Columbia Gas of Kentucky, Inc.

AG Data Request 1

Volume 4 of 5

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PSC Case No. 2009-00141
AG DR Set 1-206
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 206:

With reference to page 22 and Attachment PRM-6, please provide: (1) all data, work papers, and source documents, and calculations used in computing the short-term and long-term cost rate; (2) all details (issue date, debt amounts, underwriter, underwriting spread, SEC filings, etc.) associated with all actual and pro forma financings used in determining the Company's long-term debt cost rate; and (3) the assumptions and associated work papers used in computing all elements of the short-term and long-term debt cost rates. Please provide the data and work papers in both hard copy and electronic (Microsoft Excel) formats, with all data and formulas intact.

Response:

(1) (2) (3)
The cost rates for long-term debt were taken from the Company's 2008 Form 2 for the actual issues of long-term debt that were outstanding at December 31, 2008. The additional amount of hypothetical debt was developed from data described on lines 8 through 14 of page 22 of the direct testimony. A copy of the Reuters Corporate Bond Spreads and the 10-year Treasury yield on March 12, 2009 is attached in Attachment A.

The cost rate of short-term debt is shown on Schedule J-2 of the Company's Standard Filing Requirements.

BondsOnline Network | BondsOnline | BondsOnline Quotes | PreferredsOnline | Yield and Income

bonds online QUOTES AND DATA

From the Desk of Vincent R
Friday, March 13 2009 01:19

Current Balance ($350.0
Available Credit $350.

HOME | DEMONSTRATION | ACCOUNT ACCESS | REGISTRA

Account Home | BondsOnline | **Request Data** | Portfolio | Review Past Searches | My Account | Help | Log Out

REQUEST DATA

Estimated Cost: $35.00
Actual Cost: $35.00

REUTERS CORPORATE BOND SPREAD TABLES

Reuters Corporate Spreads for Utilities
03/12/2009

Rating	1 yr	2 yr	3 yr	5 yr	7 yr	10 yr	30 yr
Aaa/AAA	205	180	205	235	245	255	270
Aa1/AA+	215	230	270	270	325	355	385
Aa2/AA	240	255	280	295	335	365	395
Aa3/AA-	265	275	295	310	345	375	410
A1/A+	285	290	310	335	360	380	420
A2/A	340	300	325	345	365	415	430
A3/A-	390	325	335	345	375	425	440
Baa1/BBB+	490	335	345	365	385	435	465
Baa2/BBB	540	345	350	375	405	445	475
Baa3/BBB-	590	355	365	385	410	455	485
Ba1/BB+	715	705	650	650	665	685	725
Ba2/BB	1,525	1,525	1,515	1,475	1,375	1,075	1,125
Ba3/BB-	1,325	725	825	925	1,025	1,125	1,225
B1/B+	1,425	1,425	1,425	1,525	1,625	1,725	1,825
B2/B	1,525	1,825	1,925	2,025	2,325	2,425	2,525
B3/B-	1,725	1,925	2,125	2,225	2,525	2,625	2,725
Caa/CCC+	2,025	2,125	2,225	2,525	2,625	2,725	3,025
US Treasury Yield	0.70	1.03	1.42	1.92	2.50	2.89	3.63

Spread values represent basis points (bps) over a US Treasury security of the same maturity, or the closest matching maturity.

Methodology:
Reuters Pricing Service (RPS) has eight experienced evaluators responsible for pricing approximately 20,000 investment grade corpor
Corporate bonds are segregated into four industry sectors; industrial, financial, transports and utilities. RPS prices corporate bonds at
above an underlying treasury issue. The evaluators obtain the spreads from brokers and traders at various firms. A generic spread fo
sector is created using input from street contacts and the evaluator's expertise. A matrix is then developed based on sector, rating, a
maturity.

US Treasury Yields for this date are available in the BondsOnline Chart Center

Save to Portfolio Export to Spreadsheet Re-Run this Request

Federal Reserve Statistical Release

H.15

Selected Interest Rates (Daily)

Release Date: March 13, 2009

Weekly release dates | Historical data | Data Download Program (DDP) | About | Announcements
Daily update *Other formats:* Screen reader | ASCII

Data Download Program

The weekly release is posted on Monday. Daily updates of the weekly release are posted Tuesday through Friday on this site. If Monday is a holiday, the weekly release will be posted on Tuesday after the holiday and the daily update will not be posted on that Tuesday.

FEDERAL RESERVE STATISTICAL RELEASE

H.15 DAILY UPDATE: WEB RELEASE ONLY
SELECTED INTEREST RATES
For use at 4:15 p.m. Eastern Time

Yields in percent per annum — March 13, 2009

Instruments	2009 Mar 9	2009 Mar 10	2009 Mar 11	2009 Mar 12
Federal funds (effective) 1 2 3	0.20	0.20	0.19	0.18
Commercial Paper 3 4 5 6				
Nonfinancial				
1-month	0.24	n.a.	0.29	0.28
2-month	0.32	n.a.	0.29	n.a.
3-month	0.44	n.a.	n.a.	n.a.
Financial				
1-month	0.42	0.41	0.52	0.40
2-month	0.51	0.50	0.50	0.48
3-month	0.61	0.65	0.66	0.75
3-month nonfinancial or financial posted by CPFF 7				
Without surcharge	1.27	1.26	1.26	1.25
With surcharge	2.27	2.26	2.26	2.25

AG DR Set 1-206 Attachment A

CDs (secondary market) 3 8				
1-month	0.57	0.55	0.55	0.55
3-month	1.20	1.17	1.17	1.13
6-month	1.88	1.87	1.87	1.75
Eurodollar deposits (London) 3 9				
1-month	0.90	1.00	1.00	1.00
3-month	1.65	1.65	1.65	1.65
6-month	2.50	2.50	2.50	2.50
Bank prime loan 2 3 10	3.25	3.25	3.25	3.25
Discount window primary credit 2 11	0.50	0.50	0.50	0.50
U.S. government securities				
Treasury bills (secondary market) 3 4				
4-week	0.11	0.14	0.14	0.10
3-month	0.23	0.24	0.23	0.21
6-month	0.46	0.46	0.45	0.44
1-year	0.66	0.70	0.70	0.69
Treasury constant maturities				
Nominal 12				
1-month	0.12	0.14	0.14	0.11
3-month	0.23	0.24	0.23	0.22
6-month	0.47	0.47	0.46	0.45
1-year	0.69	0.71	0.71	0.70
2-year	0.96	1.01	1.03	1.03
3-year	1.38	1.46	1.45	1.42
5-year	1.90	1.99	1.96	1.92
7-year	2.53	2.63	2.56	2.50
10-year	2.89	2.99	2.95	2.89
20-year	3.83	3.94	3.88	3.82
30-year	3.59	3.70	3.67	3.63
Inflation indexed 13				
5-year	1.52	1.61	1.57	1.41
7-year	1.76	1.84	1.77	1.61
10-year	2.06	2.15	2.03	1.88
20-year	2.53	2.59	2.54	2.39
Inflation-indexed long-term average 14	2.59	2.66	2.61	2.46
Interest rate swaps 15				
1-year	1.54	1.54	1.50	1.46
2-year	1.78	1.78	1.77	1.68
3-year	2.12	2.11	2.13	2.00
4-year	2.41	2.41	2.44	2.31
5-year	2.63	2.64	2.68	2.53
7-year	2.94	2.95	3.01	2.85
10-year	3.16	3.19	3.25	3.10
30-year	3.29	3.34	3.40	3.28

AG DR Set 1-206 Attachment A

AG DR Set 1-206 Attachment A

FEDERAL RESERVE statistical release

H.15 (519) SELECTED INTEREST RATES
Yields in percent per annum

For use at 2:30 p.m. Eastern Time
March 16, 2009

Instruments	2009	2009	2009	2009	2009	Week Ending		2009
	Mar 9	Mar 10	Mar 11	Mar 12	Mar 13	Mar 13	Mar 6	Feb
Federal funds (effective)[1,2,3]	0.20	0.20	0.19	0.18	0.15	0.20	0.22	0.22
Commercial Paper[3,4,5,6]								
Nonfinancial								
1-month	0.24	n.a.	0.29	0.28	0.20	0.25	0.25	0.28
2-month	0.32	n.a.	0.29	n.a.	0.25	0.29	0.30	0.39
3-month	0.44	n.a.	n.a.	n.a.	n.a.	0.44	0.35	0.48
Financial								
1-month	0.42	0.41	0.52	0.40	0.33	0.42	0.41	0.45
2-month	0.51	0.50	0.50	0.48	0.50	0.50	0.59	0.62
3-month	0.61	0.65	0.66	0.75	0.64	0.66	0.66	0.67
3-month nonfinancial or financial posted by CPFF[7]								
Without surcharge	1.27	1.26	1.26	1.25	1.25	1.26	1.25	1.26
With surcharge	2.27	2.26	2.26	2.25	2.25	2.26	2.25	2.26
CDs (secondary market)[3,8]								
1-month	0.57	0.55	0.55	0.55	0.52	0.55	0.52	0.49
3-month	1.20	1.17	1.17	1.13	1.16	1.17	1.14	1.16
6-month	1.88	1.87	1.87	1.75	1.85	1.84	1.82	1.75
Eurodollar deposits (London)[3,9]								
1-month	0.90	1.00	1.00	1.00	1.00	0.98	0.81	0.77
3-month	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
6-month	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.52
Bank prime loan[2,3,10]	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Discount window primary credit[2,11]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
U.S. government securities								
Treasury bills (secondary market)[3,4]								
4-week	0.11	0.14	0.14	0.10	0.08	0.11	0.12	0.22
3-month	0.23	0.24	0.23	0.21	0.19	0.22	0.24	0.30
6-month	0.46	0.46	0.45	0.44	0.41	0.44	0.41	0.45
1-year	0.66	0.70	0.70	0.69	0.66	0.68	0.64	0.60
Treasury constant maturities								
Nominal[12]								
1-month	0.12	0.14	0.14	0.11	0.09	0.12	0.13	0.22
3-month	0.23	0.24	0.23	0.22	0.20	0.22	0.24	0.30
6-month	0.47	0.47	0.46	0.45	0.42	0.45	0.42	0.46
1-year	0.69	0.71	0.71	0.70	0.67	0.70	0.68	0.62
2-year	0.96	1.01	1.03	1.03	0.98	1.00	0.92	0.98
3-year	1.38	1.46	1.45	1.42	1.36	1.41	1.33	1.37
5-year	1.90	1.99	1.96	1.92	1.87	1.93	1.87	1.87
7-year	2.53	2.63	2.56	2.50	2.48	2.54	2.55	2.30
10-year	2.89	2.99	2.95	2.89	2.89	2.92	2.90	2.87
20-year	3.83	3.94	3.88	3.82	3.84	3.86	3.85	3.83
30-year	3.59	3.70	3.67	3.63	3.66	3.65	3.60	3.59
Inflation indexed[13]								
5-year	1.52	1.61	1.57	1.41	1.37	1.50	1.43	1.29
7-year	1.76	1.84	1.77	1.61	1.59	1.71	1.69	1.48
10-year	2.06	2.15	2.03	1.88	1.87	2.00	2.02	1.75
20-year	2.53	2.59	2.54	2.39	2.42	2.49	2.47	2.31
Inflation-indexed long-term average[14]	2.59	2.66	2.61	2.46	2.47	2.56	2.52	2.38
Interest rate swaps[15]								
1-year	1.54	1.54	1.50	1.46	1.45	1.50	1.38	1.33
2-year	1.78	1.78	1.77	1.68	1.67	1.74	1.64	1.62
3-year	2.12	2.11	2.13	2.00	2.00	2.07	2.00	1.98
4-year	2.41	2.41	2.44	2.31	2.28	2.37	2.33	2.28
5-year	2.63	2.64	2.68	2.53	2.51	2.60	2.58	2.52
7-year	2.94	2.95	3.01	2.85	2.82	2.91	2.93	2.84
10-year	3.16	3.19	3.25	3.10	3.08	3.15	3.21	3.10
30-year	3.29	3.34	3.40	3.28	3.27	3.32	3.34	3.31
Corporate bonds								
Moody's seasoned								
Aaa[16]	5.42	5.54	5.49	5.47	5.51	5.49	5.40	5.27
Baa	8.29	8.44	8.40	8.41	8.45	8.40	8.23	8.08
State & local bonds[17]				5.03		5.03	4.96	4.90
Conventional mortgages[18]				5.03		5.03	5.15	5.13

See overleaf for footnotes.
n.a. Not available.

Footnotes

1. The daily effective federal funds rate is a weighted average of rates on brokered trades.
2. Weekly figures are averages of 7 calendar days ending on Wednesday of the current week; monthly figures include each calendar day in the month.
3. Annualized using a 360-day year or bank interest.
4. On a discount basis.
5. Interest rates interpolated from data on certain commercial paper trades settled by The Depository Trust Company. The trades represent sales of commercial paper by dealers or direct issuers to investors (that is, the offer side). The 1-, 2-, and 3-month rates are equivalent to the 30-, 60-, and 90-day dates reported on the Board's Commercial Paper Web page (www.federalreserve.gov/releases/cp/).
6. Financial paper that is insured by the FDIC's Temporary Liquidity Guarantee Program is not excluded from relevant indexes, nor is any financial or nonfinancial commercial paper that may be directly or indirectly affected by one or more of the Federal Reserve's liquidity facilities. Thus the rates published after September 19, 2008, likely reflect the direct or indirect effects of the new temporary programs and, accordingly, likely are not comparable for some purposes to rates published prior to that period.
7. CPFF refers to the Federal Reserve's Commercial Paper Funding Facility. The rates are identical under the CPFF for financial and nonfinancial commercial paper. An issuer of commercial paper into the CPFF may avoid the surcharge by providing a collateral arrangement or indorsement that is acceptable to the Federal Reserve Bank of New York. Source: Federal Reserve Bank of New York.
8. An average of dealer bid rates on nationally traded certificates of deposit.
9. Bid rates for Eurodollar deposits collected around 9:30 a.m. Eastern time.
10. Rate posted by a majority of top 25 (by assets in domestic offices) insured U.S.-chartered commercial banks. Prime is one of several base rates used by banks to price short-term business loans.
11. The rate charged for discounts made and advances extended under the Federal Reserve's primary credit discount window program, which became effective January 9, 2003. This rate replaces that for adjustment credit, which was discontinued after January 8, 2003. For further information, see www.federalreserve.gov/boarddocs/press/bcreg/2002/200210312/default.htm. The rate reported is that for the Federal Reserve Bank of New York. Historical series for the rate on adjustment credit as well as the rate on primary credit are available at www.federalreserve.gov/releases/h15/data.htm.
12. Yields on actively traded non-inflation-indexed issues adjusted to constant maturities. The 30-year Treasury constant maturity series was discontinued on February 18, 2002, and reintroduced on February 9, 2006. From February 18, 2002, to February 9, 2006, the U.S. Treasury published a factor for adjusting the daily nominal 20-year constant maturity in order to estimate a 30-year nominal rate. The historical adjustment factor can be found at www.treas.gov/offices/domestic-finance/debt-management/interest-rate/ltcompositeindex_historical.shtml. Source: U.S. Treasury.
13. Yields on Treasury inflation protected securities (TIPS) adjusted to constant maturities. Source: U.S. Treasury. Additional information on both nominal and inflation-indexed yields may be found at www.treas.gov/offices/domestic-finance/debt-management/interest-rate/index.html.
14. Based on the unweighted average bid yields for all TIPS with remaining terms to maturity of more than 10 years.
15. International Swaps and Derivatives Association (ISDA®) mid-market par swap rates. Rates are for a Fixed Rate Payer in return for receiving three month LIBOR, and are based on rates collected at 11:00 a.m. Eastern time by Garban Intercapital plc and published on Reuters Page ISDAFIX®1. ISDAFIX is a registered service mark of ISDA. Source: Reuters Limited.
16. Moody's Aaa rates through December 6, 2001, are averages of Aaa utility and Aaa industrial bond rates. As of December 7, 2001, these rates are averages of Aaa industrial bonds only.
17. Bond Buyer Index, general obligation, 20 years to maturity, mixed quality; Thursday quotations.
18. Contract interest rates on commitments for fixed-rate first mortgages. Source: Primary Mortgage Market Survey® data provided by Freddie Mac.

Note: Weekly and monthly figures on this release, as well as annual figures available on the Board's historical H.15 web site (see below), are averages of business days unless otherwise noted.

Current and historical H.15 data are available on the Federal Reserve Board's web site (www.federalreserve.gov/). For information about individual copies or subscriptions, contact Publications Services at the Federal Reserve Board (phone 202-452-3244, fax 202-728-5886). For paid electronic access to current and historical data, call STAT-USA at 1-800-782-8872 or 202-482-1986.

Description of the Treasury Nominal and Inflation-Indexed Constant Maturity Series

Yields on Treasury nominal securities at "constant maturity" are interpolated by the U.S. Treasury from the daily yield curve for non-inflation-indexed Treasury securities. This curve, which relates the yield on a security to its time to maturity, is based on the closing market bid yields on actively traded Treasury securities in the over-the-counter market. These market yields are calculated from composites of quotations obtained by the Federal Reserve Bank of New York. The constant maturity yield values are read from the yield curve at fixed maturities, currently 1, 3, and 6 months and 1, 2, 3, 5, 7, 10, 20, and 30 years. This method provides a yield for a 10-year maturity, for example, even if no outstanding security has exactly 10 years remaining to maturity. Similarly, yields on inflation-indexed securities at "constant maturity" are interpolated from the daily yield curve for Treasury inflation protected securities in the over-the-counter market. The inflation-indexed constant maturity yields are read from this yield curve at fixed maturities, currently 5, 7, 10, and 20 years.

PSC Case No. 2009-00141
AG DR Set 1-207
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 207:

With reference to page 24, lines 7-24, and Appendix E, please provide: (1) copies of all studies used to make the ex-dividend date adjustment, and the quarterly compounding adjustment; and (2) the individual company data used in computing the adjusted dividend yield of 4.26%, including details on all adjustments to dividends and prices. Please provide copies of the source documents, work papers, and data in both hard copy and electronic (Excel) formats, with all data and formulas intact.

Response:

(1) There are no separate workpapers for the quarterly compounding adjustment. All data used for this calculation is contained on pages E-5, E-6, and E-7 of Mr. Moul's direct testimony.

(2) Attachment A is a Microsoft Excel spreadsheet that contains the workpapers. All data was obtained from the internet as indicated in the "Source of Information" and can be obtained from those websites.

Monthly Dividend Yields for
Combination Group
for the Twelve Months Ending February 2009

Company	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	12-Month Average	6-Month Average	3-Month Average
AGL Resources Inc. (NYSE:AGL)	4.93%	4.99%	4.72%	4.89%	4.91%	5.09%	5.39%	5.59%	5.59%	5.40%	5.65%	6.22%			
Atmos Energy Corp. (NYSE:ATO	5.13%	4.74%	4.75%	4.74%	4.96%	4.73%	4.91%	5.50%	5.30%	5.60%	5.43%	6.05%			
New Jersey Resources Corp. (NY	3.61%	3.53%	3.39%	3.44%	3.30%	3.12%	3.13%	3.35%	3.11%	3.16%	3.11%	3.56%			
Northwest Natural Gas Co. (NYS	3.47%	3.34%	3.30%	3.26%	3.32%	3.09%	2.90%	3.11%	3.17%	3.59%	3.68%	3.87%			
Piedmont Natural Gas Co. Inc. (N	3.97%	3.97%	3.88%	3.98%	3.90%	3.63%	3.26%	3.17%	3.11%	3.29%	4.19%	4.51%			
South Jersey Industries, Inc. (NY	3.08%	2.97%	2.84%	2.90%	2.91%	3.05%	3.03%	3.51%	3.07%	2.99%	3.21%	3.32%			
WGL Holdings Inc. (NYSE:WGL)	4.32%	4.34%	4.09%	4.13%	4.12%	4.44%	4.42%	4.42%	3.96%	4.39%	4.44%	4.71%			
Average	4.07%	3.98%	3.85%	3.91%	3.92%	3.88%	3.86%	4.09%	3.90%	4.06%	4.24%	4.61%	4.03%	4.13%	4.30%

Note: Monthly dividend yields are calculated by dividing the annualized quarterly dividend by the month-end closing stock price adjusted by the fraction of the ex-dividend.

Source of Information: http://finance.yahoo.com/
http://ccbn.aol.com Event Calendar - Split/Dividend data provided by FT Interactive Data

Month-End Closing Prices

	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09
AGL Resources Inc. (NYSE:AGL)	$ 34.320	$ 34.000	$ 35.700	$ 34.580	$ 34.560	$ 33.060	$ 31.380	$ 30.400	$ 30.110	$ 31.350	$ 30.830	$ 27.740
Atmos Energy Corp. (NYSE:ATO)	$ 25.500	$ 27.680	$ 27.390	$ 27.570	$ 26.470	$ 27.540	$ 26.620	$ 24.270	$ 24.930	$ 23.700	$ 24.550	$ 21.830
New Jersey Resources Corp. (NY	$ 31.050	$ 31.850	$ 33.310	$ 32.650	$ 34.090	$ 36.180	$ 35.890	$ 37.240	$ 40.160	$ 39.350	$ 40.090	$ 35.070
Northwest Natural Gas Co. (NYSE	$ 43.440	$ 44.870	$ 45.590	$ 46.260	$ 45.250	$ 48.730	$ 52.000	$ 50.880	$ 49.950	$ 44.230	$ 42.940	$ 40.950
Piedmont Natural Gas Co. Inc. (N	$ 26.260	$ 26.290	$ 27.030	$ 26.160	$ 26.780	$ 28.850	$ 31.960	$ 32.920	$ 33.600	$ 31.670	$ 25.910	$ 24.140
South Jersey Industries, Inc. (NYS	$ 35.110	$ 36.510	$ 38.250	$ 37.360	$ 37.300	$ 35.670	$ 35.700	$ 34.070	$ 39.000	$ 39.850	$ 37.300	$ 36.060
WGL Holdings Inc. (NYSE:WGL)	$ 32.060	$ 32.800	$ 34.890	$ 34.740	$ 34.530	$ 32.200	$ 32.450	$ 32.190	$ 36.100	$ 32.690	$ 32.100	$ 30.360

Quarterly Dividend Payment

	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09
AGL Resources Inc. (NYSE:AGL)	$ 0.420	$ 0.420	$ 0.420	$ 0.420	$ 0.420	$ 0.420	$ 0.420	$ 0.420	$ 0.420	$ 0.420	$ 0.430	$ 0.430
Atmos Energy Corp. (NYSE:ATO)	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330
New Jersey Resources Corp. (NY	$ 0.280	$ 0.280	$ 0.280	$ 0.280	$ 0.280	$ 0.280	$ 0.280	$ 0.310	$ 0.310	$ 0.310	$ 0.310	$ 0.310
Northwest Natural Gas Co. (NYSE	$ 0.375	$ 0.375	$ 0.375	$ 0.375	$ 0.375	$ 0.375	$ 0.375	$ 0.395	$ 0.395	$ 0.395	$ 0.395	$ 0.395
Piedmont Natural Gas Co. Inc. (N	$ 0.260	$ 0.260	$ 0.260	$ 0.260	$ 0.260	$ 0.260	$ 0.260	$ 0.260	$ 0.260	$ 0.260	$ 0.270	$ 0.270
South Jersey Industries, Inc. (NYS	$ 0.270	$ 0.270	$ 0.270	$ 0.270	$ 0.270	$ 0.270	$ 0.270	$ 0.298	$ 0.298	$ 0.298	$ 0.298	$ 0.298
WGL Holdings Inc. (NYSE:WGL)	$ 0.343	$ 0.355	$ 0.355	$ 0.355	$ 0.355	$ 0.355	$ 0.355	$ 0.355	$ 0.355	$ 0.355	$ 0.355	$ 0.355

Ex-Dividend Dates

	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09
AGL Resources Inc. (NYSE:AGL)	13-Feb-08	13-Feb-08	14-May-08	14-May-08	14-May-08	13-Aug-08	13-Aug-08	13-Aug-08	12-Nov-08	12-Nov-08	12-Nov-08	11-Feb-09
Atmos Energy Corp. (NYSE:ATO	21-Feb-08	21-Feb-08	22-May-08	22-May-08	22-May-08	21-Aug-08	21-Aug-08	21-Aug-08	21-Nov-08	21-Nov-08	21-Nov-08	23-Feb-09
New Jersey Resources Corp. (NY	12-Mar-08	12-Mar-08	12-Mar-08	11-Jun-08	11-Jun-08	11-Jun-08	11-Sep-08	11-Sep-08	11-Sep-08	11-Dec-08	11-Dec-08	11-Dec-08
Northwest Natural Gas Co. (NYS	29-Jan-08	28-Apr-08	28-Apr-08	28-Apr-08	29-Jul-08	29-Jul-08	29-Jul-08	29-Oct-08	29-Oct-08	29-Oct-08	28-Jan-09	28-Jan-09
Piedmont Natural Gas Co. Inc. (N	20-Mar-08	20-Mar-08	20-Mar-08	23-Jun-08	23-Jun-08	23-Jun-08	23-Sep-08	23-Sep-08	23-Sep-08	23-Dec-08	23-Dec-08	23-Dec-08
South Jersey Industries, Inc. (NY	06-Mar-08	06-Mar-08	06-Mar-08	06-Jun-08	06-Jun-08	06-Jun-08	08-Sep-08	08-Sep-08	08-Sep-08	08-Dec-08	08-Dec-08	08-Dec-08
WGL Holdings Inc. (NYSE:WGL)	08-Jan-08	08-Apr-08	08-Apr-08	08-Apr-08	08-Jul-08	08-Jul-08	08-Jul-08	08-Oct-08	08-Oct-08	08-Oct-08	07-Jan-09	07-Jan-09

Days from Ex-Dividend Date

	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09
AGL Resources Inc. (NYSE:AGL)	47	77	17	47	78	18	48	79	18	49	80	17
Atmos Energy Corp. (NYSE:ATO)	39	69	9	39	70	10	40	71	9	40	71	5
New Jersey Resources Corp. (NY	19	49	80	19	50	81	19	50	80	20	51	79
Northwest Natural Gas Co. (NYSE	62	2	33	63	2	33	63	2	32	63	3	31
Piedmont Natural Gas Co. Inc. (N	11	41	72	7	38	69	7	38	68	8	39	67
South Jersey Industries, Inc. (NYS	25	55	86	24	55	86	22	53	83	23	54	82
WGL Holdings Inc. (NYSE:WGL)	83	22	53	83	23	54	84	23	53	84	24	52

Adjusted Prices

	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09
AGL Resources Inc. (NYSE:AGL)	$34.103	$33.645	$35.622	$34.363	$34.200	$32.977	$31.158	$30.035	$30.027	$31.124	$30.452	$27.660
Atmos Energy Corp. (NYSE:ATO)	$25.361	$27.434	$27.358	$27.431	$26.220	$27.504	$26.477	$24.013	$24.897	$23.555	$24.293	$21.812
New Jersey Resources Corp. (NY	$30.992	$31.699	$33.064	$32.592	$33.936	$35.931	$35.832	$37.070	$39.887	$39.282	$39.916	$34.801
Northwest Natural Gas Co. (NYSE	$43.185	$44.862	$45.454	$46.000	$45.242	$48.594	$51.740	$50.871	$49.811	$43.957	$42.927	$40.815
Piedmont Natural Gas Co. Inc. (N	$26.229	$26.173	$26.824	$26.140	$26.671	$28.653	$31.940	$32.811	$33.406	$31.647	$25.794	$23.941
South Jersey Industries, Inc. (NYS	$35.036	$36.347	$37.995	$37.289	$37.137	$35.415	$35.635	$33.897	$38.729	$39.775	$37.123	$35.792
WGL Holdings Inc. (NYSE:WGL)	$31.748	$32.714	$34.683	$34.416	$34.440	$31.989	$32.122	$32.100	$35.893	$32.362	$32.006	$30.157

PSC Case No. 2009-00141
AG DR Set 1-208
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 208:

With reference to pages 26-31, and Attachments PRM-8 and PRM-9, please provide the individual company data and copies of the source documents, work papers, and data used in developing the historic and forecasted growth rate data for the proxy group. Please provide the data in both hard copy and electronic (Excel) formats, with all data and formulas intact.

Response:

Please refer to the Microsoft Excel spreadsheets that are attached in Attachment A. The source documents are also provided in Attachment B.

Historical Growth Rates

Earnings Per Share, Dividends Per Share,
Book Value Per Share, and Cash Flow Per Share

	Earnings per Share		**Dividends per Share**		**Book Value per Share**		**Cash Flow per Share**	
	Value Line		Value Line		Value Line		Value Line	
Gas Group	5 Year	10 Year	5 Year	10 Year	5 Year	10 Year	5 Year	10 Year
AGL Resources, Inc.	15.00%	7.00%	4.00%	2.50%	10.50%	6.50%	7.00%	5.50%
Atmos Energy Corp.	7.50%	3.50%	1.50%	2.50%	9.00%	7.00%	5.50%	4.00%
New Jersey Resources Corp.	6.00%	6.50%	4.00%	3.50%	10.00%	7.50%	4.50%	5.50%
Northwest Natural Gas	6.50%	3.00%	2.00%	1.50%	3.50%	3.50%	5.50%	3.00%
Piedmont Natural Gas Co.	6.00%	5.00%	4.50%	5.00%	6.50%	6.00%	7.00%	5.50%
South Jersey Industries, Inc.	12.50%	9.50%	4.50%	2.50%	12.50%	7.50%	9.00%	7.00%
WGL Holdings, Inc.	5.00%	2.00%	1.50%	1.50%	3.50%	4.00%	5.00%	3.50%
Average	8.36%	5.21%	3.14%	2.71%	7.93%	6.00%	6.21%	4.86%

Source of Information: Value Line Investment Survey, December 12, 2008

Analysts' Five-Year Projected Growth Rates
Earnings Per Share, Dividends Per Share,
Book Value Per Share, and Cash Flow Per Share

Gas Group	I/B/E/S First Call	Zacks	Value Line Earnings Per Share	Value Line Dividends Per Share	Value Line Book Value Per Share	Value Line Cash Flow Per Share	Value Line Percent Retained to Common Equity
AGL Resources, Inc.	4.30%	4.80%	3.00%	4.00%	2.00%	3.50%	5.50%
Atmos Energy Corp.	5.00%	5.50%	4.50%	2.00%	3.50%	2.00%	4.00%
New Jersey Resources Corp.	7.00%	8.00%	9.50%	6.00%	11.00%	7.00%	6.50%
Northwest Natural Gas	4.75%	6.80%	7.00%	5.50%	3.50%	5.00%	5.00%
Piedmont Natural Gas Co.	7.13%	7.60%	7.50%	4.00%	4.50%	4.50%	5.50%
South Jersey Industries, Inc.	7.50%	8.00%	6.00%	5.50%	4.50%	5.50%	9.50%
WGL Holdings, Inc.	4.00%	6.30%	3.50%	2.50%	5.00%	2.50%	4.00%
Average	5.67%	6.71%	5.86%	4.21%	4.86%	4.29%	5.71%

Source of Information : Thomson Financial, February 13, 2009
Zacks, February 13, 2009
Value Line Investment Survey, December 12, 2008

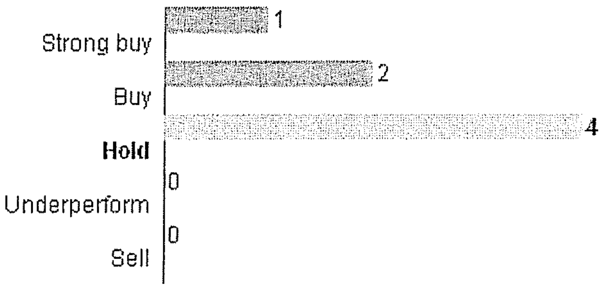
AG DR Set 1-208 Attachment A

Research Funds & Stocks » Stocks, Bonds, & CDs » Stock Profile

AGL Resources Inc (New York Stock Exchange : AGL)

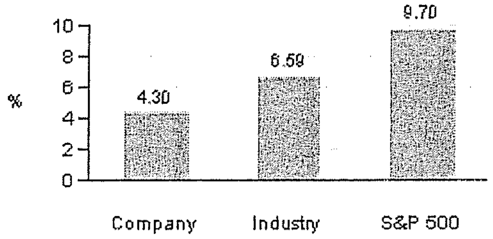
Overview
Charts
News
Fundamentals
Price history
Financials
Share details
Earnings
Analyst reports

First Call Consensus



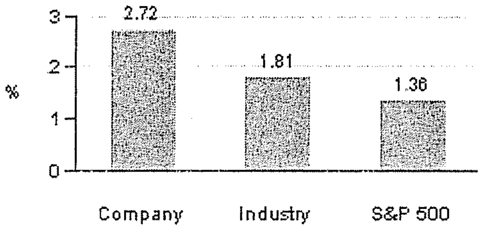
Expected Annual Growth Rates

Long term estimated growth rate



PEG Ratio

P/E ratio divided by the expected growth rate. The higher the PEG ratio, the more expensive the stock.



Consensus Estimates

	This Quarter (03/2009)	Next Quarter (06/2009)	This Year (12/2009)	Next Year (12/2010)
Average Estimate	$1.29	$0.36	$2.73	$2.90
Number of Analysts	2	2	9	7
High Estimate	$1.30	$0.42	$2.85	$3.05
Low Estimate	$1.27	$0.29	$2.66	$2.67
Year Ago EPS	$1.16	$0.30	$2.71	$2.73
EPS Growth	11.21%	–68.97%	0.74%	6.23%

Current Price to Earnings

	Company	Industry	S&P 500
Trailing	11.74	11.46	12.13
Forward	12	12	13

Current Fiscal Year	11.70	11.90	12.22
Next Fiscal Year	11.00	10.88	10.38

Earnings Estimates Revision Trend

	This Quarter (03/2009)	Next Quarter (06/2009)	This Year (12/2009)	Next Year (12/2010)	Long-Term Growth
Current	—	—	—	—	4.30%
7 Days Ago	—	—	—	—	—
30 Days Ago	—	—	—	—	—
60 Days Ago	—	—	—	—	—
90 Days Ago	—	—	—	—	—

Historical Earnings Surprise

	12/2008	09/2008	06/2008	03/2008	12/2007
Estimate	$0.89	$0.33	$0.12	$1.28	$0.84
Actual	$0.97	$0.28	$0.30	$1.16	$0.86
Difference	$0.08	–$0.05	$0.18	–$0.12	$0.02
Surprise	9.00%	–15.20%	150.00%	–9.40%	2.40%

Glossary

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Atmos Energy Corp. (ATO)

At 11:21AM ET: **25.30** ↓ 0.10 (0.39%)

Analyst Estimates

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Earnings Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Avg. Estimate	1.34	-0.05	2.09	2.16
No. of Analysts	6	6	9	9
Low Estimate	1.20	-0.12	2.03	2.04
High Estimate	1.58	0.02	2.21	2.40
Year Ago EPS	1.24	-0.07	2.00	2.09

Revenue Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Avg. Estimate	4.48B	1.13B	8.24B	7.05B
No. of Analysts	3	3	4	4
Low Estimate	2.52B	301.52M	6.54B	6.57B
High Estimate	8.12B	1.65B	12.45B	7.34B
Year Ago Sales	2.48B	1.64B	N/A	8.24B
Sales Growth (year/est)	80.4%	-31.3%	N/A	-14.4%

Earnings History	Mar-08	Jun-08	Sep-08	Dec-08
EPS Est	1.32	-0.06	-0.03	0.86
EPS Actual	1.24	-0.07	0.02	0.83
Difference	-0.08	-0.01	0.05	-0.03
Surprise %	-6.1%	-16.7%	166.7%	-3.5%

EPS Trends	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Current Estimate	1.34	-0.05	2.09	2.16
7 Days Ago	1.29	-0.03	2.09	2.17
30 Days Ago	1.37	-0.07	2.08	2.17
60 Days Ago	1.38	-0.06	2.08	2.17
90 Days Ago	1.35	-0.05	2.08	2.17

EPS Revisions	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Up Last 7 Days	0	0	0	0
Up Last 30 Days	1	0	1	1
Down Last 30 Days	0	0	0	0
Down Last 90 Days				

Growth Est	ATO	Industry	Sector	S&P 500

Current Qtr.	8.1%	-5.7%	-2.9%	N/A
Next Qtr.	28.6%	-8.5%	-3.2%	N/A
This Year	4.5%	-3.5%	1.6%	N/A
Next Year	3.3%	9.4%	9.6%	N/A
Past 5 Years (per annum)	-12.152%	N/A	N/A	N/A
Next 5 Years (per annum)	5%	6.59%	8.96%	N/A
Price/Earnings (avg. for comparison categories)	12.15	11.93	11.41	N/A
PEG Ratio (avg. for comparison categories)	2.43	1.81	1.27	N/A

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YAHOO! FINANCE Search **WEB SEARCH**

Dow ↓ **0.41%** Nasdaq ↑ **0.12%**

Fri, 13 Feb, 2009, 11h39 - **U.S. Markets close in 4hrs 21mins**

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New Jersey Resources Corp. (NJR)

At 11:24AM ET: **39.13** ↑ 0.42 (1.08%)

Analyst Estimates

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Earnings Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Avg. Estimate	2.00	-0.06	2.37	2.55
No. of Analysts	4	4	5	5
Low Estimate	1.95	-0.11	2.35	2.45
High Estimate	2.03	-0.02	2.40	2.64
Year Ago EPS	1.86	-0.10	2.24	2.37

Revenue Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Avg. Estimate	1.12B	943.36M	3.67B	3.76B
No. of Analysts	1	1	1	1
Low Estimate	1.12B	943.36M	3.67B	3.76B
High Estimate	1.12B	943.36M	3.67B	3.76B
Year Ago Sales	1.18B	1.00B	3.82B	3.67B
Sales Growth (year/est)	-4.5%	-5.7%	-3.8%	2.4%

Earnings History	Mar-08	Jun-08	Sep-08	Dec-08
EPS Est	1.85	-0.12	-0.40	0.85
EPS Actual	1.86	-0.10	-0.39	0.76
Difference	0.01	0.02	0.01	-0.09
Surprise %	0.5%	16.7%	2.5%	-10.6%

EPS Trends	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Current Estimate	2.00	-0.06	2.37	2.55
7 Days Ago	2.00	-0.06	2.37	2.55
30 Days Ago	1.92	-0.08	2.35	2.53
60 Days Ago	1.92	-0.08	2.35	2.53
90 Days Ago	1.92	-0.08	2.33	2.55

EPS Revisions	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Up Last 7 Days	2	2	2	2
Up Last 30 Days	3	3	3	3
Down Last 30 Days	0	0	0	0
Down Last 90 Days				

Growth Est	NJR	Industry	Sector	S&P 500

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Current Qtr.	7.5%	-5.7%	-2.9%	N/A
Next Qtr.	40.0%	-8.5%	-3.2%	N/A
This Year	5.8%	-3.5%	1.6%	N/A
Next Year	7.6%	9.4%	9.6%	N/A
Past 5 Years (per annum)	34.685%	N/A	N/A	N/A
Next 5 Years (per annum)	7%	6.59%	8.96%	N/A
Price/Earnings (avg. for comparison categories)	16.33	11.93	11.41	N/A
PEG Ratio (avg. for comparison categories)	2.33	1.81	1.27	N/A

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Dow ⇩ **0.39%** Nasdaq ⇧ **0.16%**

Fri, 13 Feb, 2009, 11h38 - **U.S. Markets close in 4hrs 22mins**

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Northwest Natural Gas Co. (NWN)

At 11:23AM ET: **44.08** ⇧ **0.65 (1.50%)**

Analyst Estimates

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Earnings Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Dec-09	Next Year Dec-10
Avg. Estimate	1.67	0.16	2.72	2.74
No. of Analysts	2	2	4	3
Low Estimate	1.64	0.12	2.62	2.62
High Estimate	1.70	0.20	2.80	2.90
Year Ago EPS	1.63	0.08	2.58	2.72

Revenue Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Dec-09	Next Year Dec-10
Avg. Estimate	N/A	N/A	897.49M	768.51M
No. of Analysts			3	2
Low Estimate	N/A	N/A	380.87M	393.47M
High Estimate	N/A	N/A	1.19B	1.14B
Year Ago Sales	N/A	N/A	1.04B	897.49M
Sales Growth (year/est)	N/A	N/A	-13.5%	-14.4%

Earnings History	Mar-08	Jun-08	Sep-08	Dec-08
EPS Est	1.67	0.11	-0.28	1.21
EPS Actual	1.63	0.08	-0.38	1.25
Difference	-0.04	-0.03	-0.10	0.04
Surprise %	-2.4%	-27.3%	-35.7%	3.3%

EPS Trends	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Dec-09	Next Year Dec-10
Current Estimate	1.67	0.16	2.72	2.74
7 Days Ago	1.69	0.14	2.73	2.76
30 Days Ago	1.70	0.14	2.72	2.75
60 Days Ago	1.70	0.14	2.72	2.75
90 Days Ago	1.69	0.14	2.72	2.68

EPS Revisions	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Dec-09	Next Year Dec-10
Up Last 7 Days	0	1	0	0
Up Last 30 Days	0	1	1	1
Down Last 30 Days	1	0	1	1
Down Last 90 Days				

Growth Est	NWN	Industry	Sector	S&P 500

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Current Qtr.	2.5%	-5.7%	-2.9%	N/A
Next Qtr.	100.0%	-8.5%	-3.2%	N/A
This Year	5.4%	-3.5%	1.6%	N/A
Next Year	0.7%	9.4%	9.6%	N/A
Past 5 Years (per annum)	-14.352%	N/A	N/A	N/A
Next 5 Years (per annum)	4.75%	6.59%	8.96%	N/A
Price/Earnings (avg. for comparison categories)	15.97	11.93	11.41	N/A
PEG Ratio (avg. for comparison categories)	3.36	1.81	1.27	N/A

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YAHOO! FINANCE Search WEB SEARCH

Dow ↓ **0.38%** Nasdaq ↑ **0.17%**

Fri, 13 Feb, 2009, 11h40 - **U.S. Markets close in 4hrs 20mins**

GET QUOTES Finance Search

Piedmont Natural Gas Co. Inc. (PNY)

At 11:25AM ET: **26.13** ↓ 0.19 (0.72%)

Analyst Estimates

Get **Analyst Estimates** for: GO

Earnings Est	Current Qtr Jan-09	Next Qtr Apr-09	Current Year Oct-09	Next Year Oct-10
Avg. Estimate	1.12	0.71	1.62	1.72
No. of Analysts	6	5	6	6
Low Estimate	1.10	0.67	1.56	1.68
High Estimate	1.14	0.75	1.71	1.81
Year Ago EPS	1.12	0.66	1.49	1.62

Revenue Est	Current Qtr Jan-09	Next Qtr Apr-09	Current Year Oct-09	Next Year Oct-10
Avg. Estimate	799.64M	631.72M	1.60B	1.65B
No. of Analysts	2	2	3	3
Low Estimate	793.00M	594.00M	584.92M	615.99M
High Estimate	806.28M	669.44M	2.14B	2.20B
Year Ago Sales	788.47M	634.18M	2.09B	1.60B
Sales Growth (year/est)	1.4%	-0.4%	-23.3%	3.2%

Earnings History	Jan-08	Apr-08	Jul-08	Oct-08
EPS Est	0.97	0.71	-0.14	-0.13
EPS Actual	1.12	0.66	-0.10	-0.18
Difference	0.15	-0.05	0.04	-0.05
Surprise %	15.5%	-7.0%	28.6%	-38.5%

EPS Trends	Current Qtr Jan-09	Next Qtr Apr-09	Current Year Oct-09	Next Year Oct-10
Current Estimate	1.12	0.71	1.62	1.72
7 Days Ago	1.12	0.71	1.62	1.72
30 Days Ago	1.12	0.73	1.63	1.72
60 Days Ago	1.12	0.74	1.65	1.71
90 Days Ago	1.10	0.77	1.70	1.71

EPS Revisions	Current Qtr Jan-09	Next Qtr Apr-09	Current Year Oct-09	Next Year Oct-10
Up Last 7 Days	0	0	0	0
Up Last 30 Days	0	0	0	0
Down Last 30 Days	0	0	1	0
Down Last 90 Days				

Growth Est	PNY	Industry	Sector	S&P 500

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Current Qtr.	0.0%	-5.7%	-2.9%	N/A
Next Qtr.	7.6%	-8.5%	-3.2%	N/A
This Year	8.7%	-3.5%	1.6%	N/A
Next Year	6.2%	9.4%	9.6%	N/A
Past 5 Years (per annum)	4.868%	N/A	N/A	N/A
Next 5 Years (per annum)	7.13%	6.59%	8.96%	N/A
Price/Earnings (avg. for comparison categories)	16.81	11.93	11.41	N/A
PEG Ratio (avg. for comparison categories)	2.36	1.81	1.27	N/A

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YAHOO! FINANCE Search WEB SEARCH

Dow ↓ **0.36%** Nasdaq ↑ **0.17%**

Fri, 13 Feb, 2009, 11h41 - **U.S. Markets close in 4hrs 19mins**

GET QUOTES Finance Search

South Jersey Industries, Inc. (SJI)

At 11:25AM ET: **38.05** ↑ 0.08 (0.22%)

Analyst Estimates

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Earnings Est	Current Qtr Dec-08	Next Qtr Mar-09	Current Year Dec-08	Next Year Dec-09
Avg. Estimate	0.68	1.33	2.30	2.43
No. of Analysts	5	3	5	5
Low Estimate	0.66	1.30	2.28	2.38
High Estimate	0.70	1.36	2.32	2.50
Year Ago EPS	0.63	1.32	2.09	2.30

Next Earnings Date: 26-Feb-09 - Set a Reminder

Revenue Est	Current Qtr Dec-08	Next Qtr Mar-09	Current Year Dec-08	Next Year Dec-09
Avg. Estimate	265.10M	418.88M	959.30M	990.50M
No. of Analysts	1	1	1	1
Low Estimate	265.10M	418.88M	959.30M	990.50M
High Estimate	265.10M	418.88M	959.30M	990.50M
Year Ago Sales	260.06M	348.05M	956.37M	959.30M
Sales Growth (year/est)	1.9%	20.4%	0.3%	3.3%

Earnings History	Dec-07	Mar-08	Jun-08	Sep-08
EPS Est	0.61	1.12	0.28	0.10
EPS Actual	0.63	1.32	0.26	0.04
Difference	0.02	0.20	-0.02	-0.06
Surprise %	3.3%	17.9%	-7.1%	-60.0%

EPS Trends	Current Qtr Dec-08	Next Qtr Mar-09	Current Year Dec-08	Next Year Dec-09
Current Estimate	0.68	1.33	2.30	2.43
7 Days Ago	0.68	1.33	2.30	2.43
30 Days Ago	0.68	1.33	2.30	2.40
60 Days Ago	0.66	1.32	2.30	2.40
90 Days Ago	0.65	1.32	2.30	2.40

EPS Revisions	Current Qtr Dec-08	Next Qtr Mar-09	Current Year Dec-08	Next Year Dec-09
Up Last 7 Days	0	0	0	1
Up Last 30 Days	0	0	0	2
Down Last 30 Days	0	0	0	0
Down Last 90 Days				

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Growth Est	SJI	Industry	Sector	S&P 500
Current Qtr.	7.9%	N/A	N/A	N/A
Next Qtr.	0.8%	N/A	N/A	N/A
This Year	10.0%	N/A	N/A	N/A
Next Year	5.7%	N/A	N/A	N/A
Past 5 Years (per annum)	4.096%	N/A	N/A	N/A
Next 5 Years (per annum)	7.5%	N/A	N/A	N/A
Price/Earnings (avg. for comparison categories)	16.5	N/A	N/A	N/A
PEG Ratio (avg. for comparison categories)	2.2	N/A	N/A	N/A

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YAHOO! FINANCE Search WEB SEARCH

Dow ⇩ **0.54%** Nasdaq ⇧ **0.01%**

Fri, 13 Feb, 2009, 11h42 - **U.S. Markets close in 4hrs 18mins**

GET QUOTES Finance Search

WGL Holdings Inc. (WGL)

At 11:25AM ET: **33.78** ⇧ 0.68 (2.05%)

Analyst Estimates

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Earnings Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Avg. Estimate	1.66	0.02	2.35	2.39
No. of Analysts	5	5	5	5
Low Estimate	1.58	-0.04	2.30	2.32
High Estimate	1.73	0.08	2.47	2.54
Year Ago EPS	1.66	0.06	2.33	2.35

Revenue Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Avg. Estimate	1.04B	470.81M	2.63B	2.68B
No. of Analysts	2	2	2	2
Low Estimate	1.04B	470.30M	2.60B	2.63B
High Estimate	1.04B	471.33M	2.66B	2.73B
Year Ago Sales	1.02B	464.65M	2.63B	2.63B
Sales Growth (year/est)	1.8%	1.3%	0.2%	1.8%

Earnings History	Mar-08	Jun-08	Sep-08	Dec-08
EPS Est	1.42	0.14	-0.33	0.97
EPS Actual	1.66	0.06	-0.22	1.03
Difference	0.24	-0.08	0.11	0.06
Surprise %	16.9%	-57.1%	33.3%	6.2%

EPS Trends	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Current Estimate	1.66	0.02	2.35	2.39
7 Days Ago	1.64	0.02	2.33	2.37
30 Days Ago	1.65	0.03	2.34	2.38
60 Days Ago	1.64	0.04	2.33	2.35
90 Days Ago	1.62	0.06	2.33	2.33

EPS Revisions	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Sep-09	Next Year Sep-10
Up Last 7 Days	1	1	1	1
Up Last 30 Days	1	1	1	1
Down Last 30 Days	0	0	1	0
Down Last 90 Days				

Growth Est	WGL	Industry	Sector	S&P 500

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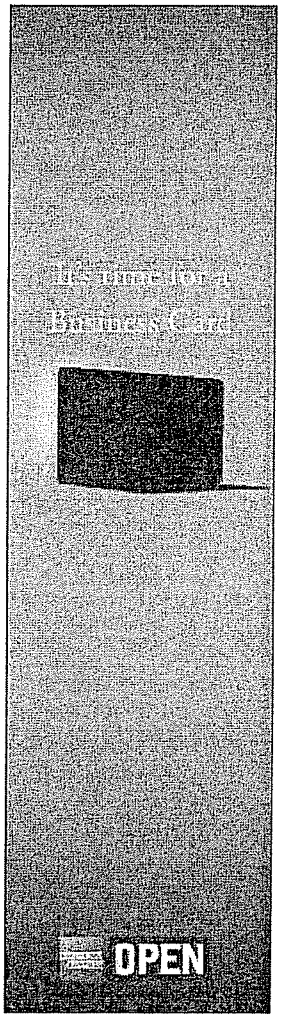
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Current Qtr.	0.0%	-5.7%	-2.9%	N/A
Next Qtr.	-66.7%	-8.5%	-3.2%	N/A
This Year	0.9%	-3.5%	1.6%	N/A
Next Year	1.7%	9.4%	9.6%	N/A
Past 5 Years (per annum)	-23.596%	N/A	N/A	N/A
Next 5 Years (per annum)	4%	6.59%	8.96%	N/A
Price/Earnings (avg. for comparison categories)	14.09	11.93	11.41	N/A
PEG Ratio (avg. for comparison categories)	3.52	1.81	1.27	N/A

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AGL RES INC (NYSE)				Scottrade
AGL	31.88	▲0.07	(0.22%)	Vol. 79,895	11:32 ET

AGL Resources principal business is the distribution of natural gas to customers in central, northwest, northeast and southeast Georgia and the Chattanooga, Tennessee area through its natural gas distribution subsidiary. AGL's major service area is the ten county metropolitan Atlanta area.

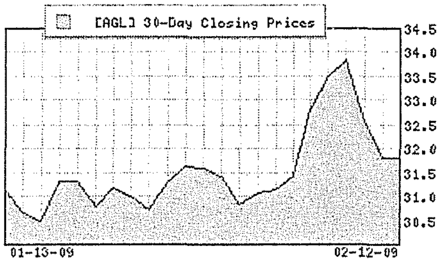
General Information

AGL RESOURCES
Ten Peachtree Place NE
Atlanta, GA 30309
Phone: 404 584-4000
Fax: 404 584-3945
Web: www.aglresources.com
Email: scave@aglresources.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	0
Last Reported Quarter	0
Next EPS Date	04/22/2009

Price and Volume Information

Zacks Rank	2
Yesterday's Close	31.81
52 Week High	36.83
52 Week Low	24.02
Beta	0.32
20 Day Moving Average	475,948.84
Target Price Consensus	35.29



% Price Change		% Price Change Relative to S&P 500	
4 Week	4.36	4 Week	5.43
12 Week	20.45	12 Week	8.51
YTD	1.47	YTD	11.12

Share Information		Dividend Information	
Shares Outstanding (millions)	76.78	Dividend Yield	5.41%
		Annual Dividend	$1.72
Market Capitalization (millions)	2,442.37	Payout Ratio	0.62
Short Ratio	5.18	Change in Payout Ratio	0.00
Last Split Date	12/04/1995	Last Dividend Payout / Amount	11/12/2008 / $0.42

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	1.33	Current (1=Strong Buy, 5=Strong Sell)	2.17
Current Year EPS Consensus Estimate	2.73	30 Days Ago	2.17
Estimated Long-Term EPS Growth Rate	4.80	60 Days Ago	2.17
Next EPS Report Date	04/22/2009	90 Days Ago	2.14

Fundamental Ratios

P/E		*EPS Growth*		*Sales Growth*	
Current FY Estimate:	11.64	vs. Previous Year	12.79%	vs. Previous Year	17.52%
Trailing 12 Months:	11.74	vs. Previous Quarter	246.43%	vs. Previous Quarter:	49.35%
PEG Ratio	2.43				
Price Ratios		**ROE**		**ROA**	
Price/Book	1.48	12/31/08	12.23	12/31/08	3.20

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Price/Cash Flow	6.79	09/30/08	11.74	09/30/08	3.13
Price / Sales	0.87	06/30/08	11.42	06/30/08	3.08
Current Ratio		**Quick Ratio**		**Operating Margin**	
12/31/08	1.03	12/31/08	0.70	12/31/08	7.41
09/30/08	1.06	09/30/08	0.62	09/30/08	7.44
06/30/08	1.03	06/30/08	0.67	06/30/08	7.61
Net Margin		**Pre-Tax Margin**		**Book Value**	
12/31/08	12.46	12/31/08	12.46	12/31/08	21.52
09/30/08	12.43	09/30/08	12.43	09/30/08	22.49
06/30/08	9.96	06/30/08	9.96	06/30/08	22.03
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
12/31/08	2.61	12/31/08	1.01	12/31/08	50.82
09/30/08	2.60	09/30/08	0.97	09/30/08	49.71
06/30/08	2.60	06/30/08	0.97	06/30/08	49.78

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ATMOS ENERGY CORP (NYSE)

Scottrade

ATO	25.27	▼-0.13	(-0.51%)	Vol. 129,566	11:33 ET

Atmos Energy Corporation distributes and sells natural gas to residential, commercial, industrial, agricultural and other customers. Atmos operates through five divisions in cities, towns and communities in service areas located in Colorado, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Missouri, South Carolina, Tennessee, Texas and Virginia. The Company has entered into an agreement to sell all of its natural gas utility operations in South Carolina. The Company also transports natural gas for others through its distribution system.

General Information

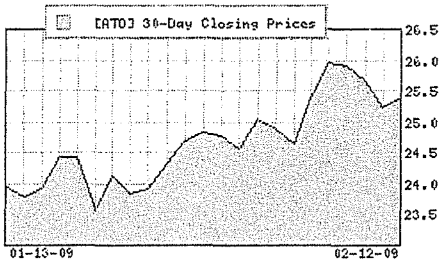
ATMOS ENERGY CP
Three Lincoln Centre 5430 Lbj Freeway
Suite 1800
Dallas, TX 75240
Phone: 972-934-9227
Fax: 972-855-3040
Web: www.atmosenergy.com
Email: InvestorRelations@atmosenergy.com

Industry	UTIL-GAS DISTR
Sector:	Utilities

Fiscal Year End	September
Last Reported Quarter	12/31/08
Next EPS Date	02/03/2009

Price and Volume Information

Zacks Rank	
Yesterday's Close	25.40
52 Week High	28.66
52 Week Low	19.68
Beta	0.45
20 Day Moving Average	545,183.44
Target Price Consensus	29.33



% Price Change		% Price Change Relative to S&P 500	
4 Week	6.23	4 Week	7.32
12 Week	8.13	12 Week	-2.58
YTD	7.17	YTD	13.86

Share Information		Dividend Information	
Shares Outstanding (millions)	91.56	Dividend Yield	5.20%
		Annual Dividend	$1.32
Market Capitalization (millions)	2,325.55	Payout Ratio	0.00
Short Ratio	2.13	Change in Payout Ratio	0.00
Last Split Date	05/17/1994	Last Dividend Payout / Amount	11/21/2008 / $0.33

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.84	Current (1=Strong Buy, 5=Strong Sell)	2.50
Current Year EPS Consensus Estimate	2.09	30 Days Ago	2.50
Estimated Long-Term EPS Growth Rate	5.50	60 Days Ago	2.50
Next EPS Report Date	02/03/2009	90 Days Ago	2.40

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	12.15	vs. Previous Year	150.00%	vs. Previous Year	3.55%
Trailing 12 Months:	12.64	vs. Previous Quarter	128.57%	vs. Previous Quarter:	19.13%
PEG Ratio	2.21				

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Price Ratios		**ROE**		**ROA**	
Price/Book	1.12	12/31/08	8.73	12/31/08	2.81
Price/Cash Flow	6.04	09/30/08	8.67	09/30/08	2.82
Price / Sales	0.32	06/30/08	8.50	06/30/08	2.79
Current Ratio		**Quick Ratio**		**Operating Margin**	
12/31/08	0.83	12/31/08	0.55	12/31/08	2.51
09/30/08	1.06	09/30/08	0.59	09/30/08	2.50
06/30/08	1.20	06/30/08	0.71	06/30/08	2.58
Net Margin		**Pre-Tax Margin**		**Book Value**	
12/31/08	4.05	12/31/08	4.05	12/31/08	22.70
09/30/08	4.05	09/30/08	4.05	09/30/08	22.65
06/30/08	3.92	06/30/08	3.92	06/30/08	23.34
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
12/31/08	11.02	12/31/08	0.83	12/31/08	45.28
09/30/08	11.06	09/30/08	1.03	09/30/08	50.81
06/30/08	10.64	06/30/08	1.01	06/30/08	50.17

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NEW JERSEY RES (NYSE)					Scottrade
NJR	39.17	▲0.46	(1.19%)	Vol. 123,368	11:34 ET

NJ RESOURCES is an exempt energy svcs holding company providing retail & wholesale natural gas & related energy services to customers from the Gulf Coast to New England. Subsidiaries include: (1) N J Natural Gas Co, a natural gas distribution company that provides regulated energy & appliance services to residential, commercial & industrial customers in central & northern N J. (2) NJR Energy Holdings Corp formerly NJR Energy Svcs Corp & (3) NJR Development Corp, a sub-holding company of NJR, which includes the Company's remaining unregulated operating subsidiaries.

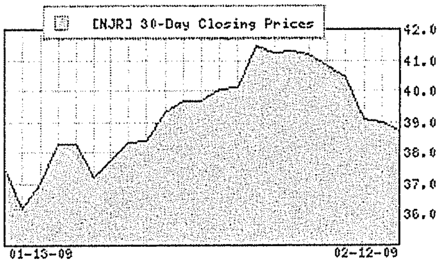
General Information

NJ RESOURCES
1415 Wyckoff Road
Wall, NJ 07719
Phone: 732-938-1489
Fax: 732 938-3154
Web: www.njresources.com
Email: investcont@njresources.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	September
Last Reported Quarter	12/31/08
Next EPS Date	04/22/2009

Price and Volume Information

Zacks Rank	[illegible]
Yesterday's Close	38.71
52 Week High	42.37
52 Week Low	21.90
Beta	0.13
20 Day Moving Average	464,139.34
Target Price Consensus	44.25



% Price Change		% Price Change Relative to S&P 500	
4 Week	4.65	4 Week	5.72
12 Week	7.83	12 Week	-2.86
YTD	-1.63	YTD	7.82

Share Information		Dividend Information	
Shares Outstanding (millions)	42.12	Dividend Yield	3.20%
		Annual Dividend	$1.24
Market Capitalization (millions)	1,630.50	Payout Ratio	0.58
Short Ratio	6.43	Change in Payout Ratio	0.00
Last Split Date	03/04/2008	Last Dividend Payout / Amount	12/11/2008 / $0.31

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	1.99	Current (1=Strong Buy, 5=Strong Sell)	2.33
Current Year EPS Consensus Estimate	2.37	30 Days Ago	1.67
Estimated Long-Term EPS Growth Rate	8.00	60 Days Ago	1.67
Next EPS Report Date	04/22/2009	90 Days Ago	2.33

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	16.33	vs. Previous Year	-12.31%	vs. Previous Year	-1.21%
Trailing 12 Months:	18.17	vs. Previous Quarter	294.87%	vs. Previous Quarter:	-3.12%
PEG Ratio	2.04				

Price Ratios		**ROE**		**ROA**	
Price/Book	2.21	12/31/08	13.13	12/31/08	3.52
Price/Cash Flow	12.22	09/30/08	13.77	09/30/08	3.74
Price / Sales	0.43	06/30/08	14.36	06/30/08	3.94
Current Ratio		**Quick Ratio**		**Operating Margin**	
12/31/08	-	12/31/08	-	12/31/08	2.36
09/30/08	1.24	09/30/08	0.70	09/30/08	2.46
06/30/08	1.15	06/30/08	0.79	06/30/08	2.65
Net Margin		**Pre-Tax Margin**		**Book Value**	
12/31/08	3.89	12/31/08	3.89	12/31/08	-
09/30/08	4.72	09/30/08	4.72	09/30/08	17.29
06/30/08	-0.40	06/30/08	-0.40	06/30/08	15.69
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
12/31/08	9.06	12/31/08	-	12/31/08	-
09/30/08	8.77	09/30/08	0.63	09/30/08	38.50
06/30/08	8.90	06/30/08	0.73	06/30/08	42.27

AG DR Set 1-208 Attachment A

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NORTHWEST NAT GAS CO (NYSE)

NWN	44.19	▲0.76	(1.75%)	Vol. 49,343	11:34 ET

NW Natural is principally engaged in the distribution of natural gas.The Oregon Public Utility Commission (OPUC) has allocated to NW Natural as its exclusive service area a major portion of western Oregon, including the Portland metropolitan area, most of the fertile Willamette Valley and the coastal area from Astoria to Coos Bay. NW Natural also holds certificates from the Washington Utilities and Transportation Commission (WUTC) granting it exclusive rights to serve portions of three Washington counties bordering the Columbia River.

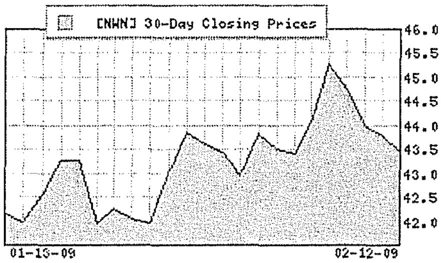
General Information

NORTHWEST NAT G
220 NW Second Avenue
Portland, OR 97209
Phone: 503 226-4211
Fax: 503 273-4824
Web: www.nwnatural.com
Email: Bob.Hess@nwnatural.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	12/31/08
Next EPS Date	04/24/2009

Price and Volume Information

Zacks Rank	
Yesterday's Close	43.43
52 Week High	78.55
52 Week Low	36.61
Beta	0.35
20 Day Moving Average	133,491.34
Target Price Consensus	51.75



% Price Change		% Price Change Relative to S&P 500	
4 Week	2.07	4 Week	3.11
12 Week	-8.03	12 Week	-17.14
YTD	-1.81	YTD	6.43

Share Information		Dividend Information	
Shares Outstanding (millions)	26.43	Dividend Yield	3.64%
		Annual Dividend	$1.58
Market Capitalization (millions)	1,148.07	Payout Ratio	0.00
Short Ratio	7.77	Change in Payout Ratio	0.00
Last Split Date	09/09/1996	Last Dividend Payout / Amount	01/28/2009 / $0.40

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	1.69	Current (1=Strong Buy, 5=Strong Sell)	2.00
Current Year EPS Consensus Estimate	2.70	30 Days Ago	2.00
Estimated Long-Term EPS Growth Rate	6.80	60 Days Ago	2.00
Next EPS Report Date	04/24/2009	90 Days Ago	1.50

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	16.08	vs. Previous Year	11.61%	vs. Previous Year	5.31%
Trailing 12 Months:	16.58	vs. Previous Quarter	428.95%	vs. Previous Quarter:	218.32%
PEG Ratio	2.38				

Price Ratios	ROE	ROA

Price/Book	1.90	12/31/08	-	12/31/08	-
Price/Cash Flow	8.04	09/30/08	10.77	09/30/08	3.29
Price / Sales	1.11	06/30/08	11.55	06/30/08	3.56
Current Ratio		**Quick Ratio**		**Operating Margin**	
12/31/08	-	12/31/08	-	12/31/08	-
09/30/08	0.69	09/30/08	0.44	09/30/08	6.47
06/30/08	0.65	06/30/08	0.49	06/30/08	6.79
Net Margin		**Pre-Tax Margin**		**Book Value**	
12/31/08	-	12/31/08	-	12/31/08	-
09/30/08	10.30	09/30/08	10.30	09/30/08	22.88
06/30/08	10.81	06/30/08	10.81	06/30/08	23.64
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
12/31/08	-	12/31/08	-	12/31/08	-
09/30/08	9.67	09/30/08	0.85	09/30/08	45.84
06/30/08	10.39	06/30/08	0.82	06/30/08	45.05

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PIEDMONT NAT GAS INC (NYSE)

Scottrade

PNY	26.14	▼-0.18	(-0.68%)	Vol. 110,568	11:35 ET

Piedmont Natural Gas Co, Inc., is an energy and services company engaged in the transportation and sale of natural gas and the sale of propane to residential, commercial and industrial customers in North Carolina, South Carolina and Tennessee. The Company is the second-largest natural gas utility in the southeast. The Company and its non-utility subsidiaries and divisions are also engaged in acquiring, marketing and arranging for the transportation and storage of natural gas for large-volume purchasers, and in the sale of propane to customers in the Company's three-state service area.

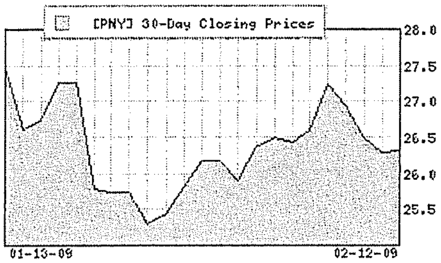
General Information

PIEDMONT NAT GA
4720 Piedmont Row Drive
Charlotte, NC 28210
Phone: 704 364-3120
Fax: 704-365-3849
Web: www.piedmontng.com
Email: investorrelations@piedmontng.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	October
Last Reported Quarter	01/31/09
Next EPS Date	03/10/2009

Price and Volume Information

Zacks Rank	
Yesterday's Close	26.32
52 Week High	35.29
52 Week Low	20.52
Beta	0.24
20 Day Moving Average	424,952.31
Target Price Consensus	31.33



% Price Change		% Price Change Relative to S&P 500	
4 Week	-1.57	4 Week	-0.56
12 Week	-10.57	12 Week	-19.43
YTD	-16.89	YTD	-10.59

Share Information		Dividend Information	
Shares Outstanding (millions)	73.35	Dividend Yield	3.95%
		Annual Dividend	$1.04
Market Capitalization (millions)	1,930.68	Payout Ratio	0.00
Short Ratio	6.70	Change in Payout Ratio	0.00
Last Split Date	11/01/2004	Last Dividend Payout / Amount	12/23/2008 / $0.26

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	1.12	Current (1=Strong Buy, 5=Strong Sell)	2.67
Current Year EPS Consensus Estimate	1.62	30 Days Ago	2.67
Estimated Long-Term EPS Growth Rate	7.60	60 Days Ago	2.67
Next EPS Report Date	03/10/2009	90 Days Ago	2.60

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	16.29	vs. Previous Year	16.67%	vs. Previous Year	12.13%
Trailing 12 Months:	16.76	vs. Previous Quarter	-115.15%	vs. Previous Quarter:	-12.11%
PEG Ratio	2.15				

Price Ratios		**ROE**		**ROA**	
Price/Book	2.17	01/31/09	-	01/31/09	-
Price/Cash Flow	9.29	10/31/08	11.95	10/31/08	3.67
Price / Sales	-	07/31/08	12.52	07/31/08	3.93
Current Ratio		**Quick Ratio**		**Operating Margin**	
01/31/09	-	01/31/09	-	01/31/09	-
10/31/08	0.88	10/31/08	0.59	10/31/08	5.27
07/31/08	1.00	07/31/08	0.60	07/31/08	5.59
Net Margin		**Pre-Tax Margin**		**Book Value**	
01/31/09	-	01/31/09	-	01/31/09	-
10/31/08	8.78	10/31/08	8.78	10/31/08	12.11
07/31/08	7.23	07/31/08	7.23	07/31/08	12.56
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
01/31/09	-	01/31/09	-	01/31/09	-
10/31/08	9.83	10/31/08	0.90	10/31/08	47.24
07/31/08	10.43	07/31/08	0.89	07/31/08	47.21

AG DR Set 1-208 Attachment A

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SOUTH JERSEY INDS INC (NYSE)

Scottrade

SJI	38.02	▲0.05	(0.13%)	Vol. 69,391	11:34 ET

South Jersey Inds Inc. is engaged in the business of operating, through subsidiaries, various business enterprises. The company's most significant subsidiary is South Jersey Gas Company (SJG). SJG is a public utility company engaged in the purchase, transmission and sale of natural gas for residential, commercial and industrial use. SJG also makes off-system sales of natural gas on a wholesale basis to various customers on the interstate pipeline system and transports natural gas.

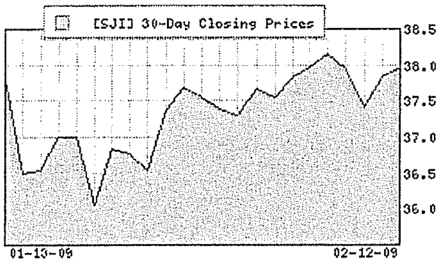
General Information

SOUTH JERSEY IN
1 South Jersey Plaza
Folsom, NJ 08037
Phone: 609 561-9000
Fax: 609 561-8225
Web: www.sjindustries.com
Email: investorrelations@sjindustries.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	12/31/08
Next EPS Date	02/19/2009

Price and Volume Information

Zacks Rank	
Yesterday's Close	37.97
52 Week High	40.78
52 Week Low	25.19
Beta	0.35
20 Day Moving Average	196,058.50
Target Price Consensus	41



% Price Change		% Price Change Relative to S&P 500	
4 Week	3.89	4 Week	4.95
12 Week	10.54	12 Week	-0.41
YTD	-4.72	YTD	-0.42

Share Information		Dividend Information	
Shares Outstanding (millions)	29.73	Dividend Yield	3.13%
		Annual Dividend	$1.19
Market Capitalization (millions)	1,128.81	Payout Ratio	0.00
Short Ratio	4.83	Change in Payout Ratio	0.00
Last Split Date	07/01/2005	Last Dividend Payout / Amount	12/08/2008 / $0.30

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.67	Current (1=Strong Buy, 5=Strong Sell)	2.67
Current Year EPS Consensus Estimate	2.30	30 Days Ago	2.60
Estimated Long-Term EPS Growth Rate	8.00	60 Days Ago	2.60
Next EPS Report Date	02/19/2009	90 Days Ago	2.60

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	15.63	vs. Previous Year	180.00%	vs. Previous Year	34.68%
Trailing 12 Months:	16.88	vs. Previous Quarter	-84.62%	vs. Previous Quarter:	54.90%
PEG Ratio	1.95				

Price Ratios	ROE	ROA

Price/Book	2.19	12/31/08	-	12/31/08	-
Price/Cash Flow	11.86	09/30/08	13.53	09/30/08	4.25
Price / Sales	-	06/30/08	13.31	06/30/08	4.16
Current Ratio		**Quick Ratio**		**Operating Margin**	
12/31/08	-	12/31/08	-	12/31/08	-
09/30/08	0.94	09/30/08	0.45	09/30/08	6.99
06/30/08	0.92	06/30/08	0.61	06/30/08	7.13
Net Margin		**Pre-Tax Margin**		**Book Value**	
12/31/08	-	12/31/08	-	12/31/08	-
09/30/08	12.52	09/30/08	12.52	09/30/08	17.32
06/30/08	6.62	06/30/08	6.62	06/30/08	16.13
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
12/31/08	-	12/31/08	-	12/31/08	-
09/30/08	6.50	09/30/08	0.69	09/30/08	41.08
06/30/08	7.05	06/30/08	0.69	06/30/08	41.06

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Scottrade

WGL HLDGS INC (NYSE)

WGL	33.79	▲0.69	(2.08%)	Vol. 102,706	11:36 ET

WASHINGTON GAS LIGHT CO is a public utility that delivers and sells natural gas to metropolitan Washington, D.C. and adjoining areas in Maryland and Virginia. A distribution subsidiary serves portions of Virginia and West Virginia. The Company has four wholly-owned active subsidiaries that include: Shenandoah Gas Company (Shenandoah) is engaged in the delivery and sale of natural gas at retail in the Shenandoah Valley, including Winchester, Middletown, Strasburg, Stephens City and New Market, Virginia, and Martinsburg, West Virginia.

General Information

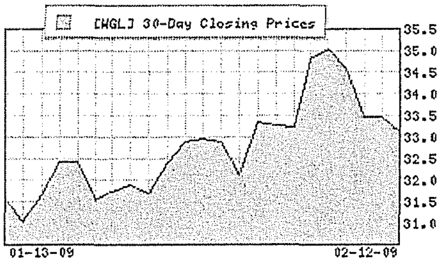
WGL HLDGS INC
101 Constitution Avenue NW
Washington, DC 20080
Phone: 703 750-2000
Fax: 703 750-4828
Web: www.wglholdings.com
Email: madams@washgas.com

Industry	UTIL-GAS DISTR
Sector:	Utilities

Fiscal Year End	September
Last Reported Quarter	12/31/08
Next EPS Date	04/22/2009

Price and Volume Information

Zacks Rank	
Yesterday's Close	33.10
52 Week High	37.08
52 Week Low	22.40
Beta	0.23
20 Day Moving Average	621,363.00
Target Price Consensus	34



% Price Change	
4 Week	4.52
12 Week	3.44
YTD	1.25

% Price Change Relative to S&P 500	
4 Week	5.59
12 Week	-6.81
YTD	11.47

Share Information	
Shares Outstanding (millions)	49.97
Market Capitalization (millions)	1,654.07
Short Ratio	7.50
Last Split Date	05/02/1995

Dividend Information	
Dividend Yield	4.29%
Annual Dividend	$1.42
Payout Ratio	0.56
Change in Payout Ratio	0.00
Last Dividend Payout / Amount	01/07/2009 / $0.35

EPS Information	
Current Quarter EPS Consensus Estimate	1.66
Current Year EPS Consensus Estimate	2.38
Estimated Long-Term EPS Growth Rate	6.30
Next EPS Report Date	04/22/2009

Consensus Recommendations	
Current (1=Strong Buy, 5=Strong Sell)	2.75
30 Days Ago	2.75
60 Days Ago	2.75
90 Days Ago	2.50

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	13.88	vs. Previous Year	7.29%	vs. Previous Year	9.29%
Trailing 12 Months:	13.08	vs. Previous Quarter	568.18%	vs. Previous Quarter:	408.30%
PEG Ratio	2.19				

Price Ratios	ROE	ROA

AG DR Set 1-208 Attachment A

Price/Book	1.52	12/31/08	11.77	12/31/08	3.79
Price/Cash Flow	7.68	09/30/08	11.60	09/30/08	3.72
Price / Sales	0.67	06/30/08	11.37	06/30/08	3.64
Current Ratio		**Quick Ratio**		**Operating Margin**	
12/31/08	1.06	12/31/08	0.72	12/31/08	5.11
09/30/08	0.99	09/30/08	0.42	09/30/08	5.09
06/30/08	1.15	06/30/08	0.71	06/30/08	4.60
Net Margin		**Pre-Tax Margin**		**Book Value**	
12/31/08	7.85	12/31/08	7.85	12/31/08	21.74
09/30/08	7.08	09/30/08	7.08	09/30/08	20.99
06/30/08	7.32	06/30/08	7.32	06/30/08	21.72
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
12/31/08	6.84	12/31/08	0.61	12/31/08	37.11
09/30/08	7.07	09/30/08	0.58	09/30/08	35.95
06/30/08	7.63	06/30/08	0.56	06/30/08	35.26

AG-DR Set 1-208 A

AGL RESOURCES NYSE-ATG

RECENT PRICE **28.54** | P/E RATIO **10.2** (Trailing: 11.0 Median: 14.0) | RELATIVE P/E RATIO **1.00** | DIV'D YLD **6.0%** | VALUE LINE

TIMELINESS 3 Raised 11/7/08
SAFETY 2 New 7/27/90
TECHNICAL 3 Raised 12/21/07
BETA .75 (1.00 = Market)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
High:	21.6	23.4	23.4	23.2	24.5	25.0	29.3	33.7	39.3	40.1	44.7	39.1
Low:	17.8	17.7	15.6	15.5	19.0	17.3	21.9	26.5	32.0	34.4	35.2	24.0

2011-13 PROJECTIONS

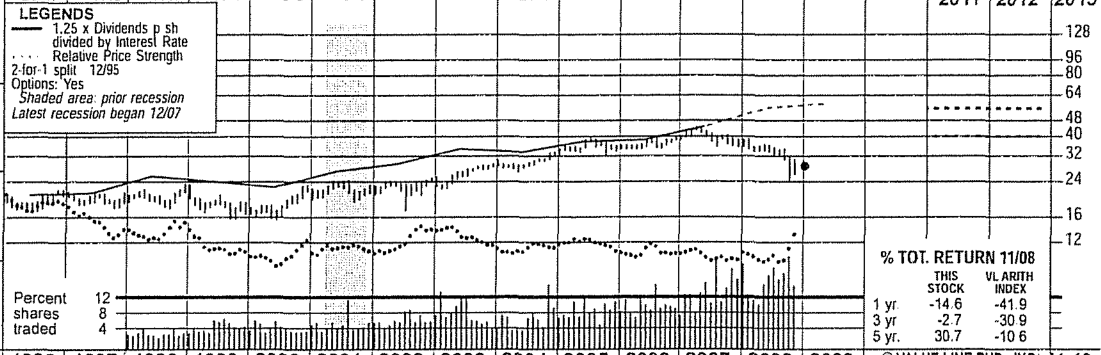
	Price	Gain	Ann'l Total Return
High	55	(+95%)	21%
Low	40	(+40%)	13%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	3	2	1	0	3	0	0	1	0
to Sell	0	1	0	0	2	0	0	1	0

Institutional Decisions

	1Q2008	2Q2008	3Q2008
to Buy	105	131	92
to Sell	127	106	130
Hld's(000)	47696	46762	48796



% TOT. RETURN 11/08

	THIS STOCK	VL ARITH INDEX
1 yr.	-14.6	-41.9
3 yr.	-2.7	-30.9
5 yr.	30.7	-10.6

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
20.43	22.73	23.59	19.32	21.91	22.75	23.36	18.71	11.25	19.04	15.32	15.25	23.89	34.98	33.73	32.64	*35.40*	*35.90*	Revenues per sh A	*41.25*
2.31	2.25	2.24	2.33	2.49	2.42	2.65	2.29	2.86	3.31	3.39	3.47	3.29	4.20	4.50	4.64	*4.70*	*4.80*	"Cash Flow" per sh	*5.40*
1.13	1.08	1.17	1.33	1.37	1.37	1.41	.91	1.29	1.50	1.82	2.08	2.28	2.48	2.72	2.72	*2.70*	*2.80*	Earnings per sh A B	*3.15*
1.03	1.04	1.04	1.04	1.06	1.08	1.08	1.08	1.08	1.08	1.08	1.11	1.15	1.30	1.48	1.64	*1.68*	*1.72*	Div'ds Decl'd per sh C■	*1.84*
2.74	2.49	2.37	2.17	2.37	2.59	2.05	2.51	2.92	2.83	3.30	2.46	3.44	3.44	3.26	3.39	*4.20*	*4.35*	Cap'l Spending per sh	*5.00*
9.70	9.90	10.19	10.12	10.56	10.99	11.42	11.59	11.50	12.19	12.52	14.66	18.06	19.29	20.71	21.74	*22.60*	*22.75*	Book Value per sh D	*23.15*
48.69	49.72	50.86	55.02	55.70	56.60	57.30	57.10	54.00	55.10	56.70	64.50	76.70	77.70	77.70	76.40	*77.00*	*78.00*	Common Shs Outst'g E	*80.00*
15.5	17.9	15.1	12.6	13.8	14.7	13.9	21.4	13.6	14.6	12.5	12.5	13.1	14.3	13.5	14.7	*Bold figures are*		Avg Ann'l P/E Ratio	*15.0*
.94	1.06	.99	.84	.86	.85	.72	1.22	.88	.75	.68	.71	.69	.76	.73	.78	*Value Line*		Relative P/E Ratio	*1.00*
5.9%	5.4%	5.9%	6.2%	5.6%	5.4%	5.5%	5.5%	6.2%	4.9%	4.7%	4.3%	3.9%	3.7%	4.0%	4.1%	*estimates*		Avg Ann'l Div'd Yield	*3.9%*
						1338.6	1068.6	607.4	1049.3	868.9	983.7	1832.0	2718.0	2621.0	2494.0	*2725*	*2800*	Revenues ($mill) A	*3300*
						80.6	52.1	71.1	82.3	103.0	132.4	153.0	193.0	212.0	210.5	*210*	*220*	Net Profit ($mill)	*250*
						32.5%	33.1%	34.3%	40.7%	36.0%	35.9%	37.0%	37.7%	37.8%	37.6%	*39.0%*	*38.0%*	Income Tax Rate	*38.0%*
						6.0%	4.9%	11.7%	7.8%	11.9%	13.5%	8.4%	7.1%	8.1%	8.4%	*7.7%*	*7.9%*	Net Profit Margin	*7.6%*
						47.5%	45.3%	45.9%	61.3%	58.3%	50.3%	54.0%	51.9%	50.2%	50.2%	*49.0%*	*48.0%*	Long-Term Debt Ratio	*45.5%*
						47.1%	49.2%	48.3%	38.7%	41.7%	49.7%	46.0%	48.1%	49.8%	49.8%	*51.0%*	*52.0%*	Common Equity Ratio	*54.5%*
						1388.4	1345.8	1286.2	1736.3	1704.3	1901.4	3008.0	3114.0	3231.0	3335.0	*3415*	*3425*	Total Capital ($mill)	*3400*
						1534.0	1598.9	1637.5	2058.9	2194.2	2352.4	3178.0	3271.0	3436.0	3566.0	*3750*	*3850*	Net Plant ($mill)	*4200*
						7.6%	5.7%	7.4%	6.5%	8.1%	8.9%	6.3%	7.9%	8.0%	7.7%	*7.5%*	*7.5%*	Return on Total Cap'l	*8.5%*
						11.1%	7.1%	10.2%	12.3%	14.5%	14.0%	11.0%	12.9%	13.2%	12.7%	*12.0%*	*12.5%*	Return on Shr. Equity	*13.5%*
						12.3%	7.9%	11.5%	12.3%	14.5%	14.0%	11.0%	12.9%	13.2%	12.7%	*12.0%*	*12.5%*	Return on Com Equity	*13.5%*
						4.4%	NMF	3.2%	4.2%	7.0%	6.6%	5.6%	6.2%	6.3%	5.3%	*4.5%*	*5.0%*	Retained to Com Eq	*5.5%*
						64%	101%	72%	65%	52%	53%	49%	52%	52%	58%	*62%*	*61%*	All Div'ds to Net Prof	*59%*

CAPITAL STRUCTURE as of 9/30/08
Total Debt $2444.0 mill. **Due in 5 Yrs** $1088 mill.
LT Debt $1675.0 mill. **LT Interest** $85.0 mill.
(Total interest coverage: 3.8x)

Leases, Uncapitalized Annual rentals $26.0 mill.

Pension Assets-12/07 $383.0 mill. **Oblig.** $427.0 mill.

Pfd Stock None

Common Stock 76,780,439 shs. as of 10/22/08

MARKET CAP: $2.2 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2006	2007	9/30/08
Cash Assets	20.0	21.0	11.0
Other	1802.0	1790.0	1929.0
Current Assets	1822.0	1811.0	1940.0
Accts Payable	213.0	172.0	181.0
Debt Due	539.0	580.0	769.0
Other	875.0	893.0	872.0
Current Liab.	1627.0	1645.0	1822.0
Fix. Chg. Cov.	397%	391%	390%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	3.5%	13.5%	*3.5%*
"Cash Flow"	5.5%	7.0%	*3.5%*
Earnings	7.0%	15.0%	*3.0%*
Dividends	2.5%	4.0%	*4.0%*
Book Value	6.5%	10.5%	*2.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	908	430	387	993	2718
2006	1044	436	434	707	2621
2007	973	467	369	685	2494
2008	1012	444	539	*730*	*2725*
2009	*1040*	*480*	*505*	*775*	*2800*

Cal-endar	EARNINGS PER SHARE B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	1.14	.30	.19	.85	2.48
2006	1.41	.25	.46	.60	2.72
2007	1.29	.40	.17	.86	2.72
2008	1.16	.30	.28	*.96*	*2.70*
2009	*1.20*	*.35*	*.30*	*.95*	*2.80*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.28	.29	.29	.29	1.15
2005	.31	.31	.31	.37	1.30
2006	.37	.37	.37	.37	1.48
2007	.41	.41	.41	.41	1.64
2008	.42	.42	.42	.42	

BUSINESS: AGL Resources, Inc. is a public utility holding company. Its distribution subsidiaries include Atlanta Gas Light, Chattanooga Gas, and Virginia Natural Gas. The utilities have more than 2.2 million customers in Georgia, Virginia, Tennessee, New Jersey, Florida, and Maryland. Engaged in nonregulated natural gas marketing and other allied services. Also wholesales and retails propane. Deregulated subsidiaries: Georgia Natural Gas markets natural gas at retail. Sold Utilipro, 3/01. Acquired Compass Energy Services, 10/07. Officers/directors own less than 1.0% of common (3/08 Proxy). Pres. & CEO: John W. Somerhalder II. Inc.: GA. Addr.: Ten Peachtree Place N.E., Atlanta, GA 30309. Telephone: 404-584-4000. Internet: www.aglresources.com.

Shares of AGL Resources have held up relatively well since our September review, despite considerable weakness in the broader market. The company reported healthy performance in the third quarter. Revenues and share earnings advanced considerably in the recent interim. This was primarily due to strength in the Wholesale Services business, which reported much higher operating income for the period. Elsewhere, performance at the Distribution Operations was helped by greater pipeline replacement revenues for Atlanta Gas Light. However, the utility operations continued to be dampened by weakness in the housing market, and customer growth has slowed significantly in recent times. Despite the challenging economic environment, healthy performance should continue at the company's core businesses. Thus, we anticipate solid results at AGL Resources going forward.

The company continues to progress with its capital projects. The Hampton Roads Crossing Project remains on schedule and within budget. This initiative will connect two pipeline systems crossing the Hampton Roads harbor, and provide for an ample supply of natural gas to the region. The project will likely be completed late in 2009, and ought to earn solid returns for the company. Elsewhere, construction continues on the Spindletop salt dome in Beaumont, Texas. This underground natural gas storage facility will offer up to 12 billion cubic feet (bcf) of gas capacity in two caverns. The project should meet a growing demand for natural gas storage in the region. Meantime, AGL is moving forward with the Magnolia Pipeline Project. This $48 million initiative will provide transportation of regasified liquid natural gas from Elba Island to Atlanta Gas Light in the Macon and Atlanta areas.

Overall, this stock offers attractive total return potential for a utility. We anticipate steady bottom-line growth from 2009 onward, assuming capital projects pay off. Moreover, AGL earns high marks for Safety, Price Stability, and Earnings Predictability. Income investors may find this neutrally-ranked issue's healthy dividend yield appealing. Earnings need to pick up for dividend growth to remain above average, though.

Michael Napoli, CPA *December 12, 2008*

(A) Fiscal year ends December 31st. Ended September 30th prior to 2002.
(B) Diluted earnings per share. Excl. nonrecurring gains (losses): '95, ($0.83); '99, $0.39; '00, $0.13; '01, $0.13; '03, ($0.07); '08, ($0.45). Next earnings report due late January/early February.
(C) Dividends historically paid early March, June, Sept., and Dec. ■ Div'd reinvest. plan available.
(D) Includes intangibles. At 9/30/08: $418 million, $5.44/share.
(E) In millions, adjusted for stock split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	80
Earnings Predictability	85

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ATMOS ENERGY CORP. NYSE-ATO

RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE
23.24	10.8 (Trailing: 11.6 Median: 16.0)	1.06	5.7%	

TIMELINESS	2	Raised 12/12/08
SAFETY	2	Raised 12/16/05
TECHNICAL	2	Raised 12/12/08

BETA .65 (1.00 = Market)

2011-13 PROJECTIONS	Price	Gain	Ann'l Total Return
High	40	(+70%)	*19%*
Low	30	(+30%)	*11%*

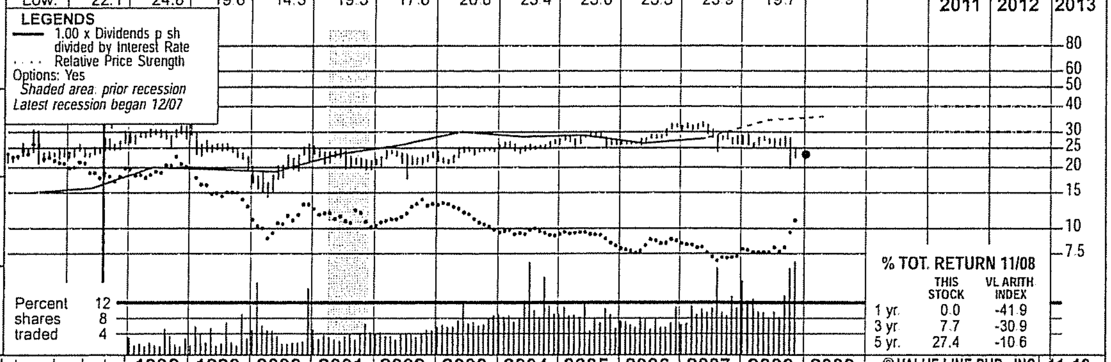
Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	1	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	3	0	1	1

Institutional Decisions

	1Q2008	2Q2008	3Q2008
to Buy	112	119	103
to Sell	103	89	119
Hld's(000)	58504	58318	56301

															Target Price Range		
High:	30.5	32.3	33.0	26.3	25.8	24.5	25.5	27.6	30.0	33.1	33.5	29.3			2011	2012	2013
Low:	22.1	24.8	19.6	14.3	19.5	17.6	20.8	23.4	25.0	25.5	23.9	19.7					



% TOT. RETURN 11/08	THIS STOCK	VL ARITH. INDEX
1 yr.	0.0	-41.9
3 yr.	7.7	-30.9
5 yr.	27.4	-10.6

Atmos Energy's history dates back to 1906 in the Texas Panhandle. Over the years, through various mergers, it became part of Pioneer Corporation, and, in 1981, Pioneer named its gas distribution division Energas. In 1983, Pioneer organized Energas as a separate subsidiary and distributed the outstanding shares of Energas to Pioneer shareholders. Energas changed its name to Atmos in 1988. Atmos acquired Trans Louisiana Gas in 1986, Western Kentucky Gas Utility in 1987, Greeley Gas in 1993, United Cities Gas in 1997, and others.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
27.90	22.09	26.61	35.36	22.82	54.39	46.50	61.75	75.27	66.03	*79.35*	*86.95*	Revenues per sh A	*93.05*
3.38	2.62	3.01	3.03	3.39	3.23	2.91	3.90	4.26	4.14	*4.20*	*4.40*	"Cash Flow" per sh	*4.65*
1.84	.81	1.03	1.47	1.45	1.71	1.58	1.72	2.00	1.94	2.00	*2.10*	Earnings per sh A B	*2.45*
1.06	1.10	1.14	1.16	1.18	1.20	1.22	1.24	1.26	1.28	1.30	*1.32*	Div'ds Decl'd per sh C■	*1.40*
4.44	3.53	2.36	2.77	3.17	3.10	3.03	4.14	5.20	4.39	*5.20*	*5.65*	Cap'l Spending per sh	*6.30*
12.21	12.09	12.28	14.31	13.75	16.66	18.05	19.90	20.16	22.01	*23.65*	*24.10*	Book Value per sh	*25.55*
30.40	31.25	31.95	40.79	41.68	51.48	62.80	80.54	81.74	89.33	*91.00*	*92.00*	Common Shs Outst'g D	*115.00*
15.4	33.0	18.9	15.6	15.2	13.4	15.9	16.1	13.5	15.9	13.6		Avg Ann'l P/E Ratio	*14.5*
.80	1.88	1.23	.80	.83	.76	.84	.86	.73	.83	.80		Relative P/E Ratio	*.95*
3.7%	4.1%	5.9%	5.1%	5.4%	5.2%	4.9%	4.5%	4.7%	4.2%	4.8%		Avg Ann'l Div'd Yield	*4.0%*
848.2	690.2	850.2	1442.3	950.8	2799.9	2920.0	4973.3	6152.4	5898.4	7221.3	*8000*	Revenues ($mill) A	*10700*
55.3	25.0	32.2	56.1	59.7	79.5	86.2	135.8	162.3	170.5	180.3	*195*	Net Profit ($mill)	*280*
36.5%	35.0%	36.1%	37.3%	37.1%	37.1%	37.4%	37.7%	37.6%	35.8%	38.4%	*38.5%*	Income Tax Rate	*40.0%*
6.5%	3.6%	3.8%	3.9%	6.3%	2.8%	3.0%	2.7%	2.6%	2.9%	2.5%	*2.4%*	Net Profit Margin	*2.6%*
51.8%	50.0%	48.1%	54.3%	53.9%	50.2%	43.2%	57.7%	57.0%	52.0%	*51.0%*	*51.0%*	Long-Term Debt Ratio	*51.0%*
48.2%	50.0%	51.9%	45.7%	46.1%	49.8%	56.8%	42.3%	43.0%	48.0%	*49.0%*	*49.0%*	Common Equity Ratio	*49.0%*
769.7	755.1	755.7	1276.3	1243.7	1721.4	1994.8	3785.5	3828.5	4092.1	*4170*	*4450*	Total Capital ($mill)	*6000*
917.9	965.8	982.3	1335.4	1300.3	1516.0	1722.5	3374.4	3629.2	3836.8	*4135*	*4350*	Net Plant ($mill)	*5800*
9.0%	5.1%	6.5%	5.9%	6.8%	6.2%	5.8%	5.3%	6.1%	5.9%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
14.9%	6.6%	8.2%	9.6%	10.4%	9.3%	7.6%	8.5%	9.8%	8.7%	*9.0%*	*9.0%*	Return on Shr. Equity	*9.5%*
14.9%	6.6%	8.2%	9.6%	10.4%	9.3%	7.6%	8.5%	9.8%	8.7%	*9.0%*	*9.0%*	Return on Com Equity	*9.5%*
6.3%	NMF	NMF	2.1%	1.9%	2.8%	1.7%	2.3%	3.6%	3.0%	*3.0%*	*3.5%*	Retained to Com Eq	*4.0%*
58%	NMF	112%	79%	82%	70%	77%	73%	63%	65%	*66%*	*62%*	All Div'ds to Net Prof	*58%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $2234.0 mill. **Due in 5 Yrs** $920.0 mill.
LT Debt $2119.7 mill. **LT Interest** $125.0 mill.
(LT interest earned: 2.9x; total interest coverage: 2.8x)
Leases, Uncapitalized Annual rentals $16.9 mill.
Pfd Stock None
Pension Assets-9/07 $389.1 mill.
Oblig. $335.6 mill.
Common Stock 90,627,522 shs.
as of 7/31/08
MARKET CAP: $2.1 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	75.8	60.7	46.5
Other	1041.7	1008.2	1350.5
Current Assets	1117.5	1068.9	1397.0
Accts Payable	345.1	355.3	582.4
Debt Due	385.6	154.4	114.3
Other	388.5	410.0	472.1
Current Liab.	1119.2	919.7	1168.8
Fix. Chg. Cov.	408%	405%	410%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	8.5%	19.0%	*5.5%*
"Cash Flow"	4.0%	5.5%	*2.0%*
Earnings	3.5%	7.5%	*4.5%*
Dividends	2.5%	1.5%	*2.0%*
Book Value	7.0%	9.0%	*3.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	1371.0	1687.8	909.9	1004.6	4973.3
2006	2283.8	2033.8	863.2	971.6	6152.4
2007	1602.6	2075.6	1218.2	1002.0	5898.4
2008	1657.5	2484.0	1639.1	1440.7	7221.3
2009	*1855*	*2925*	*1735*	*1485*	*8000*

Fiscal Year Ends	EARNINGS PER SHARE A B E Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	.79	1.11	.06	d.21	1.72
2006	.88	1.10	d.22	.25	2.00
2007	.97	1.20	d.15	d.05	1.94
2008	.82	1.24	d.07	.02	2.00
2009	*.90*	*1.30*	*d.06*	*d.04*	*2.10*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.305	.305	.305	.31	1.23
2005	.31	.31	.31	.315	1.25
2006	.315	.315	.315	.32	1.27
2007	.32	.32	.32	.325	1.29
2008	.325	.325	.325	.33	

BUSINESS: Atmos Energy Corporation is engaged primarily in the distribution and sale of natural gas to 3.2 million customers via six regulated natural gas utility operations: Louisiana Division, West Texas Division, Mid-Tex Division, Mississippi Division, Colorado-Kansas Division, and Kentucky/Mid-States Division. Combined 2007 gas volumes: 297 MMcf. Breakdown: 56%, residential; 32%, commercial; 8%, industrial; and 4% other. 2007 depreciation rate 3.7%. Has around 4,470 employees. Officers and directors own approximately 1.8% of common stock (12/07 Proxy). Chairman and Chief Executive Officer: Robert W. Best. Incorporated: Texas. Address: P.O. Box 650205, Dallas, Texas 75265. Telephone: 972-934-9227. Internet: www.atmosenergy.com.

Atmos Energy's core natural gas utility stands to perform decently in fiscal 2009 (began on October 1st). That division should benefit from a rise in throughput, plus more aggressive collection efforts, which should keep bad debt expense under control. Note that revenues from pending rate cases are excluded from our presentation.

We are constructive about the other operations, as well. The regulated transmission and storage segment ought to be boosted by healthy transportation volumes from production in the Barnett Shale region of Texas. Moreover, respectable results seem achievable for the nonregulated marketing segment. But that unit's record showing in fiscal 2006 (when it was able to capture highly favorable arbitrage spreads created by natural gas volatility) probably won't be repeated.

Consolidated share net may rise around 5%, to $2.10, this fiscal year. One threat to this estimate is higher interest expense. The company has normally used short-term commercial paper to finance natural gas purchases. But Atmos had to access a line of credit when the commercial paper market froze. Efficiency gains may provide an offset, though. We expect a similar rate of bottom-line growth (to $2.20 a share) in fiscal 2010.

Steady, albeit unspectacular, annual earnings gains appear to be in store over the 2011-2013 horizon. The utility is one of the country's leading natural gas-only distributors, serving some 3.2 million customers across 12 states. Furthermore, the unregulated segments (contributing between 15% and 35% to net income annually on a historical basis) seem to possess healthy overall prospects. Finally, management should continue to implement its successful strategy of purchasing less-efficient utilities and shoring up their profitability via expense-reduction efforts, rate relief, and aggressive marketing.

These good-quality shares offer a healthy dose of current dividend income, which is adequately covered by earnings. Continued moderate increases in the distribution seem likely, too.

Total return prospects look decent, on a risk-adjusted basis. Also, the stock is ranked 2 (Above Average) for Timeliness.

Frederick L. Harris, III December 12, 2008

(A) Fiscal year ends Sept. 30th. (B) Diluted shrs. Excl. nonrec. items: '99, d23¢; '00, 12¢; '03, d17¢; '06, d18¢; '07, d2¢. Next egs. rpt. due early Feb. (C) Dividends historically paid in early March, June, Sept., and Dec. ■ Div. reinvestment plan. Direct stock purchase plan avail.
(D) In millions.
(E) Qtrs may not add due to change in shrs outstanding.
(F) ATO completed United Cities merger 7/97.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	40
Earnings Predictability	80

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NEW JERSEY RES. NYSE-NJR

RECENT PRICE 38.42 | P/E RATIO 12.2 (Trailing: 14.2 Median: 15.0) | RELATIVE P/E RATIO 1.20 | DIV'D YLD 3.2% | VALUE LINE A

TIMELINESS 2 Raised 11/28/08
SAFETY 1 Raised 9/15/06
TECHNICAL 2 Raised 11/21/08
BETA .70 (1.00 = Market)

High:	18.7	17.9	18.3	19.8	21.7	22.4	26.4	29.7	32.9	35.4	37.6	41.1
Low:	12.5	14.0	14.9	16.1	16.6	16.2	20.0	24.3	27.1	27.7	30.3	24.6

2011-13 PROJECTIONS

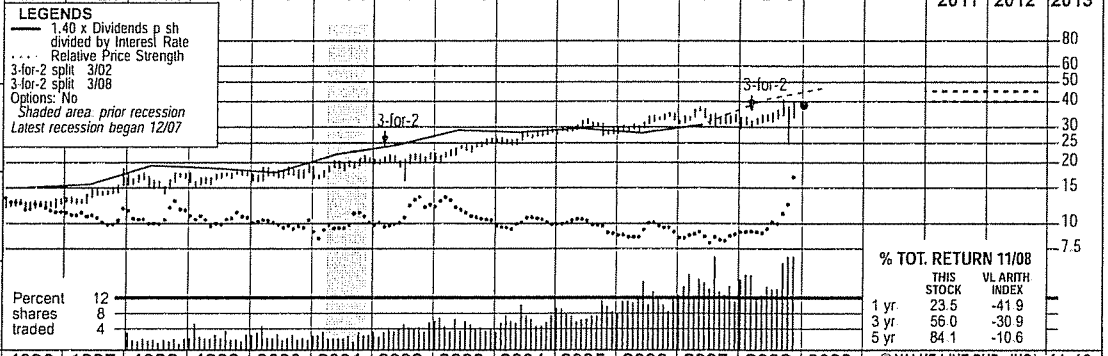
	Price	Gain	Ann'l Total Return
High	45	(+15%)	7%
Low	40	(+5%)	4%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	2	0	0	1	2	0	0	1	0
to Sell	0	2	0	0	2	0	0	1	0

Institutional Decisions

	1Q2008	2Q2008	3Q2008
to Buy	85	90	64
to Sell	70	62	88
Hld's(000)	26518	26910	26312



% TOT. RETURN 11/08

	THIS STOCK	VL ARITH INDEX
1 yr.	23.5	-41.9
3 yr.	56.0	-30.9
5 yr.	84.1	-10.6

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
11.25	12.02	12.81	11.36	13.48	17.31	17.73	22.65	29.42	51.22	44.11	62.29	60.89	76.19	79.63	72.62	91.12	*92.45*	Revenues per sh A	*97.60*
1.30	1.42	1.54	1.42	1.48	1.63	1.74	1.86	1.99	2.12	2.14	2.38	2.50	2.62	2.73	2.44	3.64	*3.70*	"Cash Flow" per sh	*3.90*
.73	.76	.84	.86	.92	.99	1.04	1.11	1.20	1.30	1.39	1.59	1.70	1.77	1.87	1.55	2.70	*2.80*	Earnings per sh B	*3.00*
.68	.68	.68	.68	.69	.71	.73	.75	.76	.78	.80	.83	.87	.91	.96	1.01	1.11	*1.24*	Div'ds Decl'd per sh C■	*1.36*
1.33	1.54	1.40	1.18	1.19	1.15	1.07	1.21	1.23	1.10	1.02	1.14	1.45	1.28	1.28	1.46	1.73	*1.75*	Cap'l Spending per sh	*1.80*
6.29	6.54	6.43	6.47	6.73	6.92	7.26	7.57	8.29	8.80	8.71	10.26	11.25	10.60	15.00	15.50	17.36	*19.35*	Book Value per sh D	*25.75*
36.64	37.84	38.93	40.03	40.69	40.23	40.07	39.92	39.59	40.00	41.50	40.85	41.61	41.32	41.44	41.61	41.88	*42.50*	Common Shs Outst'g E	*44.00*
12.4	15.1	13.0	11.7	13.6	13.5	15.3	15.2	14.7	14.2	14.7	14.0	15.3	16.8	16.1	21.6	12.3		Avg Ann'l P/E Ratio	*14.0*
.75	.89	.85	.78	.85	.78	.80	.87	.96	.73	.80	.80	.81	.89	.87	1.13	.73		Relative P/E Ratio	*.95*
7.5%	5.8%	6.2%	6.7%	5.6%	5.3%	4.6%	4.5%	4.4%	4.2%	3.9%	3.7%	3.3%	3.1%	3.2%	3.0%	3.3%		Avg Ann'l Div'd Yield	*3.4%*
						710.3	904.3	1164.5	2048.4	1830.8	2544.4	2533.6	3148.3	3299.6	3021.8	3816.2	*3930*	Revenues ($mill) A	*4295*
						43.3	44.9	47.9	52.3	56.8	65.4	71.6	74.4	78.5	65.3	113.9	*120*	Net Profit ($mill)	*130*
						30.4%	36.2%	37.8%	38.0%	38.7%	39.4%	39.1%	39.1%	38.9%	38.8%	37.8%	*39.0%*	Income Tax Rate	*40.0%*
						6.1%	5.0%	4.1%	2.6%	3.1%	2.6%	2.8%	2.4%	2.4%	2.2%	3.0%	*3.1%*	Net Profit Margin	*3.0%*
						51.2%	48.7%	47.0%	50.1%	50.6%	38.1%	40.3%	42.0%	34.8%	37.3%	38.5%	*38.0%*	Long-Term Debt Ratio	*32.5%*
						45.6%	51.2%	52.9%	49.9%	49.4%	61.9%	59.7%	58.0%	65.2%	62.7%	61.5%	*62.0%*	Common Equity Ratio	*67.5%*
						638.2	590.4	620.1	706.2	732.4	676.8	783.8	755.3	954.0	1028.0	1182.1	*1325*	Total Capital ($mill)	*1680*
						680.0	705.4	730.6	743.9	756.4	852.6	880.4	905.1	934.9	970.9	1017.3	*1040*	Net Plant ($mill)	*1100*
						8.1%	9.0%	9.0%	8.5%	8.7%	10.7%	10.1%	11.2%	9.6%	7.7%	10.7%	*10.0%*	Return on Total Cap'l	*8.5%*
						13.9%	14.8%	14.6%	14.8%	15.7%	15.6%	15.3%	17.0%	12.6%	10.1%	*15.7%*	*14.5%*	Return on Shr. Equity	*11.5%*
						14.4%	14.8%	14.6%	14.9%	15.7%	15.6%	15.3%	17.0%	12.6%	10.1%	*15.7%*	*14.5%*	Return on Com Equity	*11.5%*
						4.4%	5.0%	5.4%	6.1%	6.9%	7.7%	7.8%	8.5%	6.3%	3.6%	9.3%	*8.0%*	Retained to Com Eq	*6.5%*
						71%	67%	63%	59%	56%	51%	49%	50%	50%	64%	41%	*44%*	All Div'ds to Net Prof	*46%*

CAPITAL STRUCTURE as of 9/30/08
Total Debt $693.4 mill. **Due in 5 Yrs** $175.6 mill.
LT Debt $455.1 mill. **LT Interest** $16.9 mill.
Incl. $8.8 mill. capitalized leases.
(LT interest earned: 4.8x; total interest coverage: 4.8x)
Pension Assets-9/08 $80.6 mill. **Oblig.** $102.4 mill.
Pfd Stock None

Common Stock 42,120,169 shs. as of 11/20/08
MARKET CAP: $1.6 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2006	2007	9/30/08
Cash Assets	5.0	5.1	42.6
Other	960.5	794.8	1067.1
Current Assets	965.5	799.9	1109.7
Accts Payable	46.8	64.4	61.7
Debt Due	284.4	260.8	238.3
Other	566.0	378.1	594.0
Current Liab.	897.2	703.3	894.0
Fix. Chg. Cov.	570%	461%	450%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	18.5%	13.0%	*4.5%*
"Cash Flow"	5.5%	4.5%	*7.0%*
Earnings	6.5%	6.0%	*9.5%*
Dividends	3.5%	4.0%	*6.0%*
Book Value	7.5%	10.0%	*11.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	854.1	1065	544.3	684.9	3148.3
2006	1164	1064	536.1	535.5	3299.6
2007	737.4	1029	662.2	593.2	3021.8
2008	811.1	1178	1000	827.1	3816.2
2009	*850*	*1190*	*1050*	*840*	*3930*

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	.61	1.23	.05	d.12	1.77
2006	.82	1.43	d.09	d.29	1.87
2007	.70	.19	.60	.06	1.55 F
2008	.87	.30	d.18	1.86	2.70
2009	*.90*	*.40*	*- -*	*1.50*	*2.80*

Cal-endar	QUARTERLY DIVIDENDS PAID C E■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.217	.217	.217	.217	.87
2005	.227	.227	.227	.227	.91
2006	.24	.24	.24	.24	.96
2007	.253	.253	.253	.253	1.01
2008	.267	.28	.28	.28	

BUSINESS: New Jersey Resources Corp. is a holding company providing retail/wholesale energy svcs. to customers in New Jersey, and in states from the Gulf Coast to New England, and Canada. New Jersey Natural Gas had about 478,000 customers at 9/30/07 in Monmouth and Ocean Counties, and other N.J. Counties. Fiscal 2007 volume: 102.8 bill. cu. ft. (58% firm, 6% interruptible industrial and electric utility, 36% off-system and capacity release). N.J. Natural Energy subsidiary provides unregulated retail/wholesale natural gas and related energy svcs. 2007 dep. rate: 2.8%. Has 808 empls. Off./dir. own about 2% of common (12/07 Proxy). Chrmn., CEO, & Pres. : Laurence M. Downes. Inc.: N.J. Addr.: 1415 Wyckoff Road, Wall, NJ 07719. Tel.: 732-938-1480. Web: www.njresources.com.

New Jersey Resources posted solid results for its fiscal fourth quarter (ended September 30th) and year. This stemmed from roughly 7,175 new customers last year, as well as about 730 conversions, which boosted results at the New Jersey Natural Gas (NJNG) division. Meanwhile, record performance from NJR Energy Services also contributed nicely.

Capital projects ought to provide room for the expansion of its midstream assets. NJR has been making progress at its Steckman Ridge storage facility in western Pennsylvania. Meanwhile, the company has drilled three wells so far, and expects to have nine others completed in 2009. This facility will provide extra capacity during the peak winter and summer months to the Northeast. Also, the completion of a new 16-inch main pipeline into the Whiting section of Manchester Township, NJ is allowing for new first-time customers.

We have raised our 2009 annual estimate by 30%. This stems a recent base rate case approval for NJNG that boosts annual revenues by $32.5 million, as well as the aforementioned capital projects. New customers at the NJNG division are expected to contribute approximately $4 million annually to utility gross margins. And there is still sizable room for that segment to grow through potential customers and conversions. The NJR Energy Services unit has benefited from its dynamic portfolio of supply storage and transportation contacts. And the Steckman Ridge facility ought to complement that mix nicely. All told, the company's prospects appear bright.

Meanwhile, the balance sheet and financial position appear strong. NJR has ample cash on hand, and solid access to capital through revolving bank credit.

These timely shares have been on a bumpy ride since our September review. Still, they are currently trading up about 6% over that interim, thanks to a dividend increase and solid earnings this past year. Meanwhile, the 10.7% hike in NJR's quarterly dividend may appeal to income-oriented accounts. And conservative investors may find the high Safety rank (1) and solid Financial Strength rating (A) comforting.

Bryan Fong *December 12, 2008*

(A) Fiscal year ends Sept. 30th.
(B) Diluted earnings. Qtly egs may not sum to total due to change in shares outstanding. Next earnings report due late Jan.
(C) Dividends historically paid in early January, April, July, and October. ■ Dividend reinvestment plan available.
(D) Includes regulatory assets in 2008: $340.7 million, $8.09/share.
(E) In millions, adjusted for split.
(F) Restated.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	65
Earnings Predictability	50

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N.W. NAT'L GAS NYSE-NWN

RECENT PRICE **46.38** P/E RATIO **17.4** (Trailing: 18.0 Median: 16.0) RELATIVE P/E RATIO **1.71** DIV'D YLD **3.4%** VALUE LINE

TIMELINESS 3 Raised 8/8/08
SAFETY 1 Raised 3/18/05
TECHNICAL 1 Raised 12/12/08
BETA .60 (1.00 = Market)

2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+40%)	*12%*
Low	55	(+20%)	*8%*

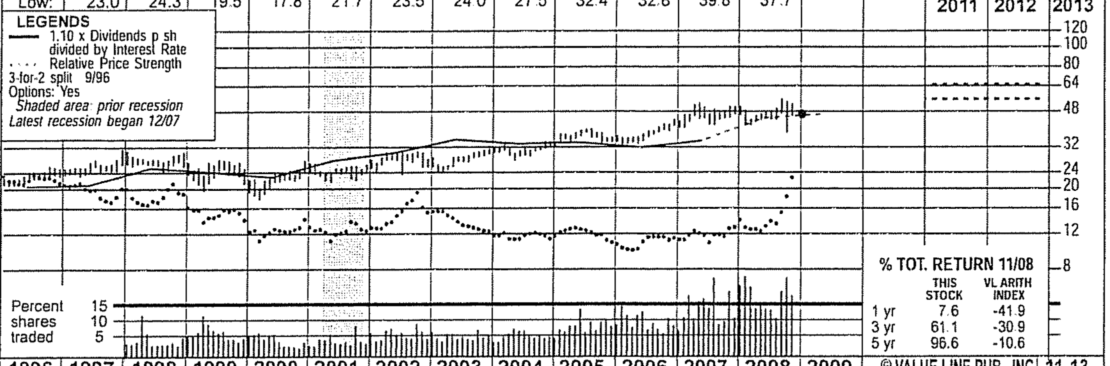
Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	1	0	0	0	1	0	0	0
Options	0	0	0	0	0	1	0	1	2
to Sell	0	0	0	0	0	1	0	1	2

Institutional Decisions

	1Q2008	2Q2008	3Q2008
to Buy	77	78	65
to Sell	92	71	74
Hld's(000)	16772	16947	16310

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
High:	31.4	30.8	27.9	27.5	26.8	30.7	31.3	34.1	39.6	43.7	52.8	55.2
Low:	23.0	24.3	19.5	17.8	21.7	23.5	24.0	27.5	32.4	32.8	39.8	37.7



LEGENDS
—— 1.10 x Dividends p sh divided by Interest Rate
· · · · Relative Price Strength
3-for-2 split 9/96
Options: Yes
Shaded area: prior recession
Latest recession began 12/07

% TOT. RETURN 11/08

	THIS STOCK	VL ARITH INDEX
1 yr	7.6	-41.9
3 yr	61.1	-30.9
5 yr	96.6	-10.6

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
14.10	18.15	18.30	16.02	16.86	15.82	16.77	18.17	21.09	25.78	25.07	23.57	25.69	33.01	37.20	39.13	*40.55*	*43.95*	Revenues per sh	*50.00*
3.25	3.74	3.50	3.41	3.86	3.72	3.24	3.72	3.68	3.86	3.65	3.85	3.92	4.34	4.76	5.41	*5.40*	*5.75*	"Cash Flow" per sh	*6.60*
.74	1.74	1.63	1.61	1.97	1.76	1.02	1.70	1.79	1.88	1.62	1.76	1.86	2.11	2.35	2.76	*2.55*	*2.80*	Earnings per sh A	*3.35*
1.15	1.17	1.17	1.18	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.30	1.32	1.39	1.44	1.52	*1.60*	Div'ds Decl'd per sh B ■	*1.88*
3.73	3.61	4.23	3.02	3.70	5.07	4.02	4.78	3.46	3.23	3.11	4.90	5.52	3.48	3.56	4.48	*5.45*	*9.00*	Cap'l Spending per sh	*4.50*
12.41	13.08	13.63	14.55	15.37	16.02	16.59	17.12	17.93	18.56	18.88	19.52	20.64	21.28	22.01	22.52	*23.65*	*23.75*	Book Value per sh	*26.50*
19.46	19.77	20.13	22.24	22.56	22.86	24.85	25.09	25.23	25.23	25.59	25.94	27.55	27.58	27.24	26.41	*26.50*	*26.50*	Common Shs Outst'g C	*28.00*
27.0	12.9	13.0	12.9	11.7	14.4	26.7	14.5	12.4	12.9	17.2	15.8	16.7	17.0	15.9	16.7	***Bold figures are***		Avg Ann'l P/E Ratio	*18.0*
1.64	.76	.85	.86	.73	.83	1.39	.83	.81	.66	.94	.90	.88	.91	.86	.88	***Value Line***		Relative P/E Ratio	*1.20*
5.7%	5.2%	5.5%	5.7%	5.2%	4.8%	4.5%	5.0%	5.6%	5.1%	4.5%	4.6%	4.2%	3.7%	3.7%	3.1%	***estimates***		Avg Ann'l Div'd Yield	*3.1%*
						416.7	455.8	532.1	650.3	641.4	611.3	707.6	910.5	1013.2	1033.2	*1000*	*1025*	Revenues ($mill)	*1400*
						27.3	44.9	47.8	50.2	43.8	46.0	50.6	58.1	65.2	74.5	*67.5*	*74.0*	Net Profit ($mill)	*94.0*
						31.0%	35.4%	35.9%	35.4%	34.9%	33.7%	34.4%	36.0%	36.3%	37.2%	*37.0%*	*37.0%*	Income Tax Rate	*37.0%*
						6.6%	9.9%	9.0%	7.7%	6.8%	7.5%	7.1%	6.4%	6.4%	7.2%	*6.8%*	*6.4%*	Net Profit Margin	*6.7%*
						45.0%	46.0%	45.1%	43.0%	47.6%	49.7%	46.0%	47.0%	46.3%	46.3%	*47.0%*	*48.0%*	Long-Term Debt Ratio	*48.0%*
						50.6%	49.9%	50.9%	53.2%	51.5%	50.3%	54.0%	53.0%	53.7%	53.7%	*53.0%*	*52.0%*	Common Equity Ratio	*52.0%*
						815.6	861.5	887.8	880.5	937.3	1006.6	1052.5	1108.4	1116.5	1106.8	*1150*	*1200*	Total Capital ($mill)	*1500*
						894.7	895.9	934.0	965.0	995.6	1205.9	1318.4	1373.4	1425.1	1495.9	*1550*	*1650*	Net Plant ($mill)	*2000*
						5.0%	6.8%	6.7%	6.9%	5.9%	5.7%	5.9%	6.5%	7.1%	8.5%	*7.5%*	*7.7%*	Return on Total Cap'l	*7.0%*
						6.1%	9.7%	9.8%	10.0%	8.9%	9.1%	8.9%	9.9%	10.9%	12.5%	*11.5%*	*11.5%*	Return on Shr. Equity	*11.0%*
						6.0%	9.9%	10.0%	10.2%	8.5%	9.0%	8.9%	9.9%	10.9%	12.5%	*11.5%*	*11.5%*	Return on Com Equity	*11.0%*
						NMF	2.8%	3.1%	3.5%	1.9%	2.6%	2.7%	3.7%	4.5%	6.0%	*5.0%*	*5.0%*	Retained to Com Eq	*5.0%*
						118%	74%	70%	67%	79%	72%	69%	63%	59%	52%	*58%*	*57%*	All Div'ds to Net Prof	*56%*

CAPITAL STRUCTURE as of 9/30/08
Total Debt $686.8 mill. **Due in 5 Yrs** $259.8 mill.
LT Debt $512.0 mill. **LT Interest** $37.0 mill.

(Total interest coverage: 4.0x)

Pension Assets-12/07 $241 mill.
Oblig. $260 mill.
Pfd Stock None

Common Stock 26,470,688 shs.
as of 10/31/08
MARKET CAP $1.2 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2006	2007	9/30/08
Cash Assets	5.8	6.1	4.1
Other	303.0	268.8	279.7
Current Assets	308.8	274.9	283.8
Accts Payable	113.6	119.7	53.5
Debt Due	129.6	148.1	174.8
Other	98.3	122.1	184.0
Current Liab.	341.5	389.9	412.3
Fx. Chg. Cov.	349%	408%	NMF

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	8.5%	8.5%	*6.5%*
"Cash Flow"	3.0%	5.5%	*5.0%*
Earnings	3.0%	6.5%	*7.0%*
Dividends	1.5%	2.0%	*5.5%*
Book Value	3.5%	3.5%	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	308.7	153.7	106.7	341.4	910.5
2006	390.4	171.0	114.9	336.9	1013.2
2007	394.1	183.2	124.2	331.7	1033.2
2008	387.7	191.3	109.7	*311.3*	*1000*
2009	*380*	*190*	*120*	*335*	*1025*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	1.44	.04	d.31	.94	2.11
2006	1.48	.07	d.35	1.15	2.35
2007	1.77	.10	d.22	1.11	2.76
2008	1.63	.08	d.38	*1.22*	*2.55*
2009	*1.70*	*.13*	*d.30*	*1.27*	*2.80*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.325	.325	.325	.325	1.30
2005	.325	.325	.325	.345	1.32
2006	.345	.345	.345	.355	1.39
2007	.355	.355	.355	.375	1.44
2008	.375	.375	.375	.395	

BUSINESS: Northwest Natural Gas Co. distributes natural gas to 90 communities, 657,000 customers, in Oregon (90% of customers) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.5 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system. Owns local underground storage. Rev. breakdown: residential, 55%; commercial, 28%; industrial, gas transportation, and other, 17%. Employs 1,130. Barclays Global owns 6.5% of shares; off./dir., 1.3% (4/08 proxy). CEO Mark S. Dodson; CEO-elect: Gregg S. Kantor. Inc.: Oregon. Address: 220 NW 2nd Ave., Portland, OR 97209. Tel.: 503-226-4211. Internet: www.nwnatural.com.

Northwest Natural's third-quarter results reflected mostly unusual items. In the 2007 period, the company received a state tax refund, and in the 2008 quarter, it lost money from its gas cost-sharing mechanism in Oregon; the two items added up to about $0.12 a share of the higher year-to-year loss. (Gas utilities usually book losses in the summer quarter.) Meanwhile, customer growth, at 2.4% from September 30, 2007, was below the recent 3% pace, but still above the national average.

Lower costs should lead to a good fourth-quarter earnings gain. Despite the higher-than-expected third-quarter loss, Northwest reaffirmed its 2008 earnings-per-share guidance of $2.48-$2.63. In the final frame of 2007, Northwest spent about $3 million over its normal operating expenses, partly in connection with redoing some business practices. The absence of those costs, plus continued customer growth, should produce a good earnings boost.

We look for normal earnings growth in 2009, excluding the effects of gas cost-sharing. In the first nine months of 2008, Northwest lost about $0.17 a share from its gas cost-sharing in Oregon. The state has modified the cost-sharing procedure, so that the company now chooses to receive either 20% or 10% of the difference between actual gas costs and the prices built into rates, with the balance going to its customers. For the next year, starting in November 2008, Northwest has chosen to retain 20% of that difference, believing that it will earn a small profit from the cost-sharing arrangement.

Several projects should contribute considerably to earnings by the end of our 3- to 5-year horizon. Gill Ranch, a gas storage project near Fresno, CA, should receive approval from that state next year and open by 2011. The Palomar pipeline, a joint venture with TransCanada, would connect Portland to a second source of gas. Northwest's investment in the two projects would total about $525 million if both halves of Palomar are built. The two investments would add significantly to our out-year earnings forecast.

These top-quality shares, steady in recent troubled times, should appeal to conservative investors.

Sigourney b. Romaine December 12, 2008

(A) Diluted earnings per share. Excludes nonrecurring items: '98, $0.15; '00, $0.11; '06, ($0.06). Next earnings report due early February.

(B) Dividends historically paid in mid-February, mid-May, mid-August, and mid-November.
■ Dividend reinvestment plan available.
(C) In millions, adjusted for stock split.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	70
Earnings Predictability	80

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PIEDMONT NAT'L. GAS NYSE-PNY

RECENT PRICE 31.23 **P/E RATIO** 19.8 (Trailing: 19.9 Median: 17.0) **RELATIVE P/E RATIO** 1.94 **DIV'D YLD** 3.3% **VALUE LINE**

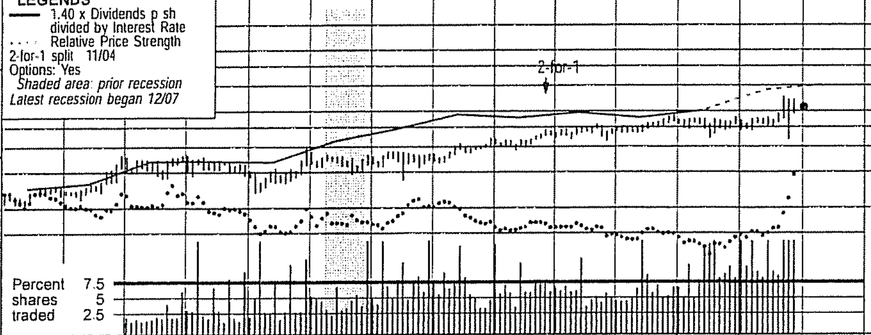
TIMELINESS 3 Raised 6/15/07
SAFETY 2 New 7/27/90
TECHNICAL 1 Raised 12/5/08
BETA .70 (1.00 = Market)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
High:	18.2	18.1	18.3	19.7	19.0	19.0	22.0	24.3	25.8	28.4	28.0	35.3
Low:	11.0	13.9	14.3	11.8	14.6	13.7	16.6	19.2	21.3	23.2	22.0	21.7

Target Price Range

2011	2012	2013

LEGENDS
— 1.40 x Dividends p sh divided by Interest Rate
···· Relative Price Strength
2-for-1 split 11/04
Options: Yes
Shaded area: prior recession
Latest recession began 12/07



2011-13 PROJECTIONS	Price	Gain	Ann'l Total Return
High	40	(+30%)	10%
Low	30	(-5%)	3%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	2	0	0	0	0	0	0

Institutional Decisions

	1Q2008	2Q2008	3Q2008
to Buy	78	97	82
to Sell	85	77	96
Hld's(000)	36778	36688	35228

% TOT. RETURN 11/08

	THIS STOCK	VL ARITH INDEX
1 yr	33.9	-41.9
3 yr.	60.2	-30.9
5 yr.	98.5	-10.6

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
8.91	10.57	10.82	8.76	11.59	12.84	12.45	10.97	13.01	17.06	12.57	18.14	19.95	22.96	25.80	23.37	*28.30*	*29.10*	Revenues per sh A	*32.05*
1.07	1.14	1.13	1.25	1.49	1.62	1.72	1.70	1.77	1.81	1.81	2.04	2.31	2.43	2.51	2.64	*2.80*	*2.85*	"Cash Flow" per sh	*3.30*
.70	.73	.68	.73	.84	.93	.98	.93	1.01	1.01	.95	1.11	1.27	1.32	1.27	1.40	*1.55*	*1.60*	Earnings per sh B	*2.05*
.46	.48	.51	.54	.57	.61	.64	.68	.72	.76	.80	.82	.85	.91	.95	.99	*1.03*	*1.07*	Div'ds Decl'd per sh C■	*1.19*
1.41	1.58	1.95	1.72	1.64	1.52	1.48	1.58	1.65	1.29	1.21	1.16	1.85	2.50	2.74	1.85	*1.95*	*3.40*	Cap'l Spending per sh	*2.25*
5.13	5.45	5.68	6.16	6.53	6.95	7.45	7.86	8.26	8.63	8.91	9.36	11.15	11.53	11.83	11.99	*12.60*	*13.15*	Book Value per sh D	*15.45*
51.59	52.30	53.15	57.67	59.10	60.39	61.48	62.59	63.83	64.93	66.18	67.31	76.67	76.70	74.61	73.23	*73.50*	*73.50*	Common Shs Outst'g E	*73.00*
12.3	15.4	15.7	13.8	13.9	13.6	16.3	17.7	14.3	16.7	18.4	16.7	16.6	17.9	19.2	18.7	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*18.0*
.75	.91	1.03	.92	.87	.78	.85	1.01	.93	.86	1.01	.95	.88	.95	1.04	.98			Relative P/E Ratio	*1.50*
5.3%	4.3%	4.8%	5.4%	4.9%	4.8%	4.0%	4.1%	5.0%	4.5%	4.6%	4.4%	4.1%	3.8%	3.9%	3.8%			Avg Ann'l Div'd Yield	*3.1%*

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
765.3	686.5	830.4	1107.9	832.0	1220.8	1529.7	1761.1	1924.7	1711.3	*2080*	*2140*	Revenues ($mill) A	*2340*
60.3	58.2	64.0	65.5	62.2	74.4	95.2	101.3	97.2	104.4	*114*	*118*	Net Profit ($mill)	*150*
39.2%	39.7%	34.7%	34.6%	33.1%	34.8%	35.1%	33.7%	34.2%	33.0%	*35.0%*	*35.0%*	Income Tax Rate	*35.0%*
7.9%	8.5%	7.7%	5.9%	7.5%	6.1%	6.2%	5.8%	5.0%	6.1%	*5.5%*	*5.5%*	Net Profit Margin	*6.4%*
44.7%	46.2%	46.1%	47.6%	43.9%	42.2%	43.6%	41.4%	48.3%	48.4%	*47.5%*	*50.0%*	Long-Term Debt Ratio	*47.0%*
55.3%	53.8%	53.9%	52.4%	56.1%	57.8%	56.4%	58.6%	51.7%	51.6%	*52.5%*	*50.0%*	Common Equity Ratio	*53.0%*
829.3	914.7	978.4	1069.4	1051.6	1090.2	1514.9	1509.2	1707.9	1703.3	*1765*	*1930*	Total Capital ($mill)	*2125*
990.6	1047.0	1072.0	1114.7	1158.5	1812.3	1849.8	1939.1	2075.3	2141.5	*2200*	*2250*	Net Plant ($mill)	*2400*
9.2%	8.1%	8.3%	7.9%	7.8%	8.6%	7.8%	8.2%	7.2%	7.8%	*8.0%*	*7.5%*	Return on Total Cap'l	*8.5%*
13.2%	11.8%	12.1%	11.7%	10.6%	11.8%	11.1%	11.5%	11.0%	11.9%	*12.5%*	*12.5%*	Return on Shr. Equity	*13.5%*
13.2%	11.8%	12.1%	11.7%	10.6%	11.8%	11.1%	11.5%	11.0%	11.9%	*12.5%*	*12.5%*	Return on Com Equity	*13.5%*
4.7%	3.3%	3.5%	3.0%	1.7%	3.1%	3.7%	3.6%	2.8%	3.5%	*4.0%*	*4.0%*	Retained to Com Eq	*5.5%*
65%	72%	71%	75%	83%	74%	66%	68%	74%	70%	*66%*	*67%*	All Div'ds to Net Prof	*58%*

CAPITAL STRUCTURE as of 7/31/08
Total Debt $994.0 mill. **Due in 5 Yrs** $150.0 mill.
LT Debt $824.5 mill. **LT Interest** $55.7 mill.
(LT interest earned: 4.0x; total interest coverage: 4.0x)

Pension Assets-10/07 $225.0 mill.
Oblig. $188.7 mill.

Pfd Stock None

Common Stock 73,278,668 shs.
as of 9/2/08
MARKET CAP: $2.3 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2006	2007	7/31/08
Cash Assets	8.9	7.5	4.9
Other	467.1	427.8	429.9
Current Assets	476.0	435.3	434.8
Accts Payable	80.3	97.2	151.8
Debt Due	170.0	195.0	169.5
Other	150.1	132.3	114.2
Current Liab.	400.4	424.5	435.5
Fix. Chg. Cov.	261%	225%	220%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	8.0%	11.0%	*5.0%*
"Cash Flow"	5.5%	7.0%	*4.5%*
Earnings	5.0%	6.0%	*7.5%*
Dividends	5.0%	4.5%	*4.0%*
Book Value	6.0%	6.5%	*4.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Jan.31	Apr.30	Jul.31	Oct.31	Full Fiscal Year
2005	680.6	508.0	232.9	339.6	1761.1
2006	921.4	483.2	237.9	282.2	1924.7
2007	677.2	531.5	224.4	278.2	1711.3
2008	788.5	634.2	354.7	*302.6*	*2080*
2009	*815*	*655*	*360*	*310*	*2140*

Fiscal Year Ends	EARNINGS PER SHARE A B F Jan.31	Apr.30	Jul.31	Oct.31	Full Fiscal Year
2005	.93	.52	d.06	d.07	1.32
2006	.94	.57	d.16	d.08	1.27
2007	.94	.69	d.12	d.11	1.40
2008	1.12	.66	d.10	*d.13*	*1.55*
2009	*1.13*	*.68*	*d.10*	*d.11*	*1.60*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.208	.215	.215	.215	.85
2005	.215	.23	.23	.23	.91
2006	.23	.24	.24	.24	.95
2007	.24	.25	.25	.25	.99
2008	.25	.26	.26	.26	

BUSINESS: Piedmont Natural Gas Company is primarily a regulated natural gas distributor, serving over 932,097 customers in North Carolina, South Carolina, and Tennessee. 2007 revenue mix: residential (54%), commercial (30%), industrial (14%), other (2%). Principal suppliers: Transco and Tennessee Pipeline. Gas costs: 69.4% of revenues. '07 deprec. rate: 3.4%. Estimated plant age: 8.7 years. Non-regulated operations: sale of gas-powered heating equipment; natural gas brokering; propane sales. Has about 1,876 employees. Officers & directors own less than 1% of common stock (1/08 proxy). Chairman, CEO, & President: Thomas E. Skains. Inc.: NC. Addr.: 4720 Piedmont Row Drive, Charlotte, NC 28210. Telephone: 704-364-3120. Internet: www.piedmontng.com.

Piedmont Natural Gas likely posted a larger share loss for the October interim. Its top-line volumes have been growing steadily due to its residential and commercial businesses. Moreover, marketing activities are beginning to bear fruit for its wholesale division. But weaker performance at the sideline Hardy Storage and Southstar Energy Service units ought to detract from other income, resulting in the aforementioned decline in share net. However, due to stronger profitability earlier this year, PNY's 2008 tally likely advanced almost 11%.

Due to the tough operating environment, the top and bottom lines may well advance only 3% in fiscal 2009 (began November 1st). Winter heating costs are expected to remain flat this year. However, some uncertainty stems from the 2008-2009 winter weather. Meanwhile, operating margins should continue to benefit from higher volumes and decreased operating expenses. Thus, profitability ought to improve marginally. Furthermore,

New rate cases and capital projects augur well for the company's prospects. Piedmont recently received approval for a rate increase in North Carolina. This allowed the company to raise its annual rates by $15.7 million, effective November 1st. Meanwhile, the Robeson liquid natural gas storage project, located in NC, is moving along nicely. This facility should allow for extra capacity and profits during peak winter months.

Hardy Storage and Southstar Energy Services contributions to PNY have moderated a bit. This stems from higher operating expenses at Hardy Storage and from the effects of warmer weather on Southstar Energy. Meanwhile, Southstar has been impacted by rising commodity prices and reduced opportunities from the management of storage and transportation assets. Still, the Hardy Storage facility only came on line in April, 2007. There is room to expand, and operations can be tightened up, providing upside. In all,

These neutrally ranked shares may offer modest conservative appeal. They have been more volatile than usual since our September review. However, presently, they are trading almost 13% higher and offer good dividend growth potential.

Bryan Fong *December 12, 2008*

(A) Fiscal year ends October 31st.
(B) Diluted earnings. Excl. extraordinary item: '00, 8¢. Excl. nonrecurring charge: '97, 2¢. Next earnings report due early Feb.
(C) Dividends historically paid mid-January, April, July, October.
■ Div'd reinvest. plan available; 5% discount.
(D) Includes deferred charges. In 2007: $23.9 million, 33¢/share.
(E) In millions, adjusted for stock split.
(F) Quarters may not add to total due to change in shares outstanding.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	60
Earnings Predictability	85

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SOUTH JERSEY INDS. NYSE-SJI

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RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD
37.07	15.6 (Trailing: 16.5 Median: 14.0)	1.53	3.2%

VALUE LINE

TIMELINESS 3 Raised 5/23/08
SAFETY 2 Lowered 1/4/91
TECHNICAL 2 Raised 12/5/08
BETA .75 (1.00 = Market)

2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+35%)	*10%*
Low	35	(-5%)	*2%*

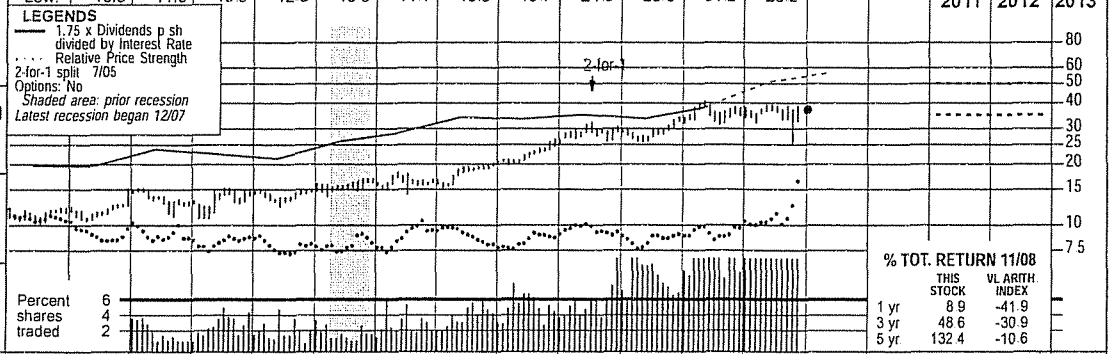
Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	1	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	2	0	2	1	0	0	0

Institutional Decisions

	1Q2008	2Q2008	3Q2008
to Buy	57	85	71
to Sell	71	58	59
Hld's(000)	17182	17430	17041

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
High:	15.3	15.4	15.4	15.1	17.0	18.3	20.3	26.5	32.4	34.3	41.3	39.4
Low:	10.5	11.0	10.8	12.3	13.8	14.1	15.3	19.7	24.9	25.6	31.2	25.2



% TOT. RETURN 11/08

	THIS STOCK	VL ARITH. INDEX
1 yr	8.9	-41.9
3 yr	48.6	-30.9
5 yr	132.4	-10.6

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
16.67	17.03	17.45	16.50	16.52	16.18	20.89	17.60	22.43	35.30	20.69	26.34	29.51	31.78	31.76	32.30	*32.00*	*32.25*	Revenues per sh	*35.95*
1.56	1.54	1.35	1.65	1.54	1.60	1.44	1.84	1.95	1.90	2.12	2.24	2.44	2.51	3.51	3.20	*3.30*	*3.60*	"Cash Flow" per sh	*4.20*
.81	.78	.61	.83	.85	.86	.64	1.01	1.08	1.15	1.22	1.37	1.58	1.71	2.46	2.09	*2.30*	*2.50*	Earnings per sh A	*3.00*
.71	.72	.72	.72	.72	.72	.72	.72	.73	.74	.75	.78	.82	.86	.92	1.01	*1.11*	*1.20*	Div'ds Decl'd per sh B ■	*1.30*
1.69	1.87	1.93	2.08	2.01	2.30	3.06	2.19	2.21	2.82	3.47	2.36	2.67	3.21	2.51	1.88	*2.00*	*2.25*	Cap'l Spending per sh	*3.15*
6.95	7.17	7.23	7.34	8.03	6.43	6.23	6.74	7.25	7.81	9.67	11.26	12.41	13.50	15.11	16.25	*17.35*	*17.75*	Book Value per sh C	*19.55*
19.00	19.61	21.43	21.44	21.51	21.54	21.56	22.30	23.00	23.72	24.41	26.46	27.76	28.98	29.33	29.61	*30.00*	*31.00*	Common Shs Outst'g D	*32.00*
13.2	15.8	16.1	12.2	13.3	13.8	21.2	13.3	13.0	13.6	13.5	13.3	14.1	16.6	11.9	17.2	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*14.0*
.80	.93	1.06	.82	.83	.80	1.10	.76	.85	.70	.74	.76	.74	.88	.64	.91			Relative P/E Ratio	*.95*
6.6%	5.9%	7.4%	7.2%	6.4%	6.1%	5.3%	5.4%	5.2%	4.7%	4.6%	4.3%	3.7%	3.0%	3.2%	2.8%			Avg Ann'l Div'd Yield	*3.1%*
						450.2	392.5	515.9	837.3	505.1	696.8	819.1	921.0	931.4	956.4	*960*	*1000*	Revenues ($mill)	*1150*
						13.8	22.0	24.7	26.8	29.4	34.6	43.0	48.6	72.0	61.8	*70.0*	*80.0*	Net Profit ($mill)	*100*
						46.2%	42.8%	43.1%	42.2%	41.4%	40.6%	40.9%	41.5%	41.3%	41.9%	*42.0%*	*40.0%*	Income Tax Rate	*40.0%*
						3.1%	5.6%	4.8%	3.2%	5.8%	5.0%	5.2%	5.3%	7.7%	6.5%	*7.3%*	*8.0%*	Net Profit Margin	*8.7%*
						57.3%	53.8%	54.1%	57.0%	53.6%	50.8%	48.7%	44.9%	44.7%	42.7%	*41.0%*	*40.5%*	Long-Term Debt Ratio	*40.5%*
						33.5%	37.0%	37.6%	35.9%	46.1%	49.0%	51.0%	55.1%	55.3%	57.3%	*59.0%*	*59.5%*	Common Equity Ratio	*59.5%*
						401.1	405.9	443.5	516.2	512.5	608.4	675.0	710.3	801.1	839.0	*880*	*925*	Total Capital ($mill)	*1050*
						504.3	533.3	562.2	607.0	666.6	748.3	799.9	877.3	920.0	948.9	*980*	*1015*	Net Plant ($mill)	*1200*
						5.3%	7.4%	7.4%	6.9%	7.6%	7.3%	7.9%	8.3%	10.1%	8.6%	*9.0%*	*9.5%*	Return on Total Cap'l	*10.5%*
						8.1%	11.7%	12.1%	12.1%	12.4%	11.5%	12.4%	12.4%	16.3%	12.8%	*13.5%*	*14.5%*	Return on Shr. Equity	*16.0%*
						10.3%	14.6%	14.8%	12.8%	12.5%	11.6%	12.5%	12.4%	16.3%	12.8%	*13.5%*	*14.5%*	Return on Com Equity	*16.0%*
						NMF	4.2%	4.8%	3.5%	4.7%	5.0%	5.9%	6.2%	10.2%	6.7%	*7.0%*	*8.0%*	Retained to Com Eq	*9.5%*
						112%	72%	67%	76%	62%	57%	52%	50%	37%	48%	*48%*	*47%*	All Div'ds to Net Prof	*42%*

CAPITAL STRUCTURE as of 9/30/08
Total Debt $517.0 mill. **Due in 5 Yrs** $196.8 mill.
LT Debt $357.8 mill. **LT Interest** $17.0 mill.
(Total interest coverage: 5.9x)

Pension Assets-12/07 $120.4 mill.
Oblig. $133.0 mill.
Pfd Stock none

Common Stock 29,728,697 common shs.
as of 11/3/08

MARKET CAP: $1.1 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2006	2007	9/30/08
Cash Assets	7.9	11.7	4.2
Other	363.8	316.6	350.7
Current Assets	371.7	328.3	354.9
Accts Payable	101.6	101.2	88.1
Debt Due	197.0	118.4	159.2
Other	124.2	108.7	131.1
Current Liab.	422.8	328.3	378.4
Fix. Chg. Cov.	527%	476%	581%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	7.0%	4.0%	*2.0%*
"Cash Flow"	7.0%	9.0%	*5.5%*
Earnings	9.5%	12.5%	*6.0%*
Dividends	2.5%	4.5%	*5.5%*
Book Value	7.5%	12.5%	*4.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	328.6	154.0	157.0	281.4	921.0
2006	372.6	153.8	154.7	250.3	931.4
2007	368.4	171.7	156.2	260.1	956.4
2008	348.0	135.8	210.4	*265.8*	*960*
2009	*365*	*160*	*200*	*275*	*1000*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.96	.27	.09	.39	1.71
2006	1.06	.20	.51	.69	2.46
2007	1.30	.21	d.05	.63	2.09
2008	1.32	.26	.04	*.68*	*2.30*
2009	*1.35*	*.30*	*.15*	*.70*	*2.50*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	--	.202	.202	.415	.82
2005	--	.213	.213	.438	.86
2006	--	.225	.225	.470	.92
2007	--	.245	.245	.515	1.01
2008	--	.270	.270	.568	

BUSINESS: South Jersey Industries, Inc. is a holding company. Its subsidiary, South Jersey Gas Co., distributes natural gas to 335,663 customers in New Jersey's southern counties, which covers 2,500 square miles and includes Atlantic City. Gas revenue mix '07: residential, 46%; commercial, 23%; cogeneration and electric generation, 8%; industrial, 23%. Non-utility operations include: South Jersey Energy, South Jersey Resources Group, Marina Energy, and South Jersey Energy Service Plus. Has 604 employees. Off./dir control 1.0% of com. shares; Dimensional Fund Advisors, 6.5%; Barclays, 6.1% (3/08 proxy). Chrmn. & CEO: Edward Graham. Incorp.: NJ. Address: 1 South Jersey Plaza, Folsom, NJ 08037. Tel.: 609-561-9000. Internet: www.sjindustries.com.

Shares of South Jersey Industries have held their own in recent months, despite considerable weakness in the broader market. The company reported strong results for the third quarter. Customer growth at South Jersey Gas continued at a decent clip, considering the slowdown in the housing construction market. The utility posted a slightly greater loss in the recent period, though. Losses are common for this business in the third quarter, due to a lack of heating demand. This was more than offset by strength in other areas. Higher cooling demand and the opening of the Borgata's new Water Club tower benefited performance at the on-site energy production business, Marina Energy. The Retail Services and Asset Management & Marketing segments also posted improved results. We anticipate a healthy performance in the fourth quarter, as well. We expect a share-earnings advance of roughly 10% for full-year 2008. Bottom-line growth ought to continue in 2009.

The New Jersey Board of Public Utilities has approved a rate increase for South Jersey Gas. The subsidiary had originally requested an increase in June, citing greater natural gas costs. Its Basic Gas Supply Service rate will now increase by 9.2%, which was somewhat smaller than had been originally requested, reflecting a decline in gas prices in recent months.

The company has announced a 10% dividend hike. The board of directors raised the quarterly dividend from $0.27 to $0.2975, starting with the December payout. The company has established an encouraging track record of dividend increases in recent years. We expect this pattern to continue. In addition, South Jersey has announced a share-repurchase program. Under this program, the company can buy back up to 5% of common stock outstanding over the next four years. This ought to keep a lid on the share count, supporting share net.

This issue is neutrally ranked for year-ahead performance. Looking further out, we anticipate solid bottom-line growth at the company over the pull to 2011-2013. This good-quality stock offers subpar, but reasonably well-defined, total return potential for the coming years.

Michael Napoli, CPA *December 12, 2008*

(A) Based on GAAP EPS through 2006, economic earnings thereafter. GAAP EPS: '07, $2.10. Excl. nonrecur. gain (loss): '01, $0.13; Q2 '08, ($0.70). Excl gain (losses) from discont. ops.: '96, $1.14; '97, ($0.24); '98, ($0.26); '99, ($0.02); '00, ($0.04); '01, ($0.02); '02, ($0.04); '03, ($0.09); '05, ($0.02); '06, ($0.02); '07, $0.01. Next egs. report due late February.

(B) Div'ds paid early Apr., Jul., Oct., and late Dec. ■ Div. reinvest. plan avail. (C) Incl. regulatory assets. At 9/30/08: $212.7 mill., $7.15 per shr. (D) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	95
Earnings Predictability	75

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WGL HOLDINGS NYSE-WGL

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD
33.52	14.1	(Trailing: 8.3 Median: 15.0)	1.38	4.3%

VALUE LINE

TIMELINESS	3	Raised 5/25/07
SAFETY	1	Raised 4/2/93
TECHNICAL	2	Raised 12/12/08

BETA .75 (1.00 = Market)

2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	40	20%	8%
Low	35	5%	5%

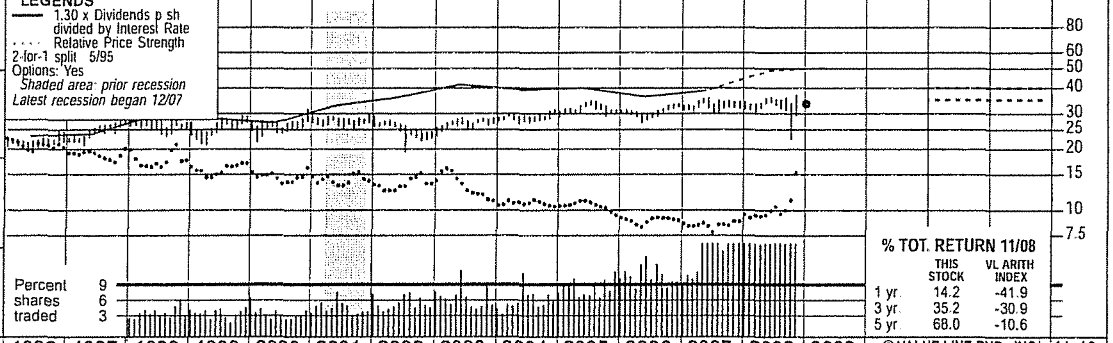
Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	1	0	0	0	0
Options	0	0	0	0	5	1	0	0	2
to Sell	2	0	0	0	7	1	0	0	2

Institutional Decisions

	1Q2008	2Q2008	3Q2008
to Buy	106	95	83
to Sell	89	100	119
Hld's(000)	35559	34195	32939

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
High:	31.4	30.8	29.4	31.5	30.5	29.5	28.8	31.4	34.8	33.6	35.9	37.1
Low:	20.9	23.1	21.0	21.8	25.3	19.3	23.2	26.7	28.8	27.0	29.8	22.4



% TOT. RETURN 11/08

	THIS STOCK	VL ARITH INDEX
1 yr.	14.2	-41.9
3 yr.	35.2	-30.9
5 yr.	68.0	-10.6

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
18.37	21.55	21.69	19.30	22.19	24.16	23.74	20.92	22.19	29.80	32.63	42.45	42.93	44.94	53.96	53.51	52.98	*53.35*	Revenues per sh A	*54.60*
2.17	2.25	2.43	2.51	2.93	3.02	2.79	2.74	3.20	3.24	2.63	4.00	3.87	3.97	3.93	3.89	4.17	*4.30*	"Cash Flow" per sh	*4.55*
1.27	1.31	1.42	1.45	1.85	1.85	1.54	1.47	1.79	1.88	1.14	2.30	1.98	2.11	1.94	2.10	2.33	*2.40*	Earnings per sh B	*2.55*
1.07	1.09	1.11	1.12	1.14	1.17	1.20	1.22	1.24	1.26	1.27	1.28	1.30	1.32	1.34	1.37	1.42	*1.44*	Div'ds Decl'd per sh C■	*1.56*
2.17	2.43	2.84	2.63	2.85	3.20	3.62	3.42	2.67	2.68	3.34	2.65	2.33	2.32	3.27	3.33	3.33	*3.00*	Cap'l Spending per sh	*2.50*
10.66	11.04	11.51	11.95	12.79	13.48	13.86	14.72	15.31	16.24	15.78	16.25	16.95	17.80	18.28	19.83	21.06	*22.00*	Book Value per sh D	*25.00*
40.62	41.50	42.19	42.93	43.70	43.70	43.84	46.47	46.47	48.54	48.56	48.63	48.67	48.65	48.89	49.45	49.61	*49.65*	Common Shs Outst'g E	*50.00*
13.6	15.6	14.0	12.7	11.5	12.7	17.2	17.3	14.6	14.7	23.1	11.1	14.2	14.7	15.5	15.6	14.3		Avg Ann'l P/E Ratio	*15.0*
.82	.92	.92	.85	.72	.73	.89	.99	.95	.75	1.26	.63	.75	.78	.84	.82	.85		Relative P/E Ratio	*1.00*
6.2%	5.3%	5.6%	6.1%	5.4%	5.0%	4.5%	4.8%	4.8%	4.6%	4.8%	5.0%	4.6%	4.2%	4.5%	4.2%	4.3%		Avg Ann'l Div'd Yield	*4.2%*

CAPITAL STRUCTURE as of 9/30/08
Total Debt $950.7 mill. **Due in 5 Yrs** $399.5 mill.
LT Debt $603.7 mill. **LT Interest** $40.1 mill.
(LT interest earned: 6.7x; total interest coverage: 5.7x)
Pension Assets-9/08 $588.2 mill. **Oblig.** $590.5 mill.
Preferred Stock $28.2 mill. **Pfd. Div'd** $1.3 mill.

Common Stock 49,971,614 shs. as of 10/31/08

MARKET CAP: $1.7 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
1040.6	972.1	1031.1	1446.5	1584.8	2064.2	2089.6	2186.3	2637.9	2646.0	2628.2	*2650*	Revenues ($mill) A	*2730*
68.6	68.8	84.6	89.9	55.7	112.3	98.0	104.8	95.1	102.9	116.3	*120*	Net Profit ($mill)	*130*
35.6%	36.0%	36.1%	39.6%	34.0%	38.0%	38.2%	37.4%	39.0%	39.1%	38.0%	*38.0%*	Income Tax Rate	*38.0%*
6.6%	7.1%	8.2%	6.2%	3.5%	5.4%	4.7%	4.8%	3.6%	3.9%	4.4%	*4.5%*	Net Profit Margin	*4.8%*
40.3%	41.5%	43.1%	41.7%	45.7%	43.8%	40.9%	39.5%	38.5%	37.9%	36.0%	*35.0%*	Long-Term Debt Ratio	*32.0%*
57.1%	56.1%	54.8%	56.3%	52.4%	54.3%	57.2%	58.6%	61.5%	60.3%	62.3%	*63.5%*	Common Equity Ratio	*66.5%*
1064.8	1218.5	1299.2	1400.8	1462.5	1454.9	1443.6	1478.1	1497.8	1625.4	1677.2	*1720*	Total Capital ($mill)	*1880*
1319.5	1402.7	1460.3	1519.7	1606.8	1874.9	1915.6	1969.7	2067.9	2150.4	2208.3	*2325*	Net Plant ($mill)	*2615*
8.0%	7.1%	7.9%	7.9%	5.3%	9.1%	8.2%	8.5%	7.7%	7.6%	*8.1%*	*8.0%*	Return on Total Cap'l	*8.0%*
10.8%	9.7%	11.4%	11.0%	7.0%	13.7%	11.5%	11.7%	10.3%	10.2%	*11.1%*	*11.0%*	Return on Shr. Equity	*10.0%*
11.1%	9.9%	11.7%	11.2%	7.2%	14.0%	11.7%	12.0%	10.2%	10.4%	*11.6%*	*11.5%*	Return on Com Equity	*10.5%*
2.5%	1.8%	3.7%	3.8%	NMF	6.2%	4.1%	4.6%	3.1%	3.5%	4.3%	*4.5%*	Retained to Com Eq	*4.0%*
78%	82%	69%	67%	112%	56%	65%	62%	70%	66%	61%	*60%*	All Div'ds to Net Prof	*61%*

CURRENT POSITION ($MILL.)	2006	2007	9/30/08
Cash Assets	4.4	4.9	6.2
Other	556.9	568.8	736.1
Current Assets	561.3	573.7	742.3
Accts Payable	208.5	216.9	243.1
Debt Due	238.4	205.4	347.0
Other	113.9	134.8	158.4
Current Liab.	560.8	557.1	748.5
Fix. Chg. Cov.	465%	460%	460%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	9.0%	12.5%	*1.0%*
"Cash Flow"	3.5%	5.0%	*2.5%*
Earnings	2.0%	5.0%	*3.5%*
Dividends	1.5%	1.5%	*2.5%*
Book Value	4.0%	3.5%	*5.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	623.4	929.8	349.0	284.1	2186.3
2006	902.9	1064.5	346.9	323.6	2637.9
2007	732.9	1119.9	467.5	325.7	2646.0
2008	751.6	1020.0	464.7	391.9	2628.2
2009	*760*	*1050*	*480*	*360*	*2650*

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	.88	1.63	d.17	d.23	2.11
2006	.93	1.17	d.01	d.15	1.94
2007	.92	1.27	.22	d.31	2.10
2008	.96	1.66	.06	d.22	2.33
2009	*.97*	*1.50*	*.13*	*d.20*	*2.40*

Cal-endar	QUARTERLY DIVIDENDS PAID C ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.32	.325	.325	.325	1.30
2005	.325	.333	.333	.333	1.32
2006	.333	.338	.338	.338	1.34
2007	.34	.34	.34	.34	1.36
2008	.34	.36	.36	.36	

BUSINESS: WGL Holdings, Inc. is the parent of Washington Gas Light, a natural gas distributor in Washington, D.C. and adjacent areas of VA and MD to resident'l and comm'l users (1,046,201 meters). Hampshire Gas, a federally regulated sub., operates an underground gas-storage facility in WV. Non-regulated subs.: Wash. Gas Energy Svcs. sells and delivers natural gas and provides energy related products in the D.C. metro area; Wash. Gas Energy Sys. designs/installs comm'l heating, ventilating, and air cond. systems. American Century Inv. own 8.2% of common stock; Off./dir. less than 1% (1/08 proxy). Chrmn. & CEO: J.H. DeGraffenreidt. Inc.: D.C. and VA. Addr.: 1100 H St., N.W., Washington, D.C. 20080. Tel.: 202-624-6410. Internet: www.wglholdings.com.

WGL Holdings performed well in fiscal 2008 (ended September 30th). New rates, higher consumption, and customer growth contributed to the annual top-line increase of almost 18%. Meanwhile, the *initiation of regulatory mechanisms like the* weather normalization adjustment (WMA) minimized usage volatility. And margins widened due to the successful expansion of the "asset optimization" program. The retail energy segment did not fare as well. This reflects lower margins from electric sales, partially offset by slightly higher margins for natural gas sales. Weakness here stemmed from milder weather and the loss of certain government and large commercial accounts. However, on balance, WGL's earnings per share advanced 11%. Next up,

We look for December-period results to be little changed compared to last year. Aggregate electric and gas customer accounts declined in the most recent quarter, due to the extended run-up in natural gas and electric prices from February through June. That caused WGL to *halt its mass market customer acquisition* efforts. However, as the company begins fiscal 2009, lower energy prices have allowed it to resume those efforts. It may take some time for these programs to pick up steam, consequently, WGL will likely experience growth in electricity sales, but natural gas *volumes will probably continue* to decline, as the last of the lost government accounts roll off its books. However,

The company should still register a modest 3% earnings increase for fiscal 2009. The utility segment should benefit from an estimated 9,500 new accounts, as well as higher contributions from its expanded asset management strategy. Meanwhile, the retail energy business may get a boost from stronger gross margins on natural gas sales. Also, rate case approvals and capital projects augur well for WGL's prospects. However, a likely decline in usage compared to last year's unusually high levels could be an offset.

These neutrally ranked shares may appeal to conservative income-oriented accounts. Indeed, this is evident in their good dividend yield, strong Safety rank (1), solid financial strength (A), and top mark for Price Stability (100).

Bryan Fong *December 12, 2008*

(A) Fiscal years end Sept. 30th.
(B) Based on diluted shares. Excludes nonrecurring losses: '01, (13¢); '02, (34¢); '07, (4¢) discontinued operations: '06, (15¢). Qtly egs may not sum to total, due to change in shares outstanding. Next earnings report due late Jan.
(C) Dividends historically paid early February, May, August, and November. ■ Dividend reinvestment plan available.
(D) Includes deferred charges and intangibles. '07: $322.2 million, $6.51/sh.
(E) In millions, adjusted for stock split.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	50
Earnings Predictability	65

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PSC Case No. 2009-00141
AG DR Set 1-209
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC. RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 209:

With reference to pages 32-38, and Appendix E, please: (1) list all regulatory cases (by name, docket number, and filing date) in which Mr. Moul has provided rate of return testimony and proposed his leverage adjustment; (2) indicate all cases (by name, docket number, and date), other than those cited, in which a regulatory commission has adopted Mr. Moul's leverage adjustment in arriving at an overall rate of return; and (3) provide copies of the 'Rate of Return' section of the Commission's decisions for all cases in which a regulatory commission has adopted the adjustment.

Response:

(1) The first testimony that Mr. Moul offered where he compared the financial risk of the market capitalization to the book capitalization was Appalachian Power Company (Case No. PUE960301). He has proposed this adjustment in all subsequent cases where it was warranted. Those cases are provided in the list below.

Client	Date	Jurisdiction	Docket No.
Appalachian Power Company	6/5/97	Virginia State Corporation Commission	Docket No. PUE960301
Birmingham Utilities	7/9/97	Connecticut Department of Public Utility Control	Docket No. 97-07-14
Atlantic City Electric (FERC)	1/19/99	Federal Energy Regulatory Commission	ER99-1618-000
Hawaii Electric Light Company	2/13/98	Hawaii Public Utilities Commission	Docket No. 97-0420
PP&L	3/25/98	Federal Energy Regulatory Commission	ER97-4829-000; 97-3189-007;EL98-25-000
Pennsylvania American Water Co.	4/20/99	Pennsylvania Public Utility Commission	Docket No. R-00994638
Kentucky-American Water Co.	4/25/00	Public Service Commission of Kentucky	Case No. 2000-120
Northern Border Partners	5/25/99	Federal Energy Regulatory Commission	RP99-322-000
Appalachian Power Company	6/21/99	Public Service Commission of West VA	Docket No. 99-0409-E-GI
The Southern Connecticut Gas Co.	7/8/99	Department of Public Utility Control	Docket No. 99-04-18
Philadelphia Suburban Water Co.	10/26/99	Pennsylvania Public Utility Commission	Docket No. R-00994868
Baltimore Gas & Electric Co.	11/10/99	Public Service Commission of Maryland	Case No. 8829
Williston Basin Interstate Pipeline Co.	11/23/99	Federal Energy Regulatory Commission	RP00-107-000
Illinois-American Water Co.	4/1/00	Illinois Commerce Commission	Docket No. 00-0340
Central Florida Gas	5/2/00	Public Service Commission of Florida	Docket No. 000108-GU
PFG Gas/North Penn Gas Co.	6/23/00	Pennsylvania Public Utility Commission	docket No. R-00005277
PAWC – Waste Water	9/7/00	Pennsylvania Public Utility Commission	Docket No. R-00005212
Dominion Transmission, Inc.	10/26/00	Federal Energy Regulatory Commission	Docket No. RO01-74-000, etal
Dominion Hope Gas, Inc.	4/25/01	Public Service Commission of West Virginia	Case No. 01-330-G-42T

Pennsylvania-American Water Co.	4/20/01	Pennsylvania Public Utility Commission	Docket No. R-00016339
Chesapeake Utilities Corp.	7/30/01	Delaware Public Service Commission	Docket No. 01-307
Illinois Power Company	8/27/01	Federal Energy Regulatory Commission	Docket No. ER01-2999-000
Illinois Power Company	5/14/01	Illinois Commerce Commission	Docket No. 01-0432
Berkshire Gas Co.	7/9/01	Massachusetts Dept. of Telecommunication and Energy	Case No. D.T.E. 01-56
Philadelphia Suburban Water Co.	11/7/01	Pennsylvania Public Utility Commission	Docket No. R-00016750
American Elec. Power Service Corp.	8/27/01	Federal Energy Regulatory Commission	Docket No. ER01-2995-000
Virginia Electric & Power Co.	8/27/01	Federal Energy Regulatory Commission	Docket No. ER01-2993-000
Virginia-American Water Co.	8/7/01	Virginia State Corporation Commission	Case No. PUE-010312
Northern Utilities, Inc.	10/26/01	New Hampshire Public Utilities Commission	Docket No. DG-01-182
Eastern Shore Natural Gas Co.	10/26/01	Federal Energy Regulatory Commission	Docket No. RP02-34-000
Ohio-American Water Co.	11/8/01	Public Utilities Commission of Ohio	Case No. 01-626-WW-Air
Columbia of Kentucky, Inc.	4/15/02	Public Service Commission of Kentucky	Case No. 2002-00145
Virginia-American Water Co.	4/30/02	Virginia State Corporation Commission	Case No. PUE 2002-___
Lockhart Power Co.	5/7/02	Public Service Comm. of South Carolina	Docket No. 2002-122-E
PPL Electric Utilities Corp.	6/20/02	Pennsylvania Public Utility Commission	Docket No. R-00016850C001
PECO Energy Company	6/20/02	Pennsylvania Public Utility Commission	R-00016856C001
Illinois-American Water Co.	9/13/02	Illinois Commerce Commission	Docket No. 02-0690
Kentucky Power Co.	6/20/02	Public Service Commission of Kentucky	Case No. 2002-000169
Atlantic City Electric Co.	1/31/03	New Jersey Board of Public Utilities	Docket No. ER03020110
Tennessee-American Water Co.	2/5/03	Tennessee Regulatory Authority	Case No. 03-00118
Birmingham Utilities Co.	2/10/03	Department of Public Utility Control	Docket No. 03-02-07
Pennsylvania-American Wtr. Co.	4/25/03	Pennsylvania Public Utility Commission	Docket No. R-00038304
South Jersey Gas	8/14/03	New Jersey Board of Public Utilities	Docket No. GR03080683
West Virginia-American Wtr. Co.		Public Service Commission of WV	Case No. 03-0353-W-42T
Delmarva Gas Company	3/14/03	Public Service Commission of Delaware	PSC Docket No. 03-127
Public Service of Oklahoma	10/31/03	Oklahoma Corporation Commission	Cause No. PUD200300076
Philadelphia Suburban Water Co.		Pennsylvania Public Utility Commission	Docket No. R-00038805
AEP Texas Central Co.	11/3/03	The Public Utility Commission of Texas	PUC Docket No. 28840
Potomac Electric Power Co.	12/5/03	The Public Service Commission of MD	Case No. 8995
Aquarion Water Co.		Dept. of Public Utility Control	Docket No. 04-02-14
Indiana Gas Company		IURC	Cause No. 42598
Vectren Ohio		Public Utilities Commission of Ohio	Case No. 04-794-GA-AAM
York Water Co.		Pennsylvania Public Utility Commission	Docket No. R-00049165
PP&L Electric Utilities	3/29/04	Pennsylvania Public Utility Commission	Docket No. R-00049255
Virginia-American Water Co.		Virginia State Corporation Commission	Case No. PUE-2003-00539
Georgia Power Co.	7/1/04	Georgia Public Service Commission	Docket No. 18300-U
Savannah Electric and Power Co.	11/30/04	Georgia Public Service Commission	Docket No. 19758-U
American Electric Power Company	3/31/05	Federal Energy Regulatory Commission	Docket No. ER05-751-000
Bay State Gas Company	4/27/05	Dept. of Telecommunications and Energy	D. T. E. 05-27
Appalachian Power Company	8/26/05	Public Service Commission of West VA	Case No. 05-1278-PC-PW-42T
Kentucky Power Company	9/26/05	Pub. Serv. Comm. of the Cmnwlth of KY	Case No. 2005-00341
Columbia Gas of Virginia, Inc.	10/3/06	State Corporation Commission of Virginia	Case No. PUE-2005-00098/100
Northern Border Pipeline Company	11/1/05	Federal Energy Regulatory Commission	Docket No. RP06-72-000
Aqua Pennsylvania, Inc.	11/18/05	Pennsylvania Public Utility Commission	Docket R-00051030
Boston Edison Company	12/6/05	Dept. of Telecommunications and Energy	DT.E. 05-85
NSTAR Gas Company	12/6/05	Depart. of Telecomm. and Energy	D.T.E. 05-85
T.W. Phillips Gas & Oil Co.	2/13/06	Pennsylvania Public Utility Commission	Docket No. R-00051178
Duquesne Light Company	4/7/06	Pennsylvania Public Utility Commission	Docket No. R-00061346
The York Water Company	4/27/06	Pennsylvania Public Utility Commission	Docket No. R-00061322
PPL Gas Utilities Corporation	4/27/06	Pennsylvania Public Utility Commission	Docket No. R-00061398
Appalachian Power Co.	5/4/06	Virginia State Corporation Commission	Case No. PUE-2006-00065
Chesapeake Utilities Corporation	5/16/06	Public Service Commission of Maryland	Case No. 9062
Birmingham Utilities, Inc.	5/19/06	CT Depart. of Public Utility Control	Docket No. 06-05-10

Gas Transmission Northwest Corp.	6/30/06	Federal Energy Regulatory Commission	Docket No. RP06-407-000
Dominion Cove Point LNG, L.P.	6/30/06	Federal Energy Regulatory Commission	Docket No. RP06-417-000
So. Indiana Gas & Elec. Co. (Elec.)	9/1/06	Indiana Utility Regulatory Commission	IURC Cause No. 43111
So. Indiana Gas & Elec. Co. (Gas)	9/1/06	Indiana Utility Regulatory Commission	IURC Cause No. 43112
Duquesne Light Company	9/29/06	Federal Energy Regulatory Commission	Docket No. EL06-1549-000
Eastern Shore Natural Gas Co.	10/31/06	Federal Energy Regulatory Commission	Docket No. RP07-38-000
Indiana-American Water Co.	12/1/06	Indiana Utility Regulatory Commission	Cause No. 43187
Lockhart Power Co.	1/12/07	Pu. Serv. Commission of South Carolina	Docket No. 2007-33-E
Columbia Gas of Kentucky, Inc	2/1/07	Pub. Serv. Comm. of the Cmnwlth of KY	PSC Case No. 2007-00008
Peoples Gas Light and Coke Co.	3/9/07	Illinois Commerce Commission	ICC Docket No. 07-0242
North Shore Gas Company	3/9/07	Illinois Commerce Commission	ICC Docket Nos. 07-0241
PPL Electric Utilities Corp.	3/29/07	Pennsylvania Public Utility Commission	Docket No. R-00072155
Maryland-American Water Co.	3/29/07	Public Service Commission of Maryland	Case No. 9101
Pennsylvania-American Water Co.	4/27/07	Pennsylvania Public Utility Commission	Docket No. R-00072229
Indiana Gas Company	5/18/07	Indiana Utility Regulatory Commission	Cause No. 43298
Ohio Valley Gas Corp.	6/8/07	Indiana Utility Regulatory Commission	Cause No. 43208/43209
Chesapeake Utilities Corp.	7/6/07	Public Service Commission of Delaware	PSC Docket No. 07-186
Environmental Disposal Corp.	9/28/07	New Jersey Board of Public Utilities	PU Docket No. WR07090715
Aqua Pennsylvania, Inc.	11/21/07	Pennsylvania Public Utility Commission	Docket No. R-00072711
Columbia of Pennsylvania	1/28/08	Pennsylvania Public Utility Commission	Docket No. R-2008-2011621
PECO Energy Company	3/31/08	Pennsylvania Public Utility Commission	Docket No. R-2008-2028394
New Jersey-American Water Co.	1/14/08	New Jersey Board of Public Utilities	BPU Docket No. WR08010020 OAL Docket No. PUC 03919-08
Columbia Gas of Ohio	3/17/08	Public Utilities Commission of Ohio	Case No. 08-72-GA-AIR Case No. 08-73-GA-ALT Case No. 08-74-GA-AAM Case No. 08-75-GA-AAM
York Water Co.	5/22/08	Pennsylvania Public Utility Commission	Docket No. R-2008-2023067
KeySpan Energy North	2/25/08	New Hampshire P.U.C	DG 08-009
National Grid (RI)	3/1/08	New Hampshire P.U.C	R.I.P.U.C. Docket No. 3943
Virginia-American Water Co.	2/8/08	Virginia State Corporation Commission	Case No. PUE-2008-00009
Portland Natural Gas	4/1/08	Federal Energy Regulatory Commission	Docket No. RP08-306-000
Wisconsin Public Service Co.	4/1/08	Public Service Commission of Wisconsin	Docket No. 6690-UR-119
Michigan Gas	5/08	Michigan Public Service Commission	Case No. U-15549
Minnesota Gas	7/31/08	Minnesota P.U.C	Docket No. G007,011/GR-08-835
Cleco Power LLC	7/14/08	Louisiana Public Service Commission	Docket No. U-30689
Coatesville Wastewater	4/28/08	Pennsylvania Public Utility Commission	Docket No. R-2008-2032689
Columbia of MD		Public Service Commission of Maryland	Docket No. Case No. 9159

(2) & (3) This adjustment has been employed in the cost equity determinations by the Pennsylvania Public Utility Commission in the following cases:

- January 10, 2002 for Pennsylvania-American Water Company in Docket No. R-00016339 -- 60 basis points adjustment.

- August 1, 2002 for Philadelphia Suburban Water Company in Docket No. R-00016750 -- 80 basis points adjustment.

- January 29, 2004 for Pennsylvania-American Water Company in Docket No. R-00038304 (affirmed by the Commonwealth Court on November 8, 2004) -- 60 basis points adjustment.

- August 5, 2004 for Aqua Pennsylvania, Inc. in Docket No. R-00038805 -- 60 basis points adjustment.

- December 22, 2004 for PPL Electric Utilities Corporation in Docket No. R-00049255 -- 45 basis points.

- February 8, 2007 for PPL Gas Utilities Corporation in Docket No. R-00061398 -- 70 basis points adjustment.

In addition, the Connecticut Department of Public Utility Control considered an adjustment such as this in its Decision dated January 21, 1998 in Docket No. 97-07-14, where it adopted 5/8ths of the proposed leverage adjustment. A copy of those decisions is attached Attachment A.

AG DR Set 1-209 Attachment A

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held January 10, 2002

Commissioners Present:

Glen R. Thomas, Chairman, Statement attached
Robert K. Bloom, Vice Chairman
Aaron Wilson, Jr.
Terrance J. Fitzpatrick

Pennsylvania Public Utility Commission,	R-00016339
Joan B. Kristoff	R-00016339C0001
AK Steel Corporation	R-00016339C0002
Irwin A. Popowsky, Consumer Advocate	R-00016339C0003
Jim Brothers	R-00016339C0004
Lawrence Boucher	R-00016339C0005
John Janiga	R-00016339C0006
Loretta Pryor	R-00016339C0007
Albert Barrera, Jr.	R-00016339C0008
Herbert N. Preble	R-00016339C0009
Mrs. Kenneth Rudat	R-00016339C0010
Werner H. Frank	R-00016339C0011
Samuel J. Pasquarelli	R-00016339C0012
Mr. & Mrs. Carmine Napolitano	R-00016339C0013
Susan A. Haines	R-00016339C0014
Erica O. LeClere	R-00016339C0015
Kenneth & Katherine Booth	R-00016339C0016
Andy Turriziani	R-00016339C0017
Donald Major	R-00016339C0018
Winifred H. Jennings	R-00016339C0019
Leo & Alice Samuels	R-00016339C0020
Edward R. Hoffman	R-00016339C0021
West Brownsville Borough	R-00016339C0022
James F. Curtin	R-00016339C0023
William Rakauskas	R-00016339C0024
James Maunder	R-00016339C0025
Francis J. Nawrocki	R-00016339C0026
Paul Walaski	R-00016339C0027

Office of Small Business Advocate	R-00016339C0028
Hill Neighborhood Association, Inc.	R-00016339C0029
City of Connellsville	R-00016339C0030
Donato Telesca	R-00016339C0031
Thomas E. Tompkins	R-00016339C0032
Bruce Bartko	R-00016339C0033
Elizabeth & Bernhard Iken	R-00016339C0034
Daniel Tischendorf	R-00016339C0035
Pennsylvania-American Water Large Users Group	R-00016339C0036
Mimma C. Constantine	R-00016339C0037
Morris Laundromation Services, Inc.	R-00016339C0038
Mr. D. Wintermyer	R-00016339C0039
Vincent Gallo	R-00016339C0040
Robert F. Heisinger	R-00016339C0041
Noelle C. Fluri	R-00016339C0042
Kim Davis	R-00016339C0043
William J. Becker	R-00016339C0044
A Pocono Country Place	R-00016339C0045
Douglas L. Hoover and Jacqueline A. Battista	R-00016339C0046
Susan Leigh DeSilva	R-00016339C0047
Ernest E. Campos	R-00016339C0048
Herbert Womack	R-00016339C0049
Precious Kitchen-Hogans	R-00016339C0050
Rose McGrath	R-00016339C0051

v.

Pennsylvania-American Water Company

OPINION AND ORDER

VI. RATE OF RETURN

It has been determined in this Commonwealth that a public utility is entitled to an opportunity to earn a fair rate of return on the value of its property which is dedicated to public service. (*Pennsylvania Gas & Water Company v. Pennsylvania Public Utility Commission*, 341 A.2d 239 (Pa. Cmwlth. 1975)). This is consistent with longstanding decisions by the United States Supreme Court, including *Bluefield Water Works and Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679, 690-93 (1923), and *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944).

A utility's rate of return has been defined as follows:

> [t]he *rate of return* is the amount of money a utility earns, over and above operating expenses, depreciation expense and taxes, expressed as a percentage of the legally established net valuation of utility property, the rate base. Included in the 'return' is interest on long-term debt, dividends on preferred stock, and earnings on common stock equity. In other words, the return is that money earned from operations which is available for distribution among the capital. In the case of common stockholders, part of their share may be retained as surplus. The rate-of-return concept merely converts the dollars earned on the rate base into a percentage figure, thus making the item more easily comparable with that in other companies or industries.

(P. Garfield and W. Lovejoy, *Public Utility Economics*, (1964), p. 116).

In determining what is a fair rate of return, we have traditionally considered the utility's capital structure in conjunction with its costs of debt, preferred stock, and common equity, as will be discussed below.

A. Capital Structure

The following is a summary of the Parties' positions regarding PAWC's capital structure:

Capital Structure	PAWC(1)	OCA(2)	OTS(3)
	%	%	%
Debt	56.15	56.15	56.15
Preferred Stock	1.23	1.23	1.23
Common Equity	42.62	42.62	42.62
	100.00	100.00	100.0

(1) PAWC Exh. 9-A, Sch.1
(2) OCA St. 3, Sch. JRW 1
(3) OTS St. 1, p. 8

PAWC's position is based on the use of a capital structure at the end of the future test year, December 31, 2001. PAWC chose the capitalization ratios tabulated above because these ratios are indicative of those that PAWC will maintain during the period that new rates will be in effect. No Party opposed the capital structure proposed by PAWC.

The ALJ, noting the consensus of the Parties, recommended the adoption of PAWC's anticipated capital structure at the end of the future test year.

Our review of the record evidence leads us to conclude that the capitalization ratios, consisting of 56.15 percent long-term debt, 1.23 percent preferred stock, and 42.62 percent common equity as of the end of the future test year ending December 31, 2001, are reasonable and appropriate for purposes of this proceeding.

B. Cost of Debt

Regarding its cost of debt, PAWC's claimed cost of debt for this proceeding was originally 7.52 percent. (PRM Exh. No. 9-A, Schedule-1). The OCA accepted this cost of debt as appropriate for this proceeding. (OCA Stmt. 3, Sch. JRW 1). The OTS, however, recommended a 7.46 percent cost of debt. (OTS Exhibit No.1, Schedule 5). The embedded cost of debt was revised and later amended by PAWC on November 9, 2001. The revised figure is 7.26 percent. The ALJ asserted that the revised cost of debt is not disputed by the Parties. (R.D., p.47).

In our review of this matter, we note that none of the Parties in this proceeding has disputed PAWC's 7.26 percent revised cost of debt in their Exceptions. Therefore, we will adopt the ALJ's recommendation and adopt the 7.26 percent cost of debt as revised by PAWC.

C. Cost of Common Equity

The following table summarizes the cost of common equity claims made, and methodologies used, by the Parties in this proceeding:

Methodology	PAWC(1) %	OCA(2) %	OTS(3) %
Discounted Cash Flow (DCF)	10.93	9.0	9.25
Risk Premium Model (RPM)	12.50	9.1	
Capital Asset Pricing Model (CAPM)	12.67		
Comparable Earnings Method (CEM)	12.90		
Recommendation	12.00	9.0	9.25

(1) PAWC St. No. 9, pp. 4-5

(2) OCA St. No. 3, pp.19-24

(3) OTS St. 1, pp. 22-23

1. Position of the Parties

PAWC, after applying four of the above cited and widely recognized market-based models to market data for its barometer group of water utilities, arrived at a 12.00 percent cost of common equity recommendation. PAWC's barometer group consists of four water utilities with actively traded common stock. These water utilities appear in Edition 9 of the *Value Line Investment Survey*. (PAWC Exhibit No. 9-A, Schedule 3, Page 3). PAWC argued that these models, used *in tandem*, are based on the premise that no one method or model of the cost of equity can be applied in an isolated manner.

According to PAWC, informed judgment must be used to take into consideration the relative risk traits of the firm. It is for this reason that PAWC uses more than one method to measure PAWC's cost of equity. (PAWC Statement No. 9, p.25). It should be noted that PAWC's DCF common equity cost rate recommendation of 10.93 percent, which is tabulated above, includes a 60 basis point upward adjustment to *reconcile* the divergence between the market and book value of the common stock. (R.D., p.48).

Specifically, PAWC calculated a recent six-month average dividend yield of its barometer group of 3.70 percent which it basically increased by ½ the growth rate of 6.50 percent or 3.70 percent * 1.0325 = 3.83 percent. The resultant 3.83 percent + 6.50 percent = 10.33 percent DCF result is subsequently increased by 60 basis points to 10.93 percent as explained above.

The average of the three market based cost rates of common equity, excluding comparable earnings which is not market based, yields a 12.03 percent result and forms the essence of PAWC's recommended common equity cost rate of 12 percent. (PAWC Statement No. 9, p.4).

The OTS relied solely on the DCF method to arrive at its 9.25 percent recommended cost rate of common equity. The OTS applied the DCF method to both the market data of American Water Works (the parent of PAWC) and to its barometer group of water utilities whose stock is actively traded. The OTS' barometer group consists of six publicly traded water utilities that operate in the eastern United States, have at least two sources of analysts' forecasts of earnings growth, and are not the announced subject of an acquisition.

Specifically, the OTS averaged the spot dividend yield and the 52-week average dividend yield of his barometer group to reach a 3.55 percent composite dividend yield. The OTS then added its 5.25 percent growth rate recommendation to the 3.55 percent dividend yield to reach an 8.80 percent DCF recommendation for its barometer group.

Next, the OTS averaged the spot dividend yield and the 52-week average of American Water Works, the parent of PAWC, to reach a 3.28 percent composite dividend yield. The OTS then added its 6.25 percent growth rate recommendation to the 3.28 percent dividend yield to reach a 9.53 percent DCF recommendation for PAWC. The OTS proceeded to average the aforementioned 8.80 percent and 9.53 percent results to reach a 9.17 percent overall DCF recommendation which it rounded to 9.25 percent.

The OCA relied upon the DCF method and the Risk Premium method to produce common equity cost rates of 9.0 percent and 9.1 percent, respectively. The OCA then chose 9.0 percent as its common equity cost rate recommendation. Specifically, the OCA averaged the 12-month composite dividend yield of 3.8 percent and the latest one-month average dividend yield of 3.6 percent to develop the DCF dividend yield of 3.7 percent for its barometer group. Next, in order to account for dividend growth in the period in which rates will be in effect, the OCA adjusted the 3.7 percent dividend yield by one-half the expected dividend growth rate of 5.25 percent or 2.63 percent. The OCA's DCF result is thereby 3.7 percent*1.0263 +5.25 percent = 9.0 percent. (OCA Statement No. 3, p.19).

Next, the OCA used the risk-free Treasury securities over an 18-month period to arrive at a rate of 5.6 percent as the risk-free premium. The OCA then derived a risk premium range from data for his barometer group, which ranged from 3.0 percent to 4.4 percent. Using the average, the OCA concluded that the indicated rate of return was 9.1 percent. The OCA subsequently recommended a 9.0 percent equity return rate. (OCA Statement No. 3, p. 24).

2. ALJ Recommendation

After considering the arguments of the Parties regarding the cost of common equity, the ALJ recommended that we permit PAWC the opportunity to earn a rate of return on common equity of 10.0 percent. It is the ALJ's position that a 10.0 percent rate of return on common equity is amply supported by the record. The ALJ also noted that the events of September 11, 2001, have changed the perception of riskiness of the utility business. Specifically, the ALJ maintained that the aforementioned events have accentuated a slowdown in the economy with a resultant drop in the cost of borrowing money. (R.D., p. 50).

3. Exceptions

PAWC excepts to ALJ Nemec's 10.0 percent common equity cost rate recommendation. PAWC submits that the ALJ's 10.0 percent recommendation falls nearly midway between PAWC's 10.93 percent DCF result and the 9.0 percent DCF calculation recommended by the OCA. Therefore, PAWC surmises that the ALJ relied extensively, and perhaps exclusively, on the DCF method. In its Exceptions, PAWC avers that the DCF method should not be relied upon exclusively, to the exclusion of other generally accepted methods, to form a cost of common equity recommendation. (PAWC Exc., pp. 5-6).

PAWC sets forth its position that the rate of return on common equity issue cannot be resolved solely on the analysis of technical and market-driven data. PAWC believes that resolution of this issue must also take into account the specific challenges confronting the water utility industry in general and PAWC in particular. PAWC infers that because it has made a substantial investment in utility plant to comply with the provisions of the Safe Drinking

Water Act, 42 USC §§300(f) et seq., and also to rehabilitate aging infrastructure, strict adherence to a mechanistic cost of common equity calculation is inappropriate. Moreover, PAWC argues that the tragic events of September 11, 2001, have underscored the risks that water suppliers face every day. PAWC, therefore, concludes that it is in this broader context that the evidence of record should be evaluated. (PAWC Exc., pp. 5-6)

PAWC further argues that extensive reliance on the DCF method is inappropriate because: (1) PAWC's stock is not publicly traded and, therefore, the DCF method provides no direct evidence as to PAWC's cost of equity capital; (2) because of the recent spate of mergers, the universe of comparable companies has shrunk to the point where the usefulness of any particular group must be questioned; (3) PAWC alleges that when the DCF results are applied to an original cost rate base, its cost of equity capital will be understated when the market prices of the stocks used in the analysis substantially exceed book values. PAWC alleges that it sought to correct the "mismatch" of market and book values by making a 60 basis adjustment to his raw DCF finding of 10.33 percent. (PAWC Exc., p.6).

In their Reply Exceptions, both the OTS and the OCA rejoin that the Commission has relied upon the DCF analysis and informed judgment as the appropriate means of measuring the cost of common equity. *See e.g., Pa. P.U.C. v. City of Lancaster,* 197 P.U.R.4th 156 (1999), *Pa. P.U.C. v. Consumers Pennsylvania Water Company-Roaring Creek Division (Roaring Creek),* 87 Pa. P.U.C. 826 (1997), *Pa. P.U.C. PECO Energy Company,* 87 Pa. P.U.C. 184, 212-213 (1997). (OTS R.E., p.4). The OCA indicates that in *Roaring Creek, supra,* we concluded that little credence can be placed on the CAPM and risk premium methodologies. The OCA further argues that we have not used the aforementioned methodologies in recent years. (OCA Reply Exc., p.12).

Both the OTS and the OCA contend that PAWC's view that, because its stock is not publicly traded, the DCF method provides no direct evidence as to PAWC's cost of equity capital, is misguided. The OCA rejoins that PAWC made the exact same argument in its 1995 base rate case, and we still applied the DCF method. *Pa. P.U.C. v. Pennsylvania American Water Co.*, 85 Pa PUC 13, 40 (1995); *Pa. P.U.C. v. Pennsylvania American Water Co.*, Docket No. R-00943231, Recommended Decision at 54-55 (May 25, 1995). The OCA, therefore, concludes that PAWC has shown no reason to change in the instant case. (OCA Reply Exc., p. 14).

The OTS excepts to the ALJ's 10.00 percent common equity cost rate recommendation. The OTS alleges that the ALJ's choice of a 10.00 percent cost of common equity lacks both supporting facts and rationale. The OTS thereby concludes that absent any specific support, the ALJ's 10.00 percent common equity cost rate recommendation must be rejected as unsubstantiated by the record of this case. The OTS takes issue with the ALJ's contention that the events of September 11, 2001, have changed the perception of the risk inherent in the utility business. The OTS contends that the ALJ's contention is mere speculation and is unsubstantiated by the instant record.

The OTS also submits that the ALJ mischaracterizes the testimony of its rate of return witness. The OTS argues that, contrary to the ALJ's Recommended Decision which avers that its 9.25 percent cost of common equity recommendation is merely based upon the 9.43 to 9.63 percent range of DCF common equity cost rates of PAWC's parent, AWW, the OTS' 9.25 percent cost of common equity recommendation is also based upon the barometer group's 8.67 percent to 8.94 percent range of DCF common equity cost rates. (OTS Exc., p. 13).

In its Reply Exceptions, PAWC maintains that the OTS' contention that the ALJ mischaracterized its position by neglecting to mention its barometer group DCF results (8.67 percent to 8.94 percent) is misplaced. Accordingly, PAWC argues that the barometer group assembled by the OTS is not representative of PAWC because it includes a number of very small water companies whose growth prospects are extremely limited. As a result of their size, the *Value Line Investment Survey* does not even publish financial analyst growth forecasts for these companies. (PAWC R.E., pp.13-14).

The OCA excepts to the ALJ's recommended cost of common equity of 10 percent and, accordingly, submits that the common equity cost rate should be 9 percent. The OCA indicates that the primary discrepancy between the common equity cost rates cited above is that its barometer group more accurately reflects the financial profile of PAWC as opposed to the barometer groups which yielded the ALJ's composite recommendation. (OCA Exc., p. 19). Furthermore, the OCA contends that the lower interest and inflation rates as a result of the events associated with September 11, 2001, decreased PAWC's cost of common equity capital.

In its Reply Exceptions, PAWC maintains that the OCA's common equity cost rate recommendation of 9.0 Percent is confiscatory. Specifically, PAWC alleges that even if the OCA's barometer group is financially representative of PAWC, which it disputes, the barometer is actually earning a 10.6 percent equity return. (Company R.E., p.14).

4. Disposition

Historically, we have primarily relied on the DCF methodology in arriving at our determination of the proper cost of common equity. We have, in many recent decisions, determined the cost of common equity primarily based upon the DCF method and informed judgment. (*See Pennsylvania Public Utility Commission v. Philadelphia Suburban Water Company*, 71 Pa. PUC 593, 623-632 (1989); *Pennsylvania Public Utility Commission v. Western Pennsylvania Water Company*, 67 Pa. PUC 529, 559-570 (1988); *Pennsylvania Public Utility Commission v. Roaring Creek Water Company*, 150 PUR4th 449, 483-488 (1994); *Pennsylvania Public Utility Commission v. York Water Company,* 75 Pa. PUC 134, 153-167 (1991); *Pennsylvania Public Utility Commission v. Equitable Gas Company*, 73 Pa. PUC 345-346 (1990)).

We find that the DCF method is the preferred method of analysis to determine a market based common equity cost rate. The Parties' DCF recommendations, excluding PAWC's "at risk" adjustment, range from 9.00 percent to 10.33 percent. Taking into account the increased perception of risk of the utility business as a result of the events of September 11, 2001, we find that the ALJ's rate of return on common equity recommendation of 10.00 percent is the most reasonable, as further adjusted below.

We note that, in *Lower Paxton Township v. Pennsylvania Public Utility Commission,* 317 A.2d 917 (Pa. Cmwlth. 1974) (*Lower Paxton Township),* the Commonwealth Court recognized that this Commission may consider such factors that affect the cost of capital such as the utility's financial structure, credit standing, dividends, risks, regulatory lag, wasting assets and any peculiar features of the utility involved.

We are persuaded by PAWC's "at risk" adjustment of 60 basis points. PAWC argues that a preliminary DCF calculation, which is computed using the market price of PAWC's common stock, should be adjusted to reconcile the divergence between market and book values. The indicated cost of common equity of 10 percent, therefore, reflects the barometer group's average *market* capitalization, which includes a common equity ratio of 62 percent as opposed to our recommended common equity ratio of 42.62 percent which reflects significantly more financial risk.

PAWC further argues that, when investors value a Company's common stock, they employ actual market capitalization data and not book data although book capitalization is employed for ratemaking purposes. Accordingly, we find that, in order to place the computed DCF result on a consistent basis with the greater financial risk inherent in PAWC's book value-derived capital structure ratios, a 60 basis point financial risk adjustment above our 10.00 percent representative DCF common equity cost rate recommendation is warranted.

Based on our analysis of the record, we conclude that PAWC's cost of common equity of 10.60 percent is reasonable and appropriate under the circumstances in this proceeding.

5. Conclusion

The following table summarizes our determinations concerning PAWC's capital structure, cost of debt, cost of preferred stock, and cost of common equity, as well as the resulting weighted costs and overall rate of return:

Capital Structure	Ratio	Cost Rate	Weighted Cost
Debt	56.15%	7.26%	4.08%
Preferred Stock	1.23%	8.05%	.10%
Common Equity	42.62%	10.60%	4.52%
	100.00%		8.70%

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Public Meeting held July 18, 2002

Commissioners Present:

Glen R. Thomas, Chairman
Robert K. Bloom, Vice Chairman
Aaron Wilson, Jr., Statement attached
Terrance J. Fitzpatrick, Statement Concurring and Dissenting in part attached
Kim Pizzingrilli

Pennsylvania Public Utility Commission, *et al.*

R-00016750
R-00016750C0001-C0091

v.

Philadelphia Suburban Water Company.

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BY THE COMMISSION:

Before the Commission for consideration and disposition is the Recommended Decision of Administrative Law Judge (ALJ) Marlane R. Chestnut issued on June 7, 2002, relative to the above-captioned general rate increase proceedings. Also before the Commission are the various Exceptions and Reply Exceptions filed with respect thereto.

I. HISTORY OF THE PROCEEDING

On November 9, 2001, the Philadelphia Suburban Water Company (PSWC) filed proposed Supplement Nos. 35 through 39 to Tariff Water-Pa. P.U.C. No. 16 to become effective January 8, 2002. This consolidated filing was made by PSWC on behalf of itself and Consumers Pennsylvania Operating Companies (Roaring Creek, Shenango Valley and Susquehanna), and the Waymart Water Company, Fawn Lake Forest Water Company, Western Utilities, Inc., Northeastern Utilities, Inc. and Hawley Water Company.[1]

Based upon a historic test year ended June 30, 2001, and a future test year ending June 30, 2002, these tariff supplements proposed changes in rates, rules and regulations calculated to produce $28.0 million in additional annual operating revenues, or an increase of approximately 13.5%.[2]

By Order entered December 19, 2001, an investigation was instituted into the lawfulness, justness and reasonableness of PSWC's proposed tariff supplements as well as the Company's existing rates and service. Consequently, Supplements Nos. 35 through 39 were suspended by operation of law, pursuant to 66 Pa. C.S. §1308(d), for a period not to exceed seven months, or until August 8, 2002. This proceeding was thereafter referred to the Office of Administrative Law Judge (OALJ) for further proceedings.

More than ninety Complaints were filed against the proposed tariff supplement, including those of the Office of Consumer Advocate (OCA), the Office of Small Business Advocate (OSBA), Lawrence G. Speivogel, and Charles Mullin. On January 8, 2002, the Commission's Office of Trial Staff (OTS) filed a Notice of Appearance. A Petition to Intervene, which was unopposed, was filed by the Philadelphia Suburban Water Large Users Group (PSWLUG) on January 22, 2002.[3]

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[1] *See* Commission Order entered December 7, 2001 at Docket No. A-210104 *et al.*, which permitted the consolidation of these entities for corporate purposes.

[2] As the result of a number of mergers and acquisitions, rates for service vary among PSWC's operating divisions. Therefore, the percentage change for each division will vary.

By Notice dated January 3, 2002, the investigation was assigned to ALJ Chestnut and a Prehearing Conference was scheduled for January 11, 2002. Present, either in person or telephonically, were PSWC, the OTS, the OCA, the OSBA, PSWLUG, Mr. Speilvogel, and Mr. Mullin. At that Prehearing Conference, as set forth in Prehearing Order No. 2 dated January 15, 2002, a number of procedural items were addressed and a litigation and briefing schedule was adopted.

In order to allow PSWC customers the opportunity to express their concerns or opinions concerning the pending rate increase request, three Public Input Hearings were held in various locations in PSWC's service territory. These Public Input Hearings were held February 12, 2002, in Hatboro (Bucks County) and February 13, 2002, in Media (Delaware County) and Berwyn (Chester County). Representatives of PSWC, the OTS, the OCA, and the OSBA attended. Testimony was given by twenty-nine individuals and transcribed for the record. A summary of the testimony presented at these sessions is attached to OCA's Main Brief as Appendix C. (*See also*, PSWC M. B., p. 83).

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[3] *See*, Prehearing Order No. 3, dated January 31, 2002. PSWLUG is an ad hoc association of large-volume end-users who receive water service from PSWC. The members in this proceeding are the Apartment Association of Greater Philadelphia, Building Owners' and Managers' Association of Philadelphia and GlaxoSmithKline.

On March 22, 2002, the ALJ issued an Order Granting PSWC's Motion as to Qualifications. Mr. Spielvogel had challenged the qualifications of two of PSWC's witnesses to sponsor, respectively, the cost of service study and the depreciation study. The ALJ agreed with PSWC that this challenge was completely without merit, and permitted the witnesses to sponsor the studies.

Evidentiary hearings were held in Philadelphia on April 3, 4, and 5, 2002. The record consists of a transcript of 565 pages, and numerous statements and exhibits. Appendix B to the Recommended Decision lists these statements and exhibits. Pursuant to the schedule adopted at the Prehearing Conference, Main Briefs were filed on April 26, 2002, by PSWC, the OTS, the OCA, the OSBA, PSWLUG and Mr. Spielvogel. Reply Briefs were filed on May 10, 2002, by all Parties except Mr. Spielvogel.

In their respective Main Briefs, PSWC explained the basis for its requested $28.0 million revenue increase; the OTS recommended a revenue increase of no more than $12,893,915; and, the OCA recommended a decrease in annual revenues of $719,082. Neither the OSBA nor PSWLUG took a position on the amount of revenue relief, but did discuss rate design and revenue allocation issues.

The Recommended Decision was filed on June 7, 2002. Exceptions to the Recommended Decision were timely filed by the following Parties: Mr. Spielvogel, OTS, PSWC; and the OCA.

The OSBA and the PSWLUG each filed a Letter, on June 24, 2002, and on June 28, 2002, respectively, indicating that they would not be filing Exceptions to the Recommended Decision.

The OSBA filed a Letter on July 2, 2002, indicating that it would not be filing Reply Exceptions. On July 3, 2002, PSWLUG filed a Letter in Lieu of Reply Exceptions. The following Parties filed Reply Exceptions on July 3, 2002: the OTS, Mr. Spielvogel, the OCA, and PSWC.

II. DESCRIPTION OF THE COMPANY

PSWC is a regulated Pennsylvania public utility and is a wholly-owned subsidiary of Philadelphia Suburban Corporation (PSC). PSWC furnishes water service to approximately 382,000 customers in a service territory that covers all or a portion of thirteen counties across the Commonwealth. In 1999, PSC acquired Consumers Water Company, including its operating utilities in Pennsylvania (Roaring Creek, Shenango Valley, and Susquehanna) and in 2000, it acquired a group of utilities headquartered in Waymart, Pennsylvania (Waymart Water Company, Fawn Lake Forest Water Company, Western Utilities, Inc., Northeastern Utilities, Inc. and Hawley Water Company). As explained above, our reference to PSWC in this proceeding collectively incorporates all of PSC's water utility operations in Pennsylvania.

III. BURDEN OF PROOF

It is incumbent upon PSWC to establish rates for its customers which are "just and reasonable" pursuant to Section 1301 of the Public Utility Code (Code), 66 Pa. C.S. §1301. Before addressing the specific elements of the rate filing, it should be noted that the burden of proof is upon PSWC to establish the justness and reasonableness of every component of the requested rate increase. Specifically Section 315(a) of the Code, states:

> Reasonableness of rates: In any proceeding upon the motion of the commission, involving any proposed or existing rate of any public utility, or in any proceeding upon complaint involving any proposed increase in rates, the burden of proof to show that the rate involved is just and reasonable shall be upon the public utility.

66 Pa. C.S. §315(a).

This section has been interpreted in numerous judicial proceedings. In *Lower Frederick Twp. Water Co. v. Pa. P.U.C.*, 48 Pa. Commw. 22, 226-27, 409 A.2d 505, 507 (Pa. Cmwlth. 1980), the Pennsylvania Commonwealth Court explained:

> Section 315(a) of the Public Utility Code, 66 Pa. C.S. §315(a), places the burden of proving the justness and reasonableness of a proposed rate hike squarely on the public utility. It is well-established that the evidence adduced by a utility to meet this burden must be substantial. [citations omitted]

See also, Brockway Glass v. Pa. P.U.C., 437 A.2d 1067 (Pa. Cmwlth. 1981). The Pennsylvania Supreme Court also has clearly stated that the party with the burden of proof has a formidable task before its position can be adopted by the Commission. Even where a *prima facie* case has been established, the party with the burden of proof still must establish that "the elements of that cause of action are proven with substantial evidence which enables the party asserting the cause of action to prevail, precluding all reasonable inferences to the contrary." *Burleson v. Pa. P.U.C.*, 461 A.2d 1234, 1236 (Pa. 1983).

With specific reference to base rate proceedings, both the Commission and the courts have made it clear that this burden does not shift to intervenors challenging a requested rate increase. While the burden of going forward may shift, the burden of proof remains on the utility, and this burden of establishing the justness and reasonableness of every component of its rate request is an affirmative one. In contrast, there is no similar burden placed on an intervenor to justify a proposed adjustment to the Company's filing. The Pennsylvania Supreme Court stated:

> [T]he appellants did not have the burden of proving that the plant additions were improper, unnecessary or too costly; on the contrary, that burden is, by statute, on the utility to demonstrate the reasonable necessity and cost of the installations, and that is the burden which the utility patently failed to carry.

Berner v. Pa. P.U.C., 116 A.2d 738, 744 (Pa. 1955).

Similarly, this standard has been recognized by the Commission in its rate determinations:

> There is no presumption of reasonableness which attaches to a utility's claims, at least none which survive the raising of credible issues regarding a utility's claim. A utility's burden is to affirmatively establish the reasonableness of its claim. It is not the burden of another party to disprove the reasonableness of a utility's claim.

Pa. P.U.C. v. Equitable Gas Co., 57 Pa. PUC 423, 444 (1983).

The utility's burden of proof must be satisfied by the introduction of substantial evidence, which has been defined by the Commission as "such relevant evidence as reasonable minds might accept to support a conclusion." *Pa. PUC v. Equitable-Gas Energy Co.*, 68 Pa. PUC 438, 448 (1988). In turn, the Commission's material findings of fact must be supported by substantial evidence. *See* 2 Pa. C.S. §704.

The evidentiary standards described above were applied in this case. Where a Party raised a credible question concerning a rate element at issue, the affirmative burden of proving the justness and reasonableness of its claim was upon PSWC.

IV. RATE BASE

PSWC's claim for rate relief in this proceeding is based upon data for the future test year ending June 30, 2002. PSWC's claimed rate base of $887,713,655 consisted of its adjusted actual plant balances at June 30, 2001, as set forth in its books of account to reflect those plant additions and retirements and system acquisitions anticipated to occur during the twelve months ending June 30, 2002. PSWC added to that its proposed allowances for materials and supplies, cash working capital and certain other balance sheet items in the process of being amortized, and made normal ratemaking deductions for, *inter alia*, accrued depreciation customer contributions, advances and deposits, deferred income taxes and accrued interest.

A. Recent Water Company Acquisitions

Since the conclusion of PSWC's last base rate proceeding, the Company has acquired a number of additional municipal and small water systems. As part of its initial rate filing, PSWC submitted original cost studies with respect to the following acquisitions that were completed either prior to or during the historic test year: Fulmer Heights, Chatwood, Waymart, and Geigertown. No Party objected to the proposed measures of value with respect to these acquisitions. (R.D., p. 7).

In addition, PSWC included in its claimed measure of value the amount of $16,787,200 representing the price paid for eight additional systems to be acquired during the future test year. Original cost studies were not provided for those systems with PSWC's filing. Subsequently, PSWC provided original cost studies for seven of the eight systems cited above. At the same time, PSWC removed the rate base and associated revenues and expenses related to the eighth system because it did not appear that this acquisition would close prior to the end of the future test year. (R.D., p. 8).

1. Positions of the Parties

The OTS recommended that the Commission remove the purchase price from rate base associated with the aforementioned seven acquisitions because it had insufficient time to review the original cost studies. Specifically, the OTS recommended that property and plant associated with the seven acquisitions should not be included in the measure of value ($13,107,200), and that the revenues ($1,496,421) and the expenses ($366,578) relating to the acquisitions should be removed. (R.D., p. 8).

PSWC opposed the OTS' recommendations. PSWC emphasized that it complied with the OTS' admonition that the original cost studies pertaining to the acquisitions be supplied prior to the close of the record. Moreover, PSWC asserted that the OTS had nearly two weeks to review the first four studies and a week to review the final three studies before the close of the record on April 5, 2002. PSWC reasoned that the OTS' proposal, if adopted, would force it either to make separate rate filings for the excluded systems or to wait another two years before recovering on its investment. (R.D., p. 9).

2. The ALJ's Recommendation

After considering the arguments of the Parties, the ALJ rejected the OTS' arguments that these systems should be excluded from rate base. The ALJ found that, not only are the water systems used and useful property and, therefore, recognizable in PSWC's rate base for ratemaking purposes, but also that the OTS had ample time to examine the original cost studies of the water systems. The ALJ emphasized that the OTS had a calendar week, from March 28, 2002, to April 5, 2002, to review the germane set of original cost studies. The ALJ found that a week was sufficient time for the OTS to conduct its review.

The ALJ concluded that it is in the interests of PSWC's customers for the Commission to recognize these acquisitions for ratemaking purposes. Subject to Commission approval of the relevant applications, the ALJ determined that the acquisitions will occur and be part of PSWC's operations during the period the rates set in this proceeding will be in effect. Accordingly, the ALJ recommended that the aforementioned acquisitions be recognized for ratemaking purposes, subject to the Commission's approval of any outstanding application. (R.D., p. 12).

3. Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

4. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with the record evidence, it is adopted.

B. Future Acquisition Applications

1. Positions of the Parties

The OTS recommended that PSWC be directed to include an original cost study in any future acquisition application so that the Commission will have all relevant information in order to make an informed decision. PSWC has opposed this recommendation as impractical.

2. The ALJ's Recommendation

The ALJ recommended that the OTS' proposal be rejected because it is not always possible for a utility to produce an original cost study prior to the filing of an application. The ALJ further observed that the OTS' proposal may improperly restrict the Commission's exercise of its jurisdictional authority. The ALJ indicated that presently the Commission can exercise its discretion, in any acquisition application proceeding, to reject an application that is insufficiently supported. (R.D., p. 13).

3. Exceptions and Reply Exceptions

In its Exceptions, the OTS argues that, even if an original cost study may not always be available, such a study will often be available depending on the circumstances. Specifically, if the utility demonstrates that it has exercised all reasonable options in an attempt to obtain the information necessary for the original cost studies, and still cannot include the studies with the application, only then should the study not be required.

The OTS' objective in filing its Exception on this issue is to emphasize that it is burdensome, and many times unnecessary, for the Commission to try to analyze an original cost study within the confines of a rate proceeding. The OTS maintains that, if the original cost studies were filed with the acquisition applications, the Commission would have access to this data and have ample time to locate and to review other germane information. Therefore, it is the OTS' position that the ALJ's recommendation be rejected. (OTS Exc., pp. 3-5).

In its Reply Exceptions, PSWC rejoins that the ALJ was correct in her recommendation that the Company should not be required to prepare and to submit an original cost study whenever it files a future application to acquire an additional water system. Contrary to the OTS' Exception, PSWC argues that requiring it to prepare and to include an original cost study as part of its application for a Certificate of Public Convenience, with the holding of associated hearings, will substantially delay the consummation of future acquisitions. PSWC further argues that this will postpone any planned system improvements, to the clear detriment of customers served by troubled water systems. Accordingly, PSWC asserts that the OTS' Exception must be denied. (PSWC R.Exc., pp. 1-2).

4. Disposition

We agree with the ALJ that it is not always possible for a utility to produce an original cost study prior to filing an application to acquire an additional water system. Presently, we have the discretion to reject any acquisition application that is insufficiently supported. By ordering a utility always to include an original cost study with its filing, we would restrict the exercise of our jurisdictional authority to grant or reject an application irrespective of the filing of a concomitant original cost study. Furthermore, we agree with PSWC that requiring it to prepare and include an original cost study, as part of its application, may delay the consummation of future acquisitions. We nevertheless reserve the right to require an original cost study, if appropriate, in the context of a specific application proceeding. Therefore, we will deny the Exceptions of the OTS on this issue, and adopt the ALJ's recommendation.

V. REVENUES

In this proceeding, PSWC submitted extensive financial and accounting data depicting the results of its operations during the historic test year ended June 30, 2001, and as projected for the future test year ending June 30, 2002. (PSWC Exh. 1-A(a)). A summary statement of income, together with its revenue and expense claims, was attached to PSWC's Main Brief as Appendix A. That statement shows pro forma revenue at the end of the test year in the amount of $197,270,372, pro forma revenue at the end of the future test year at current rates of $208,338,392 and pro forma revenue at the end of the future test year at proposed rates of $236,338,392.

To develop its claimed pro forma future test year revenue level, PSWC began with the level of revenue experienced during the historic test year. The historic data were then adjusted to: (1) annualize revenues associated with each of the acquisitions that occurred during the historic test year and will occur during the future test year; (2) annualize the effect of actual and anticipated changes in the number of customers during the historic and future test years; and (3) reflect known and measurable changes affecting the consumption levels of specific customers. (PSWC Exh. 1-A(a), pp. 6-17).

According to PSWC, the appropriate amount of pro forma revenue associated with future test year acquisitions is $1,496,421. The ALJ recommended that, since the future test year acquisitions are to be recognized for ratemaking purposes, the revenues associated with those various acquisitions also should be recognized in this proceeding.

The only outstanding issue to be addressed is the appropriate level of revenue to be imputed from the Chalfont and White Haven Divisions.

A. Imputed Revenue from Chalfont and White Haven Divisions

1. Positions of the Parties

The OTS asserted that PSWC's proposed rate increases for the Chalfont and White Haven Divisions are understated. The OTS recommended, therefore, that $32,802 be added to the proposed revenue for the Chalfont Division and $26,182 be added to the proposed revenue for the White Haven Division, based on a hypothetical 30% rate increase for those customers. According to the OTS, this adjustment would result in rate parity for those divisions with PSWC's Main Division in nine years, rather than twelve years as provided for by PSWC.

In supporting its claim, PSWC notes that the agreement it entered into with the Borough of Chalfont to acquire the Chalfont Water System provided that, in order to gradually equalize rates, PSWC would raise rates by 50% over a series of four annual rate increases beginning November 1, 2002. (PSWC M.B., pp. 10-11). In accordance with this contract, PSWC filed with the Commission a series of tariff supplements to increase rates annually through November 2005. The Commission approved that agreement, at Docket No. A-212370F066 by Order entered October 25, 2002.

In arriving at its pro forma revenue claim relating to Chalfont, PSWC included existing revenue of $481,163, additional revenue of $54,590 relating to the November 1, 2002 increase, and an additional $49,082, which represents the present value of revenues resulting from the November 1, 2002 increase. (PSWC Exh. 1-A(a), p. 11; PSWC Supp. Exh. 2, p. 3). This represents an approximate 22.8% increase in metered rates for the Chalfont Division.

With respect to the White Haven Division, the Commission approved PSWC's Application to purchase the assets of the White Haven Municipal Water

Authority by Order docketed at No. A-212600F0007 and entered January 28, 2002. The contract with White Haven provides for a twelve-year rate equalization plan and a rate freeze until January 1, 2004. Although White Haven's rates will not change, PSWC has imputed $30,901 of additional revenue at present rates. (PSWC Exh. 1A(a), p. 11-1). This is equivalent to a 16.2% increase above current revenues. (PSWC St. 1-R, p. 41).

PSWC noted that, at 14,000 gallons per quarter, a White Haven residential customer's bill at present rates is $93.56, while a similarly situated Main Division customer would pay $90.28. (PSWC St. 1-R, p. 41).

The only reason advanced by the OTS for proposing to impute revenues associated with a 30% increase for each division is that "OTS believes that if the rate freeze were not in effect, these customers would have received an increase of 30% in this proceeding." (OTS R.B., p. 16). The OTS also argued that this adjustment "will facilitate the more timely movement of these divisions to Main Division rates." (OTS R.B., p. 17).

2. The ALJ's Recommendation

The ALJ recommended that the OTS' proposal be rejected. The ALJ noted that PSWC's proposed rate equalization plans were each approved by the Commission in the respective application proceedings. The ALJ concluded that, therefore, there was no basis in this proceeding to reject or to modify the Commission's conclusions concerning the appropriateness of the proposed schedule for rate equalization with the Main Division.

The ALJ also noted that, as explained by PSWC, the average overall percentage increase to all of the rate divisions other than the Main Division is approximately 13%. (PSWC M.B., pp. 10-11). Excluding the newest divisions with minimal increases or net decreases, the average increase to the rate divisions other than the Main Division is approximately 22%. (PSWC Exh. 50-A, Schedule 1, p. 2 and Schedule 1A, p. 2). Therefore, the ALJ concluded that PSWC's proposed revenue imputations, representing an increase of 22.8% in metered rates to the Chalfont customers and 16.2% to the White Haven customers, were appropriate.

3. Exceptions and Reply Exceptions

The OTS excepts to the ALJ's recommendation on this issue. The OTS contends that the ALJ's characterization of a rate equalization plan, or rate freeze, that was included in prior Application Dockets as binding in a rate case is misguided. The OTS asserts that when a utility acquires another system and agrees to a rate freeze as a condition of sale, the utility should reflect the revenue of the acquired system as if the rate freeze did not exist. (OTS St. No. 2, p. 51).

The OTS argues that the ALJ has misinterpreted the conclusions of the Application Dockets from the Chalfont and White Haven divisions (Docket numbers cited above), and has inappropriately infused them into the instant proceeding. Additionally, PSWC has explicitly recognized the need to impute some revenues pertaining to those divisions. The error occurred in the ALJ's characterization of what was sufficient. Despite Commission precedent indicating that a theoretical increase of 33% was reasonable,[4] the ALJ determined that the theoretical increase of 30% proposed by the OTS in the case of the Chalfont and White Haven divisions is not appropriate. (R.D., p. 16). The OTS maintains that an additional $26,182 needs to be imputed in White Haven and an additional $32,802 is necessary for Chalfont. (OTS Exc., pp. 15-18).

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[4] *Pa. P.U.C. v. Pennsylvania American Water Company*, Docket No. R-00016339, Order entered January 25, 2002 (PAWC 2002).

PSWC rejoins that the ALJ properly rejected the OTS' attempt to impute an additional $58,984 in revenues for Chalfont and White Haven customers, based upon a hypothetical 30% rate increase for those divisions. PSWC contends that the OTS has provided no reason why an assumed 30% increase for these divisions is more appropriate than the 22.8% increase that PSWC has imputed for Chalfont, or the 16.2% increase that PSWC has imputed for White Haven. These increases are greater than the increases proposed for the Main Division, and thus represent reasonable movement toward single tariff pricing. PSWC Asserts that the OTS' proposal to impute additional revenues for the Chalfont and White Haven Divisions is unsupported by the record, and was properly rejected by the ALJ. (PSWC R.Exc., pp. 2-3).

4. Disposition

On review of this issue, we conclude that the ALJ properly rejected the OTS' proposal to impute an additional $58,984 in revenues for Chalfont and White Haven customers, based upon a hypothetical 30% rate increase for those divisions. PSWC's proposed rate equalization plans for those divisions were each approved in the respective application proceeding. Accordingly, there is no basis in this proceeding to reject or to modify our prior conclusions regarding the appropriateness of the proposed schedule for rate equalization of those divisions with the Main Division.

Given PSWC's acquisition history, it is not surprising that the various rate divisions are subject to varying degrees of percentage increases. There is no fixed percentage which is applied across the board. While the OTS pointed out divisions with proposed substantial increases in rates, there are other divisions with little or no increase proposed.

Finally, we note that the OTS provided no rationale as to why its proposed 30% increase for the two pertinent divisions is more appropriate than the 22.8% increase

PSWC imputed for Chalfont, or the 16.2% increase that PSWC imputed for White Haven. Those increases are greater than the increases proposed for the Main Division, and thus represent reasonable movement toward single tariff pricing.

Accordingly, for the above reasons, the OTS' Exception on this issue is denied.

VI. EXPENSES

A. Operating and Maintenance Expense

In developing its future test year claim, PSWC adjusted the expenses incurred throughout the historic test year ended June 31, 2001, to arrive at a projected future test year pro forma operating and maintenance claim. Both the OTS and the OCA recommended adjustments to PSWC's claim. Throughout the course of the proceeding, the Parties were able to reach agreement on a number of issues, because PSWC was able to update certain claims as actual data became available.

PSWC's pro forma operating and maintenance expense for the future test year is $76,391,178. (PSWC M.B., Appendix A).

1. Payroll Expenses

PSWC's claim for payroll expense is found at PSWC Exhs. 2-A and 2-A(a). A number of issues raised by the OTS and the OCA were resolved. The unresolved issues relating to payroll expense are the post-future test year increase, the incentive compensation claim and overtime normalization.

a. Post-future Test Year Increase

i. Positions of the Parties

Both the OTS and the OCA recommended that the Commission reject that portion of PSWC's claim relating to a wage increase that was projected to be granted to the unionized Shenango District employees in October 2002. Two reasons were presented for the rejection of the claim: (1) it will fall outside the end of the future test year; and (2) the amount of the increase is not now known, therefore, the claim is speculative. (R.D., p. 18).

PSWC argued that the OTS and OCA proposals were without merit. Two primary reasons were cited: (1) the Commission previously approved post-future test year salary and wage increases; and (2) PSWC's claim for post-test year payroll increases were extremely conservative. (PSWC M.B., pp. 13-14; PSWC R.B., pp. 6-7).

ii. The ALJ's Recommendation

The ALJ noted that the Commission routinely has accepted payroll adjustments that are projected to occur within six months of the end of the future test year, when such adjustments are known or anticipated with reasonable certainty. The existence of a collective bargaining agreement or other contractual obligation has been determined to constitute the requisite certainty. *See Dauphin Consolidated Water Supply Co. v. Pa. P.U.C.*, 423 A.2d 1357, 1360, 1980 Pa. Commw. LEXIS 1958; *Pa. P.U.C. v. Pennsylvania American Water Co.*, 85 Pa. PUC 13, 27-28 (*PAWC 1995*).

The ALJ also noted that she had found no cases that support the position, taken by the OCA and the OTS herein, that the absence of a contractual obligation renders future wage increases so speculative as to be uncertain. On the other hand, there are cases in which the Commission has found that post-future test year wages are appropriate in the absence of a collective bargaining agreement or other contractual obligation. *See Pa. P.U.C. v. Pennsylvania American Water Co.*, Docket No. R-00016339 (Opinion and Order entered January 25, 2002) (*PAWC 2002*).

Additionally, the ALJ cited *Pa. P.U.C. v. UGI Corp. (Gas Division)*, 58 Pa. PUC 155, 207-209 (1984). In that case, the Commission did allow a 4% increase, based on current economic conditions, in lieu of a proposed 7% increase, stating "[w]e specifically note that the Company is not under any obligation to provide a 7% increase to its union."

Upon consideration, the ALJ concluded that the proposed payroll increase is sufficiently definite to be accepted for ratemaking purposes. In doing so, she noted that the unionized Shenango employees have received a wage increase in each of the last ten years. Furthermore, given the prior history of increases, the 2.1% increase appeared reasonable. Weighing all the relevant factors, the ALJ concluded that PSWC's claim is consistent with Commission precedent and should be approved. (R.D., pp. 18-19).

iii. Exceptions and Reply Exceptions

The OTS objects to the ALJ's recommendation on this issue, arguing that, since PSWC claimed that it expects a new contract for the Shenango employees in October 2002, it increased the future test year salaries by 2.1% to account for the annualization of the expected increase. (PSWC St. 2, p. 3). The OTS opposed this increase on the grounds that it is not known and measurable. (OTS St. 4, p. 13).

The OTS asserts that the Commonwealth Court, in *Lower Frederick Township v. Pa. PUC*, 409 A.2d 505 (Pa. Cmwlth. 1980), determined that in order to recover an expense claim, the amount of evidence adduced must be substantial. Additionally, such evidence must be supported with a minimum amount of specificity. The OTS argues that since the 2.1% increase proposed by PSWC is not supported by a signed contract, it is clearly speculative and uncertain, and should, therefore, be rejected. (OTS Exc., pp. 5-6).

PSWC rejoins that the OTS has not identified a single case in which the Commission held that an executed collective bargaining agreement was a prerequisite to rate recovery. The Commission and the Commonwealth Court have frequently authorized utilities to recover projected post-test year wage and salary increases so long as the estimated increases are anticipated to occur within a relatively short period following the end of the test year, and are reasonable in amount. (PSWC R.Exc., pp. 3-4).

iv. Disposition

On review of this issue, we conclude that the ALJ correctly determined that the proposed payroll increase is sufficiently definite to be accepted for ratemaking purposes. The Commission has routinely accepted payroll adjustments which are projected to occur within six months of the end of the future test year, when such adjustments are known or anticipated with reasonable certainty. Based on our review of the record evidence, we find that there is a sufficient basis for concluding that the projected payroll increase is sufficiently definite to be accepted for ratemaking purposes. Accordingly, the OTS' Exception on this issue is denied.

b. Incentive Compensation Program

i. Positions of the Parties

The OCA recommended an adjustment of $631,068, to completely eliminate PSWC's claim for incentive compensation. PSWC's incentive compensation plan consists of a Management Incentive Program and an Employee Recognition Program. (OCA Sch. LKM-7 (final)). The reasons advanced for the OCA's recommendation are that payments pursuant to the plan are uncertain and that this type of plan should be rejected as a matter of policy. (OCA M. B., pp. 58-62).

In addition, the OCA recommended that PSWC's proposed wage increase should not be applied to that portion of employee compensation. The OCA contends that the incentive compensation program should be reflected in rates at the historic test year level, not adjusted to reflect increases in wages and salaries for non-union employees. This argument results in a proposed adjustment of $37,864, found at Sch. LKM-6. (OCA St. 1, p. 11).

PSWC's response was that this proposal is flawed because the compensation plan payments are based on a percentage of the employee's salary. (PSWC R.B., p. 9).

ii. The ALJ's Recommendation

In her disposition of this issue, the ALJ noted that the Commission carefully examines each incentive compensation plan on a case-by-case basis to determine if it is appropriately recognized for ratemaking purposes. The ALJ emphasized that the Commission has never demanded a quantification or demonstration of improved customer performance, but rather has rejected those plans that are based entirely on the achievement of financial goals. However, incentive plans that are linked to "operational effectiveness" have been permitted.

The ALJ opined that, in this case, the OCA either intentionally or unintentionally misrepresented the incentive plan as implemented by PSWC. Contrary to the unambiguous testimony presented by PSWC, the OCA asserted that "[t]he primary objective of the incentive compensation plan is profitability." (OCA M.B., p. 61). The ALJ concluded that that statement was untrue. In the ALJ's opinion, the OCA attempted to mischaracterize PSWC's incentive compensation plan as being solely or primarily intended to improve PSWC's financial condition. Thus, that plan would be analogized to plans previously rejected by the Commission.

The ALJ found that the instant plan was not designed to address "profitability," but rather was intended to address a number of corporate objectives. (PSWC R.B., pp. 7-8, citing PSWC St. 2-R, pp. 7-8). Additionally, the ALJ noted that PSWC's incentive plan, implemented in response to a 1988 Commission management audit recommendation, was more than just a plan that gives bonuses to certain employees. Rather, every non-union employee has a percentage of his or her compensation put at risk. (PSWC St. 2-R, p. 7).

The ALJ concluded that PSWC has sustained its burden of establishing that its incentive compensation plan is focused on improving operational effectiveness, including customer service, and, therefore, should be recognized for ratemaking purposes. Accordingly, the ALJ rejected the OCA's recommendation that all expenses associated with this program should be disallowed. (R.D., pp. 22-23).

iii. Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

iv. Disposition

Since no Party filed Exceptions to the ALJ's recommendation on this issue, and finding the ALJ's recommendation to be otherwise reasonable, and in accord with the record evidence, it is adopted. As noted by the ALJ, the Commission has previously recognized that incentive compensation plans which are designed to improve the level of customer service by achieving "operational effectiveness" obviously are in the best interest of the company's ratepayers, and should be supported through rates.

We find that PSWC has sustained its burden of establishing that its incentive compensation plan is focused on improving operational effectiveness, including customer service, and, therefore, should be recognized for ratemaking purposes. It is a reasonable incentive program that conditions a portion of an employee's compensation on the achievement of appropriate performance standards.

c. Overtime Normalization

i. Positions of the Parties

The OCA recommended that PSWC's overtime claim be normalized. Implementation of that recommendation would result in a decrease to expenses of $193,712. (Schedule LKM-23). The OCA explained that "[t]he adjustment [Mr. Morgan] proposed is based upon the use of average overtime hours for a three-year period and composite overtime pay rates for the test year." (OCA M. B., p. 63). Additionally, the OCA stated that:

> In response to Mr. Smeltzer's suggestion in rebuttal that the 2001 overtime should be included in the average, Mr. Morgan testified that he would incorporate the 2001 overtime data for union employees into his normalization adjustment. Tr. 405-406; PSW St. 2-R at 11. In addition, Mr. Morgan incorporated the 51.6% capitalization ratio for 2001 in response to Mr. Smeltzer's rebuttal statement about the appropriate capitalization ratio for overtime. PSW St. 2-R at 12. This adjustment is shown on Schedule LKM-23 and would reduce operating expenses by $101,678, thus increasing net income by $64,039. Sch. LKM-3 (Final).

(OCA M.B., p. 64).

The basis for the recommendation was the OCA's observation that the level of overtime payroll for non-union employees was significantly higher than in previous years, which seems to be in conflict with the PSWC stated objective of reducing overtime.

In its Reply Brief, PSWC explained the derivation of the proposed adjustment for unionized employees:

> In his direct testimony (OCA St. 1, Sch. LKM-23), Mr. Morgan developed a "normalized" level of overtime for unionized employees by calculating a three-year average (1998, 1999 and twelve months ending June 30, 2001) of overtime hours and multiplying the result by the average hourly overtime rate during the historic test year. In the final schedule (LKM-23 Final) attached to the OCA's Main Brief, Mr. Morgan takes a different approach and simply calculates a four-year average (1998, 1999, twelve months ending June 30, 2001 and calendar 2001) of overtime dollars equaling $2,673,000. Because that amount is less than unionized overtime expense incurred during the historic test year ($2,748,346), Mr. Morgan concludes that PSW's claim is overstated.

(PSWC R.B., p. 9).

PSWC further explained:

> Although Schedule LKM-23 (Final) continues to refer to union overtime "payroll hours," the $2.673 million figure obviously represents overtime dollars. It apparently was derived as follows: $2,180,573 (1998) + $2,563,082 (1999) + $2,748,346 (historic test year) + $3,200,000 (2001) = $10,692,011 ÷ 4 = $2,673,000. The 1998, 1999 and historic test year figures were provided in response to OTS Interrogatory RE-67 (*see* OTS Ex. 4, Sch. 1, p. 6); the year 2001 figure was supplied by Mr. Smeltzer in his rebuttal testimony (PSWC St. 2-R, p. 11).

(PSWC R.B., p. 9, n. 3).

ii. The ALJ's Recommendation

The ALJ noted that, since PSWC addressed only the unionized portion of the adjustment, she assumed that it accepted the OCA's proposal relating to the non-unionized overtime. Therefore, the ALJ also accepted the OCA's proposed adjustment to the non-unionized payroll overtime claim. (R.D., pp. 25-26).

With respect to the unionized portion of the claim, the ALJ noted that the OCA had switched methodologies in calculating the appropriate claim. In doing so, she relied on PSWC's contention that by using a four-year average based on total dollars, the OCA "fails to fully account for wage rate increases granted between 1998 and June 30, 2002. In other words, even if PSWC were to incur the same number of hours as it did in 1998, the Company would still have to pay more today than it did then." (R.D., p. 26 (quoting PSWC R.B., p. 10)).

The ALJ recommended that the OCA's proposed adjustment be adopted, despite some reservations she expressed regarding the appropriateness of the methodology used to derive the proposed adjustment. (R.D., pp. 25-26).

iii. Exceptions and Reply Exceptions

PSWC excepts to the ALJ's recommendation on this issue, contending that the ALJ's proposed disallowance of union payroll expenses, as to which even the ALJ herself expressed doubt, is unsupported and should be rejected.

PSWC observes that the OCA developed a "normalized" level of overtime for union employees by calculating a three-year average (1998, 1999 and twelve months ending June 30, 2001) of overtime hours and multiplying the result by the average hourly overtime rate during the historic test year. (OCA St.1, Sch. LKM-23). In the final schedule, LKM-23 attached to its Main Brief, the OCA took a different approach and simply calculated an unadjusted four-year average (1998, 1999, twelve months ending June 30, 2001 and calendar 2001) of overtime dollars equaling $2,673,000. Because that amount is less than unionized overtime expense incurred during the historic test year ($2,748,346), the OCA concluded that PSWC's claim was overstated by $75,346, which, when allocated between capital and operating expense, yielded a proposed disallowance of $38,869. (OCA Sch. LKM-23 Final).

PSWC posits that there are several problems with the OCA's analysis. For one thing, the four-year average unquestionably masks the upward trend in overtime expense as PSWC grows and expands its operations. For another thing, the OCA's recommended four-year average fails to account for wage rate increases granted between 1998 and June 30, 2002. Finally, PSWC's claim of $2,748,346 is substantially less than the amount of union overtime expense incurred during the most recent (2001) calendar year, *i.e.*, $3,200,000. PSWC contends that, for all of these reasons, the OCA's proposed disallowance should be denied. (PSWC Exc., pp. 16-17).

The OCA rejoins that the ALJ correctly recommended a normalization of union overtime costs. The OCA maintains that PSWC's overtime claim is overstated and its arguments are unpersuasive. Furthermore, the OCA contends that PSWC's Schedule 2 attached to its Exceptions should not be considered at all but, if it is, the inherent flaws should be recognized. The OCA concludes by urging this Commission to adopt the proposed adjustment to PSWC's union overtime claim. (OCA R.Exc., pp. 6-10).

iv. Disposition

On review of this issue, we conclude that the ALJ correctly recommended a normalization of union overtime costs. Normalization has been used historically as an appropriate ratemaking tool, to ensure that the level of expenses recognized for rate-making purposes will be representative of the period rates will be in effect.

Here, there is no question that that future test year level of overtime was significantly higher than for previous years. While the trend in overtime definitely is upward, there is no assurance that the corporate objective of reducing the amount of overtime will not be achieved. Additionally, we agree with the OCA that PSWC's overtime claim appeared to be overstated, and that its arguments in support of that claim were unpersuasive.

Accordingly, PSWC's Exception on this issue is denied.

2. Liability Insurance

a. Positions of the Parties

PSWC's proposed liability insurance expense claim of $3,921,728 (PSWC M.B., Appendix A, p. 42) was a substantial increase over the historic test year expense of $2.9 million. That claim was based on the final 2001/2002 renewal policy received in October 2001, and projected increases for the 2002/2003 policy year. Both the OTS and the OCA recommended that this claim be reduced because the increase was not supported by an invoice or signed contract. The OTS also noted that the renewal falls outside the end of the future test year. The OTS proposed an adjustment of $1,171,154. (OTS M.B., p. 50). The OCA proposed an adjustment of $978,500. (OCA M.B., pp. 54-58).

The OTS also suggested that the record should remain open until the issuance of the Recommended Decision, so that if PSWC received an invoice or policy it could be admitted into the record and considered in this proceeding. (OTS M.B., p. 50, n. 31). The ALJ opined that that was an excellent suggestion, and should be extended perhaps to the period after the issuance of the Recommended Decision. The ALJ pointed out that the Commission's regulations recognize and permit the introduction of additional evidence after the record is closed in appropriate circumstances. (*See* 52 Pa. Code §5.431).

The OCA's proposed adjustment was summarized as follows:

> In rebuttal, PSW tried to buttress the claim by presenting the testimony of Roger C. Fell, its insurance broker. While this step added some information to the record, the long and short is that PSW's claimed increase to liability insurance is still based purely on estimates and opinions expressed by a witness who was not qualified as an expert by the Presiding Officer. Moreover, those estimates are based on hearsay statements by others not present in the hearing room and not even identified by the witness in most instances.

(OCA R.B., p. 17).

The OCA's second procedural contention was that the information relied on by PSWC in compiling its estimates is hearsay and, as it was objected to, cannot form the sole basis for the Commission's decision. *See Re: Duquesne Light Co.*, 57 Pa. PUC 313, 317 (1983).

On the issue of whether PSWC sustained its burden of proof with respect to the general liability insurance claim, PSWC presented the expert testimony of Mr. Fell, who described his firm as "able to secure insurance for our clients at the lower prices and on better terms than they could secure on their own." (PSWC St. 8-R, p. 3). He explained that the estimates he provided were developed "following direct discussions with insurers and our observation of the insurance costs of similar operations." (*Id.*, p. 7). He also provided a chart showing actual premiums paid by various businesses. (PSWC St. 8-R, Sch. 1, Tr. 372).

Mr. Fell further explained that the cost of property insurance is expected to rise because of, among other factors, the terrorist attacks on September 11, 2001, which resulted in losses now estimated at $60 billion. (PSWC St. 8-R, p. 5).

No evidence was presented by either the OCA or the OTS to rebut Mr. Fell's expert testimony that the cost of insurance was expected to increase substantially. The OCA cited a number of cases where it asserted that the Commission rejected claims based on oral estimates. In none of those cases, however, was an expert presented to support the reasonableness of the utility's claims.

b. The ALJ's Recommendation

The first issue to be discussed under this heading is the qualification of PSWC's witness Roger C. Fell as an expert. The OCA contended that he was not qualified as an expert. The ALJ concluded that the witness was properly qualified and that the OCA's contention was misplaced. The ALJ determined that substantial record evidence attested that Mr. Fell was amply qualified, by virtue of education, knowledge and experience, to testify as an expert in insurance matters. (PSWC St. 8-R, p. 1; R.D., pp. 27-28). The ALJ further concluded that Mr. Fell was the only insurance expert presented in this case. (R.D., pp. 28-29).

The OCA's next issue was that the information relied on by Mr. Fell in compiling his estimates was hearsay and, as it was objected to, it cannot form the sole basis for the Commission's decision.

The ALJ observed that, while this assertion is generally correct, it does not apply here because the information Mr. Fell relied upon (quotes from various insurance companies) is that type of information used by him as a broker. (PSWC R.B., p. 14; R.D., pp. 29-30).

The next question to be resolved is whether PSWC sustained its burden of proof with respect to the general liability insurance claim. The ALJ concluded that it had. The ALJ noted that the OCA cited a number of cases wherein it was claimed that the Commission rejected claims based on oral estimates. However, in none of those cases was an expert presented to support the reasonableness of the utility's claims. (R.D., p. 31).

The ALJ noted that Mr. Fell was not simply passing along quotes and estimates. He knew the people from the various insurance companies from whom he received estimates, and, based on his knowledge and experience, as well as the actual costs shown on his schedule for other clients, was well able to evaluate the reasonableness of those estimates by applying his expert judgment. (R.D., pp. 31-32). The ALJ further noted that the OCA's citation to *Pa. P.U.C. v. Philadelphia Suburban Water Co.*, 71 Pa. P.U.C. 593 (1989) was misplaced.

The ALJ concluded that, as PSWC's claim for liability insurance was supported by the unrebutted testimony of its expert witness, that claim should be approved. The ALJ added that the claim should be adjusted to reflect any actual invoices received by PSWC prior to the issuance of the Commission's Opinion and Order herein. (R.D., p. 33).

c. Exceptions and Reply Exceptions

In its Exceptions, the OTS again raises the issue of the qualifications of Mr. Fell. The OTS contends that the ALJ gave too much weight to the credentials of PSWC's witness Mr. Fell. The OTS furthermore complains that the ALJ failed to discuss all of the cases it cited in support of its claim that PSWC had not sustained its burden of proof.

PSWC rejoins that the OTS's criticism of the ALJ is unwarranted, and should be disregarded. First, the ALJ noted that Mr. Fell's testimony was unrebutted. Second, the OTS did not cite a single case in support of its proposed adjustment in the Main Brief. Additionally, PSWC notes that the ALJ not only recommended that PSWC's liability insurance expense claim be approved, but also that it submit for the record any actual invoices that become available to it prior to final Commission action herein. (R.D., pp. 27-33).

d. Disposition

In general, we adopt the ALJ's recommendation on this issue. As noted by the ALJ, PSWC's liability insurance expense claim is supported by the unrebutted testimony of PSWC's expert witness. Further, there is no question that Mr. Fell qualifies as an expert in the insurance field. (R.D., p. 33). The ALJ noted that this claim should be adjusted to reflect any actual invoices received by PSWC prior to the Commission's decision. (R.D., p. 33). However, she also explained that PSWC should make a request to reopen the record and that the invoices should be "subject to the parties' ability to review the late-filed exhibit." (R.D., p. 27).

On July 15, 2002, PSWC filed an affidavit signed by PSWC's Manager of Regulatory Accounting, along with copies of PSWC's liability insurance invoices. The affidavit states that PSWC's liability insurance expense is slightly higher than the amount supported by the testimony of PSWC's expert witness. To the extent that the affidavit constitutes a request to reopen the record, such request is hereby denied. The affidavit and supporting invoices were not submitted in sufficient time for the other Parties to have a fair opportunity for review and challenge. We note that the invoices are dated July 2, 2002, and that PSWC did not file them until July 15, 2002. As such, the affidavit and the invoices are rejected and will not be admitted into the record.

Accordingly, the OTS' Exception on this issue is denied. PSWC's claim for liability insurance, as supported by the unrebutted testimony of its expert witness, is approved.

3. Inflation Adjustment

a. Positions of the Parties

As part of its filing, PSWC included an adjustment for General Price Level (inflation) increases applicable to various historic test year operating expenses for which specific future test year adjustments were not made. PSWC utilized a projected inflation rate of 2.35% to develop an inflation adjustment of $279,500. (PSWC St. 1, p. 8).

In response to testimony from the OTS and the OCA, PSWC removed certain expenses as not being properly subject to the inflation adjustment. PSWC also updated the inflation factor, as recommended by the OTS, to 1.7%, based on the March 1, 2002 Blue Chip Forecast for the Gross Domestic Product Chained Price Index (GDP-PI). This reduced the claim to $192,600. (PSWC St. 1-R, p. 5).

The OTS also recommended that the claim be adjusted by removing approximately $6.6 million of expenses whose costs have not increased during the period June 30, 2000 to June 30, 2001, thereby reducing the claim for inflation expense by $113,266 to $79,334. (OTS M.B., p. 44). The basis for this adjustment is that it removes those expenses that are not subject to inflationary pressures.

The OCA had alternative recommendations. First, it proposed that the adjustment be adjusted to remove inappropriate expenses.[5] Alternatively, it proposed that the claim should be eliminated entirely "because to apply an inflation factor just to accounts not otherwise adjusted results in an overstatement of the effect of inflation and is not a 'sufficiently known and certain' expense." (OCA M.B., p. 50).

PSWC asserted that the OTS' recommendation should be rejected because, while a single year comparison may show that some expenses have declined, the "longer term view" demonstrates that its overall level of expenses has increased at a pace much greater than the level of inflation claimed in this case. PSWC contends that the OTS' adjustment creates a serious mismatch between the inflation factor and the expense base because, as the OTS acknowledged (Tr. 381), the inflation factor is, by definition, a composite of both increases and decreases. PSWC contended that, by applying the inflation factor only to expenses that have increased, the effect of inflation is understated. (PSWC M.B., pp. 18-19).

In response to the OCA's recommendation that general inflation adjustments should be rejected as not meeting the standard of "known and measurable," PSWC retorted that that argument has been rejected by the Commission. Additionally, PSWC noted that the inflation factor is properly applied to expenses that were not separately adjusted. (*Id.*).

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[5] Specifically, the OCA objected to the miscellaneous employee expenses contained in Account 6048. The other two categories of employee expenses in that account - active employee health costs and post-retirement benefits - were separately adjusted and are not included in this general inflation claim. (PSW St. 1-R, p. 16, PSW M.B., p. 20).

b. The ALJ's Recommendation

The first issue addressed by the ALJ was whether the OCA's proposal that the inflation adjustment be rejected in its entirety should be adopted. On this issue, the ALJ stated that there is no question but that the OCA's proposal must be rejected. (R.D., p. 37).

The ALJ noted that there are numerous cases in which the Commission has accepted this type of adjustment. The ALJ further noted that the Commission's practice of accepting inflation adjustments was the basis of the Commonwealth Court's reversal and remand of a proceeding in which the Commission had rejected a utility's proposed inflation adjustment. *See National Fuel Gas Distribution Corp. v. Pa. PUC*, 677 A.2d 861, 1996 Pa. Commw. LEXIS 210; *Pa. P.U.C. v. National Fuel Gas Distribution Corp.*, 88 Pa. PUC 363 (1998) (*NFG Remand*). (R.D., p. 35).

The ALJ also stated that she had not been able to find any support for the OCA's assertion that "[h]owever, recent decisions indicate that the Commission has held utilities to a higher standard than in prior years before accepting such an adjustment to test year expense." (OCA M.B., p. 52). The ALJ noted that a utility's burden of proof has not changed. Rather, over time there has been an increasing body of Commission decisions discussing each rate case element.

The next issue was whether the specific adjustments recommended by the OTS and the OCA should be adopted. The OTS suggested that the Commission should remove those items that did not increase during the historic test year, and also should apply the inflation factor to the remaining expense items.

The ALJ opined that the OTS' recommendation was inappropriate and should not be adopted in this proceeding. The ALJ pointed to the fact that PSWC's actual expenses for the year ended June 30, 2001, increased approximately 6.3% over the previous year, ended June 30, 2000. If the same comparison is made excluding those accounts identified as having declined, the increase for the remaining accounts is approximately 9.7%. (PSWC M.B., p. 19). Obviously, concluded the ALJ, the OTS' methodology understates the effect of inflation.

The ALJ also noted that the Commission has never accepted the proposed methodology in any proceeding, and, in fact, that methodology may be inconsistent with the Commission's position that the expenses, to which general inflation adjustments are properly applied, need not be individually examined. (R.D., pp. 37-38).

Similarly, concluded the ALJ, there is no basis for applying the adjustment suggested by the OCA. As PSWC explained, the inflation adjustment was applied only to those miscellaneous employee expenses not otherwise specifically adjusted. While such expenses as employee picnics, lunches etc. vary with the number of employees participating, the ALJ concluded that it was reasonable to assume that the costs of putting on such events are also subject to inflationary pressure.

Accordingly, the ALJ concluded that PSWC met its burden of proof on the relevant issues, and that its general inflation adjustment should be adopted. In this regard, PSWC presented a study showing that the expenses to which it applied the adjustment have increased over the past five years at a rate in excess of the claimed inflation factor. (PSWC St. 1-R, Schs. 2A and 2B). Additionally, the Commission has previously accepted this type of historic data. *NFG Remand, supra*, 88 Pa. PUC, pp. 367-68 (1998).

Additionally, the ALJ concluded that the inflation index used in this proceeding (the GDP-PI) has previously been accepted by the Commission. The Commission has characterized it as "relatively conservative." Therefore, the ALJ concluded that PSWC's general inflation adjustment, as modified and revised, should be accepted herein. (R.D., pp. 37-38).

c. Exceptions and Reply Exceptions

The OTS objects to the ALJ's recommendation, noting that PSWC applied an inflation adjustment of $192,600 by multiplying a 1.7% inflation rate by the total expenses not specifically adjusted, including expenses that both increased and decreased during the period. (PSWC Exh. 1-A, p. 23). The OTS accepted PSWC's proposed inflation rate of 1.7%, but recommends that the rate be multiplied only by the expenses that have been shown to be sensitive to inflation. Also, only expenses that have increased during the test period should be included in the calculation. The OTS concludes that both the evidentiary record and the case law indicate that the ALJ's recommendation should be rejected. (OTS Exc., pp. 10-12).

The OCA also objects to the ALJ's recommendation, arguing that the ALJ misinterpreted both the facts and the applicable law in rejecting the OCA's proposed inflation adjustment. The OCA also contends that the Commission has accepted its position on the inflation adjustment in other cases for many of the same reasons expressed herein. Furthermore, the OCA argues that the ALJ gave more weight to PSWC's evidence on this issue than was appropriate and wrongly interpreted applicable precedent. Accordingly, the Commission should reject the ALJ's recommendation to accept PSWC's inflation adjustment and instead accept the OCA's position. (OCA Exc., pp. 16-19).

PSWC responds to the Exceptions of the OTS and the OCA on this issue, arguing that the Commission's acceptance of those Exceptions would be contrary to logic and to Commission precedent. Namely, PSWC argues that the OTS and OCA approach would mismatch the inflation rate and the expense base. (PSWC R.Exc., pp. 6-7).

d. Disposition

On review, we conclude that the ALJ correctly determined that PSWC's general inflation adjustment, as modified and revised, should be accepted herein. We find that adjustment to be reasonable, supported by the applicable record evidence, and consistent with applicable precedent.

The OTS contends that PSWC's inflation factor should be applied only to those accounts that showed increases for the year ended June 30, 2001, from the year ended June 30, 2000. However, PSWC has demonstrated to our satisfaction that, over the past five years, its expenses, specifically adjusted for customer additions and exclusive of expenses have increased at a rate in excess of the 1.7% inflation factor accepted by the ALJ. (PSWC R.Exc., pp. 6-7). We conclude that adoption of the OTS-proposed methodology herein would result in an understatement of the effect of inflation.

The OCA argues that an inflation adjustment is an issue in flux before the Commission. That is not accurate. Since the Commonwealth Court's decision in *National Fuel Gas Distribution Corporation v. Pa. PUC*, 677 A.2d 861 (Pa. Cmwlth. 1986), we have consistently accepted inflation adjustments where supported by historic data demonstrating that the utility has experienced cost increases that exceed the claimed inflation increases.

Accordingly, the Exceptions of the OTS and the OCA on this issue are denied.

4. Depreciation Expense

PSWC's annual depreciation accrual applicable to plant in service at June 30, 2002, the end of the future test year, is $32,269,254. (PSWC Exh. 6-A, Part II, page II-8). The OTS and the OCA recommended reducing the depreciation accrual by extending the service lives of various groups of property. In addition, the OCA recommended that in future proceedings, PSWC be required to provide actuarial retirement analyses to "corroborate" the direct-weighted average service life resulting when PSWC uses the life span method for calculating depreciation for accounts for which it has no specific retirement plans.

Each of these issues is discussed below.

a. Remote Meters (Account 334.02)

i. Positions of the Parties

PSWC's claim for accrued depreciation for Account 334.02 was $4,545,254, based on its use of an Iowa 18-R4 survivor curve (18-R4 curve). PSWC presented testimony that its selection of the 18-R4 curve for this account was based on a number of factors, including a retirement analysis, discussions with PSWC management, the testing cycle of meters and the estimated lives for meters of other utilities. (PSWC St. 6, p. 12). This was based in part on the expected replacement of these meters at twenty years, based on its mistaken belief that this was required by the Commission's Regulations at Section 65.8(b) which reads, in pertinent part, as follows:

> No public utility furnishing public water service may allow a water meter of 1 inch or less nor a water meter of more than one inch to remain in service for a period longer than twenty years respectively without testing it for accuracy and

> readjusting it if it is found to be incorrect beyond the limits established in subsection (a).

52 Pa. Code §65.8(b).

PSWC's position was that, despite the cost differential, its replacement policy is reasonable and cost-effective. In this regard, PSWC points out that most utilities would replace rather than rebuild when the cost differential is close and that a rebuilt meter would not last as long as a new meter. (Tr., pp. 443-444).

PSWC contended that its policy is that meters which are tested at twenty years are returned to inventory. If they were automatically retired at twenty years, then the average service life would be much shorter than eighteen years. (Tr., p. 460).

The OCA noted that PSWC maintains continuing property records (CPR) from which it can identify the date of installations and retirements of most of its assets. (OCA M.B., pp. 37-38). The CPRs are incorporated into a database, which can be used to produce retirement-rate studies (statistical analyses of actual investment exposures and retirement experience) which result in an Original Life Table (OLT). This data can be used to provide an analysis of the experienced average service life and retirement characteristics of the plant account. The plotted OLT is the "original survivor curve."[6]

The OTS recommended that an Iowa 21-R4 survivor curve (21-R4 curve) be used instead of the 18-R4 curve, reducing PSWC's claim by $1,028,494. The OTS argued that the 21-R4 curve is a better fit than the 18-R4 curve because "the 21-R4 curve bisects the actual data curve closer to the most recent data points." (OTS St. 3, pp. 8-9).

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[6] Survivor curves are data points determined by models and are widely used to simplify life estimation procedures and forecasting concerning utility property. (OCA St. 3, p. 11).

In addition, the OTS did a mathematical "best fit" analysis by comparing the percent surviving from actual data to the percent surviving under selected Iowa curves for each interval year. (OTS St. 3, pp. 9-10; OTS Exh. 3, Schedule 4).

In response to criticism of its original recommendation, the OCA, in surrebuttal testimony, adopted the OLT developed by PSWC. The OCA also recommended use of a 21-R4 curve. As a result, all three Parties used PSWC's OLT and the 1968-1998 experience band for this account. (OCA St. 4S, p. 13; OTS St. 3, p. 8; PSWC St. 6, pp. 11-12; PSWC Exh. 6-A, Part II, p. I-3).

Both the OCA and the OTS opposed PSWC's policy of replacing the small meters at twenty years of age, based on two factors. First, they argue, most meters will survive past twenty years. Second, a rebuilt meter costs approximately 83% of the cost of a new meter, a saving of approximately $7.90 per meter.

ii. The ALJ's Recommendation

The ALJ concluded that the evidentiary record demonstrates that PSWC's meter replacement policy is proper and cost-effective. She pointed in this regard to the fact that a rebuilt meter is less expensive than a purchased meter by $7.90.

Additionally, the ALJ concluded that the 21-R4 curve should be used to calculate the annual depreciation accrual claim in this proceeding. However, she stated that she reached this conclusion somewhat reluctantly, because she did not feel that the record has established that PSWC's 20-year meter replacement is imprudent or not cost-effective.

However, the ALJ stated that she was ultimately persuaded by the OCA's argument that excessive depreciation expense raises the revenue requirement, resulting in higher rates. The ALJ reasoned that if depreciation expense is too low (as the result of the adoption of longer service lives), PSWC is not at risk as it ultimately recovers all of its capital investment. (R.D., pp. 39-44).

iii. Exceptions and Reply Exceptions

The OTS filed an Exception to the ALJ's recommendation arguing that the ALJ reached the correct conclusion for the wrong reason. The OTS does not object to the ALJ's ultimate recommendation that the Commission adopt the 21-R4 survivor curve for remote meters. That adoption was recommended by the OTS.

In determining that the OTS-recommended 21-R4 survivor curve is the best fit, the ALJ stated as follows:

> There is no question that [the PSWC proposed 18-R4 curve] was based in part on the expected replacement of these meters at 20 years, based on the company's mistaken belief that this was required by the Commission at 52 Pa. Code §65.8(b).

(R.D., p. 41). The OTS contends that the ALJ later "inexplicably" states that PSWC's mistaken belief on this issue does not by itself invalidate PSWC's recommendation. (R.D., p. 44).

It is the OTS' position that the ALJ did not accord proper weight to the determination that PSWC misinterpreted the Commission's regulation. PSWC's adherence to the 20-year meter replacement policy is not surprising since it provides significant financial benefits to PSWC. The OTS argues that the correct reason for the ALJ's recommendation is that PSWC's proposed 18-R4 curve for remote meters is not supported by the best fit analysis. Additionally, PSWC has inappropriately pursued a 20-year replacement policy. (OTS Exc., pp. 13-15).

PSWC also excepts to the ALJ's recommendation, pointing out that although that recommendation at first seems quite modest, it actually has a very significant revenue requirement effect, reducing PSWC's claimed depreciation expense by $1,028,494. PSWC reiterates that its recommended survivor curve is reasonable and should be approved. PSWC outlines several factors leading to the conclusion that it is more cost effective for it to replace, rather than rebuild, meters that fail the Commission-mandated testing. (Tr., pp. 443-44). PSWC contends that the record fully supports its recommended 18 year average service life for remote meters. (PSWC Exc., pp. 8-12).

In response, the OTS notes that although PSWC maintains that very few meters will survive beyond the 20-year replacement/testing cycle, PSWC's own graph of survivor percentages indicates that the actual survivors have reached approximately twenty-three years. In other words, the data indicate that, as of June 30, 2002, approximately 50% of the remote meters have survived at least twenty-three years. (PSWC Exh. 6-A, Part II, PP. 108-109). Additionally, the OTS reiterates that PSWC misinterpreted the Commission regulation when it adopted a corporate policy to replace, rather than test, remote meters after twenty years of service. (Tr., pp. 448-49). Therefore, it is argued that the ALJ's recommendation of a 21-year service life for remote meters should be adopted by the Commission. (OTS R. Exc., pp. 3-7).

iv. Disposition

On review of this issue, we conclude that the ALJ properly determined that PSWC's meter replacement policy is proper and cost-effective. Additionally, the ALJ properly determined that the OTS-recommended 21-R4 curve should be used to calculate the annual depreciation accrual claim in this proceeding.

We note that depreciation rates for PSWC's remote meters account have been calculated using a 24-R2 curve since our approval of the settlement of PSWC's last base rate case. This account has grown by $11 million dollars, or almost twenty percent, during that period. (OCA St. 4, p. 26).

In the instant proceeding, PSWC proposed to reduce the service life for this account to eighteen years. The ALJ agreed with the OCA and with the OTS that a 21-year service life should be applied to this account. (R.D., p. 44). Our adoption of the ALJ's recommendation results in an adjustment that reduces PSWC's $4.5 million depreciation expense claim for the account by $1,028,494. (R.D., p. 39; OTS St. 3, p. 12).

We also agree with the ALJ that the 21-R4 curve recommended by the OCA and the OTS is the appropriate life for purposes of calculating depreciation rates for the remote meters account. A 21-year service life is more reasonable than PSWC's proposed eighteen years, is supported by the recent retirement data, and furthermore protects PSWC's customers from paying excessive depreciation rates.

In our determination herein, we note with approval the OCA's argument that excessive depreciation expense raises the revenue requirement, resulting in higher rates. If depreciation expense is too low (as the result of the adoption of longer service lives), however, PSWC is not at risk as it ultimately recovers all of its capital investment.

Accordingly, PSWC's Exception on this issue is denied.

b. Electric Pumping Equipment (Account 311)

i. Positions of the Parties

The OCA proposed extending the service life of Account 311 (Electric Pumping Equipment) from 35 years to 50 years by use of a 50-S1 survivor curve, rather than the 35-R2.5 survivor curve used by PSWC. The OCA based this recommendation on a "full retirement rate study," which it conceded in surrebuttal testimony was flawed. (OCA St. 4S, p. 6). Despite this, the OCA continued to support its recommendation, based on the assertion that PSWC's analysis does not reflect a significant portion of its own OLT data. (OCA St. 4S, p. 9, OCA Redirect Exh. 1, p. 1).

PSWC opposed this for a number of reasons. First, it notes that the OCA failed to consider the type of investment recorded to this account. As explained by PSWC witness Spanos:

> My use of a 35-R2.5 average survivor curve for pumping equipment is based on experience during the period 1983-1998. The plant exposed to retirement decreases significantly beyond age 40. The retirement data for ages subsequent to 40 are not sufficient to use as a basis for developing historical indications or forecasting future service lives. In addition, judgment must be used in interpreting the statistically significant data. As compared to the significant portion of the historical experience, the 35-R2.5 anticipates increased levels of retirement beyond age 25, inasmuch as more recently installed equipment includes a greater investment in controls such as variable speed equipment. Such equipment enables the Company to maintain consistent pressure levels in the system. This type of equipment has a shorter service life than the pumps and motors that previously constituted the large majority of the investment in this group. Therefore, I anticipate a shorter service life for the group.

> The 50-S1 estimate of Mr. Majoros is based on an incorrect life analysis, does not incorporate consideration of the changing nature of this account, and should be rejected.

(PSWC St. 6-R, p. 15). On cross-examination, the OCA conceded that it was doubtful that any investment in electric pumping equipment, over 40 years of age, would represent variable speed equipment. (Tr., p. 466).

Additionally, PSWC noted that, as a policy matter, this account (as well as the others that are the basis for some OCA-proposed recommendations) is Distribution System Improvement Charge (DSIC) eligible. Any lengthening of the service lives for these accounts will reduce the allowed depreciation in the DSIC calculation, thus reducing DSIC revenues available between rate cases to be used for infrastructure replacements.

This would frustrate the Commission's decision to have that revenue available to promote infrastructure rehabilitation, citing the "daunting challenge of rehabilitating their existing distribution infrastructure before the property reaches the end of its service life to avoid serious public health and safety risks." *Re: Petition of Philadelphia Suburban Water Co. for Approval to Implement a DSIC*, Docket No. P-00961036 (Order entered August 26, 1996), pp. 7-8 (cited in PSWC M.B. (p. 30).

ii. The ALJ's Recommendation

The ALJ stated that she agreed with PSWC that the OCA's proposal on this account should be rejected. The ALJ noted that the nature of the equipment included in this account has changed from pumps and motors to variable speed controls, which has a shorter service life. Pursuant to *Pa. P.U.C. v. Philadelphia Electric Co.*, 48 Pa. PUC 183, 191 (1974), retirement rates are to be representative of present and future service conditions. (R.D., pp. 44-46).

iii. Exceptions and Reply Exceptions

The OCA excepts to the ALJ's recommendation, reiterating that for Account 311, its witness recommended a 50-year service life. The OCA complains that the ALJ's recommendation does not consider that the OCA developed its recommended service life using a 1983 to 1998 experience band. The OCA contends that PSWC has not supported its argument that the average service life for this account should be shortened by fifteen years. Therefore, the OCA submits that the depreciation rate for this account should be calculated using a 50-year survivor life, and that the ALJ's recommendation should be rejected. (OCA Exc., pp. 4-6).

PSWC rejoins that the OCA's proposed 50 year average service life for electric pumping equipment is not supported by the evidentiary record. (PSWC R.Exc., pp. 8-9).

iv. Disposition

On review of this issue, we agree with the ALJ that the OCA's proposal should be rejected. The nature of the equipment included in this account has changed from pumps and motors to variable speed controls, which evidence a shorter service life. Retirement rates are, ideally, to be representative of present and future service conditions.

Additionally, the OCA's proposal was based solely upon its analysis of historical data for Account 311. The error in this approach is that it fails to recognize the changing nature of this account. Specifically, as above noted, more recently installed equipment includes substantial investment in variable speed controls, which have a shorter life than the pumps and motors that traditionally made up the bulk of the investment. (PSWC St. 6-R, p. 15).

Accordingly, the OCA's Exception on this issue is denied.

c. Mains and Accessories (Account 331)

i. Positions of the Parties

Prior to 1972, PSWC used one average survivor curve to describe the service life for its Mains account. The Commission, however, in *Pa. P.U.C. v. Philadelphia Suburban Water Co.*, 46 Pa. PUC 288, 299 (1972), concluded that this approach was inappropriate. In response, PSWC disaggregated Account 331 into fourteen subaccounts, each with its own average service life. (PSWC M.B., p. 31).

The OCA proposed to increase the lives of 5 of these subaccounts, by from 5 to 20 years, so as to move these subaccounts to a 110-year average life. The basis for this is a retirement study, which the OCA abandoned in its surrebuttal testimony. Despite this, the OCA continued to adhere to its recommendation. The OCA argued that a 110-year life is reasonable because the OLT data support a much longer life and it is the life that PSWC has proposed for the 12" and over mains. Additionally, it is supported by the simple average of PSWC's "life defining retirements" of 108 years. (OCA M.B., p. 40).

PSWC opposed this adjustment, explaining that adoption of the OCA's proposal is equivalent to the longest service life for any of the Mains subaccounts and would substantially undo the disaggregation directed by the Commission. PSWC noted that similar proposals of the OCA to extend the service lives of mass property accounts have previously been rejected by the Commission.

PSWC also asserted that, as in the above-cited case, the OCA's proposal to extend the service lives is based upon insufficient retirement data.

ii. The ALJ's Recommendation

The ALJ recommended that the OCA's proposal for this item be rejected. First, she stated, it would essentially undo the disaggregation of the subaccounts. Second, there simply is no basis for its adoption. In the ALJ's opinion, the fact that 108 years is an average is meaningless except as a mathematical exercise -- as acknowledged by the OCA on cross-examination:

> "Q: So a simple average does not present anything but two points averaged?
>
> A: You are absolutely correct."

(R.D., pp. 46-48 (quoting Tr. 460-71)).

iii. Exceptions and Reply Exceptions

The OCA excepts to the ALJ's recommendation on this issue, reiterating that its witness had recommended a service life of 110 years for each account to mitigate the impact that a much longer service life would have on the overall depreciation rate. (OCA St. 4, p. 24). With regard to disaggregation, the OCA proposes to extend the average service lives of only five out of fourteen subaccounts. (OCA R.B., p. 9). The OCA contends that while a 110-year life may still be too short, it is closer to the service life indicated by the retirement data and thus more supportable than PSWC's proposed service lives. (OCA Exc., pp. 6-10).

PSWC rejoins that, in 1972, the Commission directed PSWC to cease using a single survivor curve for all mains. In response, PSWC separated its mains account into fourteen subaccounts, and established separate average service lives. The OCA now seeks to undo that disaggregation by increasing the service lives of five subaccounts to 110 years. (PSWC R.Exc., pp. 9-10).

iv. Disposition

On review of this issue, we agree with the ALJ that the OCA's proposal should be rejected. To accept that proposal would undo the policy behind the disaggregation of the subaccounts. Additionally, the OCA's proposal in this regard is founded upon insufficient retirement data, as recognized by the ALJ. (R.D., pp. 47-48). The main investment exposed to retirement reflects significant data only through approximately ages 75-90. (PSWC St. 6-R, pp. 16-17).

In its Exceptions, the OCA presents a table showing the "best fit" survivor curves if all retirement data were used. (OCA Exc., p. 7). We assume this table was developed in an effort to bolster the OCA's contention that its proposals are "reasonable." In fact, what this table demonstrates is that it is unreasonable to base depreciation lives upon data that is not significant in the life-defining ages.

Accordingly, the OCA's Exception on this issue is denied.

d. Services (Account 313)

i. Positions of the Parties

The OCA proposed to add twenty years (from 65 to 85) to the average service life for this account. PSWC used sixty-five years, based on its judgement, because the statistical analysis of the account was "inconclusive." The OCA's proposal is based on a "best fit" Iowa curve of 94-L2 resulting from the adoption in surrebuttal testimony of PSWC's OLT, which it asserts would support a longer average service life than eighty-five years.

PSWC opposed this, noting that the OCA's analysis relies upon retirement data for exposures older than seventy-eight years, even though the available exposures are less than $10,000, and that other Pennsylvania water utilities use service life estimates of 60 to 63 years.

ii. The ALJ's Recommendation

The ALJ stated that the OCA's proposal on this item should be rejected. First, she asserted that insignificant data should not be the basis for such a substantial increase in the service life. The OCA's inclusion of thirty years worth of exposures under $10,000 to derive its recommendation for this account, with more than $113 million in investment, is not consistent with Commission precedent. Also, the reasonableness of the 65-year average service life used by PSWC is demonstrated by other water utilities' practice. (R.D., pp. 48-49).

iii. Exceptions and Reply Exceptions

The OCA excepts to the ALJ's recommendation on this issue, reiterating that, for Account 313, the service life be moved closer to the statistical indication of 94 years, to 85 years, based on a "best fit" analysis of PSWC's OLT data for this account. (OCA St. 4S, p. 12; OCA Exh. MJM-7S). PSWC had argued that a 65-year life was appropriate. The OCA also reiterates that its recommendation for Account 313 reflects PSWC's most recent retirement experience as well as its actual retirement data since 1983. Accordingly, the OCA contends that the Commission should reject the ALJ's recommendation on this issue on the basis that PSWC failed to consider all available retirement data. (OCA Exc., pp. 10-13).

PSWC rejoins that the flaw in this argument is that it reflects the OCA's continued rejection of expert analysis in favor of raw statistics. For example, the OCA includes thirty years worth of exposures amounting to less than $10,000 to derive its recommendation for PSWC's $113 million investment in services. Accordingly, PSWC contends that the OCA's Exception on this issue should be denied. (PSWC R.Exc., pp. 10-11).

iv. Disposition

Again, we agree with the ALJ's analysis and recommendation on this issue. We conclude that insignificant data should not be the basis for such a substantial increase in the service life. The OCA's inclusion of thirty years worth of exposures under $10,000 to derive its recommendation for this account with more than $113 million in investment, is not consistent with Commission precedent. (R.D., pp. 48-49).

Accordingly, the OCA's Exception on this issue is denied.

e. Fire Hydrants (Account 335)

i. Positions of the Parties

PSWC used an average service life of seventy years for this account. It based this on a "good fit of the correct original survivor curve through ages 40-45 years, the most significant portion of the data." (PSWC St. 6-R, p. 18).

The OCA originally recommended a 92-year service life, based on its flawed retirement analysis. Using PSWC's OLT, the OCA recommended use of a 85-S1.5 survivor curve, using its best fit analysis. (OCA St. 4S, p. 13). The OCA noted that PSWC excluded almost all of what it considers to be "life defining data," those retirements that cause the original survivor curve to decrease from between 80 and 20 percent.

As explained by PSWC, "[t]he OCA proposes a 21% extension to the service life for Fire Hydrants, from 70 to 85 years. The OCA offers this proposal even though the only exposure data available beyond the approximately 50% survival age of eighty-five years are annual exposures ranging from $285 to $17,500. Such data are not significant and were given no weight by Mr. Spanos in exercising his expert judgement." (PSWC R.B., p. 22). PSWC stated that the OCA agreed that "20 years' worth of exposures under $10,000 were used to derive the statistical 'best fit' for the $26.8 million investment in hydrants." (PSWC M.B., p. 33) (Tr., pp. 471-472).

ii. The ALJ's Recommendation

The ALJ recommended that the OCA's proposal on this item should be rejected. First, the ALJ noted that the Commission, in a number of cases, has rejected similar OCA proposals that rest upon insignificant data, even when supported by a retirement rate analysis. The Commission has previously recognized that there is a weight to be placed on the exercise of professional judgement, and it has never stated that the calculation of the appropriate survivor curves is a purely mechanical exercise based simply on a statistical analysis of unadjusted data.

The ALJ observed that adoption of the OCA's recommended 85-year service life necessarily implies that some hydrants will remain in service for 160 years. This is patently unreasonable, and is not cured by the OCA's statement that "[M]ass property depreciation is based on dollars rather than units. Also the proportion associated with the maximum life is a very small proportion." (OCA St. 4S, p. 14, cited in OCA M.B., p. 46). (R.D., pp. 49-50).

iii. Exceptions and Reply Exceptions

The OCA excepts to the ALJ's recommendation on this issue. For Account 335, the OCA recommended an 85-year life, which is the life indicated by the retirement data. (OCA St. 4S, p. 13; OCA Exh. MJM-9S). PSWC opposed this proposal, and argued that a 70-year average service life is a good fit to the most significant portion of the retirement data. (PSWC St. 6-R, p. 18). The OCA reiterates that its recommendation for Account 335 reflects PSWC's most recent retirement experience as well as its actual retirement data since 1983. Accordingly, the OCA contends that the Commission should reject the ALJ's recommendation on this issue. (OCA Exc., pp. 10-13).

The OCA argues that PSWC failed to consider all available retirement data. PSWC rejoins that the flaw in this argument is that it reflects the OCA's continued rejection of expert analysis in favor of raw statistics. For example, the OCA gives consideration to as little as $285 in annual exposures to develop its proposed 15-year extension to the service life for hydrants. (PSWC R. Exc., pp. 10-11).

iv. Disposition

We agree with the ALJ that the OCA's proposal on this issue should be rejected. (R.D., p. 50). We have previously, in a number of cases, rejected similar OCA proposals which are based on insignificant data, even when supported by a retirement rate analysis. We have never viewed the calculation of the appropriate survivor curves as a purely mechanical exercise, based simply on a statistical analysis of unadjusted data. In this case, PSWC properly exercised its expert judgment in rejecting insignificant data.

Additionally, we note that to accept the OCA's proposed 85-year average service life for hydrants would mean that some investment in hydrants was expected to remain in service for 160 years. That prospect is not realistic.

Accordingly, the OCA's Exception on this issue is denied.

f. Retirement Rate Analysis Requirement

i. Positions of the Parties

The OCA recommended that, in future proceedings PSWC should be required to provide actuarial retirement rate analyses to corroborate the direct-weighted average service life resulting from PSWC's life span calculations. The retirement rate analyses should incorporate all past interim and final retirements and should be required to support PSWC's estimated retirement dates. (OCA M. B., p. 33).

In rebuttal, PSWC demonstrated four errors in the OCA's calculations, thereby rendering useless the OCA's analysis. In surrebuttal, the OCA conceded its errors and withdrew its adjustments. In its Main Brief, the OCA suggested that its failed analysis forced PSWC to undertake a proper statistical analysis. The OCA further asserted that, in future proceedings, PSWC should be required to submit further "analytical support" for its probable retirement year estimates for life span property.

PSWC opposed this, stating that the "analytical analysis" requested by the OCA seeks to remove expert judgment from the determination of depreciation, and replace judgment with mathematical exercises.

ii. The ALJ's Recommendation

The ALJ concluded that this OCA proposal should be rejected. The ALJ reasoned that the result of the Commission's adopting this proposal would be to subject PSWC to more rigorous filing requirements than any other utility. The ALJ also stated that, if the OCA wishes the Commission to consider changing its filing requirements, then it should file a petition requesting that the Commission consider this issue on a generic basis. It is for the utility to determine what, if anything, it feels appropriate to file in excess of the Commission's requirements. (R.D., pp. 50-51).

iii. Exceptions and Reply Exceptions

The OCA excepts to the ALJ's recommendation on this issue, contending that PSWC had the burden of making a convincing showing that its depreciation rates are not excessive. The OCA argues that in this case PSWC did not make any such showing in its case-in-chief.

Additionally, the OCA points to the ALJ's assertion that the OCA's proposal would result in PSWC "[being] subject to more rigorous filing requirements than any other utility." (R.D., p. 51). The OCA rejoins that all utilities using the life span method for accounts for which there are no specific retirement plans, have an obligation to show that their depreciation rates are not excessive. Accordingly, the OCA submits that the Commission should direct PSWC to prepare analytical analyses to support its chosen life spans in the circumstances above described. (OCA Exc., pp. 13-15).

PSWC responds to this issue, in particular noting the ALJ's observation that this OCA proposal, if adopted, would subject PSWC to different filing requirements than are imposed on any other utility. (R.D., p. 51). (PSWC R.Exc., p. 11).

iv. Disposition

We agree with the ALJ that the OCA's proposal should be rejected. As noted by the ALJ, if the OCA desires that the Commission consider changing its filing requirements, then it should file a petition requesting that we consider that issue on a generic basis.

Additionally, as noted by the ALJ, if we were to adopt the OCA proposal on this issue, the result would be to subject PSWC to different filing requirements than are imposed on any other utility. (R.D., p. 51). This is yet another situation where the OCA seeks to replace expert judgment with mathematical exercises. In the recent *Pa. PUC v. Pennsylvania-American Water* Co, Docket No. R-00016339 (Order entered January 25, 2002) (*PAWC 2002*), the OCA sought to ban the use of the life span method unless the utility presented a definitive plan for retirement. We therein rejected that effort.

Accordingly, the OCA's Exception on this issue is denied.

5. Wind Energy Project

a. Positions of the Parties

PSWC included as an expense item, $68,000 representing its investment in the Pennsylvania Wind Energy Project, a 1.5 MW wind turbine. PSWC claimed that its sponsorship of this project was "part of its ongoing research and development efforts to provide quality water service at the lowest cost and least impact upon the environment." PSWC furthermore claimed that its customers immediately benefitted from this project through pollution reductions and resource savings. (PSWC St. 2-R, p. 18).

The OTS opposed this claim as being in the nature of a forced contribution by ratepayers. (OTS M. B., pp. 45-47; OTS St. 4, p. 22). The OTS cited *Pa. P.U.C. v. National Fuel Gas Distribution Corp.*, 88 Pa. PUC 363, 366 (1998), where the Commission disallowed a claim for advertising expenses associated with a conservation program, stating that the "advertising lacked a proper nexus to directly benefiting the ratepayer."

b. The ALJ's Recommendation

The ALJ recommended that this claim should be disallowed. The ALJ reasoned that, while the project could serve to improve the environment and also could serve as an alternative energy source, she discerned no direct benefit to PSWC's ratepayers. (R.D., p. 52).

c. Exceptions and Reply Exceptions

PSWC objects to the ALJ's recommendation on this issue, and submits that the ALJ applied an incorrect standard in analyzing the rate treatment of this item. Recently, the Commission considered the criteria to be used in assessing research and development projects. In *PAWC 2002*, cited *supra*, the Commission rejected an OCA proposal to disallow costs for research and development projects on the basis that the projects did not provide current benefits to customers. In that case, the Commission stated as follows:

> We note that the types of studies here at issue could only serve to benefit customers in the future....Furthermore, we are persuaded that this expense item has important and significant public health and safety implications.

(*PAWC 2002*, 2002 Pa. PUC LEXIS 1, *56).

PSWC argues that its participation in the Pennsylvania Wind Energy Project satisfies the foregoing standards. PSWC's position is that investment in the development of wind energy has important public health benefits, including reductions in carbon dioxide, sulfur dioxide, and nitrogen oxide emissions. (PSWC St. 2-R, pp. 18-19). Those emission reductions will improve the quality of both air and surface water supplies. According to PSWC, wind energy is proven viable, it has the potential for reducing PSWC's future energy costs. Improving the environment and developing alternative energy supplies are appropriate research and development objects. Accordingly, PSWC states that its claim for this item should be accepted. (PSWC Exc., pp. 17-18).

In response, the OTS posits that the Commission's decision in *PAWC 2002* is not dispositive of the instant issue. In allowing the expenses there at issue, the

Commission stated that the relevant studies would provide a direct benefit to customers, albeit in the future, and that combining resources at the Service Company level could serve to address the most pressing concerns in a more efficient manner. In contrast, the OTS states that in the instant proceeding the ALJ properly found that although the expenditure of funds might have an indirect benefit to the environment and perhaps assist in the development of alternative energy sources, the expenditures did not provide a direct benefit to ratepayers. The OTS concludes that in this proceeding, PSWC has in a similar fashion failed to demonstrate a nexus between the proposed expense and a direct benefit to ratepayers. (OTS R. Exc., pp. 10-12).

d. Disposition

On this issue, we agree with PSWC that its claimed expense of $68,000 in future test year expenses attributable to its investment in the Pennsylvania Wind Energy Project should be allowed.

The ALJ recommended the disallowance of that expense, reasoning that "there is no direct benefit to PSWC's ratepayers". (R.D., p. 52). We would note, however, that while wind energy is still in its infancy, its potential benefits are tremendous. As correctly noted by PSWC in its Initial Brief and Exceptions, wind energy has important public health benefits. "The wind turbine [sponsored by PSWC] will reduce carbon dioxide emissions by 4.7 million pounds, sulfur dioxide emissions by 36,000 pounds, and nitrogen oxide emissions by 11,000 pounds. Moreover, the project will reduce coal usage by 1.3 million pounds (PSWC St. 2-R, pp. 18-19)." (PSWC M.B., p. 22; *see also* PSWC Exc., p. 18).

We conclude that these reductions clearly improve the quality of the ratepayers' air and water. Furthermore, wind is a reliable source of renewable energy and, one day, may be one of the cheaper sources of energy. Because PSWC's investment in the Pennsylvania Wind Energy Project is reasonable and prudent in this instance and directly benefits ratepayers through a cleaner environment, PSWC's Exception on this issue is granted.

6. NARUC Conversion

a. Positions of the Parties

Prior to January 1, 2000, PSWC maintained its accounting system in conformity with the Commission's 1948 Chart of Accounts as required by the Commission. Effective February 14, 1998, the Commission revised 52 Pa. Code §65.15 and directed water utilities to convert to the most recent uniform system of accounts prescribed by the National Association of Regulatory Utility Commissioners (NARUC). The conversion was to be completed no later than January 1, 2000.

On January 1, 2000, PSWC completed the required conversion. As of November 2000, the total cost of the conversion project was known and determined to be $178,958. (PSWC St. 3-R, pp. 3-4). PSWC claimed a five-year amortization of this cost, resulting in an annual expense allowance of $35,800. (PSWC St. 3, p. 3).

The OCA opposed this claim as being incurred prior to the test year and because PSWC was not granted approval to defer these costs.

b. The ALJ's Recommendation

The ALJ noted that amortization has long been accepted as the appropriate ratemaking treatment for unusual and non-recurring expenses. *Pa. P.U.C. v. Western Utilities, Inc.*, 88 Pa. PUC 124, 144-45 (1998). Deferred approval is not necessary. The ALJ furthermore noted that this is the first opportunity PSWC has had to request permission to recover these costs, and, therefore, amortization of the instant expense would be appropriate. *See Columbia Gas of Pa., Inc. v. Pa. P.U.C.*, 613 A.2d 74, 80 (Pa. Cmwlth. 1992); *Popowsky v. Pa. P.U.C.*, 695 A.2d 448, 452 (Pa. Cmwlth. 1997).

The ALJ recommended that the OCA's proposal on this issue be rejected. She posited that the NARUC conversion cost represents an unusual and non-recurring expense that is appropriately amortized. (R.D., p. 53).

c. Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

d. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with the record evidence, it is adopted.

As noted by the ALJ, amortization has long been accepted as the appropriate ratemaking treatment for unusual and non-recurring expenses. Deferred approval is not necessary.

7. Uncollectible Expense

a. Positions of the Parties

PSWC originally claimed $1,293,666 in uncollectible accounts expense for the future test year ending June 30, 2002. PSWC developed that claim by multiplying the total present rate revenues of $204,171,080 by a write-off ratio of .58464. (PSWC Exh. 1-A, p. 36).

The OTS' witness Keim testified that the write-off ratio was overstated and that PSWC should have multiplied the proper ratio (.49700, based on four years of historic data) by the future test year total present rate sales to general customers. (OTS St. 4, p. 29).

In rebuttal, PSWC agreed to use a three-year average of uncollectible accounts expense ratio in determining an appropriate write-off ratio. (PSWC St. 1-R, p. 23). This reduced PSWC's claim to $1,104,510, based on a write-off ratio of .0052961. (PSWC Exh. 1-A(a), p. 36 (revised)). The OTS accepted this adjustment. (OTS St. 4-SR, pp. 8-9).

The OCA also agreed to the use of a three-year average for calculating uncollectible accounts expense. However, the OCA recommended that the reserve accrual should be included in the normalization in order to ensure consistency in accounting.

PSWC asserted that the write-off ratio should not be applied to the reserve accrual. (*See* PSWC St. 1-R, pp. 22-23).

b. The ALJ's Recommendation

The ALJ recommended that the OCA's proposal to adjust the reserve accrual should be rejected. (R.D., p. 54).

c. Exceptions and Reply Exceptions

No Party filed Exceptions to the ALJ's recommendation on this issue.

d. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with record evidence, it is adopted.

VII. TAXES

A. Consolidated Tax Savings

1. Positions of the Parties

PSWC's Federal Income Tax Expense claim in this proceeding is based upon that of a separate entity standing alone. PSWC makes this claim despite the fact that it participates in the Federal Income Tax return of its corporate parent, PSC. PSWC recognized that the Commission has consistently made adjustments to Federal Income Tax claims based upon a computed Consolidated Tax Savings. This is referred to as the "Actual Taxes Paid" doctrine.

The OTS and the OCA propose downward adjustments to PSWC's Federal Income Tax claim based upon a Consolidated Tax Saving. The OTS defined Consolidated Tax Savings as the difference between the income taxes calculated by a corporation on a stand-alone basis in a rate proceeding, and the tax obligation actually incurred in filing as part of a consolidated group with its corporate parent and its other subsidiaries. (OTS St. 4, pp. 33-34).

The OTS proposed an adjustment that resulted from the use of a three-year average consisting of company-provided income tax data for the tax years ending December 31, 1998, 1999 and 2000. The OTS' calculation resulted in a proposed downward adjustment of $525,430 to PSWC's claimed Federal Income Tax Expense.

The OCA used a similar methodology to derive its recommended Consolidated Tax Savings Adjustment. It calculated the difference between the aggregate taxes which the members of the PSC would have paid on a separate return compared to the taxes paid on a consolidated basis. Next, the OCA determined PSWC's share of the savings based on its taxable income compared to the taxable income of all members of PSC with positive taxable income, based upon a three-year average. Initially, this calculation resulted in a decrease to federal taxes of $525,430.

The OCA, subsequently accepted PSWC's adjustment to remove high interest expense, merger costs and expenses that were erroneously booked. The OCA did not incorporate the unrecognized gain on marketable securities that PSWC included, on the ground that it was speculative. The OCA's final revised adjustment would reduce federal taxes by $120,573.

2. The ALJ's Recommendation

The ALJ recommended that a Consolidated Tax Savings Adjustment be made in the instant proceeding. (R.D., p. 56). The ALJ cited *Barasch v. Pa. P.U.C.*, 493 A.2d 653, 656 (Pa. 1985) (*Barasch I*), and also cited *Barasch v. Pa. P.U.C.*, 548 A.2d 1310 (Pa. Cmwlth. 1988) (*Barasch II*) in support of a Consolidated Tax Savings Adjustment. (*Id.*).

The ALJ noted that both the OTS and OCA proposed Consolidated Tax Savings Adjustments based upon the use of the Modified Effective Tax Rate Method. The ALJ commented that under the Modified Effective Tax Rate Method, which was approved in *Barasch II, supra,* the consolidated tax savings generated by the non-regulated companies of a corporate group are allocated to the regulated, and non-regulated members of the group having positive taxable incomes.

The ALJ recommended rejection of the adjustment for declining interest rates in light of the testimony of PSWC's Rate of Return witness that interest rates are expected to rise in the latter half of 2002 and the first quarter of 2003. (R.D., p. 58). The

ALJ agreed with PSWC that merger expenses of $515,948 should be removed from the calculation as being non-recurring. The ALJ reasoned as follows:

> I agree with the company that these adjustments should be made, as the merger has been completed. Future mergers or acquisitions are too speculative to support the conclusion asserted by OTS that "merger expenses will continue to be part of PSW's financial future." OTS Reply Brief, pp. 35-36. Nor is there any evidence to rebut PSW's assertion that the officers' salaries will not be paid in the future.

(*Id.*).

Finally, the ALJ recommended rejection of PSWC's adjustment concerning an unrecognized gain on the projected sale of marketable securities. The ALJ adopted the position of the OTS and the OCA that the proposed adjustment was clearly speculative.

Based upon the foregoing discussion, the ALJ recommended the adoption of a downward adjustment to Federal Income Tax expense of $294,448. (R.D., p. 59).

3. Exceptions and Reply Exceptions

In its Exceptions, PSWC maintains its disagreement with the principle underlying the Consolidated Tax Savings Adjustment, but concedes that Pennsylvania Appellate Court decisions have circumscribed the Commission's discretion in this area to a considerable extent.

PSWC argues further that even if the Commission were to reject its interest expense normalization, the Consolidated Tax Savings Adjustment is substantially overstated and in the alternative, should be reduced from $294,448 to $180,547. This is to eliminate merger costs of $966,306 incurred by Consumers Water Company in the merger with PSWC. (PSWC Exc., p. 15).

In response, the OTS first asserts that the ALJ was correct in rejecting the interest expense adjustment since PSWC's witness, was predicting higher interest rates while another witness, Mr. Jerdon, was predicting lower interest rates for the same 2002-2003 period. The OTS argues that although PSWC claims that its witness was referring to a more modest upward movement in utility bonds alone, this narrow view is not apparent from the testimony.

The OTS posits that, if the ALJ properly eliminated all costs associated with the adjustments that were apparently approved in her Recommended Decision, it appears that PSWC is correct that the appropriate Consolidated Tax Savings Adjustment should be $180,547. The OTS points out that this number results from the three year average of the PSWC normalized tax loss without Interest Normalization of $648,050 (*See* PSWC Exceptions, Sch. 1) x the 79.6% ratio of Pennsylvania taxable income of all companies x the 35% tax rate. (OTS R.Exc., p. 10).

4. Disposition

The Parties to this proceeding are in agreement that the Federal Income Tax Expense allowance for PSWC in this proceeding should be based upon the Actual Taxes Paid doctrine. Accordingly, we will adopt the ALJ's recommendation to make a Consolidated Tax Savings Adjustment based upon the Pennsylvania Supreme Court's finding in *Barasch I* without further comment. The remaining controversy on this issue is the amount of the Consolidated Tax Adjustment to be made.

For computation of the adjustment, we will use the Modified Effective Tax Rate Method described, *supra.* With regard to the various components of the tax calculation, we adopt the ALJ's recommendation to reject PSWC's proposed interest rate adjustments and its adjustment to include an unrecognized gain on marketable securities planned to be sold.

We adopt the ALJ's recommendation to reject the interest rate reduction because we find that PSWC did not provide persuasive evidence in support of this adjustment. We are convinced by the argument advanced in the OTS' Reply Exceptions that PSWC's presentation was internally inconsistent. Specifically, as discussed previously herein, two PSWC witnesses provided contradictory interest rate projections. Moreover, we note that the rate of return witnesses of PSWC and the OTS project rising interest rates for the 2002-2003 period.

We agree with the ALJ's recommendation to reject PSWC's adjustment to include the unrecognized gain on marketable securities. The proposed adjustment is speculative and cannot be considered for ratemaking purposes. We observe that PSWC did not except to the ALJ's recommendation on this specific issue. Accordingly, we adopt the ALJ's recommendation without further comment.

The OTS is in agreement with PSWC that if the ALJ properly eliminated all costs associated with the adjustments that were apparently approved in her Recommended Decision, the appropriate Consolidated Tax Savings Adjustment should be $180,547. We find the OTS' Reply Exceptions to be well-articulated on this point. Accordingly, we shall grant the Exceptions of PSWC to limit the Consolidated Tax Savings Adjustment to $180,547. The Exception of PSWC on this issue is otherwise denied.

VIII. RATE OF RETURN

Commonwealth case law clearly states that a public utility is entitled to an opportunity to earn a fair rate of return on the value of its property which is dedicated to public service. *Pennsylvania Gas & Water Company v. Pennsylvania Public Utility Commission*, 341 A.2d 239 (Pa. Cmwlth. 1975). This is consistent with longstanding decisions by the United States Supreme Court, including *Bluefield Water Works and Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679, 690-93 (1923), and *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944).

A utility's rate of return has been defined as follows:

> [t]he *rate of return* is the amount of money a utility earns, over and above operating expenses, depreciation expense and taxes, expressed as a percentage of the legally established net valuation of utility property, the rate base. Included in the 'return' is interest on long-term debt, dividends on preferred stock, and earnings on common stock equity. In other words, the return is that money earned from operations which is available for distribution among the capital. In the case of common stockholders, part of their share may be retained as surplus. The rate-of-return concept merely converts the dollars earned on the rate base into a percentage figure, thus making the item more easily comparable with that in other companies or industries.

(P. Garfield and W. Lovejoy, *Public Utility Economics*, (1964), p. 116).

In determining what is a fair rate of return, we have traditionally considered the utility's capital structure in conjunction with its costs of debt, preferred stock, and common equity, as will be discussed below.

A. Capital Structure

The following is a summary of the Parties' positions regarding PSWC's capital structure:

Capital Structure	PSWC(1)	OTS(2)	OCA(3)
	%	%	%
Long-term Debt	52.26	52.26	46.3
Short-term Debt			9.00
Common Equity	47.74	47.74	44.7
Total Capital	100.00	100.00	100.0

(1) PSWC Main Brief, p. 42

(2) OTS Main Brief, p. 34

(3) OCA Main Brief, p. 77

1. Positions of the Parties

PSWC's position is based on the use of a capital structure at the end of the future test year, June 30, 2002. PSWC chose the capitalization ratios tabulated above because these ratios are indicative of those that PSWC will maintain to finance its claimed rate base during the period that new rates will be in effect. The OTS accepts the capital structure proposed by PSWC because, according to OTS, it protects the interests of all Parties to the instant proceeding and is, therefore, acceptable for ratemaking purposes.

The OCA alleges that PSWC's proposed capital structure does not accurately represent the source of its capital. Specifically, the OCA maintains that the evidence of the instant proceeding shows a consistent and ongoing pattern of short-term debt usage by PSWC to finance projects other than construction work in progress (CWIP), so that short-term debt must comprise a portion of PSWC's capital structure. (R.D., p. 63).

2. The ALJ's Recommendation

The ALJ, noting that the Commission in numerous prior cases rejected the exact same arguments raised by the OCA, recommended the adoption of PSWC's proposed capital structure anticipated at the end of the future test year. Specifically, the ALJ indicated that, although PSWC utilizes short-term debt on an on-going basis, it has used, and will continue to use, short-term debt to support construction activities (CWIP as well as plant placed in service between rate cases), the acquisition of other water and wastewater systems, and other short-term borrowing needs (*e.g.*, tax and interest payments). (R.D., p. 66).

3. Exceptions and Reply Exceptions

In its Exceptions the OCA states that it is well settled that if short-term debt primarily finances CWIP and non-CWIP short-term debt is insignificant, such short-term debt should not be included in rate base. *Pa. P.U.C. v. Philadelphia Suburban Water Co.,* 67 Pa. PUC 752, 96 PUR4th 158 (1988) *(PSWC 1988).* The OCA maintains, however, that it has demonstrated that an average of fifty percent and as much as 87.7 percent of all PSWC short-term debt funds are non-CWIP, and that short-term debt is a significant amount of PSW's non-CWIP funds. Moreover, the OCA argues that PSWC consistently carries short-term debt, without replacing it with permanent financing, evidencing that short-term debt contributes to financing PSWC's rate base. Therefore, the OCA concludes that under *PSWC 1988, supra,* the Commission should include short-term debt in PSWC's capital structure. (OCA Exc., pp. 21-22).

The OCA maintains that the ALJ erred in characterizing its short-term debt amount as far exceeding PSWC's credit lines. The OCA indicates that between December 1999 and February 2002, records show that that PSWC's short-term debt approximated the $79 million of short-term debt that PSWC disputes. The OCA further maintains that the ALJ erred by disregarding the fact that PSWC has relied upon rating services, such as Standard and Poor's, including a short-term debt component to achieve its credit rating, while excluding that same short-term debt component for ratemaking purposes. Since PSWC's credit ratings reflect the inclusion of short-term debt in its capital structure, the OCA argues that it is erroneous to exclude the short-term debt component for ratemaking purposes. (OCA Exc., pp. 23-24).

PSWC argues that, contrary to the OCA's Exceptions, its ongoing short-term debt balance does not finance today's rate base nor support CWIP. PSWC maintains that it utilizes short-term debt to support plant placed in service between rate cases (plant that is no longer in CWIP but has yet to be included in rates), to finance the acquisition of other water and wastewater systems and to meet other short-term borrowing needs. Alternatively, PSWC maintains that, consistent with past practice, it will employ a combination of long-term debt and common equity to finance its proposed rate base. PSWC, therefore, concludes that we should deny the OCA's Exception that its short-term debt be included in its capital structure. (PSWC. R.Exc., pp. 12-13).

4. Disposition

We are persuaded that PSWC has properly shown that it uses its non-CWIP short-term debt for a number of purposes other than to finance its rate base, such as the support of plant placed in service between rate cases, to finance the acquisition of other water and wastewater systems and to meet other short-term borrowing needs. The record shows that PSWC has had anywhere from $20 to $40 million of short-term debt outstanding related to acquisition activity alone. We, therefore, adopt the position of the ALJ set forth above and deny the Exceptions of the OCA regarding capital structure.

B. Cost of Debt

1. Positions of the Parties

Regarding its cost of debt, PSWC's claimed cost of debt for this proceeding is 7.01 percent. (PSWC Exh. No. 4-A, updated p. 14). No Party contested this cost rate. (OTS M.B., p. 17; OCA M.B., p. 83).

2. The ALJ's Recommendation

The ALJ recommended adoption of a cost rate for long-term debt of 7.01%. (R.D., p. 67).

3. Exceptions and Reply Exceptions

No parties filed Exceptions on this issue.

4. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with record evidence, it is adopted.

C. Cost of Common Equity

The following table summarizes the cost of common equity claims made, and methodologies used, by the Parties in this proceeding:

Methodology	PSWC(1) %	OTS(2) %	OCA(3) %
Discounted Cash Flow Range (DCF)	10.29-13.16	9.92-10.37	8.9
Risk Premium Model (RPM)	12.50-13.00		8.84
Capital Asset Pricing Model (CAPM)	11.64-12.06		
Comparable Earnings Method (CEM)	13.55		
Recommendation	11.75	9.90	9.00

(1) PSWC St. No. 4, p. 49

(2) OTS St. 1-SR, p. 8

(3) OCA St. 2, p. 26

1. Positions of the Parties

PSWC, after applying four of the above cited and widely recognized market-based models to market data for its barometer group of water utilities, arrived at an 11.75 percent cost of common equity recommendation. Because all of PSWC's common stock is owned by its parent PSC and, therefore, is not publicly traded, it analyzed data for PSC as well as a barometer group consisting of four water utilities with actively traded common stock. These water utilities appear in the *Water Utility Industry Category* of the *Value Line Investment Survey*. (PSWC Exhibit No. 4-A, Schedule 3, Page 5). PSWC also employed a barometer group of eleven natural gas local distribution companies. PSWC argued that it is essential that a variety of techniques are employed to measure its cost of equity because of the limitations/infirmities that are inherent in each method.

According to PSWC, informed judgment must be used to take into consideration the relative risk traits of the firm. It is for this reason that PSWC uses more than one method to measure its cost of equity. (PSWC Statement No. 4, p. 24). It should be noted that PSWC's DCF computed range of common equity cost rates (9.82-12.15 percent) has been increased to 10.29-13.16 percent, which is tabulated above, in order to adjust for the financial risk associated with the book value of the capitalization. (PSWC Statement 4, pp. 35-36).

Specifically, PSWC calculated a recent six-month average dividend yield of 2.48 percent for PSC, 3.46 percent for the Water Company Group, and 4.72 percent for the LDC Group which it basically increased to reflect the prospective nature of dividend payments to include higher expected dividends for the future. The adjusted dividend yields that are calculated in Appendix E of Statement No. 4 are 2.58 percent for PSC, 3.57 percent for the Water Group, and 4.90 percent for the LDC Group.

PSWC utilizes an 8.00 percent growth rate for PSC, a 6.25 percent growth rate for the Water Group and a 7.25 Percent growth rate for the LDC Group. These growth rates are based on its opinion that a blend of historical performance and published forecasts are appropriate to estimate the DCF growth rates listed above. Thus, PSWC proposes a DCF result of 10.58 percent (2.58 percent plus 8.00 percent) for PSC, 9.82 percent (3.57 percent plus 6.25 percent) for the Water Group, and 12.15 percent (4.90 percent plus 7.25 percent) for the LDC Group, before making its aforementioned financial risk adjustment which raises its proposed DCF results to 11.69 percent, 10.29 percent, and 13.16 percent, respectively.

Although PSWC utilized four other cost of common equity estimating techniques enumerated above, the ALJ emphasized that the RP, CAPM, and Comparable Earnings methods of analysis are inappropriate for use in rate-making because they are based on historic data, and do not measure the current rate of return on common equity. (R.D., p. 71). In any case, PSWC chose 11.75 percent as representative of the four cost rates of common equity results enumerated above. Moreover, according to PSWC, it is entitled to an 11.75 percent rate of return on common equity so that it can compete in the capital markets and maintain a reasonable credit quality. (PSWC Statement 4, p. 49).

The OTS relied solely on the DCF method to arrive at its 9.90 percent recommended cost rate of common equity. The OTS applied the DCF method to both the market data of PSC and to its barometer group of water utilities' stock which is actively traded. The OTS' barometer group consists of five publicly traded water utilities that have at least two sources of analysts' forecasts of earnings growth, and are not the announced subject of an acquisition.

Specifically, the OTS averaged the spot dividend yield and the 52-week average dividend yield of its barometer group to reach a 3.68 percent composite dividend yield. The OTS then added its 5.90 percent growth rate recommendation to the 3.68 percent dividend yield to reach a 9.58 percent DCF recommendation for its barometer group.

Next, the OTS averaged the spot dividend yield and the 52-week average dividend yield of PSC to reach a 2.41 percent composite dividend yield. The OTS then added its 7.80 percent growth rate recommendation to the 2.41 percent dividend yield to reach a 10.21 percent DCF recommendation for PSWC. The OTS proceeded to average the aforementioned 9.58 percent and 10.21 percent results to reach a 9.90 percent overall DCF recommendation which became OTS' updated common equity cost rate recommendation. (OTS Exhibit No. 1-S, Schedule 2).

The OCA relied primarily upon the DCF method to produce a common equity cost rate of 8.9 percent. The OCA afforded lesser weight to its RP result of

8.84 percent. The OCA then chose 9.0 percent as its common equity cost rate recommendation.

In its DCF analysis, the OCA averaged the 12-month composite dividend yield of 3.6 percent and the latest one-month average dividend yield of 3.5 percent to develop the DCF dividend yield of 3.55 percent for its barometer group. The OCA proceeded to employ the midpoint of its range of prospective Comparison Group growth rates of 5.00 percent to 5.50 percent. The resultant 5.25 percent is chosen by the OCA as a representative DCF growth rate. Next, in order to account for dividend growth in the period in which rates will be in effect, the OCA adjusted the 3.55 percent dividend yield by one-half the expected dividend growth rate of 5.25 percent or 2.63 percent. The OCA's DCF result is thereby 8.9 percent (3.55 percent*1.0263 +5.25 percent). (OCA Statement No. 2, p. 21).

In its RP analysis, the OCA used the risk-free Treasury securities over a 24-month period to arrive at a rate of 5.5 percent as the risk-free rate. The OCA then derived a risk premium range from data for its barometer group, which ranged from 2.8 percent to 4.4 percent. Using the average of 3.34 percent, the OCA concluded that the indicated rate of return was 8.84 percent (5.50% + 3.34%).

The OCA subsequently recommended a 9.0 percent common equity rate of return based primarily upon the DCF method and, to a lesser extent, the RP method.

2. The ALJ's Recommendation

After considering the arguments of the Parties regarding the cost of common equity, the ALJ recommended that we permit PSWC the opportunity to earn a rate of return on common equity of 9.9 percent as recommended by the OTS. It is the ALJ's position that a 9.9 percent rate of return on common equity is amply supported by the record. Moreover, the ALJ maintains that the OTS' DCF analysis was conducted in accordance with Commission precedent and appears reasonable. As such, the ALJ finds that in numerous cases we have recognized that while investors use many analytic methodologies such as RP, CAPM and CE, these types of analyses are inappropriate for use in rate-making because they are based on historic data, and do not directly measure the current rate of return on common equity. (R.D., p. 71).

Finally, the ALJ rejected PSWC's use of a leverage adjustment of 111 basis points for its DCF PSC analysis and 47 basis points for its DCF Water Group analysis. The ALJ reasoned that, although we accepted a 60 basis point adjustment in *Pa P.U.C. v. Pennsylvania-American Water Co.,* Docket No. R-00016339 (Opinion and Order entered January 25, 2002) (*PAWC 2002*), pp. 71-72, high financial risk is not a factor in this case. Moreover, the ALJ submitted that the financial risk adjustment of 60 basis points that we made in *PAWC 2002, supra* was far smaller than the 111 and 47 basis point adjustments that PSWC made for PSC and the Water Group, respectively. (R.D., p. 72).

3. Exceptions and Reply Exceptions

PSWC excepts to the ALJ's 9.9 percent common equity cost rate recommendation arguing that it falls midway between the 9.58 percent to 10.21 percent range of unadjusted DCF values developed by the OTS. In its Exceptions, PSWC avers that the DCF method should not be relied upon exclusively, to the exclusion of other generally accepted methods, to form a cost of common equity recommendation. PSWC argues that no one cost of equity model is so inherently precise that it can be relied upon to the exclusion of all other methods. PSWC supports the utilization of several common equity cost rate methodologies in rate case proceedings by reminding us that the Commission reviews the results of more than one method in evaluating the quarterly earnings reports submitted by Pennsylvania's jurisdictional utilities and in establishing the cost of equity for Distribution System Improvement (DSIC) purposes. (Co. Exc., pp. 3-4).

PSWC further argues that extensive reliance on the DCF method is inappropriate because: (1) PSWC's stock is not publicly traded and, therefore, the DCF method provides no direct evidence as to PSWC's cost of equity capital; (2) due to the recent spate of mergers, the universe of comparable companies has shrunk to the point where the usefulness of any particular group must be questioned; and (3) PSWC alleges that when the DCF results are applied to an original cost rate base, its cost of equity capital will be understated when the market prices of the stocks used in the analysis substantially exceed book values.

PSWC notes that, in *PAWC 2002*, we adopted a financial risk adjustment virtually identical to the adjustment made in the instant proceeding. PSWC, therefore, excepts to the ALJ's rejection of the financial risk adjustment that it made in this rate case. PSWC alleges that it sought to correct the "mismatch" of market and book values by making a 47 basis point adjustment for its barometer group and a 111 basis point adjustment for PSC. PSWC indicates that the midpoint of this range (47 to 111 basis points) approximates 80 basis points that when added to the ALJ's unadjusted DCF findings of 9.9 percent would suggest an equity allowance of 10.7 percent. In *PAWC 2002, supra*, PSWC indicates that we adopted a 60 basis point financial risk adjustment to reconcile the greater financial risk inherent in PAWC's book value-derived capital structure ratios. (PSWC Exc., p. 6).

In their Reply Exceptions, both the OTS and the OCA rejoin that the Commission has relied upon the DCF analysis and informed judgment as the appropriate means of measuring the cost of common equity. *See, e.g., PAWC 2002*; *Pa. P.U.C. v. City of Lancaster,* 197 P.U.R.4th 156 (1999); *Pa. P.U.C. v. Consumers Pennsylvania Water Company-Roaring Creek Division (Roaring Creek),* 87 Pa. P.U.C. 826 (1997);

Pa. P.U.C. PECO Energy Company, 87 Pa. P.U.C. 184, 212-213 (1997). (OTS R.Exc., pp. 15-16). The OTS indicates that PSWC's Exception stating that because the Commission reviews the results of more than one method in establishing the cost of equity for the DSIC, it is, therefore, necessary in a base rate case to do the same thing, is entirely without merit. It is the OTS' position that rate of return analysis in DSIC reports was never intended to be used as a substitute for the rate of return analysis in a base rate proceeding. According to the OTS, rate of return analysis in DSIC reports was developed to facilitate interim rate of return allowances on infrastructure improvements up to 5% of net plant between base rate proceedings. (OTS R.Exc., p. 16; OTS St. 1-SR, pp. 3-4).

In their Reply Exceptions, both the OTS and the OCA rejoin that the ALJ correctly rejected any proposed risk adjustment to PSWC's Cost of Common Equity. The OCA argues that PSWC's reliance on a single case, *PAWC 2002,* that is inapplicable to this issue, is unjustified. The OCA reasons that any inequity between market and book values is not necessarily significant. It is the OCA's position that a company with market value that exceeds book value and results in a market/book ratio of over 1.0, such as the case of PSWC, simply means that such a company is earning a return on equity in excess of its cost of equity. The OCA explains that a market/book ratio of 1.0 indicates that investors return requirements are being met. A market/book ratio greater than one, as is the case with PSC and its barometer group, indicates that PSWC's returns are more than sufficient to meet its investors' requirements. (OTS R.Exc., pp.17-18; OCA R.Exc., pp. 12-14.).

Therefore, the OTS and the OCA conclude that, not only should the DCF method be relied upon exclusively in the current base rate case, but also that no financial risk adjustment is necessary based on the market/book ratio of both PSC and its barometer group being greater than 1.0. The OTS and the OCA recommend that the associated Exceptions of PSWC be denied.

4. Disposition

Historically, we have primarily relied on the DCF methodology in arriving at our determination of the proper cost of common equity. We have, in many recent decisions, determined the cost of common equity primarily based upon the DCF method and informed judgment. *See Pa. PU C v. Philadelphia Suburban Water Co.,* 71 Pa. PUC 593, 623-32 (1989); *Pa. PU C v. Western Water Co.*, 67 Pa. PUC 529, 559-70 (1988); *Pa. PUC v. Roaring Creek Water Co.*, 150 PUR4th 449, 483-88 (1994); *Pa. PUC v. York Water Co.,* 75 Pa. PUC 134, 153-67 (1991); *Pa. PUC v. Equitable Gas Co.*, 73 Pa. PUC 345-46 (1990); *PAWC 2002*, p. 70. After a thorough examination of the record in this proceeding, we continue to find that the DCF method is the preferred method of analysis to determine a market based common equity cost rate.

We note that, in *Lower Paxton Township v. Pennsylvania Public Utility Commission,* 317 A.2d 917 (Pa. Cmwlth. 1974) (*Lower Paxton Township),* the Commonwealth Court recognized that this Commission may consider such factors that affect the cost of capital such as the utility's financial structure, credit standing, dividends, risks, regulatory lag, wasting assets and any peculiar features of the utility involved.

PSWC argues that a preliminary DCF calculation, which is computed using the market price of PSC's common stock and the average of the barometer group's market prices, should be adjusted to reconcile the divergence between market and book values. The indicated cost of common equity of 9.90 percent recommended by the ALJ, therefore, reflects the barometer group's average *market* capitalization, which includes a common equity ratio of 69.74 percent as opposed to its common equity ratio of 52.85 percent which reflects the group's book capitalization and significantly more financial risk. The corresponding common equity figures for PSC were 72.89 percent market and 46.95 percent book. PSWC properly determined that a financial risk adjustment ranging from 47 basis points for the barometer group and 111 basis points for PSC is in order. The midpoint of this range approximates 80 basis points.

We find that a financial risk adjustment is indeed necessary to reconcile the divergence between PSWC's market and book values. This is particularly true in light of the significant turbulence currently being experienced by the stock market. We find merit to the alternative proposal presented in PSWC's Exceptions cited above. Specifically, an 80 basis point adjustment to the 9.90 percent recommendation of ALJ Chestnut is appropriate. We, accordingly, find that a 10.70 percent common equity cost rate assures the continued financial stability of PSWC and takes into account PSWC's efficiency, effectiveness, and adequacy of service. *See* 66 Pa. C.S. §523 (a).

Moreover, we find that even in the absence of a financial risk adjustment applied to the unadjusted DCF results, the record in this proceeding still supports a cost of common equity allowance of 10.70 percent. For example, the RP, CAPM and CE analyses performed by PSWC's rate of return witness all yielded results in excess of 10.70 percent for the cost of common equity. While the Commission does not rely primarily on these alternative methods of determining the company's cost of common equity, this testimony further supports the reasonableness of the 10.70 percent cost of common equity we have allowed in this proceeding.

Based on our analysis of the record, we conclude that PSWC's cost of common equity of 10.70 percent is reasonable and appropriate under the circumstances in this proceeding. The following table summarizes our determinations concerning PSWC's capital structure, cost of debt, cost of preferred stock, and cost of common equity, as well as the resulting weighted costs and overall rate of return:

Capital Structure	Ratio	Cost Rate	Weighted Cost

Debt	52.26%	7.01%	3.66%
Common Equity	47.74%	10.70%	5.11%
	100.00%		8.77%

IX. RATE STRUCTURE

A. Overview

In *Pa. P.U.C. v. West Penn Power*, the Commission described its view of cost recovery through rates as follows:

> Public utility rates should enable the utility to recover its cost of providing service and should allocate this cost among the utility's customers in a just, reasonable and nondiscriminatory manner.

73 Pa. P.U.C. 454, 510, 199 PUR 4th 110 (1990) (*West Penn Power*). The determination of the proper amount of the total cost of service to be allocated to each customer class is accomplished through the use of a cost of service study. The allocation is determined based upon the relative cost responsibilities of each customer class.

The ALJ observed that, due to acquisitions of several water utilities, PSWC customers are currently served under twenty-five separate rate zones. Over the long term, it is PSWC's stated intent to serve all of its customers under a uniform set of rates, implementing Commission approved Single Tariff Pricing. Thus, PSWC's different rate divisions receive varying rate increases as the company continues the rate equalization process.

The ALJ observed further that this process is complicated by several factors. First, the need for gradualism, to avoid rate shock; and second, the fact that many of the systems acquired by PSWC were served by rates substantially different from those of PSWC, as well as those served by flat rates or rates which contain a water allowance in the customer charge. (R.D., pp. 73-74).

B. Cost of Service Study

1. Positions of the Parties

PSWC prepared a cost of service study using the Base-Extra Capacity Method for allocating costs to customer classifications. PSWC revised its original cost of service study to change certain cost allocations. No Party objected to the use of the revised cost of service study submitted by PSWC.

The OCA recommended that, in future proceedings, PSWC be directed to: (1) undertake further demand studies to refine its estimates of class non-coincident peak demands; and (2) make changes to the allocation of storage facilities to the public fire protection class. PSWC objected to the OCA's proposal arguing that PSWC should determine how to conduct the cost of service study that it presents.

2. The ALJ's Recommendation

The ALJ recommended rejection of the OCA's proposal. The ALJ found that any party to a proceeding should have the right to prepare its cost of service study in the manner supported and recommended by its expert. (R.D., p. 77). The method proposed by PSWC has been accepted by this Commission as the appropriate methodology for determining class costs of service. The ALJ proffered a description of this method, which is incorporated herein by reference. (R.D., p. 75-77).

3. Exceptions and Reply Exceptions

In its Exceptions, the OCA argues that it provided evidence to show that PSWC does not use the appropriate measurement for customer demand in its load study and, as a result, PSWC's Cost of Service study may overstate the relative hourly and daily demands of residential customers. The OCA continues that the information used by PSWC to determine class cost of service could be made more accurate by continuing PSWC's load research to develop a method to estimate class non-coincident peak day and hour demands

The OCA wants PSWC to develop a method to estimate non-coincident peak demands. The OCA argues that despite the foregoing definition, PSWC applies the Base-Extra Capacity method without a measure of the non-coincident peak (NCP) demands on its system. The OCA maintains that NCP demands are used to assign cost responsibility because they avoid potential biases against particularly low load factor customers by capturing the diversity of their usage. According to the OCA, the residential class tends to be more diversified than other classes, thus resulting in a particular difference in the measurement of demand if this diversity is not reflected. (OCA Exc., pp. 29-30).

PSWC rejoins that it measures residential demand within residential load control areas that contain from 22 to 105 residential customers. PSWC argues that the resulting data captures the coincident peak usage of the customers on the distribution system, and presents a more accurate measurement of peak usage of distribution facilities than the OCA's proposal, which PSWC contends would understate the peak by looking at coincident usage across the system.

PSWC further argues that the OCA's proposal also is flawed in that it fails to consider the technological difficulties, and resulting costs, that would be encountered in trying to develop more, but not necessarily more accurate, data.

According to PSWC, the difficulty is in measuring commercial and industrial demand data for customers that are not served in discrete systems, but are instead spread throughout the service territory. PSWC asserts that to adopt the OCA proposal, it would have to establish a system to record and compile data for an unspecified number of commercial and industrial customers 24 hours/day, 365 days/year, since it is impossible to know, in advance, when each of these classes will experience a peak hour or a peak day. PSWC posits that, even if this could be accomplished, there is no basis to conclude that the relative demands of each class will vary from those already determined. (PSWC R.Exc., pp. 30-31).

4. Disposition

After careful consideration of the positions of the Parties, we shall adopt the recommendation of the ALJ. First, we agree with the ALJ that any party to a proceeding should have the right to prepare its cost of service study in the manner supported and recommended by its expert, and that PSWC should not be constrained as to the evidence it presents in future cases. We are persuaded by the argument advanced by PSWC in its Reply Exceptions that the OCA's proposal does not consider the technological difficulties and resultant costs that would be encountered in imposing the proposed requirement upon PSWC. We find that the OCA has not demonstrated that its proposal would produce more accurate data.

We further conclude that implementation of the OCA proposal would not result in more accurate data than is currently being developed. Since we are mindful that the cost of a rate proceeding is ultimately borne by the ratepayers of a utility seeking rate relief, we are unwilling to create a further evidentiary requirement which may not result in more accurate data than is currently being produced. Accordingly, we will deny the Exceptions of the OCA, and adopt the recommendation of the ALJ on this issue.

C. Rate Design Proposals

1. Customer Charge - Main Division

a. Positions of the Parties

PSWC proposed to raise its customer charge for customers in the Main Division with 5/8 inch meters from $7.50 per month exclusive of the DSIC, or $7.7875 inclusive of the DSIC. PSWC proposed comparable increases in customer charges for those customers with other meter sizes.

The OCA recommended no increase in the customer charge in the Main Division because its witness contended that there were indirect costs included in the proposed charge. Specifically the OCA argued that employee benefits and payroll taxes related to employees who operate and maintain meters and services, prepare bills and collections and read meters and computer costs, should not be recovered through the customer charge. The OCA also argued that as a matter of policy, customer charges should be kept low to encourage conservation.

PSWC responded that the OCA's calculations were flawed. Specifically, PSWC pointed out that although a significant number of its customers are billed on a quarterly basis, the OCA divided quarterly billing costs by monthly billing units. This, according to PSWC, creates a substantial mismatch.

b. The ALJ's Recommendation

The ALJ recommended adoption of the PSWC recommendation reasoning as follows:

> In light of this [error], it is not necessary to address the further criticism of OCA's customer cost analysis. I do agree with PSW that OCA's methodology is deficient and should not be used to reject the company's proposal to increase the customer charge.
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> ***
>
> In addition, as discussed in detail in PSWLUG's Reply Brief, pp. 5-7, those other cases cited by OCA do not support its assertion that the Commission has ever recognized the promotion of conservation as a policy matter in the setting of a customer charge. For example, in Pa. P.U.C. v. City of Bethlehem, 160 PUR4th 375, 428 (1995), the Commission's discussion was in the context of minimum usage charges which contained water allowances. It was the consumption allowance – not the customer charge – that was eliminated to favor conservation.
>
> In conclusion, I recommend that the Main Division 5/8-inch meter customer charge be increased as proposed by the company.

(R.D., pp. 88-89).

c. Exceptions and Reply Exceptions

In its Exceptions, the OCA argues that PSWC's costing analysis is at odds with previous Commission decisions regarding the development of customer charges and gradualism. The OCA argues further that a customer charge that is greater than the direct customer costs – which is improper in itself – will also have the effect of discouraging water conservation.

In its Reply Exceptions, PSWC maintains that the OCA erred in its calculation of customer costs by dividing meter reading, collecting and billing costs by meter equivalents. PSWC argues that this is wrong because these costs are driven principally by the frequency of billing, and thus should be divided by billing units.

According to PSWC, the OCA concedes that if these costs are divided by billing units, its own customer cost analysis produces a $9.07 customer charge for a 5/8" meter. PSWC submits that this is more than sufficient to support the ALJ's recommended $8.75 customer charge. Moreover, PSWC contends that the $9.07 charge understates PSWC's true customer costs because it fails to include such items as employee benefits and payroll taxes related to those employees who perform meter services, billing and collection functions. PSWC argues that the OCA's suggestion would also exclude PSWC's investment in billing computer equipment, even though without computers additional employees would be needed to prepare bills by hand. PSWC cites *Pa. P.U.C. v. Citizens Utilities Water Company of Pennsylvania*, 86 Pa. P.U.C. 51 (1996) (*Citizens Utilities*) for the proposition that such costs have been recognized as direct customer costs. (PSWC R.Exc., pp. 21-22).

d. Disposition

Upon consideration of the positions of the Parties we shall adopt the recommendation of the ALJ. We arrive at this conclusion for several reasons. First, we find, as did the ALJ, that the OCA calculations were flawed. As noted in PSWC's Reply Exceptions, the OCA concedes that if these costs are divided by billing units, its own customer cost analysis produces a $9.07 customer charge for a 5/8" meter, which is more than sufficient to support the $8.75 customer charge.

Next, it appears that even the $9.07 charge may be understated because it fails to include such items as employee benefits and payroll taxes related to those employees who perform meter services, billing and collection functions.

Finally, we also reject the argument that a customer charge would influence consumption. We find that consumption would be far more affected by an allowance included within a customer charge. Since PSWC has eliminated the water allowance from its customer charge, such an argument is rendered moot.

Based upon the foregoing discussion we adopt the ALJ's recommendation. The Exception of the OCA relative to this issue is denied.

2. Fawn Lake and Paupack Divisions

The Fawn Lake and Paupack Divisions primarily serve vacation rental properties in the Pocono Mountain area. PSWC proposed a $17.22 per month customer charge for customers of the Paupack Division who are served by a 5/8 or ¾ inch meter. Included in the monthly customer charge is an allowance of 2,300 gallons. For customers of the Fawn Lake Division who are served by the 5/8 or ¾ inch meters, the monthly charge is $17.22, which includes an allowance of 2,000 gallons.

a. Position of the Parties

The OTS and the OCA proposed the same per month customer charge as the Main Division with no water allowance for customers of Fawn Lake Division. For both the Fawn Lake and Paupack Divisions, the OTS and the OCA accepted PSWC's proposal to charge the same consumption rates as in the Main Division.

b. The ALJ's Recommendation

The ALJ recommended as follows:

> Therefore, it is recommended that the 5/8-inch minimum charge in the Fawn Lake Division be set at $8.75, and the ¾-inch meter minimum charge be set at $13.80, with no water allowance, consistent with the Main Division charges. It is further recommended that the 5/8-inch meter minimum charge in the Paupack Division be set at $10.00 with no allowance and that the ¾-inch meter minimum charge be set at $13.80 per month with no water allowance. (Footnote omitted.)

(R.D., p. 91).

c. Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

d. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with record evidence, it is adopted. As such, we adopt the minimum charges for the Fawn Lake Division consistent with our approval of the Main Division charges. We also adopt the ALJ's recommended charges for the Paupack Division as reasonable since the charges implement (1) a move toward single tariff pricing; and (2) a substantial decrease from the rates currently charged to the Paupack Division customers.

3. Western Division

a. Positions of the Parties

PSWC proposed to increase customer charges for customers served by 5/8-inch and ¾-inch meters from $35.01 to $44.00 per month with an allowance of 5,000 gallons per month.

The OTS recommended a $15 per month customer charge for customers served by 5/8 and ¾ inch meters with no minimum allowance. The OCA recommended a $12.50 per month customer charge with no minimum allowance for customers served by 5/8 inch meters.

b. The ALJ's Recommendation

The ALJ found as follows:

> As explained in PSW's Main Brief, p. 79, at present rates, pro forma revenue from Western Division metered sales service is $266,094. PSW's proposed rates would produce pro forma revenues of $294,163. PSW St. 1-R, p. 35. OTS' proposal would reduce metered revenue to $228,028, a 14% reduction. PSW St. 1-R, p. 35, PSW St. 1-R, Sch. 7, p. 3. OCA's proposal would reduce metered revenue even further to $213,251, a $52,843, or 20%, reduction from current revenues. PSW St. 1-R, Sch. 7, p. 4.
>
> It is recommended that the OTS proposal be adopted. For the reasons stated above, no water allowance should be included. A customer charge of $15.00 with no allowance will move current rates closer to the Main Division rates. It is certainly possible that the anticipated revenue shortfall will be offset by

> reductions in expenses, given the economies of scale that will now be available.

(R.D., p. 92).

c. Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

d. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with record evidence, it is adopted. Specifically, we find that the imposition of the rates recommended by the OTS are a move toward single tariff pricing.

4. Woodloch Springs Division

a. Positions of the Parties

The Woodloch Springs Division was recently acquired by PSWC. Customers of the Woodloch Springs Division are currently charged a flat rate of $32.85 per month. PSWC proposed to establish a $32.50 per month customer charge including a 5,000 gallon allowance. PSWC proposed that all other rates would be the same as the Main Division rates. The OTS proposed a $15 per month customer charge for customers with 5/8 and ¾ inch meters with no minimum allowance.

b. The ALJ's Recommendation

The ALJ recommended as follows:

> I recommend that the company's proposal be accepted. I agree that the OTS recommendation fails to give due regard to principles of gradualism. Because Woodloch Springs customers are presently flat rate customers, it would be more appropriate, in the transition to metered service, to charge these customers higher customer charges with a usage allowance. The application of PSW Main Division commodity charges to these customers is adequate movement toward Single Tariff Pricing in this case. OTS' proposal for Woodloch Springs presents too great a change in rate design with an inappropriate reduction in revenues.

(R.D., pp. 92-93).

c. Exceptions and Reply Exceptions

In its Exceptions, the OTS argues that, in the case of Woodloch Springs, the ALJ favors the creation of a water allowance under the guise of supporting gradualism. The OTS contends that the recommended proposal does not move the average consumer's bill toward an appropriate rate in any manner. (OTS Exc., p. 21).

PSWC rejoins that the OTS' proposal represents too dramatic a change in rate design for these customers and "fails to give due regard to principles of gradualism". PSWC argues that the OTS-proposed Woodloch Springs rates would produce a 26% decrease in revenues from existing rates, at the same time that the average increase to other non-Main Division customers is approximately 13%. PSWC opines that the OTS proposal was properly rejected by the ALJ. (PSWC R.Exc., p. 23).

d. Disposition

Upon consideration, we agree with the ALJ that the OTS recommendation is not consistent with the principles of gradualism. We also agree with the ALJ's finding that PSWC's recommendation represents a more gradual transition to metered service and to eventual single tariff pricing.

We are mindful that the customers of the Woodloch Springs Division are presently flat rate customers and must be transitioned to metered service. We find that the OTS' Exceptions do not rise to the level that would cause us to modify or reject the ALJ's recommendation. Moreover, we take cognizance of the fact that under the OTS' proposal, the Woodloch Springs Division would receive a 26% decrease, while the remainder of the non-Main Division customers would receive an increase of approximately 13%.

Based upon the foregoing discussion we deny the Exception of the OTS on this issue, and adopt the recommendation of the ALJ.

5. Bristol Division

a. Positions of the Parties

For customers of the Bristol Division, PSWC proposed to maintain the monthly minimum charge of $8.00 per month including an allowance of 1,600 gallons for customers served by 5/8 and ¾ inch meters. PSWC agreed to OTS' proposal to maintain the minimum charge at $8.00 per month, but reduce the monthly allowance to 1,400 gallons. (R.D., p. 93).

The OCA recommended that the monthly minimum charge be reduced to $7.50 including an allowance of 1,000 gallons.

b. The ALJ's Recommendation

The ALJ recommended rejection of the OCA's position, reasoning as follows:

> The OCA's recommendations should be rejected because (1) its customer charge analysis has already been rejected in connection with the Main Division; and (2) the allowance recommended by OTS is appropriate, given the company's intention to completely eliminate the minimum allowance by 2007. OTS St. 2, p.10.

(*Id.*).

c. Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

d. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with record evidence, it is adopted. Consistent with our rejection of the OCA's proposal to adopt $7.50 as a customer charge for the Main Division, we reject the OCA's proposal.

6. West Chester Division

a. Positions of the Parties

PSWC proposed to increase monthly customer charge for customers served through a 5/8-inch meter from $8.33 to $8.75. The OCA recommended that the monthly customer charge for the 5/8-inch metered customers be reduced to $7.50 from the current level of $8.33.

b. The ALJ's Recommendation

The ALJ recommended adoption of PSWC's proposal and rejection of the OCA's proposal, consistent with the previous proposals.

c. Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

d. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with record evidence, it is adopted.

7. Flying Hills Division

a. Positions of the Parties

PSWC proposed no change to the $9.65 monthly customer charge for customers served through 5/8 inch meters. PSWC proposed lowering the monthly water allowance from 2,300 to 1,800 gallons for these customers. The current customer charges for all other meter sizes would be retained. The OCA did not oppose this proposal.

The OCA proposed reducing the monthly customer charge for customers served through 5/8 inch meters from $9.95 to $8.75. PSWC opposed the OCA's proposal reasoning that PSWC's proposed rate includes 1,800 gallons and thus warrants a customer charge higher than $8.50 per month in the Main Division where there is no water allowance.

b. The ALJ's Recommendation

The ALJ recommended adoption of the OCA proposal, as follows:

> I recommend that the OCA's proposal be adopted for this Division. As it points out, currently, the customer charge is higher than the Main Division customer charge with a higher allowance. The reduction to the monthly allowance will help to offset the reduction to the customer charge, while moving these customers toward Main Division rates.

(R.D., p. 94).

(c) Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

d. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with record evidence, it is adopted. We find that the ALJ's recommendation to adopt the OCA's recommended rate is consistent with the principle of gradualism. As the ALJ pointed out, the customer charge is higher than that of the Main Division, with an allowance that is not contained in the Main Division customer charge.

8. Main Division-Consumption Charges

a. Positions of the Parties

PSWC proposed increasing the first consumption block (the first 10,000 gallons) by a greater percentage than any other consumption block. The ALJ noted that the first consumption block is also the flat rate for the Residential and Sales to Other Utilities classes.

The OCA argued that PSWC's cost of service study shows that the Residential Class is over-contributing to PSWC's rate of return at current rates. Thus, the OCA proposed that PSWC increase each consumption block by the same percentage. PSWC responded that the OCA proposal is based upon its original cost of service study. PSWC submitted that its revised cost of service study shows that the Residential Class is at the system average rate of return.

PSWLUG opposed the OCA's recommendation. PSWLUG argued that while the OCA proposal may promote the interests of the Residential Class, it has not shown that its proposal would result in just, reasonable and fair rates for the other classes.

b. The ALJ's Recommendation

The ALJ recommended adoption of the PSWC proposal based upon the revised cost of service study.

c. Exceptions and Reply Exceptions

In its Exceptions, the OCA submits that the ALJ erred in determining, based on the results of the revised cost of service study, that a disproportionate increase is appropriate for the Residential Class. According to the OCA , PSWC proposed a disproportionate increase for residential customers who are paying "at the system average." The OCA argues that PSWC had not proposed a disproportionate increase for any of the other classes that are paying the average rate of return. The OCA contends that it is restoring reason and proportion to the cost allocation by proposing elimination of the disproportionate increase. (OCA Exc., pp. 36-38).

PSWC rejoins that the fallacy of the OCA proposal is that PSWC's revised cost of service study shows that the Residential Class rate of return is at system average under PSWC's proposed rates. According to PSWC, the OCA's proposal, rather than restoring proportionality, will instead perpetuate below system-average rates for the Residential Class. PSWC opines that the OCA has offered no compelling justification for such a result. (PSWC R.Exc., p. 24)

d. Disposition

Upon our careful consideration of the positions of the Parties in this proceeding, we shall adopt the recommendation of the ALJ. We observe that the resolution of this issue turned on a determination of whether the Residential Class over contributed to the system average rate of return. We agree with the ALJ's determination that the Residential Class' rate of return was at the system average.

We find that the Exceptions of the OCA do not refute the ALJ's findings that (1) the Residential Class is not over contributing to the overall system rate of return; and (2) PSWC's Cost of Service Study indicates that the Residential Class contribution is at the system average.

Based upon the foregoing discussion, we will deny the Exception of the OCA and adopt the recommendation of the ALJ.

9. Scaleback of Revenue Increase

a. Positions of the Parties

All Parties presented recommendations as to how the revenue increase, if any, should be allocated in the event the Commission determines that PSWC is entitled to a lower revenue requirement than it requested.

PSWC proposed to that consumption charges in the Main Division be scaled back proportionally before any scale back to customer charges, because the customer charges are "substantially" below cost. PSWC recommended that, in order to facilitate the move to single tariff pricing, any rate in another division that was moved to the proposed rates in its Main Division should be scaled back equal to the scaled back Main Division rates.

PSWC contended that any proposed rates in other divisions that would still be lower than the scaled back Main Division rates should remain as proposed and not be scaled back. PSWC pointed out that these scaleback proposals represent its acceptance of the recommendations of the OTS. PSWLUG supported PSWC's position.

The OSBA recommended that: (1) the customer charge and the first consumption block should be scaled back proportionally; (2) the second and third blocks should receive a greater than proportionate scale back; and (3) the fourth and fifth blocks should be given a less than proportionate scale back. The OSBA's proposal was based on the fact that the Industrial Class's relative rate of return is .87% under the proposed rates.

b. The ALJ's Recommendation

The ALJ recommended as follows:

> In the event the Commission allows a lower level of revenue than that requested by the company, I recommend that the PSW/OTS/PSWLUG proposal should be adopted. While the testimony of OSBA witness Kalcic concerning the effect of the interclass subsides (Public Fire Protection, Riders DIS and DRS) is persuasive, the revised cost of service study addresses some of his concerns. There is no question that, even under the revised class cost-of-service study, the industrial class's relative rate of return is less than system average; whether or to what extent the class return is under-stated due to any overlap with the private fire protection class.

(R.D., p. 97).

c. Exceptions and Reply Exceptions

No Party filed Exceptions on this issue.

d. Disposition

Since no Party excepts to the ALJ's recommendation on this issue, and finding that recommendation to be otherwise reasonable and in accord with record evidence, it is adopted. We find PSWC's proposal to be reasonable. We are of the opinion that PSWC's proposal represents a fair and equitable first step toward single tariff pricing for PSWC. Additionally, we find that the provision that there be no scaleback to any proposed rates in other divisions that would still be lower than the scaled back Main Division rates, to be consistent with the principle of gradualism.

X. CONCLUSION

We have carefully reviewed the record as developed in this proceeding, including the ALJ's Recommended Decision and the Exceptions filed thereto. The ALJ recommended an allowable revenue increase in the amount of $15,118,564. This amount is approximately 53.99% of the original request of $28,000,000, and represents a 7.26% overall increase in revenues at current rates. (R.D., p. 99). We will permit PSWC to increase its annual revenues by $21,225,941 or 10.19%. The increase that we will permit is 75.81% of the amount requested. As noted above, we conclude that a cost of common equity of 10.70 percent is appropriate.

As such, we hereby grant and/or deny the Exceptions filed by the various Parties hereto, as discussed *supra*. Accordingly, the ALJ's Recommended Decision is adopted, as modified by this Opinion and Order; **THEREFORE,**

IT IS ORDERED:

1. That the Exceptions of the various Parties to the Recommended Decision of Administrative Law Judge Marlane R. Chestnut herein, are granted or denied, consistent with this Opinion and Order.

2. That the Recommended Decision of Administrative Law Judge Marlane R. Chestnut, issued on June 7, 2002, is adopted as modified by this Opinion and Order.

3. The Philadelphia Suburban Water Company shall not place into effect the rates contained in Supplements Nos. 35 through 39 to Tariff Water–Pa. P.U.C. No. 16, which have been found to be unjust, unreasonable and, therefore, unlawful.

4. The Philadelphia Suburban Water Company is hereby authorized to file tariffs or tariff supplements containing rates, provisions, rules and regulations, consistent with the findings here, to produce revenues not in excess of $229,564,333.

5. That the tariffs or tariff supplements may be filed upon less than statutory notice, and pursuant to the provisions of 52 Pa. Code §§53.31 and 53.101, may be filed to be effective for service rendered on and after the date of entry of the instant Opinion and Order.

6. That Philadelphia Suburban Water Company shall file detailed calculations with its tariff filing, which shall demonstrate to this Commission's satisfaction that the filed rates comply with the instant Opinion and Order.

7. That Appendix A of the Main Brief of Philadelphia Suburban Water Company and Appendix A of the Main Brief of the Office of Consumer Advocate are admitted into the record.

8. That Philadelphia Suburban Water Company shall comply with all directives contained in the body of the instant Opinion and Order which are not the subject of individual ordering paragraphs as fully as if they were the subject of specific ordering paragraphs.

9. That the Complaints filed by the various Parties at Docket No. R-00016750C001 through R-00016750C0091 are granted or denied to the extent consistent with the instant Opinion and Order.

10. That upon Commission approval of the tariffs filed in response to the instant Opinion and Order, the proceeding at Docket No. R-00016750, including R-00016750C0001 through R-00016750C0091, shall be marked closed.

BY THE COMMISSION,

James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: July 18, 2002

ORDER ENTERED: August 1, 2002

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held January 16, 2004

Commissioners Present:

Terrance J. Fitzpatrick, Chairman
Robert K. Bloom, Vice Chairman
Glen R. Thomas
Kim Pizzingrilli
Wendell F. Holland

Pennsylvania Public Utility Commission : R-00038304
Gary D. A. Lewis : R-00038304C0001
Richard Sanderman : R-00038304C0002
John Ross : R-00038304C0003
Brian Carr : R-00038304C0004
Elaine Ziegler : R-00038304C0005
Irwin A. Popowsky, Consumer Advocate : R-00038304C0006
Randy and Bonnie Reich : R-00038304C0007
Cecil J. Hartman : R-00038304C0008
Natalie Kerr : R-00038304C0009
Thomas B. Aunkst : R-00038304C0010
Jeannie Weaver : R-00038304C0011
John D. Eisenhard : R-00038304C0012
Kevin M. Aldrich : R-00038304C0013
David R. Erali : R-00038304C0014
Jamie Denunzio : R-00038304C0015
Steven Maga : R-00038304C0016
Gary E. Pickel : R-00038304C0017
Richard Dewees : R-00038304C0018
Randy Piersol : R-00038304C0019
Laurence Wagner : R-00038304C0020
Ann Katcavage : R-00038304C0021
William D. and Loretta J. Hawkins : R-00038304C0022
Emmanuel Cooper : R-00038304C0023
Frank Lesnefsky : R-00038304C0024
Robert M. East, Jr. : R-00038304C0025
Peter Nahrgang : R-00038304C0026

Dirk Maurer : R-00038304C0027
David H. Lower : R-00038304C0028
Dale L. Szarejko : R-00038304C0029
Jennifer Ottinger : R-00038304C0030
Robert J. Cunnane : R-00038304C0031
Carolyn Marinelli : R-00038304C0032
Douglas George : R-00038304C0033
Timothy G. Long : R-00038304C0034
Joseph and Deborah Saracino : R-00038304C0035
James P. Trunzo, Jr. : R-00038304C0036
Michael Blevins : R-00038304C0037
Rosemary Smith : R-00038304C0038
Andrew Kozemko : R-00038304C0039
Mildred McDonald : R-00038304C0040
Andrew Moletress : R-00038304C0041
A. P. Casciano : R-00038304C0042
Patricia Termine : R-00038304C0043
Michael J. Zuber : R-00038304C0044
Bernard J. Lease : R-00038304C0045
Edmund Leizens : R-00038304C0046
Garry Detwiler : R-00038304C0047
Pamela Burnisky : R-00038304C0048
Gail Shannon : R-00038304C0049
Debbie and Gregg Templin : R-00038304C0050
Fern L. and John P. Gedman : R-00038304C0051
Gary A. Lunardini : R-00038304C0052
Kathleen Cotton : R-00038304C0053
William R. Cora : R-00038304C0054
George B. Smith : R-00038304C0055
Louise E. and Anthony S. Cisek : R-00038304C0056
Patricia A. Eyler : R-00038304C0057
Joseph A. Grudzinski : R-00038304C0059
Andrew L. and Dorris K. Gerfin : R-00038304C0060
Davis Haldeman : R-00038304C0061
Werner H. Frank : R-00038304C0062
Isabelle Martinez VanDapel : R-00038304C0063
Barbara L. Elia : R-00038304C0064
Donald E. Weston, III : R-00038304C0065
Paul Allen : R-00038304C0066
Alberta Murphy : R-00038304C0067
Robert T. Heist : R-00038304C0068
Lois K. Fink : R-00038304C0069
Susan and James Irwin : R-00038304C0070

Richard and Helene Dorr	:	R-00038304C0071
Carol F. Pennington, Acting Small Business Advocate	:	R-00038304C0072
Pennsylvania-American Water Large Users Group	:	R-00038304C0073
Paul and Miriam Fligleman	:	R-00038304C0074
Clare Kashuba	:	R-00038304C0075
Madeline Metro	:	R-00038304C0076
Charles Fortescue	:	R-00038304C0077
Eugene Rutkoski	:	R-00038304C0078
Joanne Ross-MacLeod	:	R-00038304C0079
John G. Patrick	:	R-00038304C0080
Rebecca Hafer	:	R-00038304C0081
Angelo Greek	:	R-00038304C0082
Josephine R. Kwiatkowski	:	R-00038304C0083
Joseph F. and Anna B. Marshalek	:	R-00038304C0084
William Rinker	:	R-00038304C0085
Anna M. Sealer	:	R-00038304C0086
Donald Major	:	R-00038304C0087
Louise Prioleau T. Fletcher	:	R-00038304C0088
Razvan Andrei	:	R-00038304C0089
Claudia L. Bertucci	:	R-00038304C0090
Cynthia Jones	:	R-00038304C0091
Angus D. MacLeod	:	R-00038304C0092
Michael and Matilda Gagliardi	:	R-00038304C0093
George H. Gantert, Jr.	:	R-00038304C0094
Frank Smith	:	R-00038304C0095
Jean Popp	:	R-00038304C0096
David Armanini	:	R-00038304C0097
Cathie Pallay	:	R-00038304C0098
Arthur Karten	:	R-00038304C0099
Patrick A. Brown	:	R-00038304C0100
Bill and Suzanne Patz	:	R-00038304C0101
James Schafer	:	R-00038304C0102
Ann F. Miller	:	R-00038304C0103
Kenneth Booth	:	R-00038304C0104
Otto and Winifred Forster	:	R-00038304C0106
Deletta Mastrangelo	:	R-00038304C0107
June Marie Preston	:	R-00038304C0108
Peter J. Mundell	:	R-00038304C0109
Regis P. Zapata	:	R-00038304C0110
D. Wintermyer	:	R-00038304C0111
Robert K. Alico	:	R-00038304C0112
Vittoria McEntee	:	R-00038304C0113

Robert S. Schaeffer : R-00038304C0114
Alice Yamrick : R-00038304C0115
Duerr Packaging Company, Inc. : R-00038304C0116
Jerome Greene : R-00038304C0117
Ronald J. Funk : R-00038304C0118
Robert Redinger, Jr. : R-00038304C0119
Dorothy E. Farrell : R-00038304C0120
AK Steel Corporation : R-00038304C0121
Winifred Jennings : R-00038304C0123
William J. Becker : R-00038304C0124
Kenneth J. Depro : R-00038304C0125
Bryan M. Maldony : R-00038304C0126
Joseph Trainor : R-00038304C0127
Peter Digiacomo : R-00038304C0128
Nancy Svitak : R-00038304C0129
John J. Hafferty : R-00038304C0130
Kari Suter : R-00038304C0131
Cheryl and Thomas H. Dalton, Sr. : R-00038304C0132
Fred M. Woy : R-00038304C0133
Bill Gaffey : R-00038304C0134
Amity Township, Berks Co. : R-00038304C0135
Deborah Destefano : R-00038304C0136
West Brownsville Borough, Washington Co. : R-00038304C0137
Robert K. and Diane M. Tuttle : R-00038304C0138
George Ondra : R-00038304C0139
Spring Township, Berks Co. : R-00038304C0140
Upper Providence Township, Montgomery Co. : R-00038304C0141
Robert Megatulski : R-00038304C0142
Elizabeth Kozlowski : R-00038304C0143
Thomas J. Hallyburton : R-00038304C0144
Colleen Sosnowy : R-00038304C0145
Fred J. and Ursula B. Pledger : R-00038304C0146
John M. and Terry D. Stockton : R-00038304C0147
Victoria Marie DeBarbieri : R-00038304C0148
William Glaser : R-00038304C0149
Dominick S. Vassallo : R-00038304C0150
Community Central Energy Corporation : R-00038304C0151
Eat 'N Park Hospitality Group, Inc. : R-00038304C0152
Joanne G. Kramer : R-00038304C0153
Exeter Township, Berks Co. : R-00038304C0154
Rice Enterprises LLC : R-00038304C0155
The Exeter Library Association : R-00038304C0156
Dorothy Reilly : R-00038304C0157

L. Louise Kellerman	:	R-00038304C0158
Joseph Merces	:	R-00038304C0159
Michelle P. Kircher	:	R-00038304C0160
Rosalia DiGrazia	:	R-00038304C0161
Susan M. Chelston	:	R-00038304C0162
Lois Schmoyer	:	R-00038304C0163
Mr. and Mrs. Robert R. Gross	:	R-00038304C0164
Jose A. and Helen Vega	:	R-00038304C0165
Dorothy K. Billing	:	R-00038304C0166
Bonnie and Bill Cochran	:	R-00038304C0167
Laurence Boucher	:	R-00038304C0168
Wesley J. Egleberger	:	R-00038304C0169
Samuel T. Orlando	:	R-00038304C0170
Kathleen A. Tini	:	R-00038304C0171

v.

Pennsylvania-American Water Company

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OPINION AND ORDER

BY THE COMMISSION:

Before the Commission for consideration and disposition is the Recommended Decision of Administrative Law Judge (ALJ) Wayne L. Weismandel, issued on December 2, 2003, relative to the above-captioned proceedings, and the Exceptions and Replies filed with respect thereto.

Exceptions to the Recommended Decision were filed by Pennsylvania-American Water Company (PAWC) and by the Office of Consumer Advocate (OCA) on December 17, 2003. Letters were received from the following Parties indicating that they would not be filing Exceptions: the Office of Small Business Advocate (OSBA), on December 16, 2003; the Commission's Office of Trial Staff (OTS), and Pennsylvania-American Water Large Users Group (PAWLUG), on December 17, 2003.

Reply Exceptions were filed by PAWC, the OTS and the OCA on December 24, 2003. The OSBA and PAWLUG filed Letters indicating that they would not be filing Reply Exceptions on December 23, 2003.

I. History of the Proceeding[1]

On March 31, 2003, PAWC filed with the Commission a Petition for Permission to Depart From the Requirements of 52 Pa. Code § 53.52(B)(2) and to File Supporting Data that Conform to the Proposed Amendments to the Data Filing Requirements for Water Utilities Published at 33 *Pennsylvania Bulletin* 1106 (Petition). That Petition was granted per Secretarial Letter issued on April 23, 2003.

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[1] We have extracted liberally from the Recommended Decision in setting forth the History of the Proceedings and the positions of the Parties as presented during the evidentiary phase of this matter.

On April 30, 2003, PAWC filed with the Commission Supplement No. 141 to Tariff Water - Pa. P.U.C. No. 4, to become effective June 29, 2003, containing proposed changes in rates, rules, and regulations calculated to produce $64,946,533 (18.2%) in additional annual revenues based on a future test year ending December 31, 2003.

On May 5, 2003, the OCA filed a Formal Complaint,[2] as did AK Steel on May 7, 2003. By Order adopted and entered May 22, 2003, we suspended the filing until January 29, 2004, unless permitted by Commission Order to become effective at an earlier date. Our May 22, 2003 Order also directed an investigation into the lawfulness, justness, and reasonableness of the proposed rates, rules and regulations, with hearings to be held by the Office of Administrative Law Judge (OALJ).

Pursuant to the Settlement Guidelines and Procedures for Major Rate Cases - Statement of Policy,[3] by Notice dated May 28, 2003, an Initial Prehearing Conference was scheduled for June 17, 2003, and ALJ Weismandel was assigned as the Presiding Officer. By Initial Prehearing Conference Order dated May 28, 2003, the participants were ordered to prepare memoranda to be filed and served by June 10, 2003, and advised that active participants would be limited to attendees at the scheduled Initial Prehearing Conference on June 17, 2003, unless granted active participant status upon the filing of Petitions to Intervene. On June 3, 2003, the OSBA filed a Formal Complaint, as did PAWLUG on June 9, 2003.[4] On June 10, 2003, the OTS filed a Notice of Appearance.

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[2] During the course of this proceeding a total of 171 Formal Complaints were filed. The overwhelming majority of the Complainants became inactive participants. Three of the Formal Complaints (Docket Numbers R-00038304C0058, R-00038304C0105 and R-00038304C0122) were withdrawn by the respective Complainants and closed by Secretarial Letters (respectively dated July 23, 2003, August 14, 2003, and August 14, 2003).

[3] 52 Pa. Code §§ 69.401-69.406.

[4] PAWLUG consists of GlaxoSmithKline, H. Warshow & Sons, Inc. and USX Corporation – U.S. Steel.

By letter dated June 16, 2003, PAWC advised that it would be relying on the provisions of 52 Pa. Code § 5.61(d) which provide that, for complaints which are docketed with Commission-instituted rate proceedings, no answer is generally required. PAWC, the OTS, the OCA, the OSBA, AK Steel, PAWLUG, the Commission on Economic Opportunity of Luzerne County (CEO), and the City of Pittsburgh (Pittsburgh) timely submitted Memoranda in accordance with the Initial Prehearing Conference Order. The Prehearing Conference occurred as scheduled on June 17, 2003, and was attended (either in-person or by telephone) by representatives of PAWC, the OTS, the OCA, the OSBA, AK Steel, PAWLUG, CEO, and Pittsburgh. A transcript of the proceeding containing 52 pages was produced.

As a result of the Prehearing Conference, ALJ Weismandel issued a Scheduling and Briefing Order dated June 18, 2003, which, *inter alia*, provided a schedule for the hearing and for Public Input Hearing sessions, and scheduled a Second Prehearing Conference for September 5, 2003. By Hearing Notice dated June 18, 2003, an initial and further hearing were scheduled for September 15-19, 2003, and September 22-26, 2003, in Harrisburg. A Further Prehearing Conference was also scheduled for September 5, 2003.

By Hearing Notice dated June 27, 2003, Public Input Hearing sessions were scheduled for the period of August 11-21, 2003. By Order Scheduling Public Input Hearing dated June 30, 2003, a Public Input Hearing in sixteen sessions at nine locations in Pennsylvania was scheduled for the period of August 11-21, 2003. By Order Granting Permission to Intervene dated July 30, 2003, the Petition to Intervene jointly filed on July 29, 2003, by

A Pocono County Place Property Owners Association (APCPPOA) and by Saw Creek Estates Community Association, Inc. (SCECA) was granted.[5]

By Second Prehearing Conference Order dated August 4, 2003, the active participants were ordered to prepare Memoranda to be filed and served by August 29, 2003. Among other things, the Memoranda were to include the Party's litigation position summary and final witness information for the scheduled initial and further hearing. By Order Scheduling Additional Public Input Hearing Sessions dated August 7, 2003, two additional sessions at another location were scheduled.

During the period of August 11-27, 2003, a Public Input Hearing, in eighteen sessions, was held in Pennsylvania. Sessions were held in ten of the thirty-five Counties in which PAWC provides public water service. At these Public Input Hearing sessions, a total of ninety-six witnesses presented sworn testimony, and six exhibits were admitted into evidence. Transcripts of the proceedings containing 833 pages were produced.

By Order Granting Motion for Leave to File Testimony Pursuant to the Commission's July 24, 2003 Order, at Docket No. R-00027983, dated August 20, 2003, PAWC was permitted to submit testimony and other evidence on the issue of the prudence and reasonableness of increased security costs incurred after September 11, 2001. PAWC had filed a Motion seeking this permission on August 7, 2003, which Motion was opposed by the OCA.

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[5] The fourteen active participants which litigated this case are PAWC, the OCA, AK Steel, the OSBA, PAWLUG, the OTS, CEO, Pittsburgh, APCPPOA, SCECA, Quarryville Borough, Lancaster County, Atglen Borough, Chester County, Christiana Borough Lancaster County, and Parkesburg Borough, Chester County.

PAWC, the OTS, the OCA, the OSBA, AK Steel, PAWLUG, CEO, Pittsburgh, and Quarryville, Atglen, Christiana, Parkesburg, APCPPOA and SCECA (jointly) timely submitted Memoranda in accordance with the Second Prehearing Conference Order. The Second Prehearing Conference occurred as scheduled on September 5, 2003, attended (either in-person or by telephone) by representatives of PAWC, the OTS, the OCA, the OSBA, AK Steel, PAWLUG, CEO, Pittsburgh, Quarryville, Atglen, Christiana, Parkesburg, APCPPOA, and SCECA. A transcript of the proceeding containing 29 pages was produced. As a result of agreements reached by the active participants at the Second Prehearing Conference, the initial and further hearing was rescheduled to begin on September 19, 2003, rather than on September 15, 2003.

Based upon further agreements of the active participants, and due in part to the temporary unavailability of an OCA witness due to a family emergency, the initial and further hearing ultimately convened on Tuesday, September 23, 2003. That hearing continued on consecutive work days through Monday, September 29, 2003. PAWC, the OCA, the OTS, the OSBA, PAWLUG, Quarryville, Atglen, Christiana, Parkesburg, APCPPOA and SCECA each presented written direct testimony that was admitted as evidence. PAWC, the OCA, the OSBA, PAWLUG, and AK Steel each presented written rebuttal testimony that was admitted as evidence.

In accordance with the requirements of the Special Instructions for Briefs and Exceptions in Major General Rate Increase Proceedings, Paragraph 3.a., the test year to be used in this case was established on the record as the future test year ended December 31, 2003. (Tr. at 1571). Also in accordance with the requirements of the Special Instructions, Paragraph 4.a., at the conclusion of the hearing, PAWC was directed to file and serve, identified as ALJ Exhibit 1, its final *pro forma* showing at present rates. ALJ Exhibit 1 would be the starting point from which all active participants would make adjustments based upon evidence admitted in the case. (Tr. at 1572 – 1574).

Finally, at the conclusion of the hearing, the ALJ directed that the record would close on October 6, 2003. (Tr. at 1578). On October 7, 2003, PAWC late-filed ALJ Exhibit 1. PAWC, the OTS, the OCA, PAWLUG, and CEO timely submitted Main Briefs in accordance with the Scheduling and Briefing Order. PAWC, the OTS, the OCA, and APCPPOA and SCECA (jointly) timely submitted Reply Briefs in accordance with the Scheduling and Briefing Order.

On October 28, 2003, all of the active participants in this case, outlined above, filed a Stipulation Concerning Rate Structure and Rate Design (Stipulation) to resolve the issues concerning the structure and design of rates and the distribution among customer classes of any revenue increase allowed in this proceeding. The Stipulation requested that its terms be adopted in the final Order in this case. The Stipulation as filed remained unsigned on behalf of APCPPOA, SCECA, Quarryville, Atglen, Christiana, and Parkesburg due to the need for their respective Boards to meet and formally authorize their attorney to execute the Stipulation on their behalf.

By Order Reopening Record and Admitting Exhibits dated October 31, 2003, the record was reopened for the limited purpose of admitting, as part of the record, both ALJ Exhibit 1 filed October 7, 2003, and the Stipulation filed October 28, 2003. On November 13, 2003, counsel for APCPPOA, SCECA, Quarryville, Atglen, Christiana, and Parkesburg filed an executed signature page evidencing that all six of his clients joined in the Stipulation. On November 18, 2003, original signature pages for the Stipulation on behalf of the OTS and Pittsburgh were filed (the filed Stipulation contained faxed signature pages on behalf of these two active participants). In accordance with the Order Reopening Record And Admitting Exhibits dated October 31, 2003, the record was closed on November 21, 2003.

ALJ Weismandel's Recommended Decision was issued on December 2, 2003. In his Recommended Decision the ALJ found, *inter alia*, that PAWC's proposed

Supplement No. 141 to Tariff Water - Pa. P.U.C. No. 4 proposing an annual increase of $64,946,533, should be rejected. The ALJ stated that the rates contained in that Supplement were not just and reasonable, or otherwise in accordance with the Pennsylvania Public Utility Code (Code) and the Commission's Regulations. The ALJ further recommended that the Commission issue an Opinion and Order directing PAWC to file a tariff allowing recovery of no more than $26,174,845 in additional base rate revenue. (R.D. at 81).

Exceptions and Reply Exceptions to the Recommended Decision were filed as above noted. As duly noted in our determinations herein, we are adopting the ALJ's Recommended Decision, modified (1) to permit deferred security costs as further adjusted herein; and (2) to increase the cost of common equity to 10.6%. Incorporating these modifications into our determinations herein, results in a grant of additional annual operating revenues not to exceed $34,314,157.

II. Description of The Company and General Principles

PAWC is a regulated Pennsylvania public utility that furnishes water service to approximately 609,110 customers in a service territory covering portions of 35 counties across the Commonwealth. It was formed by the merger of the former Pennsylvania-American Water Company with Western Pennsylvania Water Company (WPW) on February 1, 1989.

The former WPW was originally established in 1972, when sixteen separate water companies in Western Pennsylvania were merged. The former Pennsylvania-American Water Company was initially formed in 1987, when Riverton Consolidated Water Company (Riverton) merged with Keystone Water Company (Keystone). Keystone itself had been established in 1973, when fourteen separate companies located in Eastern and Central Pennsylvania were merged. Similarly, Riverton was the combined derivative of many small independent water companies, all serving the area in the Harrisburg vicinity known as "The West Shore."

On February 16, 1996, PAWC acquired all of the water utility assets of the former Pennsylvania Gas and Water Company (PG&W) and began providing water service in the former PG&W service territory located in Lackawanna, Luzerne, Susquehanna and Wayne Counties. Since January 1, 1996, PAWC has acquired the assets of a number of smaller municipal and investor-owned water systems. On March 22, 2001, it acquired the water system owned and operated by the City of Coatesville Authority, which furnished service to approximately 8,300 residential, commercial, industrial and sale for resale customers located in the City of Coatesville and all or portions of fifteen other municipalities. Additionally, on January 15, 2002, PAWC acquired the utility assets of Citizens Utilities Water Company of Pennsylvania (Citizens), which furnished service to approximately 33,550 residential, commercial, and industrial customers located in all or portions of 36 municipalities.

PAWC utilizes various sources of water supply to meet its customers' requirements. In addition, it owns and operates water treatment facilities, distribution storage facilities, booster pumping stations, and transmission and distribution mains for furnishing water service to customers. PAWC is a subsidiary of American Water Works Company, Inc. (American).[6] Another subsidiary of American, the American Water Works Service Company, Inc. (Service Company), provides certain technical and administrative services to American and its subsidiaries. Such services, which include engineering, water quality and procurement, are provided at cost, with no element of profit to the Service Company. In addition, through an initiative that began in 2001, certain customer call center and corporate service functions were consolidated at the Service Company level in the National Customer Call Center and the Shared Services Center.

In deciding this, or any other, general rate increase case brought under Section 1308(d) of the Code, 66 Pa. C.S. § 101 *et seq.*, certain general principles always apply. A public utility is entitled to an opportunity to earn a fair rate of return on the value of the property dedicated to public service. *Pennsylvania Gas and Water Company v. Pennsylvania Public Utility Commission*, 341 A.2d 239 (Pa. Commw. Ct. 1975) [Emphasis added].

In determining a fair rate of return the Commission must be guided by the criteria provided by the United States Supreme Court in the landmark cases of *Bluefield Water Works and Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) and *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944). In *Bluefield*, the Court stated, in pertinent part, that:

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[6] On January 10, 2003, American was acquired by Thames Water Aqua US Holdings, Inc. (Thames), the water division of RWE Aktiengellshaft (RWE). Prior to its acquisition by Thames, American's common stock was publicly held.

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.

Bluefield, 262 U.S. 679, 692-3 (1923).

The burden of proof to establish the justness and reasonableness of every element of a public utility's rate increase request rests solely upon the public utility in all proceedings under Section 1308(d) of the Code. The standard to be met by the public utility is set forth at Section 315(a) of the Code which provides that:

> **Reasonableness of rates.** –In any proceeding upon the motion of the Commission, involving any proposed or existing rate of any public utility, or in any proceeding upon complaint involving any proposed increase in rates, the burden of proof to show that the rate involved is just and reasonable shall be upon the public utility.

66 Pa. C.S. § 315(a).

The Pennsylvania Commonwealth Court, in reviewing Section 315(a) of the Code, interpreted the utility's burden of proof in a rate proceeding as follows:

> Section 315(a) of the [Code], 66 Pa. C.S. Section 315(a), places the burden of proving the justness and reasonableness of a proposed rate hike squarely on the public utility. It is well-established that the evidence adduced by a utility to meet this burden must be substantial. [Emphasis added].

Lower Frederick Township Water Company v. Pennsylvania Public Utility Commission, 409 A.2d 505, 507 (Pa. Commw. Ct. 1980) (Emphasis added). *See also, Brockway Glass Company v. Pennsylvania Public Utility Commission*, 437 A.2d 1067 (Pa. Commw. Ct. 1981). Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. *Smalley v. Zoning Hearing Board of Middleton Township*, 2003 Pa. LEXIS 1950 (Pa., 2003) (citation omitted).

It is well-established that in general rate increase proceedings, the burden of proof does not shift to parties challenging a requested rate increase. Rather, the utility's burden of establishing the justness and reasonableness of every component of its rate request is an affirmative one and that burden remains with the public utility throughout the course of the rate proceeding. It has been held that there is no similar burden placed on other parties to justify a proposed adjustment to the utility's filing. The Pennsylvania Supreme Court has held that:

> [T]he appellants did not have the burden of proving that the plant additions were improper, unnecessary or too costly; on the contrary, that burden is, by statute, on the utility to demonstrate the reasonable necessity and cost of the installations, and that is the burden which the utility patently failed to carry.

Berner v. Pennsylvania Public Utility Commission, 382 Pa. 622, 631, 116 A.2d 738, 744 (1955).

This does not mean, however, that in proving that its proposed rates are just and reasonable a public utility must affirmatively defend every claim it has made in its filing, even those which no other party has questioned. As the Pennsylvania Commonwealth Court has held:

> While it is axiomatic that a utility has the burden of proving the justness and reasonableness of its proposed rates, it cannot be called upon to account for every action absent prior notice that such action is to be challenged.

Allegheny Center Assocs. v. Pennsylvania Public Utility Commission, 570 A.2d 149, 153 (Pa. Commw. Ct. 1990) (citation omitted). *See; also, Pa Public Utility Commission v. Equitable Gas Co.*, 73 Pa. P.U.C. 310, 359 – 360 (1990). It is also noted that the mere rejection of evidence, contrary to that adduced by the public utility, is not an impermissible shifting of the evidentiary burden. *United States Steel Corp. v. Pennsylvania Public Utility Commission*, 456 A.2d 686 (Pa. Commw. Ct. 1983).

Discussion

In analyzing a proposed general rate increase, the Commission basically determines a rate of return to be applied to a rate base measured by the aggregate value of all the utility's property used and useful in the public service. At its most fundamental level, the determination of a proper rate of return requires calculation of the utility's capital structure (either actual or hypothetical) and, with respect to the different types of capital, the cost of that type of capital during the period in issue. The Commission is granted wide discretion, because of its administrative expertise, in determining the cost of capital. *Equitable Gas Company v. Pennsylvania Public Utility Commission*, 405 A.2d 1055 (Pa. Commw. Ct. 1979) (determination of cost of capital is basically a matter of judgment which should be left to the regulatory agency and not disturbed absent an abuse of discretion). It is well settled that when the parties have been ordered to file Briefs and fail to include all the issues they wish to have reviewed, the unbriefed issues may properly be viewed as having been waived. *Jackson v. Kassab*, 2002 Pa. Super. 570, 812 A.2d 1233 (2002) appeal denied, *Jackson v. Kassab*, 885 A.2d 1261, 2003 Pa. LEXIS 1128 (Pa. 2003).

As we proceed in our review of the various positions espoused in this proceeding, we are reminded that we are not required to consider expressly or at great length each and every contention raised by a party to our proceedings. (*University of Pennsylvania, et al. v. Pennsylvania Public Utility Commission*, 485 A.2d 1217, 1222 (Pa. Commw. Ct. 1984)). Moreover, any exception or argument that is not specifically addressed herein shall be deemed to have been duly considered and denied without further discussion.

III. Rate Base

PAWC's claim for rate relief in this proceeding is based upon data for the future test year ending December 31, 2003. (PAWC Initial Brief; Appendix A, PAWC Exhibit 3-B-1). PAWC's final claimed rate base of $1,549,769,797 consists of the depreciated original cost of its utility plant in service as of December 31, 2002, together with rate base additions and deductions.

A. Original Cost Utility Plant in Service

To develop the future test year year-end level of plant in service, the original cost of plant to be constructed or acquired during the twelve months ended December 31, 2003, was added to the original cost of plant recorded on PAWC's books at December 31, 2002, and the original cost of plant to be retired during the twelve months ending December 31, 2003, was subtracted. (PAWC Statement 3, at 5-6). PAWC's final claim for the original cost of utility plant in service as of December 31, 2003, is $2,069,597,830 (PAWC Exhibit 3A Revised, at 23R). From this amount, PAWC deducted contributions in aid of construction, customer advances for construction, and the original cost of certain utility property excluded from rate base to derive net utility plant in service of $1,938,013,782. (PAWC Exhibit 3A Revised, at 23R). After deducting Accrued Depreciation of $367,431,008, and adding/deducting various other rate base elements that result in a net deduction of $20,812,977, the final claimed rate base of $1,549,769,797 is determined. (PAWC Initial Brief, Appendix A, at 23R). None of the active participants disputed any of these claims.

B. Accrued Depreciation

1. Positions of the Parties

PAWC's claim for accrued depreciation related to its utility plant in service that was developed and presented by Mr. John J. Spanos, Vice-President of the Valuation and Rate Division of Gannett Fleming, Inc. The details underlying the methodology employed by Mr. Spanos, together with all supporting calculations and documentation, are set forth in two separately bound documents placed in the record as PAWC Exhibit Nos. 10-A and 10-B. PAWC's claim for accrued depreciation related to utility plant in service at December 31, 2003, is $367,431,008. (PAWC Exhibit 3A Revised, at 23R).

PAWC's accrued depreciation is its book reserve, as established by Commission Orders entered January 24, 1985, at 59 PA P.U.C. 178 (WPW), March 21, 1985, at 59 PA P.U.C. 286 (Riverton) and March 29, 1985, at Docket No. R-842755 (Keystone). Mr. Spanos computed the accrued depreciation related to PAWC's plant in service as of December 31, 2003, by reflecting all appropriate entries required to establish what PAWC's book reserve would be at that point in time (PAWC Statement 10, at 6-7). The OTS was the only active participant that disputed any element of PAWC's claim for accrued depreciation.

The OTS recommended that $21,506,211 be added to PAWC's accumulated depreciation reserve, which adjustment, if made, would serve to decrease PAWC's rate base by the same amount. The OTS argued that PAWC improperly deducted its annual net negative salvage expense from its accrued depreciation, thereby overstating its rate base by inflating its depreciation book reserve.

2. ALJ's Recommendation

The ALJ noted that in *Penn Sheraton Hotel v. Pennsylvania Public Utility Commission*, 184 A.2d 324 (Pa. Super. Ct. 1962), the Pennsylvania Superior Court defined the term "negative salvage" as follows:

> Negative salvage is the loss a utility suffers upon the retirement of property resulting from the necessity to expend funds in excess of the salvage value in order to remove the property.

Penn Sheraton, 184 A.2d at 327.

The Court went on to describe how *actual* negative salvage should be treated in a general rate increase case.

> [T]he negative salvage actually incurred by the utility either upon the actual retirement of a property without replacement or upon the replacement of an item of property is of course entitled to consideration in a rate proceeding. It is then no longer prospective but actual. If the utility retires and removes a property without replacing it or replaces it after removal and incurs actual negative salvage in doing so, the expenditure should be capitalized and amortized by some reasonable method and for and over a reasonable length of time.

Penn Sheraton, 184 A.2d at 329 [Emphasis added].

The ALJ furthermore cited *PA Public Utility Commission v. Pennsylvania-American Water Company*, 1994 PA P.U.C. LEXIS 120, which was PAWC's 1993 general rate increase case. Therein, the Commission rejected the OTS' arguments on this issue, which were nearly identical to those offered here. The Commission held there as follows:

> We do not view the time honored treatment of net salvage as implicating the prohibitions of the "used and useful" concept, and neither does it produce the unfavorable result of permitting The Company a return on and return of its costs. The booking of net salvage to accrued depreciation acts as a

> reduction to the book reserve and an increase to rate base with the historic annual five-year amortization of the depreciation expense appropriately recognizing the on-going nature of plant additions and plant retirements. On the basis of the foregoing, we shall deny the OTS Exception on this issue.

Id., 1994 PA P.U.C. LEXIS 120, 45-46 (footnote omitted).

Additionally, the ALJ averred that PAWC's capitalizing net salvage is directed by the most recent *Uniform System of Accounts for Class A Water Utilities* prescribed by the National Association of Regulatory Utility Commissioners (NARUC). The ALJ also noted that PAWC is required, by Commission regulation, to keep its accounts in conformity with this NARUC prescript. 52 Pa. Code § 65.16(a). The ALJ concluded that a Pennsylvania appellate court and the Commission itself, repeatedly, have determined that PAWC's treatment of net negative salvage is proper. Consequently, the ALJ recommended that the OTS' proposed adjustment should be rejected. (R.D. at 16).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

C. Citizens Acquisition Adjustment

1. Positions of the Parties

PAWC requested that it be allowed to include in rate base, and thereby earn a return on, the approximate $46.0 million acquisition adjustment that it recorded upon its acquisition, in January 2002, of the water utility assets of Citizens. In this regard, PAWC averred that it has satisfied all of the criteria for rate base inclusion set forth in Section

1327(a) of the Code, 66 Pa. C. S. § 1327(a) (Section 1327(a)). In addition, PAWC requested that it be permitted a return of its Citizens acquisition adjustment through a 40-year amortization. The amount included in PAWC's rate base claim is $44,878,275, which reflects a reduction for one year's amortization of $1,150,725. (PAWC Exhibit 3-A at 33, 64). The OCA recommended that both requests be rejected. No other active participant has made a recommendation.

The OCA recommended that PAWC not be allowed to include the approximate $46.0 million acquisition adjustment in its rate base on the basis that it does not qualify for such treatment under Section 1327(a). Additionally, the OCA recommended that PAWC not be permitted to amortize the approximate $46.0 million acquisition adjustment independent of its inclusion in rate base.

2. ALJ's Recommendation

The ALJ noted that Section 1327(a) of the Code was added in 1990, and was designed to carve out an exception to the general rule, set forth in Section 1311(b), 66 Pa. C.S. § 1311(b), that utility property shall be valued, for rate base purposes, at the original cost of such property when first devoted to public service, less applicable accrued depreciation, as such depreciation is determined by the Commission. Section 1327(a) initially applied only to the acquisition of small systems, *viz.*, those of 1,200 or fewer customer connections. However, in 1995, the statute was amended to redefine the limit of a small system as 3,300 or fewer customer connections and to also encompass systems that were "nonviable" in the absence of the acquisition.

The ALJ continued that Section 1327(a) creates a rebuttable presumption that amounts paid by a public utility, in excess of original cost less accrued depreciation, are reasonable and entitled to be included in rate base if nine criteria are satisfied. Those criteria are set forth as (1) through (9) of Section 1327(a), as follows:

(1) the property is used and useful in providing water or sewer service;

(2) the public utility acquired the property from another public utility, a municipal corporation or a person which had 3,300 or fewer customer connections or which was nonviable in the absence of the acquisition;

(3) the public utility, municipal corporation or person from which the property was acquired was not, at the time of acquisition, furnishing and maintaining adequate, efficient, safe and reasonable service and facilities, evidence of which shall include, but not be limited to, any one or more of the following:

(i) violation of statutory or regulatory requirements of the Department of Environmental Resources or the commission concerning the safety, adequacy, efficiency or reasonableness of service and facilities;

(ii) a finding by the commission of inadequate financial, managerial or technical ability of the small water or sewer utility;

(iii) a finding by the commission that there is a present deficiency concerning the availability of water, the palatability of water or the provision of water at adequate volume and pressure;

(iv) a finding by the commission that the small water or sewer utility, because of necessary improvements to its plant or distribution system, cannot reasonably be expected to furnish and maintain adequate service to its customers in the future at rates equal to or less than those of the acquiring public utility; or

(v) any other facts, as the commission may determine, that evidence the inability of the small water or sewer utility to furnish or maintain adequate, efficient, safe and reasonable service and facilities;

> (4) reasonable and prudent investments will be made to assure that the customers served by the property will receive adequate, efficient, safe and reasonable service;
>
> (5) the public utility, municipal corporation or person whose property is being acquired is in agreement with the acquisition and the negotiations which led to the acquisition were conducted at arm's length;
>
> (6) the actual purchase price is reasonable;
>
> (7) neither the acquiring nor the selling public utility, municipal corporation or person is an affiliated interest of the other;
>
> (8) the rates charged by the acquiring public utility to its preacquisition customers will not increase unreasonably because of the acquisition; and
>
> (9) the excess of the acquisition cost over the depreciated original cost will be added to the rate base to be amortized as an addition to expense over a reasonable period of time with corresponding reductions in the rate base.

66 Pa. C.S. § 1327(a).

The ALJ noted that, in this case, there is no dispute that the property in question is "used and useful" in providing water service (Criterion No. 1); that the acquisition was the result of arm's length negotiations (Criterion No. 5); that PAWC and Citizens were not affiliated (Criterion No. 7); and that a 40-year amortization period would be reasonable (Criterion No. 9). As such, the ALJ concluded that the debate herein centered on whether PAWC has met its burden with respect to Criteria Nos. 2, 3, 4, 6, and 8. (R.D. at 18-19).

The ALJ continued that it is essential to note that the nine criteria of Section 1327(a) were written by the General Assembly in the conjunctive, not the disjunctive. That is, all nine criteria must be met or the acquiring public utility is not entitled to include in rate base the amounts paid in excess of original cost less accrued depreciation (the so-called "acquisition adjustment"). The ALJ then went on to examine each of the relevant criteria *seriatim*. (R.D. at 19-25).

a. Criterion No. 2

With respect to Criterion No. 2, PAWC and the OCA disagreed as to whether or not Citizens was "nonviable in the absence of the acquisition" (both active participants recognizing that Citizens had in excess of 3,300 customer connections). The ALJ noted that neither the Code nor any applicable Commission Regulation provides a definition of "nonviable." PAWC argued that "nonviable" should be defined as a company which lacks the financial capacity to exist as a stand-alone entity apart from its parent and in the absence of extraordinary rate relief. The OCA, analogizing from the Commission's Small Drinking Water System – Statement Of Policy, Viability of small water systems, 52 Pa. Code § 69.701, advocated that a "nonviable" public utility is one that is not "viable" as that term is defined in 52 Pa. Code § 69.701(a)(2).[7]

The ALJ concluded that neither of these proposed definitions was satisfactory. He found PAWC's proposed definition to be too narrow in that it would only apply to a public utility that was not a "stand-alone" entity, and, in that limited circumstance, it would only evaluate financial capacity and a probable need for "extraordinary rate relief". Managerial or technical capability would not enter into PAWC's proposed definition, nor would the adequacy or safety of the service being rendered by the acquired utility. The ALJ stated that, while that may be a definition that PAWC would like to use in this case regarding Citizens,[8] it clearly would not apply to other troubled public utilities that Section 1327(a)(2) was intended to address.

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[7] "A viable water system is one which is self-sustaining and has the commitment and financial, managerial and technical capabilities to reliably meet Commission and Department of Environmental Resources . . . requirements on a long-term basis." 52 Pa. Code § 69.701(a)(2).

The ALJ further asserted that the OCA's proposed definition is also not altogether satisfactory, in that it is too vague. The OCA , however, is correct in its attempt to arrive at a satisfactory definition of "nonviable" by analogizing from a Commission policy statement. The ALJ noted that in the Commission's Small Nonviable Water and Wastewater Systems – Statement Of Policy, Acquisition incentives, 52 Pa. Code § 69.711, the Commission provided a definition that he found superior to either of those offered by the active participants in this case. 52 Pa. Code § 69.711(a)(3) provides, by analogy, a workable definition for not only this case, but also for cases involving "stand-alone" public utility companies. The ALJ noted that such definition takes into consideration more than just financial capability. That definition is as follows:

> [T]he acquired system is not viable [when] it is in violation of statutory or regulatory standards concerning the safety, adequacy, efficiency or reasonableness of service and facilities; and . . . it has failed to comply, within a reasonable period of time, with any order of the Department of Environmental Protection or the Commission.

52 Pa. Code § 69.711(a)(3).

The first prong of this definition requires an evaluation of standards regarding safety, adequacy, efficiency or reasonableness of both service and facilities. That, stated the

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[8] There is no dispute in the evidentiary record that Citizens was a subsidiary of Citizens Communications Corporation (CCC) and, consequently, not a "stand-alone" entity.

ALJ, is obviously a much more encompassing evaluation than the sole criterion of financial capacity to exist as a stand-alone entity apart from its parent and in the absence of extraordinary rate relief. The second prong of the definition requires that an Order has been issued either by the Department of Environmental Protection (DEP) or the Commission, and that the acquired public utility has failed to comply with that Order within a reasonable period of time. The ALJ noted that the requirement that there has been a prior Order eliminates uncertainty and debate about whether the public utility has been advised of its deficiencies and has also been afforded an opportunity to correct them. The ALJ concluded that the above-outlined definition, derived from the Commission's policy statement concerning an "acquisition adjustment," 52 Pa. Code § 69.711(b)(2), is the definition best suited for use in instances where the very issue in dispute is the statutory qualification for an acquisition adjustment.[9] Accordingly, the ALJ adopted that definition for use in his Recommended Decision. (R.D. at 20).

The ALJ concluded that PAWC failed to satisfy Criterion No. 2 of Section 1327(a) because it adduced no evidence that Citizens (the acquired public utility) had been issued an Order either by DEP or the Commission and, within a reasonable period of time, failed to comply with that Order. The ALJ noted that, while PAWC did provide evidence that Citizens had, at some time, not met DEP secondary standards, or Environmental Protection Agency (EPA) proposed regulations, or even DEP reporting regulations, no evidence was introduced that Citizens had ever been issued an Order by DEP or the Commission to which it failed to comply. (Tr. at 1471, 1482, 1484, 1486, 1488, 1503). As the party with the burden of proof, it was incumbent upon PAWC to introduce such evidence if it was to successfully establish that Citizens was a nonviable public utility. (R.D. at 21).

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[9] The only reason this definition cannot be said to directly apply, is because of its limitation to situations where the "acquired system has less than 3,300 customer connections". 52 Pa. Code § 69.711(a)(3).

b. Criterion No. 3

The ALJ stated that, for purposes of this case, the "time of acquisition" (the only relevant time for evaluation with respect to Criterion No. 3) was determined to be the period from the date that the acquisition was announced, October 15, 1999, to the date that it was reported to the Commission that the sale had been consummated, *viz.* January 15, 2002. (Tr. 1090 – 1091). None of the active participants, including PAWC, disagreed with this determination.

The ALJ noted that Criterion No. 3 requires PAWC to prove that Citizens "was not, [during the above-outlined period], furnishing and maintaining adequate, efficient, safe and reasonable service and facilities". Additionally, while similar to Criterion No. 2, Criterion No. 3 does not require that Citizens had been subject to either a DEP or Commission order during the time of acquisition. Merely being in violation of either DEP or Commission Regulations concerning the safety, adequacy, efficiency or reasonableness of service and facilities during the applicable time period may provide evidence of Criterion No. 3. (66 Pa. C.S. § 1327(a)(3)(i)).

The ALJ stated that, as discussed above, regarding Criterion No. 2, PAWC adduced evidence that Citizens was in violation of DEP, but not of Commission, regulations. (Tr. at 1491, 1498 – 1500, 1503). The ALJ concluded that the amount of evidence adduced by PAWC was not sufficiently substantial to establish that Citizens as a whole was not "furnishing and maintaining adequate, efficient, safe and reasonable service and facilities" during the applicable time period.[10] (R.D. at 21-22).

The ALJ also pointed out that, given the fact that Glen Alsace, Blue Mountain, and Home are each discrete (not interconnected) parts of the overall Citizens' system (as are Penn and Lake Heritage), the deficiencies in only fractional portions of parts of these system segments did not constitute substantial evidence that Citizens' overall system was not providing or maintaining adequate, efficient, safe and reasonable service and facilities during the relevant period. Accordingly, the ALJ concluded that PAWC failed to prove that "the public utility", *i.e.*, Citizens' entire system, was not furnishing and maintaining adequate, efficient, safe and reasonable service and facilities during the relevant period. Consequently, the ALJ concluded that PAWC failed to satisfy Criterion No. 3 of Section 1327(a). (R.D. at 22).

c. Criterion No. 4

The OCA asserted that it has produced uncontradicted evidence that PAWC's cost to address the problems it had identified in the former Citizens' territory totaled approximately $613,560. (OCA Statement 7-S, at 5, 7, 11, 14). The OCA further argued that such amount was insubstantial in a system comprised of total net assets of $141.1 million.

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[10] As the Company's own witness testified, no agency, including DEP and the Commission, determined that Citizens' system overall was not providing or maintaining adequate, efficient, safe and reasonable service and facilities during the period from October 15, 1999, to January 15, 2002. (Tr. at 1480, 1485, 1485 – 1486, 1489 – 1490). On cross-examination of the Company's witness it was established that the Citizens' deficiencies occurred in only fractional portions of parts of its overall system. (Tr. at 1475-1478, 1483-1484, 1485, 1487).

The ALJ noted that, while it is true that the total relevant cost amounted to only four-tenths of one percent of PAWC's total net assets, Criterion No. 4 does not address the size of the investments that will be made to assure that customers being served by the acquired property will receive adequate, efficient, safe and reasonable service. The ALJ pointed out that what Criterion No. 4 does address is that the investments will be "reasonable and prudent." In fact, the ALJ asserted that if PAWC can solve the problems it has identified in the former Citizens' system for only four-tenths of one percent of its total net assets, then that investment would be both reasonable and prudent. Accordingly, the ALJ concluded that PAWC has established that Criterion No. 4 is satisfied. (R.D. at 22-23).

d. Criterion No. 6

The ALJ noted that Criterion No. 6 requires PAWC to prove that the actual purchase price for Citizens is reasonable. The ALJ opined that PAWC's expert witness lacked credibility on this issue. The ALJ also noted in this regard that PAWC's witness did not calculate or introduce evidence relative to "the actual purchase price," but rather relative to what he referred to as the "transaction price." (Tr. at 1338, 1339).

The ALJ noted that at no time did PAWC offer any evidence that the "transaction price" is synonymous with the statutory term "actual purchase price." Finally, as a result of the striking of PAWC's Exhibit 11C and portions of witness Patterson's testimony based thereon, the remaining evidence fails to be sufficiently persuasive as to the reasonableness of witness Patterson's "transaction price." Accordingly, concluded the ALJ, since PAWC failed to prove both that its "transaction price" is reasonable and that its "transaction price" is the same thing as the "actual purchase price" required by the controlling statute, it has failed to satisfy Criterion No. 6. (R.D. at 23-24).

e. Criterion No. 8

The ALJ noted that the OCA's witness Kraus provided evidence that the requested rate base addition relating to the acquisition of Citizens is $44,878,275 at the end of the future test year, or 35% of the total *pro forma* net plant additions claimed by PAWC. The annual amortization expense associated with the acquisition adjustment alone is $1,150,725. (OCA Statement 3, at 14; Company Exhibit 3A at 23A, 33). Using PAWC's requested pre-tax rate of return of 12.11%, applied to the rate base addition, yields a revenue requirement of $5,434,759. Adding that amount to the annual amortization totals $6,585,484, or approximately 10% of the total increase originally requested by PAWC.

The ALJ stated that, as the revised revenue request was $59,246,159 at that point, the total revenue requirement associated with the Citizens acquisition adjustment comprised over 11% of the requested increase. As was pointed out by another OCA witness, PAWC made a business decision to acquire Citizens with no assurance that an acquisition adjustment would ever be allowed. The ALJ opined that, if the allowance of an acquisition adjustment was crucial, from a business perspective, PAWC could have, and should have, sought prior approval. (66 Pa. C.S. § 1327(b) and (c)).

The ALJ further opined that PAWC's argument regarding the alleged savings that would offset the admitted rate increases that would be experienced by its pre-Citizens acquisition customers fails for a number of reasons. In the first place, as the OCA correctly pointed out, in evaluating a claim for allowance of an acquisition adjustment, the General Assembly prescribed nine criteria which the acquiring public utility must meet. Supposed savings to be experienced as a result of the acquisition is not among those criteria, and the Commission is without authority to add it.

Secondly, the ALJ noted that accepting PAWC's calculations of "savings" associated with labor, benefits, payroll taxes, affiliate charges, rate case expense and eliminated services of $2,426,487 annually, and adding PAWC's witness Patterson's estimated capital cost savings of $1 million, the revenue requirement associated with the acquisition adjustment in the first year would be nearly twice the supposed savings. Thirdly, as PAWC's witness Diskin acknowledged, on cross-examination, since the conclusion of PAWC's last general rate increase case and the consummation of its acquisition of Citizens, events which occurred within a few days of each other, ratepayers have been paying rates as though the acquisition never occurred. (Tr. at 1174–1176).

In other words, for nearly two years, any supposed savings have not been obtained by ratepayers, but rather by PAWC itself in increased retained earnings. Those earnings are available, should PAWC choose to so use them, to increase dividends. Finally, PAWC's witness Diskin agreed that if PAWC had acquired Citizens for $46 million less, or even for $34 million more, the claimed savings would be the same. (Tr. at 1177). That is, the so-called "savings" are not attributable to the acquisition adjustment.

PAWC argued that pre-Citizens acquisition customers will bear less of the increased revenue requirement which would result from allowance of the acquisition adjustment than would former Citizens' customers. The ALJ stated that, while that argument is interesting, PAWC has nevertheless failed to establish that the increase which the pre-Citizens acquisition customers will experience is reasonable. It was PAWC's burden, according to Criterion No. 8, to prove that the rates of pre-Citizens acquisition customers will not increase unreasonably. The ALJ concluded that it failed to do so. (R.D. at 24-25).

In sum, the ALJ concluded that PAWC failed to satisfy four of the criteria (Nos. 2, 3, 6 and 8) of the nine statutorily required criteria to be entitled to allowance of an acquisition adjustment. Accordingly, the ALJ opined that its claim should be denied in its entirety,[11] and he also recommended that the Commission adopt the OCA's adjustment as contained on Schedule LKM-4. That adjustment would decrease PAWC's claimed rate base by $42,729,181. The related adjustments would serve to decrease amortization expense by $1,150,725, increase Pennsylvania Income Tax by $340,469 and decrease Federal Income Tax by $119,164. (R.D. at 25).

3. Exceptions and Replies

PAWC excepts to the ALJ's recommendation on this issue, and it addresses each of the outlined Criteria *seriatim*.

Criterion No. 2 concerns viability. As amended in 1995, Section 1327(a)(2) requires a showing that "the public utility acquired the property from another public utility…which was nonviable in the absence of the acquisition. With respect to that Criterion, PAWC contends that it has presented extensive evidence establishing that Citizens was not viable as a stand-alone entity and that its parent, Citizens Communications Corporation (CCC), lacked the commitment to provide Citizens the financial, technical and managerial support it needed to become viable and to provide adequate, efficient, safe and reasonable service. (PAWC Initial Brief at 12-22; PAWC Reply Brief at 2-6). PAWC furthermore asserts that, applying the Commission-approved definitions, Citizens was not "viable" at the time of the acquisition. (PAWC Exc. at 26-28).

Criterion No. 3 concerns the adequacy and reasonableness of service and facilities. PAWC contends that while the ALJ seemed to acknowledge that Citizens was operating in violation of DEP regulations at the time of its acquisition (R.D. at 21), he nonetheless concluded that Citizens' deficiencies occurred only in "fractional" areas of its service territory and that, in order to satisfy Criterion No. 3, PAWC had to establish that Citizens' entire system was not furnishing adequate, efficient, safe and reasonable service. (R.D. at 22). PAWC argues, to the contrary, that the ALJ's "entire system" test is not supported by the applicable statutory language, would impose an evidentiary standard which would be virtually impossible to meet and, as a consequence, would diminish the Commission's ability to promote the acquisition of marginal water systems. (PAWC Exc. at 28-30).

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[11] The ALJ noted with approval, and adopted, the OCA's position that the issue of amortization does not exist if there is no acquisition adjustment to amortize. (R.D. at 25, Footnote 12).

Criterion No. 6 concerns the reasonableness of the purchase price. The ALJ granted a motion to strike a substantial portion of the testimony and accompanying exhibit of PAWC's expert witness on this issue, William Patterson, who opined that the purchase price for the acquisition was reasonable. PAWC excepts to both the ALJ's evidentiary ruling on the motion, and to the ALJ's recommended finding.

PAWC argues that the stricken evidence consisted of data from comparable water utility acquisition which had been compiled by Merrill Lynch from public documents filed with the SEC.[12] It is the same kind of valuation analysis which Mr. Patterson has submitted in other regulatory proceedings both in Pennsylvania and elsewhere. (PAWC Statements 11 and 11-R; PAWC Exhibits 11-C and 11-D). According to PAWC, the ALJ's ruling that that evidence should be stricken because it was based on impermissible hearsay is incorrect. (R.D. at 23). PAWC continues that Rule 703 of the Pennsylvania Rules of Evidence specifically permits expert witnesses to rely upon exactly the kind of data used by Mr. Patterson. Furthermore, PAWC posits that the evidence which was not stricken herein fully supports the reasonableness of PAWC's purchase price. (PAWC Initial Brief at 25-26). Finally, the ALJ's statement that Mr. Patterson's opinion was based on a

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[12] "Securities Exchange Commission"

"transaction price" that is not synonymous with "actual purchase price" is incorrect, according to PAWC. (PAWC Exc. at 30-33).

Criterion No. 8 concerns the effect of the acquisition on the rates of pre-acquisition customers. Section 1327(a)(8) requires a demonstration that "the rates charged by the acquiring public utility to its preacquisition customers will not increase unreasonably because of the acquisition." PAWC contends that the ALJ, relying extensively on OCA witness Ms. Kraus' testimony, concluded that PAWC failed to satisfy this criteria for the following reasons: (1) it improperly included acquisition-related savings in its analysis; (2) the alleged savings are less than the revenue requirement of the proposed acquisition adjustment; and (3) PAWC purportedly has been able to retain the savings for the past two years. (R.D. at 24-25).

PAWC argues, to the contrary, that Ms. Kraus' contentions are wrong in a number of respects. (PAWC Initial Brief at 28-29; PAWC Reply Brief at 8-9). First, Ms. Kraus erred in asserting that acquisition-related savings were irrelevant because they are not specifically mentioned in Section 1327. Second, it is not relevant that the annual savings of $3.4 million are less than the revenue requirement of PAWC's claim of $6.6 million. The relevant issue is whether the net rate impact (43.2 million), when spread over PAWC's 600,000 pre-existing customers, is unreasonable. Finally, Ms. Kraus' contention that PAWC padded its bottom line with acquisition savings since January 2002, is fanciful, and should be given no serious consideration. After it was granted its last rate relief in 1995, Citizens continued to add plant, continued to incur increased expenses, and its revenue requirement continued to grow over time. (Tr. at 1184). None of those additional costs are currently being recovered from customers. (PAWC Exc. at 33-34).

The OCA rejoins that the ALJ correctly rejected PAWC's claim due to PAWC's failure to prove four of the statutory criteria. (OCA R.Exc. at 16-21).

4. Disposition

Based on our review of the record evidence, we conclude that the ALJ correctly rejected PAWC's claim for an acquisition adjustment related to the purchase of Citizens in the amount of $44,878,275 in rate base, and the associated amortization of $1,150,725 per year for forty years. (R.D. at 16-25). PAWC attempted to portray the acquisition adjustment as two distinct claims. One was for the rate base increment associated with the portion of the purchase price in excess of the depreciated original cost of Citizen's assets, and the other was an expense amortization which PAWC argued was justified by acquisition-related savings. (PAWC Exc. at 25-35). However, the ALJ correctly concluded that "the amortization does not exist if there is no acquisition adjustment to amortize." (R.D. at 25 n12). In other words, the rate base addition and the amortization are statutorily, inextricably intertwined, and cannot, therefore, be viewed as two discrete claims. (OCA Reply Brief at 1-4).

We have carefully reviewed the ALJ's extensive discussion of the applicable criteria for inclusion of an acquisition in a utility's rate base, according to Section 1327(c) of the Code. Without reiterating that discussion, we find that PAWC has not met its burden of proving that the inclusion of Citizens in its rate base as an acquisition adjustment would be proper, based on PAWC's failure to prove four of the nine statutory criteria. (R.D. at 18-25). We note that the nine criteria of Section 1327(a) of the Code were written by the General Assembly in the conjunctive, not the disjunctive. Accordingly, we conclude that all nine criteria must be met by the acquiring public utility or else it is not entitled to include, in rate base, the amounts paid in excess of original cost less accrued depreciation. (R.D. at 16-25). Finding that PAWC has failed to satisfy the requisite burden of proof, its Exception on this issue is denied.

However, as a final note, we wish to commend PAWC for its acquisition of Citizens. We believe that these types of acquisitions are essential to provide smaller water companies with the opportunity to take advantage of needed economies of scale. Prior to its acquisition, Citizens was an example of a water company clearly headed for trouble, as outlined by PAWC in its list of cited problems, including diminished capital investment and serious water quality issues. (PAWC Initial Brief at 17-19).

IV. Revenues

PAWC's final claim for an increase in annual operating revenue is $59,246,157, which amount represents a decrease of $5,700,376 from its originally filed claim. Only one issue remained in dispute before the ALJ regarding this claim.

A. Forfeited Discounts

1. Positions of the Parties

Initially, the ALJ objected to the use of the term "Forfeited Discounts," stating that he was disturbed by the use of this "misnomer" for what is commonly referred to as late payment charges. The ALJ advised PAWC to abandon the use of this term. (R.D. at 26, Footnote 11). PAWC's claim for the penalties that customers pay for the late payment of their bills (1.5 percent of the delinquent bill) is based upon the annualized effect of the ratio of the penalties to water sales as of December 31, 2002. The ratio developed from the figures for the historic test year was then applied to annualized future test year water sales revenue to develop the claimed "forfeited discounts" revenue component of the total claimed revenue requirement.

The OCA recommended that PAWC's late payment charge revenue claim be reduced by $106,373, which proposed adjustment resulted from normalization of PAWC's late payment charge revenue for the last three calendar years as opposed to its projection based solely on results for 2002.

2. ALJ's Recommendation

The ALJ noted that normalization is a rate making technique used to smooth out the effects of an item of revenue or expense that occurs at regular intervals but in irregular amounts. Clearly, customer late payment charges, arrived at by imposing a constant 1.5 percent charge, fluctuate from year to year based upon, among other things, overall water usage, billing frequency, and the state of the economy. As such, noted the ALJ, it is appropriate to apply normalization in this instance. Furthermore, a pattern of late payment is closely linked to uncollectible expense, in that customers who ultimately do not pay at all frequently begin their downward slide by paying late.

The ALJ noted that normalizing both brings some symmetry to the treatment of "payment troubled" customers to the benefit of PAWC's other ratepayers. (R.D. at 26). As such, the ALJ concluded that, because late payment charge revenues are received every year, but in amounts that fluctuate due to various external factors, the OCA's proposal that the Commission approve normalization, using the most recent three year history is sound. Accordingly, the ALJ recommended that the Commission approve the OCA's proposed $106,373 decrease in PAWC's late payment charge revenue claim. (R.D. at 27).

3. Exceptions and Replies

PAWC excepts to the ALJ's recommendation on this issue. PAWC avers that the use of a three-year average to calculate forfeited discount revenue is improper for all of the same reasons set forth in its Exception on the issue of uncollectible accounts, *infra*. PAWC further notes the ALJ's criticism of the use of the term "forfeited discounts." In Footnote 13, found on page 27 of the Recommended Decision, the ALJ stated that "forfeited discounts" is a term which "serves only to obscure and confuse," and the ALJ furthermore advises PAWC to "abandon this term." PAWC notes in this regard that it did not itself devise the term "forfeited discounts," but that the term originated in the title given to the applicable revenue account by the NARUC in its *Uniform System of Accounts for Class A Water Utilities,* at 135.

The OCA rejoins that the ALJ correctly rejected PAWC's forfeited discounts claim as unreliable. (OCA R.Exc. at 24-25).

4. Disposition

Our review of the record evidence leads us to conclude that the ALJ's recommendation relative to this issue is reasonable and consistent with Commission precedent. It is well settled that normalization is a ratemaking technique used to smooth out the effects of an item or revenue or expense that occurs at regular intervals, but in irregular amounts. (R.D. at 53). Clearly, customer late payment charges, or forfeited discounts, arrived at by imposing a constant 1.5 percent charge fluctuate from year to year based upon, among other things, overall water usage, billing frequency, and the state of the economy. As such, normalization is properly employed for items such as late payment charges. Accordingly, for the above-outlined reasons, PAWC's Exception on this issue is denied.

V. Expenses

A. Security Costs

1. Positions of the Parties

PAWC's claim for security costs is divided into two parts. Based upon the deployment of security guards, the anticipated contract rates that will be in place by the end of the future test year, and the annual cost for security firm ADT's monitoring and related services, PAWC's claim for current security costs is $3,536,179 per year. (PAWC Exhibit 3A Revised, at 48R). No active participant disputes this part of PAWC's claim.

PAWC's final claim for deferred security costs is in the amount of $16,789,349, to be amortized over five years at the rate of $3,357,870 per year. The deferred security costs were incurred during the period after September 11, 2001, through August, 2003. PAWC's treatment of these costs was addressed by this Commission in our Opinion and Order entered on July 24, 2003, in *Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Establishing a Facility Protection Charge and to Use Deferred Accounting for Certain Security-Related Costs*, Docket Number R-00027983 (FPC Order).[13] In the FPC Order, we ordered as follows:

> 5. That the Petition of Pennsylvania-American Water Company at Docket No. R-00027983 for approval to use deferred accounting for certain incremental security-related costs incurred between September 11, 2001, and the resolution of its next general base rate case at Docket No. R-00038304, is granted subject to the following conditions:

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[13] The OCA has appealed the FPC Order to the Pennsylvania Commonwealth Court, and PAWC has cross-appealed.

> a. That approval of deferred accounting treatment is not an assurance of future rate recovery of the claimed incremental security costs.
>
> b. That approval of deferred accounting treatment does not create a regulatory asset.
>
> c. That the issue of Pennsylvania-American Water Company's right to rate recovery of the claimed incremental security costs plus the issue of the reasonableness or prudent incurrence of the claimed incremental security costs shall be decided in Pennsylvania-American Water Company's general base rate case at Docket No. R-00038304.

(FPC Order Paragraph 5, at 9–10).

PAWLUG proposed that the entire $16,789,349 claim for deferred security costs be denied, and it contended that approving this claim would constitute impermissible retroactive ratemaking. PAWLUG further argued that PAWC failed to prove that the deferred costs were prudently incurred. However, PAWLUG's Main Brief merely stated its position, and provided minimal supporting argument.

The OTS proposed that the entire $16,789,349 claim for deferred security costs be denied. It contended that the approval of this claim would constitute impermissible retroactive ratemaking, and that PAWC has failed to prove that the deferred costs were prudently incurred.

The OCA also proposed that the entire $16,789,349 claim for deferred security costs be denied. It argued that approval of this claim would constitute impermissible retroactive ratemaking. As a part of this argument, the OCA averred that the Commonwealth Court decision in *Philadelphia Electric Company v. Pennsylvania Public Utility Commission*, 502 A.2d 722 (Pa. Commw. Ct. 1985) (*PECO*) should control the outcome herein. The OCA further argued that PAWC has failed to prove that the deferred costs were prudently incurred.

Additionally, the OCA argued that: (1) the relevant effects of the disaster of September 11, 2001, were already taken into account in PAWC's last general rate increase case; (2) PAWC "assumed the risk" of increased operations and maintenance expense by its actions in its last general rate increase case; (3) that allowing PAWC to recover the deferred expenses would negate the promised savings resulting from American's acquisition by Thames; and (4) that the proceeding that resulted in the FPC Order should control.

2. ALJ's Recommendation

The ALJ noted initially that, because of the prospective nature of rates, a rule against retroactive ratemaking has long been in force in the ratemaking arena. The rule against retroactive ratemaking generally prohibits a public utility commission from setting future rates to allow a utility to recoup past losses or to refund to consumers excess utility profits. *Popowsky v. Pennsylvania Public Utility Commission*, 642 A.2d 648 (Pa. Commw. Ct. 1994), *appeal denied*, *Popowsky v. Pennsylvania Public Utility Commission*, 673 A.2d 338 (Pa. Commw. Ct. 1996). However, the ALJ also noted that an exception to the rule against retroactive ratemaking has also been recognized where the expenses are extraordinary and nonrecurring. *Philadelphia Electric Company v. Pennsylvania Public Utility Commission*, 502 A.2d 722 (Pa. Commw. Ct.1985).

The ALJ further noted that, to qualify for the exception to the rule against retroactive ratemaking, the expense being considered must be unanticipated, extraordinary and nonrecurring. The tragic events of September 11, 2001, he opined, were unanticipated, but, he went on to say, if so, that lack of anticipation may have more to do with national hubris than with any legitimate basis for believing "it can't happen here". Because, in fact, the events of September 11, 2001, were unanticipated it does not follow that they should have been, opined the ALJ, especially with respect to a company whose product is one of the very necessities of human life. The ALJ averred that it should be remembered that one of PAWC's responsibilities as a certificated public utility is to furnish and maintain safe service and facilities. This statutory obligation existed before September 11, 2001, and continues today. (R.D. at 31).

As to PAWC's claim for $16,789,349 in deferred security costs, the ALJ concluded, for the above-outlined reasons, that allowance of recovery for that claim would constitute impermissible retroactive ratemaking. Consequently, the ALJ recommended that the claim be rejected in its entirety. Alternatively, the ALJ stated that he found that PAWC had not proven that the deferred security costs were reasonable, nor that they were prudently incurred. Therefore, on that alternate basis, the ALJ stated that PAWC's entire claim for deferred security costs should be rejected as unreasonable and imprudently incurred. (R.D. at 37).

3. Exceptions and Replies

PAWC excepts to the ALJ's recommendation on this issue, stating that the recommendation should be rejected because it does not comport with either the relevant law or the record evidence. As outlined above, PAWC's expense claim herein includes a request to amortize, over five years, security costs totaling $16,789,349 (or $3,357,870 per year) which were incurred during the period after September 11, 2001, through August 2003, and were deferred on PAWC's books pursuant to the Commission's FPC Order, *supra*. (PAWC Exc. at 11). PAWC further argues that, contrary to the ALJ's recommendation, its deferred security costs are precisely the kind of expense "result[ing] from an extraordinary and nonrecurring one-time event" that the Commission, with the agreement of the Commonwealth Court, has ruled is not impermissible retroactive or single issue ratemaking. *Popowsky v. Pennsylvania Public Utility Commission*, 695 A.2d 448 (Pa. Commw. Ct. 1997) (*PPL II*). (PAWC Exc. at 13-17).

PAWC contends that the Commission ruled, in the FPC Order, that PAWC should defer, for accounting purposes, its post 9/11 security expenses with the expectation that a final decision on the recovery of deferred and current security costs would be decided in the instant proceeding. (FPC Order at 10; R.D. at 37). In so doing, the Commission authorized and directed PAWC to present additional evidence on the issues which concerned it, namely, the "prudence and reasonableness of the pertinent expenditures, including what the expenses would have been if a competitive bidding procedure had been used." (FPC Order at 7-8). PAWC argues that, in compliance with the FPC Order, it issued a state-wide RFP for security guards, identified the lowest qualified bidder, and calculated its security guard costs if the RFP contract rate were applied to those positions which had been filled by private contractors. (PAWC Statement 1-R at 8-10; PAWC Exhibit 1-A, Schedule 3). In addition, argues PAWC, it has submitted extensive evidence concerning the prudence of its actions and decisions to implement the security measures put in place after September 11, 2001. (PAWC Exc. at 18-21).

Both the OTS and the OCA rejoin that the ALJ properly determined that PAWC's attempt to recover deferred security expenses must be disallowed as impermissible retroactive ratemaking. The OTS furthermore contends that PAWC's reliance on *Popowsky* is misguided, because the facts in that case are readily distinguishable from the facts in the instant proceeding. (OTS R.Exc. at 4-7; OCA R.Exc. at 7-15).

4. Disposition

Initially, we commend PAWC for taking the comprehensive actions it implemented in response to the tragic events of September 11, 2001. The record evidence demonstrates that PAWC's actions and costs incurred, with some exceptions as noted *infra*, were prudent and reasonable in light of the significance and ramifications of the event which marked a unique moment in time and one which will forever change this country's view of what it considers necessary and appropriate security measures.

As outlined above, the ALJ recommended disallowance of PAWC's claim for $16,789,349 ($3,357,870 annually, amortized over five years) based on his belief that the costs constituted impermissible retroactive ratemaking and that PAWC had not demonstrated in the record that the security costs were reasonable or prudently incurred. We disagree.

The record is clear that PAWC took immediate and responsive action to seek timely recovery of its costs. Immediately following the events of September 11, 2001, PAWC did not seek to include the increased costs within its then pending rate case since the record was closed on September 20, 2001. Instead, PAWC chose to pursue those costs with the FPC proceeding. In that proceeding, the Commission determined, *inter alia*, that those costs should be deferred to the present rate case.

An exception to the rule governing retroactive ratemaking is that the expenses are extraordinary and nonrecurring. (*PECO, supra*, at 727-728; PAWC Initial Brief at 71). The ALJ found the costs to be extraordinary, but he did not conclude that the costs were nonrecurring. However, in our view, those costs do not constitute retroactive ratemaking because the circumstances arose from an extraordinary and nonrecurring event, namely, the terrorist attacks of September 11, 2001. That event was similar to those within the case law cited by PAWC, referred to as *PPL II*, *supra*.

In that case, the Commonwealth Court allowed the deferred Statement of Financial Accounting Standards No. 106 (SFAS 106) costs although they also had an ongoing component (similar to the ongoing nature of some of PAWC's security costs). In *PPL II*, the event triggering the changed circumstances was the change from cash to accrual accounting. In the same case, the Court also allowed deferred costs associated with nuclear plant construction. There the utility's deferred "early window" costs, consisting of O&M expenses, depreciation and capital costs, incurred after the date of commercial operation but prior to recognition of the nuclear plant in the utility's rate base, were allowed in rates through an amortization even though these deferred costs also had an ongoing component in the test year. Accordingly, we agree with PAWC that *PPL II* controls and also that allowance of the deferred security costs, as adjusted below, is permissible.

We are convinced that the deferred costs do not connote retroactive ratemaking and that the costs were reasonable and prudently incurred. However, we find that the following adjustments are appropriate.

The first adjustment is for later competitive bidding. According to this adjustment, $1,021,416 should be removed from PAWC's $16,789,349 claim to reflect savings that would have been realized had PAWC put a competitively-bid contract into place six months after September 11, 2001. (PAWC Exc. at 23). Accordingly, PAWC's claim will be reduced to $15,767,933.

The second adjustment is for not seeking federal grants. According to this adjustment, $230,000 should be deducted from PAWC's claim because PAWC could have sought federal grants to defray the cost of U.S. Environmental Protection Agency-required Vulnerability Assessments. Accordingly, PAWC's claim will be reduced to $15,537,933.

The third adjustment is to amortize over a longer period. The five-year amortization period should be expanded to ten years in order to mitigate the impact on customers' rates. Therefore, the amortization expense allowed annually will be $1,553,793 over ten years.

Accordingly, PAWC's Exceptions on this issue are granted to the extent outlined above, and the recommended disposition of the ALJ is modified accordingly.

B. Salaries and Wages

1. Positions of the Parties

PAWC's claim for salaries and wages is $44,320,416. (PAWC Exhibit 3A Revised at 41R, line 4). This figure was developed based upon its authorized employee positions for the future test year of 1,013. (PAWC Statement 6, at 5). Wage rates and salaries were annualized to reflect the effect of wage and salary increases granted or to be granted through June 30, 2004. Wage rates used in calculating the annualization adjustment are set forth in union contracts that are currently in effect and will remain in effect through June 30, 2004. (PAWC Statement 6, at 5-6). For salaried and non-union employees, PAWC projected increases of 3.5%, to become effective in April 2004, which are in line with the level of increases established by collective bargaining agreements with unionized employees. (PAWC Statement 6, at 6). Finally, to determine the portion of wage and salary costs charged to expense, PAWC deducted 19.05%, which is the proportion of direct labor costs charged to capital accounts during the historic test year (PAWC Statement 6, at 6).

The OCA recommended that PAWC's claim for salaries and wages be decreased by $1,280,714. The OCA based its recommendation on a "vacancy rate" adjustment that reduces the employee complement to 1,006, which was the actual complement on December 31, 2002, and on an adjustment that completely eliminates the annualization of salary and wage increases that will become effective within six months after the end of the future test year, *i.e.*, by June 30, 2004.

2. ALJ's Recommendation

The ALJ noted that, as to the proposed "vacancy rate" adjustment, PAWC's witness Gilbert presented uncontradicted evidence that the seven vacant positions either had been or would be filled by December 31, 2003. (PAWC Statement 6R at 4, Tr. 1135–1138). The ALJ stated that, at any point in time, PAWC could have its full 1,013 complement, or some lesser figure such as the OCA's "vacancy rate" adjusted figure of 1,006. However, the uncontradicted evidence establishes that PAWC intends to, and will, staff at the full complement level. The ALJ opined that, with this evidence, it would be unjustifiable micromanaging of a privately owned company for the Commission to accept the OCA's proposed "vacancy rate" adjustment.

The ALJ furthermore noted that the Commission has previously approved claims which involve the annualization of salary and wage increases that will become effective within six months after the end of the future test year. The Commission has done this both in the case of PAWC, and for other utility companies. (R.D. at 38-39). The ALJ noted that, for unionized employees, the annualization includes changes resulting from collective bargaining agreements that will become effective between January 1 and June 30, 2004. (PAWC Statement 6, at 5-6). These expenses are, therefore, known and measurable. For non-union employees, PAWC included a 3.5% increase to become effective in April 2004, to track that of unionized employees. The Commission has previously held such a procedure reasonable, and allowed the expense.

Based on the above consideration, the ALJ recommended that the OCA's proposed adjustments to PAWC's claim for salaries and wages should be rejected. Therefore, according to the ALJ, the OCA's proposed adjustment, to decrease PAWC's claim for salaries and wages by $1,280,714, should be rejected, and its claim for salaries and wages in the amount of $44,320,416 should be allowed. (R.D. at 39).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

C. Service Company Charges

1. Positions of the Parties

PAWC's claim for Service Company charges, as initially presented, was based upon its historic test year expense level, increased by $686,435 to reflect the transfer from PAWC to the Service Company of ten employees who, after the transfer, would provide service primarily to PAWC. (PAWC Exhibit 3A, at 54; PAWC Statement 4R at 4). Subsequently, PAWC revised its claim for Service Company charges to $17,111,977, based upon more recent actual and budgeted information for the future test year. (PAWC Statement 4R, at 5; PAWC Exhibit 3A Revised, at 54R).

The OCA proposed three adjustments to PAWC's claim for Service Company charges. The first adjustment of $1,015,673, would reduce PAWC's claim to the level of Service Company charges for the historic test year, on the grounds that it did not explain in detail the nature of the projected increase. The OCA's two additional proposed adjustments, of $80,118 and $58,409, were based on the use of 2003 allocation factors to allocate historic test year expense for the Call Center and Shared Services functions, respectively. (R.D. at 40).

2. ALJ's Recommendation

The ALJ referenced Section 2101 of the Code, 66 Pa. C.S. § 2101, as the standard for evaluating affiliated interest transactions in a rate case, as follows:

> If the commission shall determine that the amounts paid or payable under a contract or arrangement filed in accordance with this section are in excess of the reasonable price for furnishing the services provided for in the contract, or that such services are not reasonably necessary and proper, it shall disallow such amounts, insofar as found excessive, in any proceeding involving the rates or practices of the public utility. In any proceeding involving such amounts, the burden of proof to show that such amounts are not in excess of the reasonable price for furnishing such services, and that such services are reasonable and proper, shall be on the utility.

66 Pa. C.S. § 2102(c).

The ALJ further noted that the standard for evaluating transactions with affiliated interests has long been held to require strict application. *Solar Electric Company v. Pennsylvania Public Utility Commission*, 9 A.2d 447 (Pa. Super. Ct. 1939).

The ALJ was of the opinion that PAWC never adequately explained the specific components underlying calculation of the $686,435 claim related to the transfer of ten of its employees to the Service Company, nor its claim that $329,238 of its increase reflects the costs that the Service Company incurs primarily for salaries and adding employees. The ALJ concluded that PAWC did not introduce sufficient evidence to support this claim when evaluated under a strict scrutiny standard, as is required. Therefore, he recommended that the OCA's proposed adjustments on this item should be adopted by the Commission, resulting in the Company's claim for this item being decreased by a total of $1,154,200, and the allowance of the amount of $15,957,777. (R.D. at 43).

3. Exceptions and Replies

PAWC excepts to the ALJ's recommendation on this issue, arguing that it is contrary to the evidence, and should be rejected. First, PAWC contends that the ALJ's criticism does not apply to the increase of $686,435 to reflect the transfer of employees from PAWC to the Service Company. The salary amounts for those employees and the nature of their work before and after the transfer were well documented. Second, as to the additional increment of $329,238, the ALJ's criticism is also misplaced. As PAWC has previously made clear, that figure is an estimate of the increase in Service Company fees from 2002 to 2003 based on anticipated increases in the Service Company's costs, which are predominantly payroll and payroll related expenses.

Third and finally, PAWC asserts that the OCA's proposed adjustment ($138,527) to reduce Service Company charges below the historic test year level is particularly inappropriate. That adjustment was based on the use of 2003 allocation factors to allocate historic test year expenses for the Call Center and Shared Services functions, respectively. (OCA Statement 1, Schedule LKM-22, at 2). The mismatch is obvious. Using the changed allocation factor without recognition of the associated increase in the expenses being allocated would unfairly and improperly understate the actual costs. (PAWC Exc. at 36-37).

The OCA rejoins that, under the strict scrutiny and statutory standard which applies to all affiliated transactions, the ALJ correctly concluded that PAWC failed to prove its full claim of $17,111,977 in Service Company charges. (OCA R.Exc. at 22-24).

4. Disposition

On review of this issue, we conclude that the ALJ correctly determined that under the strict scrutiny and statutory standards applicable to this type of transaction, PAWC has failed to prove its full claim of $17,111,977. Section 2101 of the Code and *Solar, supra*. The ALJ concluded that as a result of PAWC's lack of support for its estimate of future test year Service Company expenses, the OCA was justified in using actual expense numbers from the historic test year. (R.D. at 42).

Additionally, we find that the evidentiary record reveals that PAWC failed: (1) to respond adequately to the discovery request for data underlying its claim for this item; (2) to substantiate its statement of "actual underlying data" to support its claim; and (3) to justify its Service Company expenses through any "reliable documentation." (R.D. at 42). We note that, in allowing the OCA's proposed adjustment for this item, we are still permitting PAWC to recover Service Company expenses in the amount of $15,957,777. (R.D. at 43). Accordingly, for the above reasons, PAWC's Exception on this issue is denied.

D. Postage and Forms Expense

1. Positions of the Parties

In accordance with affiliated interest agreements approved by the Commission, PAWC provides services to American Water Resources (AWR) in connection with the Water Line Protection Program (WLPP) offered by AWR. Under that program, a customer pays a monthly fee to AWR and, in exchange, AWR will repair or replace the customer's service line if it is damaged or leaks. (PAWC Statement 7R at 5, OCA Exhibit Cross-examination 1).

The principal service provided by PAWC is billing and collection of AWR's monthly service fees, coordinating repair service when and if necessary, and coordinating AWR promotional mailings with an outside mailing house. For the services it provides, PAWC is compensated at rates scaled to the number of bills that contain AWR charges. The contract charges to AWR range from a maximum of $0.55 cents per bill to a minimum of not less than $0.10 per bill and are subject to annual increases. (OCA Exhibit Cross-examination 1).

PAWC increased its revenues by $114,524 to reflect the amounts paid or to be paid by AWR. That amount is based on a projection of compensation from AWR for 2003 annualized at the level of monthly compensation for December 2003. (PAWC Statement 7R at 5; PAWC Exhibit 3A Revised, at 17A). Those charges cover not only the cost incurred by PAWC, but also include its profit. (PAWC Statement 4R at 2, Tr. 1221).

The OCA proposed an adjustment to reduce PAWC's expenses by $320,427, to remove postage, forms and "advertising" expenses it alleges are associated with PAWC's "promotion" of the WLPP. (OCA Statement 1, at 14-16, Schedule LKM-12). The OCA's proposed adjustment consisted of 10% of PAWC postage and forms expense for all customer billing ($211,414) plus an adder of ($109,013) to represent a so-called "advertising" expense.

2. ALJ's Recommendation

The ALJ opined that the OCA's proposed adjustment, representing less than one-half of one percent of PAWC's original claim of approximately $65 million in additional revenue, is both logically and legally flawed. The ALJ stated that, assuming, for the sake of argument, that the costs of printing one line regarding the WLPP on PAWC's bills were more than a few hundred dollars per year, the OCA nevertheless adduced no evidence that it would, therefore, be logical to assume that an appropriate charge would be 10% of PAWC's postage and forms expense for all customer billing ($211,414). The ALJ also stated that the OCA's proposal also ignored established precedent that any additional charges in situations such as this must be arrived at by determining the incremental cost to arrive at a reasonable number. (R.D. at 44).

The ALJ further noted that the OCA had similarly failed to produce persuasive evidence that PAWC President Ross' letter is an "advertisement" for AWR, as opposed to a public service message for PAWC's customers. (OCA Exhibit Cross-Examination 2). The ALJ also stated that, even assuming that the letter is an advertisement, the OCA has ignored Section 1316(a) of the Code, which deals with the recovery of advertising expenses. That Section provides, in pertinent part, is as follows:

> **(a)** **General rule.**—For purposes of rate determinations, no public utility may charge to its consumers as a permissible operating expense for ratemaking purposes any direct or indirect expenditure by the utility for political advertising. The commission shall also disallow as operating expense for ratemaking purposes expenditures for other advertising, unless and only to the extent that the commission finds that such advertising is reasonable and meets one or more of the following criteria:
>
> (1) Is required by law or regulation
>
> (2) Is in support of the issuance, marketing or acquisition of securities or other forms of financing.
>
> (3) Encourages energy independence by promoting the wise development and use of domestic sources of coal, oil or natural gas and does not promote one method of generating electricity.
>
> (4) Provides important information to the public regarding safety, rate changes, means of

> reducing usage or bills, load management or energy conservation.
>
> (5) Provides a direct benefit to ratepayers.
>
> (6) Is for the promotion of community service or economic development.

[Emphasis added].

President Ross' letter advises PAWC's ratepayers that "you own the water line that runs through your property between the street and your home." The ALJ stated that, doubtless, that information is news to many ratepayers. At Public Input Hearing sessions herein, a number of ratepayers expressed surprise and concern about this "new information."

The letter also advised PAWC's ratepayers of one way in which they could protect themselves from a potentially large expense if their service line[14] should need repair. The ALJ opined that providing both of these pieces of information is a direct benefit to ratepayers. Therefore, the ALJ found that even if the pertinent letter were to be classified as an "advertisement," the associated reasonable costs would be recoverable by PAWC in its rates. The ALJ further found that the OCA's proposal to impose an adder of $109,013 for this item was held to be unjustified. For those reasons, ALJ Weismandel concluded that the OCA's proposed adjustment to reduce PAWC's expenses by $320,427 is contrary to both logic and the law, and, accordingly, should be rejected. (R.D. at 44-45).

3. Exceptions and Replies

The OCA excepts to the ALJ's recommendation on this issue, stating that that recommendation is based on two errors. The first error is the ALJ's failure to properly apply the standards of Section 2101 of the Code, *supra*, and the second error is the wrongful application of Section 1316 of the Code, *supra*. With regard to Section 2102, the OCA argues that the ALJ erroneously failed to recognize this issue as associated with an affiliated transaction, thus requiring "strict scrutiny" pursuant to Chapter 21 of the Code, as he clearly and correctly did with respect to the Service Company charges, discussed *supra*. (R.D. at 40-41, 43-45). The OCA contends that the relevant activities are without question gratuitous services provided by PAWC on behalf of its for-profit affiliate AWR, pursuant to an affiliated interest agreement. As such, the costs of those activities require "strict scrutiny" by the Commission. (OCA Exc. at 17-19).

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[14] "The service line extending from the curb, property line or utility connection to a point of consumption." (52 Pa. Code § 65.1).

With regard to Section 1316(a), the OCA argues that the ALJ erroneously cited Section 1316(a)(5) as a basis for denying the OCA's proposed adjustment to postage and forms expense, concluding that the promotional letters from Mr. Ross contain information which may be helpful to ratepayers and, as such, "provide a direct benefit to ratepayers." (R.D. at 44-45). The OCA argues, on the other hand, that Section 1316 is not applicable to the instant issues, as it addresses "direct or indirect [advertising] expenditures *by the utility*," not by the utility's affiliate, as is the case here. The information provided in the promotional mailings, while it may be incidentally helpful to some ratepayers, relates 100% to the sale of an unregulated service, the WLPP. As such, it is not related to utility service, and Section 1316 does not apply. (OCA Exc. at 19-20).

PAWC rejoins that the ALJ correctly rejected the OCA's proposed adjustment for this item, as "both logically and legally flawed." (R.D. at 44). (PAWC R. Exc. at 9-12).

4. Disposition

We note that the OCA in its Exception relative to this issue offers no objection or response to the ALJ's principal finding that the magnitude of the proposed adjustment bears no conceivable relationship to the costs, if any, of the "promotional activities" in which PAWC is alleged to have engaged. As PAWC witness Freeston noted, such costs likely do not exceed a few hundred dollars per year, if that. (Tr. at 1222-1223). Moreover, PAWC is fully compensated for the services it provides to AWR under affiliated interest agreements approved by the Commission, which set forth rates of compensation scaled to the number of water bills issued by PAWC which contain AWR charges. (PAWC Statement 4-R, at 2; Tr. at 1221).

Also, what the OCA characterized as PAWC's "promotion" of the WLPP was described by the OCA's own witness as "a one-line message on the residential customers' bills informing them that the WLPP is available." (OCA Statement 1, at 15). Accordingly, for the above reasons, as well as those articulated by the ALJ, the OCA's Exception on this issue is denied.

E. Fuel Expense

1. Positions of the Parties

PAWC annualized the cost of fuel used to operate its fleet of vehicles based on fuel usage experienced during the historic test year and the latest available cost per gallon for each category of fuel. For retail gasoline purchases, which comprise approximately 70% of all its fuel, the fuel price used in the annualization was $1.636 per gallon, based on data as of March 27, 2003. (PAWC Statement 6, at 11, PAWC Statement 6R at 8). The resulting figure was reduced by 19.05%, to reflect the portion of fuel expense chargeable to capital accounts. PAWC's claim for the fuel cost chargeable to operating expense is $1,057,621. (PAWC Exhibit 3A, at 55).

The OTS calculated PAWC's fuel expense in the future test year as $1,144,463. It then proposed that, of this amount, $926,443 should be allocated to future test year Operation and Maintenance (O&M) expenses, and the remaining $218,020 to the corresponding Capital account. That represented a $131,178 reduction to O&M expense, and a $30,870 reduction to Capital. (OTS Statement Number 2, at 26., OTS Exhibit Number 2, Schedule 2, at 1 of 2). The OTS also recommended that PAWC utilize a three-year, normalized cost of gasoline and diesel fuel. (R.D. at 46).

The OCA proposed the use of a three-year average of fuel consumption in lieu of PAWC's actual historic test year consumption. Similar to the OTS, the OCA also recalculated PAWC's fuel expense by using average fuel prices specific to its areas of operations. The use of the OCA's methodology would result in a proposed adjustment decreasing PAWC's O&M expense for fuel by $170,486. The OCA also recommended that PAWC utilize a three-year, normalized cost of fuel. (R.D. at 47).

2. ALJ's Recommendation

The ALJ opined that both the OTS and the OCA presented persuasive evidence that PAWC's calculation of fuel expense was flawed, and both correctly argued that fuel prices fluctuate widely and frequently. Consequently, the ALJ stated that PAWC utilized an improper methodology by focusing on the price on one date, March 27, 2003, in order to calculate fuel expense for the future. The better, and more realistic, method is to use some average price to account for the fluctuating nature of the price over time.

The OTS averaged fuel prices incurred by PAWC in 2000, 2001 and 2002. The OCA, on the other hand, used an average of only two data points, July 29, 2002, and July 29, 2003, for retail fuel prices and a spot price for bulk purchases. The resulting prices are as follows:

	OTS	**OCA**
Retail Purchases		
Gasoline	$1.44	$1.450
Diesel	1.62	1.520
Bulk Purchases		
Pittsburgh – Gasoline	1.33	1.420
Pittsburgh – Diesel	1.45	1.540
Hershey – Gasoline	1.48	1.520
Hershey – Diesel	1.45	1.590

The ALJ noted that both the OTS and the OCA arrive at prices significantly lower than PAWC's $1.636 per gallon for retail gasoline, but within $.01 per gallon of each other. The ALJ opined that the OTS' use of a three-year normalized price of gasoline and diesel better accounts for the volatility in fuel prices than does the OCA's two data points method. The ALJ stated that the OTS' proposed adjustment to PAWC's fuel expense, a $131,178 reduction, is a better use of the concept of normalization than is the OCA's proposed adjustment. Accordingly, the ALJ concluded that the OCA proposal to use a three-year average of fuel consumption in lieu of PAWC's actual historic test year consumption should be rejected. The ALJ concluded that the OTS' proposed adjustment of a decrease in PAWC's fuel expense claim of $131,178 should be adopted by the Commission. (R.D. at 47-48).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accord with the record evidence, it is adopted.

F. Inflation Adjustment Expense

1. Positions of the Parties

PAWC claimed $1,431,804 as an inflation adjustment expense. An inflation factor was applied to O&M expenses booked during the historic test year for which specific future test year adjustments were not made. (PAWC Statement 6R at 11-12, PAWC Exhibit 3A, at 56). PAWC used an inflation factor of 3.49%, based upon changes during the historic test year in three major inflation indices: the Consumer Price Index (CPI), the Producer Price Index (PPI), and the Gross Domestic Product Price Index (GDPPI). (Statement 6, at 12, Tr. at 1116-1117).

The OCA proposed that PAWC's entire inflation adjustment expense claim be denied, arguing that PAWC did not present specific evidence that each of the myriad O&M expenses that were not specifically adjusted actually increased at its calculated inflation rate of 3.49%. The ALJ noted that the Commission has addressed, and rejected, this argument in the past, and that it still makes no sense to argue that each of the unadjusted O&M expenses should be, or could be in a cost-efficient manner, analyzed separately. *Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company*, 68 Pa. PUC 343 (1988). The ALJ concluded that the OCA's position remains untenable and that it should be rejected. (R.D. at 50).

The ALJ noted that the OTS, on the other hand, makes an excellent argument that recognizes the legitimacy of an inflation adjustment expense, but reduces the PAWC claim for this item. The ALJ concluded that the claim for inflation of $1,431,804 is overstated, and should be rejected, and its inflation rate as used in this proceeding is stale and results in an inappropriate calculation of the projected expense. As presented in the OTS' witness Keim's testimony, an inflation rate of 1.43% is more representative of the expected future test year rate.

The OTS used the most current average Blue Chip Financial Forecasts to calculate a 1.43% GDPPI inflation rate for the future test year. Consequently, the OTS proposed a reduction in PAWC's claim for inflation expense of $845,133, leaving an allowable claim of $586,671. The OCA, however, proposed that PAWC's entire claim of $1,431,804 for inflation expense be rejected.

2. ALJ's Recommendation

The ALJ noted that, to arrive at its inflation adjustment expense claim, PAWC deducted $97,558,029 of specifically adjusted O&M expenses from the total historic test year O&M expenses of $138,583,943, to arrive at $41,025,914 of unadjusted expenses. It then calculated its inflation factor based on the average of the 2001 to 2002 increases in CPI, PPI, and GDPPI, arriving at an inflation factor of 3.49%. It then applied its inflation factor of 3.49% to its unadjusted O&M expenses of $41,025,914 to reach its claimed inflation adjustment expense of $1,431,804. (R.D. at 49).

The ALJ found that, at a time when the Wall Street Journal Prime Rate is 4.00%, the Federal Discount Rate is 2.00%, and the Federal Funds Rate is 1.00%, the Company's claimed inflation factor of 3.49% should not be accepted. Rather, the OTS' inflation factor of 1.43% is the proper factor to apply to the Company's unadjusted O&M expenses. Accordingly, the ALJ concluded that the OTS' proposed adjustment to the

Company's inflation adjustment expense claim should be accepted and its claim reduced by $845,133, leaving an allowable claim of $586,671. (R.D. at 51-52).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accord with the record evidence, it is adopted.

G. Uncollectibles Expense

1. Positions of the Parties

To calculate uncollectible accounts expense, PAWC applied the ratio of actual historic test year write-offs to actual historic test year water sales revenue to the *pro forma* levels of water sales revenue under present rates. (PAWC Statement 6, at 13, PAWC Exhibit 3A Revised, at 61R). That calculation produced a claimed amount of $4,789,698 in future projected uncollectible expense at current rates.

The OTS averred that, assuming that PAWC was granted its entire requested rate increase, its uncollectible expense would be $5,669,575. The OTS proposed an adjustment to this figure by reducing it by $1,341,387 to $4,328,188. The OTS based its proposed adjustment on normalizing PAWC's uncollectible expense, using a three year historic analysis.

The OCA, on the other hand, used PAWC's uncollectible expense claim at present rates, $4,789,698, but proposed a decrease of $1,119,572, to arrive at $3,670,126. Like the OTS, the OCA based its proposed adjustment on normalizing the Company's uncollectible expense, using a three year historic analysis.

2. ALJ's Recommendation

Both the OTS and the OCA argued that PAWC's claim for this item should be normalized, using a three year historic analysis. The ALJ stated that he agreed with that position. Specifically, the ALJ noted that PAWC's claim is based on data from only one year, the historic test year ending December 31, 2002. In opposition to the OTS' and the OCA's proposals to use a three year normalization, PAWC argued that this method "simply masks an upward trend in uncollectible expense." (PAWC Statement Number 6R at 13). The ALJ observed, however, that one year's numbers do not constitute a trend. A review of the years 2002, 2001, and 2000 reveals that this item, as a percent of revenues, fluctuated. (OCA Statement Number 1S, at 20, Tr. 1123-1124). (R.D. at 53).

The ALJ's review of the OTS and OCA testimony revealed that the OTS determined its adjustment based on a factor of 0.010377542 (OTS Exhibit No. 2-SR, Schedule 3) and that the OCA determined its adjustment based on a factor of 0.010402 (OCA Main Brief, Schedule LKM-11, Page 2 of 2). The OTS and the OCA relied upon data provided by PAWC to determine their three year average factors.

The ALJ accepted the OTS factor of 0.010377542, and he also stated that an adjustment to decrease the *pro forma* Uncollectible Expense by $1,132,543 is necessary. That adjustment was determined by applying the uncollectible factor of 0.010377542 (OTS Exhibit No. 2-SR, Schedule 3) to the Water Sales of $352,137,711 (PAWC Exhibit 3-A Revised, at 61R) yielding an uncollectible expense of $3,654,324. Deducting PAWC's claim of $4,786,867 (PAWC Exhibit 3-A Revised, at 61R) results in an adjustment to decrease PAWC's annualized expense by $1,132,543. In addition, PAWC's claimed Uncollectible Factor of 0.013593737 (PAWC Exhibit 3-A Revised, at 61R) shall be rejected in favor of the three year normalized factor of 0.010377542 for determining the revenue requirement. (R.D. at 53-54).

3. Exceptions and Replies

PAWC excepts to the ALJ's recommendation on this issue, arguing that adoption of the ALJ's recommended use of a three-year average would actually serve to introduce an anomaly. That is because only PAWC's 2002 experience fully captures the payment patterns of customers added through acquisitions which took place over that three-year period, particularly the acquisitions of the Coatesville and Citizens systems in 2001 and 2002, respectively. Also, PAWC contends that the use of an historic three-year average understates the current level of uncollectible expense, which has been increasing. (PAWC Statement 6-R, at 14; Tr. at 1134). The ALJ's rationale, namely, that PAWC's 2002 experience was anomalous and that the future test year level would be in line with an historic three-year average, is refuted by actual 2003 data, according to PAWC. (PAWC Exc. at 37-38).

On this issue, the OTS rejoins that the ALJ correctly determined that PAWC's uncollectible expense claim must be normalized, using a three-year historic analysis. (R.D. at 54). (OTS R.Exc. at 7-8). The OCA also responds on this issue, averring that the ALJ's determination thereon is reasonable, consistent with past Commission rulings, and should be adopted. (OCA R.Exc. at 24-25).

4. Disposition

We note that the ALJ adopted a three-year normalization for this item, because use of that normalization "smooth[es] out the effects of an item of revenue or expense that occurs at regular intervals but in irregular amounts." (R.D. at 53). This is precisely the case in the instant proceeding. A review of the record indicates that PAWC's own data shows that its write-off ratio has varied from year to year. (PAWC Statement 1 at 8). The use of a three year historic analysis is sufficiently current to reflect present customer payment tendencies while providing enough historical information to account for any aberrations in PAWC's write-off activity. It also avoids the use of stale data. Accordingly, PAWC's Exception on this issue is denied.

H. Depreciation Expense

1. Positions of the Parties

PAWC claimed an annual depreciation expense allowance of $56,053,431 based on depreciation calculations performed by its witness Spanos (PAWC Statement Number 10, PAWC Exhibit 10-B). In calculating PAWC's annual accrual, witness Spanos employed the straight-line remaining life method, which had been approved for use by PAWC and its corporate predecessors since 1985. Witness Spanos used depreciation techniques and methods of life estimation that are the same as those used to determine PAWC's annual accrual for ratemaking purposes for over a decade.

In addition, pursuant to the Commission's Regulations at 52 Pa. Code §§ 73.1-73.9, PAWC has filed Annual Depreciation Reports with the Commission since 1995 that provide detailed information about, among other things, the derivation of its depreciation rates, the determination of service lives, and the specific depreciation methods and techniques it employs. Based upon these reports, the Commission approved the depreciation rates used by the utility to record depreciation for accounting purposes. PAWC's last Annual Depreciation Report was filed in July, 2003. (R.D. at 55).

The OTS proposed an adjustment to reduce PAWC's claim for amortization of net salvage by $2,008,255 (OTS Statement 4, at 4 - 5). The OTS calculated that amount based on a five-year average of salvage and cost for removal for the five-year period 1998 through 2002 and, thereby, eliminated the future test year from the average and substituted data for the year 1998.

The OCA proposed an adjustment to reduce PAWC's claim for annual depreciation expense by $1,893,601. The OCA relied on the application of a statistical formula to the Company's historical retirement data to obtain a statistical prediction of the survivor characteristics and expected life of each account.

2. ALJ's Recommendation

OTS witness Gruber explained the basis for the OTS' proposed adjustment, which eliminated the future test year from the five-year average of salvage and cost for removal, and substituted the five-year period of 1998 through 2002 as follows:

> I have been advised by counsel that the Penn Sheraton Hotel v. Pennsylvania Public Utility Commission, 198 Pa. Superior Ct. 618 (sic) 184 A.2d 324 (1962) decision does not permit the reflection of the cost of net salvage in rates until it has actually been expended. The use of a projected amount would violate this principle.

(OTS Statement Number 4, at 5).

The ALJ opined that the OTS' interpretation of *Penn Sheraton* is erroneous, as evidenced by the fact that the Commission has, for many years, approved the use of projected future test year retirement data in calculating the five-year average of net salvage. (*Pennsylvania Public Utility Commission v. Philadelphia Suburban Water Co.*, 71 PA. P.U.C. 593, 599 (1989)). The ALJ further noted that the *Penn Sheraton* decision predated the Commission's Regulations which allow the use of future test year data in rate proceedings and, therefore, that case did not address the use of data for a future test year. The ALJ, therefore, concluded that including the estimated net salvage related to actual future test year retirements in the amortization of net salvage as of December 31, 2003, does not represent the kind of accrual prohibited by *Penn Sheraton*. Accordingly, the ALJ concluded that the OTS' proposed adjustment should be rejected. (R.D. at 57).

With respect to the OCA's proposed adjustment for this item, the ALJ noted that the mere application of a statistical formula to PAWC's historical retirement data to obtain a statistical prediction of the survivor characteristics and expected life of each account, without the application of informed engineering judgment, is not the Commission's preferred methodology. In the Commission's most recently litigated water utility general rate increase case, *Pennsylvania Public Utility Commission v. Philadelphia Suburban Water Company*, 219 PUR 4th 272 (2002), the Commission accepted the utility's life estimates, which were developed in the same manner and by the same expert witness as PAWC's in this case, and rejected the OCA's reliance on statistical analysis. (R.D. at 58). The ALJ rejected both the OTS' and the OCA's proposed adjustments to PAWC's annual depreciation expense claim as unjustified, and recommended that PAWC's entire claim should be allowed. (R.D. at 57-58).

3. Exceptions and Replies

The OCA excepts to the ALJ's recommendation on this issue, arguing that the ALJ should have accepted its proposed $1.8 million adjustment to reduce the Company's claim for annual depreciation expense. The OCA argues that the ALJ has misapprehended the OCA's position on this issue. It does not dispute that the use of engineering judgment is appropriate, however, it disagrees that the engineering judgment applied by PAWC's witness was "informed" because the record evidence on PAWC's actual retirement experience and future plans, and the experience of comparable utilities, do not support those judgments. The OCA also disagrees with the ALJ's failure to recognize that the OCA's expert witness applied informed judgment, which is supported by the record evidence. (OCA Exc. at 2-8).

PAWC rejoins that the ALJ properly rejected the OCA's proposed adjustment for this item, based on Commission precedent. (PAWC R.Exc. at 1-4).

4. Disposition

The ALJ rejected the OCA's proposed adjustment for this item. The crux of the OCA's disagreement with the ALJ's recommendation here lies with the decision of PAWC's witness[15] to consider only actuarially significant retirement experience in the statistical studies he performed. In contrast, Mr. Majoros, the OCA's witness, applied a statistical formula to all of the historical data, regardless of its actuarial significance.

We note that in the 2002 *Philadelphia Suburban* rate case, *supra*, we rejected an identical adjustment. (R.D. at 58). In that case, the utility's service life estimates were developed in the same manner, using the same methodology, and by the same expert witness, as PAWC's life estimates in this case. In short, the OCA's proposed adjustment is simply an attempt to re-open and re-litigate an issue which was conclusively decided against it less than two years ago. Our review of the issue in the context of the present case leads us to concur with the ALJ's determination that the OCA's proposed adjustment is unjustified and, as such, should be rejected. Accordingly, the OCA's Exception on this issue is denied.

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[15] Mr. John J. Spanos, Vice President of the Valuation and Rate Division of Gannett Fleming, Inc.

VI. Taxes

The ALJ noted that none of the active participants raised any issue directly regarding taxes. Consequently, the only changes to PAWC's original filing are a result of various adjustments in other areas of the filing, *e.g.*, revenues, expenses, return. PAWC's claims for State and Federal income taxes are set forth in PAWC Exhibit 3A Revised, at 69R-72R, as further revised in Appendix A. As shown on PAWC's Exhibit 3A Revised (at 70R, line 29) and Appendix A, PAWC's Federal income tax claim incorporates a reduction of $2,639,000 for "consolidated tax savings." That amount was calculated using the same computation method proposed by the OTS in PAWC's 1991 rate case, and approved by the Commission in that and all subsequent cases (PAWC Statement 3 at 12). (R.D. at 59).

VII. Rate of Return

It is well settled that a public utility is entitled to an opportunity to earn a fair rate of return on the value of its property which is dedicated to public service. *Pennsylvania Gas & Water Company v. Pennsylvania Public Utility Commission*, 341 A.2d 239 (Pa. Cmwlth. 1975). This is consistent with longstanding decisions by the United States Supreme Court, including *Bluefield Water Works and Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679, 690-93 (1923), and *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944).

A utility's rate of return has been defined as follows:

> [t]he *rate of return* is the amount of money a utility earns, over and above operating expenses, depreciation expense and taxes, expressed as a percentage of the legally established net valuation of utility property, the rate base. Included in the 'return' is interest on long-term debt, dividends on preferred stock, and earnings on common stock equity. In other words, the return is that money earned from operations which is available for distribution among the capital. In the case of common stockholders, part of their share may be retained as surplus. The rate-of-return concept merely converts the dollars earned on the rate base into a percentage figure, thus making the item more easily comparable with that in other companies or industries.

(P. Garfield and W. Lovejoy, *Public Utility Economics*, (1964), at 116).

In determining what is a fair rate of return, we have traditionally considered the utility's capital structure in conjunction with its costs of debt, preferred stock, and common equity, as will be discussed below.

A. Capital Structure

The following is a summary of the Parties' positions regarding PAWC's capital structure:

Capital Structure	Company(1)	OTS(2)	OCA(3)
	%	%	%
Long-term Debt	56.82	56.82	52.15
Short-term Debt			4.67
Preferred Stock	.98	.98	.98
Common Equity	42.20	42.20	42.20
Total Capital	100.00	100.00	100.00

(1) PAWC Exhibit 9-A, Schedule 1, at 1.
(2) OTS Exhibit No.1, Schedule 1.
(3) OCA Statement 5, Schedule JRW-1, at 1.

PAWC's position is based on the use of a capital structure at the end of the future test year, December 31, 2003. PAWC chose the capitalization ratios tabulated above because these ratios are indicative of those that it will maintain to finance its claimed rate base during the period that new rates will be in effect. The OTS accepts the capital structure proposed by PAWC because, according to the OTS, it protects the interests of all Parties to the instant proceeding and is, therefore, acceptable for ratemaking purposes.

The OCA alleges that PAWC's proposed capital structure does not accurately represent the source of its capital. Specifically, the OCA maintains that the record evidence as developed in this proceeding shows a consistent and ongoing pattern of short-term debt usage by PAWC to finance projects other than Construction Work in

Progress (CWIP), so that short-term debt must comprise a portion of PAWC's capital structure. (OCA Main Brief at 108).

The ALJ, noting that the Commission in prior cases rejected the identical arguments raised by the OCA, recommended the adoption of PAWC's proposed capital structure anticipated at the end of the future test year. Specifically, the ALJ indicated that, although PAWC utilizes short-term debt on an on-going basis, it has used, and will continue to use, short-term debt to support construction activities (CWIP as well as plant placed in service between rate cases), the acquisition of other water and wastewater systems, and other short-term borrowing needs. (R.D. at 61). It is the ALJ's position that the capital structure to be employed in this proceeding consists of 56.82% long-term debt, .98% preferred stock and 42.20% common equity. This is the capital structure that PAWC will employ at the end of the future test year, December 31, 2003, and comports with the position of the OTS.

We note that no Party excepted to the recommendation of ALJ Weismandel on the capital structure issue. We are persuaded that PAWC has demonstrated in the record that it uses its non-CWIP short-term debt for a number of purposes other than to finance its rate base, such as the support of plant placed in service between rate cases and to finance the acquisition of other water and wastewater systems and to meet other short-term borrowing needs. Moreover, in *Pennsylvania Public Utility Commission v. Pennsylvania Suburban Water Company,* 219 PUR4th.272 (2002), we rejected a virtually identical proposal by the OCA to include short-term debt in the capital structure. We, therefore, adopt the recommendation of the ALJ regarding capital structure.

B. Cost of Debt

Regarding its cost of debt, PAWC's claimed cost of long-term debt for this proceeding is 6.15 percent. (PAWC Exh. 9-A at 1). No Party contested this cost rate.

(OTS Statement 1 at 8; OCA Statement 5, Schedule JRW-1 at 1). As a result, and finding it reasonable, appropriate and in accord with the evidentiary record, we will adopt the ALJ's recommendation of the 6.15 percent cost of long-term debt proposed by PAWC. Since we recommend the exclusion of short-term debt from our recommended capital structure, we shall accordingly exclude the 1.42 percent cost of short-term debt recommended by the OCA.

C. Cost of Preferred Stock

PAWC's claimed cost of preferred stock for this proceeding is 8.08 percent. (PAWC Exh. 9-A at 1). No Party contested this cost rate. (OTS Exh. 1, Schedule No. 1; OCA Statement 5, Schedule JRW-1 at 1). As a result, we will adopt the ALJ's recommendation to adopt the 8.08 percent cost of preferred stock proposed by PAWC since it is reasonable and in accord with the evidence.

D. Cost of Common Equity

The following table summarizes the cost of common equity claims made, and methodologies used, by the Parties in this proceeding:

Methodology	Company(1)	OTS(2) %	OCA(3) %
Discounted Cash Flow Range (DCF)	10.53-12.09	9.25-10.03	8.4
Risk Premium Model (RPM)	11.75-12.00		6.7
Capital Asset Pricing Model (CAPM)	14.69-15.39		
Comparable Earnings Method (CEM)	14.20		
Recommendation	11.75	10.00	8.40

(1) Company Statement 9, at 4

(2) OTS Statement 1, at 19

(3) OCA Statement 5, at 29

1. Positions of the Parties

PAWC, after applying four of the above cited and widely recognized market-based models to market data for its barometer group of water utilities, and its barometer group of gas distribution utilities, arrived at an 11.75 percent cost of common equity recommendation. PAWC's water barometer group consists of three water utilities with actively traded common stock. These water utilities appear in the Water Utility Industry section of the *Value Line Investment Survey*. (PAWC Exh. 9-A, Schedule 3 at 2). PAWC's gas barometer group consists of ten gas distribution utilities with actively traded common stock which engage in similar business lines. These gas distribution utilities appear in the Gas Distribution Utility Industry section of the *Value Line Investment Survey*. (PAWC Exh. 9-A, Schedule 3 at 7).

PAWC contended that the above cited common equity cost rate models, used *in tandem*, are based on the premise that no one method or model of the cost of equity can be applied in an isolated manner. According to PAWC, informed judgment must be used to take into consideration the relative risk traits of the firm. It is for this reason that PAWC uses more than one method to measure its cost of common equity. (PAWC Statement 9 at 22). It should be noted that PAWC's recommended range of DCF common equity cost rates of 10.53 to 12.09 percent, calculated from its water and gas groups, include 78 and 83 basis point upward adjustments respectively, to *reconcile* the divergence between the market and book value of the common equity. (PAWC Statement 9 at 36).

Specifically, PAWC calculated recent six-month average dividend yields of its barometer groups which it basically increased by (1+.5) the respective growth rates to reach a 3.75 percent dividend yield for its water group and a dividend yield of 5.01 percent for its gas distribution group. The 3.75 percent dividend yield + 6.00 percent growth rate = 9.75 percent DCF result is subsequently increased by 78 basis points to 10.53 percent for its water group. The 5.01 percent dividend yield + 6.25 percent growth rate = 11.26 percent DCF result is subsequently increased by 83 basis points to 12.09 percent for its gas distribution group.

The average of PAWC's DCF results (10.53 percent + 12.09 percent/2 = 11.31 percent) and its risk premium results (11.75 percent + 12.00 percent/2 = 11.88 percent) approximates PAWC's recommended 11.25 percent to 11.75 range of market based cost rates of common equity, excluding comparable earnings which is not market based. We note that PAWC also excludes its CAPM calculation in formulating its recommendation. From this range, PAWC chooses 11.75 percent, which recognizes the alleged exemplary performance of PAWC's management. (PAWC Statement 9 at 4-5).

The OTS relied solely on the DCF method to arrive at its 10.00 percent recommended cost rate of common equity. The OTS applied the DCF method to its barometer group of water utilities whose stock is actively traded. The OTS' barometer group consists of seven publicly traded water utilities that have at least two sources of analysts' forecasts of earnings growth, and are not the announced subject of an acquisition. (OTS Statement 1 at 11). Specifically, the OTS averaged the spot dividend yield and the 52-week average dividend yield of its barometer group to reach a 3.28 percent composite dividend yield. It then added its 6.75 percent growth rate recommendation to the 3.28 percent dividend yield to reach a 10.03 percent DCF recommendation for its barometer group.

Next, the OTS averaged the spot dividend yield and the 52-week average dividend yield of PAWC's three water utility barometer group, which is a subset of the aforementioned OTS group, to reach a 3.45 percent composite dividend yield. The OTS then added its 5.75 percent growth rate recommendation to the 3.45 percent dividend yield to reach a 9.20 percent DCF recommendation for PAWC's barometer group. The OTS chose 10.00 percent as its recommended cost rate of common equity from its recommended range of 9.25 percent to 10.00 percent. OTS reasoned that since PAWC's common equity ratio is estimated at only 42.20 percent as of December 31, 2003, as opposed to the 46.70 percent and 44.96 percent common equity ratios of its barometer groups, PAWC faces more financial risk than either of the groups. (OTS Statement 1 at 19.).

The OCA relied upon the DCF method and the Risk Premium method to produce common equity cost rates of 8.4 percent and 6.7 percent, respectively. The OCA then chose 8.4 percent as its common equity cost rate recommendation because it primarily employs the DCF model to estimate its common equity cost rate. (OCA Statement 5 at 29). Specifically, the OCA employed the latest 2-month composite dividend yield of 3.3 percent to develop the DCF dividend yield for its barometer group. Next, in order to account for dividend growth in the period in which rates will be in effect, the OCA adjusted the 3.3 percent dividend yield by one-half the expected dividend growth rate of 5.00 percent or 2.50 percent. The OCA's DCF result is thereby 3.3 percent x 1.025 +5.00 percent = 8.4 percent. (OCA Statement 5 at 24).

To develop its Risk Premium result, the OCA used the risk-free Treasury securities over an 18-month period to arrive at a rate of 4.0 percent as the risk-free rate. The OCA then derived a risk premium range from the data of its barometer group, which ranged from 1.96 percent to 4.10 percent. Using the average of 2.69 percent, the OCA concluded that the indicated rate of return of its risk premium approach is 4.0 percent +2.69 percent = 6.7 percent. As cited above, the OCA subsequently recommended an 8.4 percent common equity rate of return based on its DCF methodology. (OCA Statement 3 at 29).

2. ALJ's Recommendation

Based on his review, evaluation and analysis of the record, regarding the cost of common equity, the ALJ recommended that we afford PAWC the opportunity to earn a rate of return on common equity of 10.0 percent. The ALJ was of the view that PAWC has not met its burden of proof that a 78 basis point adjustment is appropriate to compensate PAWC for a market price per share to book value per share ratio (M/B) in excess of 1.0. Additionally, the ALJ did not agree with PAWC's proposal for a positive adjustment factor in recognition of the exemplary performance of its management.

3. Exceptions

PAWC excepts to the ALJ's recommended 10.0 percent common equity cost rate, contending that such a recommendation is exclusively based upon the 10.0 percent DCF result of the OTS. As such, PAWC argues that PAWC's cost rate for common equity is substantially understated for primarily three reasons.

First, PAWC argues that we have been considering other common equity methodologies in the quarterly earnings reports submitted by Pennsylvania's jurisdictional utilities and in establishing the cost of equity for Distribution System Improvement Charge (DSIC) purposes. (PAWC Exc. at 5).

Second, PAWC contends that the ALJ erred in rejecting the previously Commission-approved leverage adjustment. PAWC pointed out that we approved the leverage adjustment in *Pennsylvania Suburban, supra.* Specifically, the leverage adjustment adjusts the calculated common equity cost rate in order to compensate PAWC for the application of a market based cost rate of common equity to a book value common equity ratio. PAWC argues that since its book value common equity ratio of 42.20 percent is significantly less than its 62 percent market based common equity ratio, which reflects a market based common equity cost rate such as 10.00 percent, the equity return rate should be increased when applied to the 42.20 percent book value common equity ratio. The ensuing basis point premium compensates PAWC for the financial risk differential between the book value and the market based common equity ratios. (PAWC Exc. at 5-9).

Finally, PAWC argues that the ALJ erred by declining to adopt a positive adjustment factor to reflect its exemplary management performance. PAWC disagrees with the ALJ's characterization of its management as being inefficient because of the frequency of its rate filings. PAWC has filed eleven general rate increases in sixteen years, but it notes that in an attempt to stem the tide of base rate filings, it pioneered the development of the DSIC. PAWC continues that since the implementation of the DSIC in 1996, it has only filed one rate case every two years which, it alleges, comports with other Pennsylvania major water utilities. Finally, PAWC cites its acquisition of troubled systems, its low income customer assistance, and its responsiveness to customer concerns as reasons that it should be awarded an equity premium for exemplary management performance.

In its Reply Exceptions, the OTS rejoins that the Commission has relied upon the DCF analysis and informed judgment as the appropriate means of measuring the cost of common equity. *See e.g., Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company,* Docket No. R-00016339, Order entered January 25, 2002, *Pennsylvania Public Utility Commission v. City of Lancaster,* 197 P.U.R.4th 156 (1999), *Pennsylvania Public Utility Commission v. Consumers Pennsylvania Water Company-Roaring Creek Division (Roaring Creek),* 87 Pa. P.U.C. 826 (1997), *Pennsylvania Public Utility Commission v. PECO Energy Company,* 87 Pa. P.U.C. 184, 212-213 (1997). (OTS R.Exc. at 4).

The OTS argues that PAWC's contention that since we review the results of more than one method in establishing the cost of equity for the DSIC, we must therefore, do the same in a base rate case, is entirely without merit. Specifically the OTS reasons that DSIC proceedings merely afford PAWC limited rate relief, based on infrastructure issues, between base rate proceedings. Base rate proceedings, on the other hand, require analytical scrutiny, which is only afforded by the DCF methodology. (OTS R.Exc. at 11-12).

In its Reply Exceptions, the OCA cites *Pennsylvania Public Utility Commission v. Pennsylvania Suburban Water Co.*, 219 PUR4th 272 (2002) to rebut PAWC's contention regarding our prior consideration of other cost of common equity methods. The OCA argues that in *Pennsylvania Suburban, supra*, we continued to endorse the DCF method as the preferred common equity cost rate methodology. (OCA R.Exc. at 2).

The OTS rejoins that the ALJ properly reasoned that no market to book or financial risk adjustment to the DCF findings is necessary to determine an appropriate cost of common equity. Specifically, the OTS submits that any unwarranted financial risk adjustment to compensate PAWC for the application of a market derived common equity cost rate to a book value common equity ratio will create the need for an even larger proposed adjustment in subsequent proceedings. For example, the OTS notes that in PAWC's last base rate proceeding, it indicated the need for a 60 basis point adjustment while the request in this case is for a 78 basis point adjustment.

Finally, the OTS rejoins that in its attempt to use a market based capital structure for his financial risk adjustment, PAWC's witness neglected to adjust the debt portion of the capital structure to account for the market value of each issue. (OTS R.Exc. at 14.).

The OCA excepts to the ALJ's recommended cost of common equity of 10 percent and, accordingly, submits that the common equity cost rate should be 8.4 percent. The OCA argues that the ALJ's 10.00[16] percent recommendation is excessive in light of current economic conditions. Specifically, the OCA submits that the ALJ erred by adopting a 6.75 percent growth rate for use in the recommended DCF analysis. The OCA alleges that the aforementioned DCF growth rate is excessive because the weight of the evidence favors the much lower growth rate of 5.00 percent proposed by the OCA. The OCA supports its resultant 8.4 percent cost of equity position by arguing that the lower rate is justified because the record shows that capital costs are the lowest in 40 years. For example, the OCA points to record evidence that rates on Treasury bills have dropped previously from 1995 to 2002, from 5.51 percent to 1.62 percent, respectively. (OCA Exc. at 11-12).

PAWC rejoins that the OCA's rejection of the 6.75 percent DCF growth rate recommended by the ALJ is misplaced. PAWC argues that the OCA's 5.00 percent recommended growth rate may have been a reasonable estimate several years ago. However, PAWC asserts that investors clearly have bid up the price of water utility stocks, and hence have accepted reduced dividend yields in anticipation of higher future growth. This is why, according to PAWC, there is no merit in the OCA's mixing of current lower dividend yields of water utility stocks with the former low dividend and earnings growth rates which were previously coupled with higher dividend yields. In other words, PAWC submits that investors are less concerned with dividend yields than they are with earnings growth and the associated stock price appreciation. (PAWC R.Exc. at 5-6).

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[16] We note that that the ALJ basically adopted OTS' DCF result of 10.03 percent which is composed of a 3.28 percent dividend yield and a 6.75 percent growth rate. The OCA, on the other hand, recommends an 8.4 percent DCF result which is composed of a 3.38 percent dividend yield and a 5.00 percent growth rate.

4. Disposition

Historically, we have primarily relied on the DCF methodology in arriving at our determination of the proper cost of common equity. We have, in many recent decisions, determined the cost of common equity primarily based upon the DCF method and informed judgment. *See Pennsylvania Public Utility Commission v. Philadelphia Suburban Water Company*, 71 Pa. PUC 593, 623-632 (1989); *Pennsylvania Public Utility Commission v. Western Pennsylvania Water Company*, 67 Pa. PUC 529, 559-570 (1988); *Pennsylvania_Public Utility Commission v. Roaring Creek Water Company*, 150 PUR4th 449, 483-488 (1994); *Pennsylvania Public Utility Commission v. York Water Company,* 75 Pa. PUC 134, 153-167 (1991); *Pennsylvania Public Utility Commission v. Equitable Gas Company*, 73 Pa. PUC 345-346 (1990).

We determine that the DCF method is the preferred method of analysis to determine a market based common equity cost rate. Although we agree with the ALJ's adoption of the 10.00 percent market based common equity cost rate as a starting point, we find merit in the financial risk adjustment proposed by PAWC. We note that, in *Lower Paxton Township v. Pennsylvania Public Utility Commission,* 317 A.2d 917 (Pa. Cmwlth. 1974) (*Lower Paxton Township),* the Commonwealth Court recognized that this

Commission may consider such factors that affect the cost of capital such as the utility's financial structure, credit standing, dividends, risks, regulatory lag, wasting assets and any peculiar features of the utility involved.

We are persuaded by PAWC's reasoning that a financial risk adjustment is necessary to compensate PAWC for the application of a market based cost of common equity to a book value common equity ratio. However, we find that PAWC's recommended 78 basis point adjustment is excessive. As we determined in PAWC's prior base rate case, at Docket No. R-00016339 (Order entered January 25, 2002), a 60 basis point adjustment to the market based common equity cost rate will compensate PAWC for the aforementioned application of a market based common equity cost rate to a book value common equity ratio.

PAWC indicates that a preliminary DCF calculation, which is computed using the market price of PAWC's common stock, should be adjusted to reconcile the divergence between market and book values. The indicated cost of common equity of 10 percent, therefore, reflects the barometer group's average *market* capitalization, which includes a common equity ratio of 62 percent as opposed to the recommended common equity ratio of 42.20 percent which reflects significantly more financial risk. PAWC further indicates that, when investors value a company's common stock, they employ actual market capitalization data and not book data although book capitalization is employed for ratemaking purposes.

We agree that a financial risk adjustment is proper. Accordingly, we find that, in order to place the computed DCF result on a consistent basis with the greater financial risk, inherent in PAWC's book value-derived capital structure ratios, a 60 basis point financial risk adjustment above our 10 percent representative DCF common equity cost rate recommendation is warranted.

We further conclude that the record in this proceeding does not support any further upward adjustments. Under the circumstances, we find that the cost of common equity of 10.60 percent is reasonable, appropriate and in accord with the record evidence.

The following table summarizes our determinations concerning PAWC's capital structure, cost of debt, cost of preferred stock, and cost of common equity, as well as the resulting weighted costs and overall rate of return:

Capital Structure	Ratio	Cost Rate	Weighted Cost
Debt	56.82%	6.15%	3.50%
Preferred Stock	0.98%	8.08%	.08%
Common Equity	42.20%	10.60%	4.47%
	100.00%		8.05 %

VIII. Miscellaneous

A. Low Income Programs

1. Positions of the Parties

PAWC's *H2O-Help to Others Program®* is an integrated three-part program that: (1) helps customers meet current water bills through assistance grants administered by the Dollar Energy Fund; (2) reduces their rates for service through a low-income customer charge discount; and (3) helps reduce their consumption by furnishing, free of charge, conservation devices and installation assistance as well as minor plumbing repairs to stop leaks. (PAWC Statement Number 4, at 17). In this case, PAWC proposed to further expand the benefits available to eligible low-income customers by increasing the low-income customer discount from 20% to 50%. (PAWC Statement Number 4, at 17).

Based on the customer service charge of $11.50 agreed to in the Stipulation, the savings to an enrolled customer will be $5.75 per month, or $69 per year. PAWC also continued to maintain its hardship fund administered by the Dollar Energy Fund at a minimum level of $120,000.[17] CEO proposed that PAWC be ordered to increase its guaranty of a minimum level of funding for its hardship fund from $120,000 to $300,000.

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[17] If voluntary customer donations do not reach this level, the Company makes a "below-the-line" charitable contribution sufficient to bring the fund to at least $120,000.

2. ALJ's Recommendation

The ALJ noted initially that, as a creature of statute, the Commission has only those powers which are expressly conferred upon it by the Legislature and those powers which arise by necessary implication. *Feingold v. Bell of Pennsylvania*, 477 Pa. 1, 383 A.2d 791 (1977), *Rogoff v. Buncher Company*, 395 Pa. 477, 151 A.2d 83 (1959). The ALJ further observed that the Commission is not empowered to act as a super board of directors for the public utility companies of this state. *Metropolitan Edison Company v. Pennsylvania Public Utility Commission*, 437 A.2d 76, 80 (Pa. Commw. Ct. 1981). (R.D. at 77).

Finally, the ALJ observed that, in *United States Steel Corporation v. Pennsylvania Public Utility Commission*, 390 A.2d 865 (Pa. Commw. Ct. 1978), the Court made another observation, which disposes of CEO's proposed adjustment in this case, when it stated as follows:

> [T]here is nothing in Pennsylvania law which now empowers the Commission to require one customer simply to pay another's utility bill; and, as we have mentioned, the utility may not and could not for long be required to provide such subsidy out of its capital.

United States Steel, 390 A.2d 871.

The ALJ thus concluded that the implementation of CEO's proposal would require exercise of the legislative powers of taxation and appropriation. These powers are neither expressly conferred upon the Commission by the Legislature nor do they arise by necessary implication. Quite simply, the Commission is without authority to require PAWC, or any public utility, to either make or increase charitable contributions derived solely from shareholder funds and kept entirely "below-the-line" for rate making purposes.

The ALJ recommended that PAWC's voluntary proposal to expand the benefits available to eligible low-income customers by increasing the low-income customer discount from 20% to 50% be approved. He also recommended, based on the above-outlined reasons, that CEO's proposed adjustment be rejected. (R.D. at 77-78).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation relative to this issue to be reasonable, appropriate and in accord with the record evidence, it is adopted.

B. Public Input Hearing

The Public Input Hearings conducted in this case were numerous in sessions and also very geographically diverse. Those instances where customers raised concerns about service related issues, *viz.*, Bushkill, Pike County and Tobyhanna, Monroe County; Wyomissing, Berks County; Nazareth, Northampton County, all involved systems recently acquired by PAWC. Those systems had pre-existing problems. However, PAWC has begun to address those problems.

For example, PAWC has begun the designing and permitting process for a centralized treatment facility at the point of interconnection between itself and the Reading system and has also begun to address the water quality issues in Exeter Township raised at the Public Input Hearing sessions in Wyomissing, Berks County. (Company Statement 13-R at 7-8). Similarly, PAWC's witness Kaufman described in detail the extensive work that has been done and will continue to be done to bring the former LP system up to PAWC's standards. (PAWC Statement 14-R at 9 - 10). Although this will be an extensive and long-term project, PAWC has worked diligently to solve the problems that existed at the time of acquisition. (R.D. at 78-79).

PAWC also addressed concerns raised by APCPPOA and SCECA. (PAWC Statement 14-R at 6-7, Tr. at 1440 – 1448). PAWC will continue its regular meetings with APCPPOA and will initiate a similar program of regular meetings with SCECA. When, in the course of the Public Input Hearing sessions, customer-specific problems were raised, PAWC investigated the matter thoroughly and took prompt corrective action where appropriate. (PAWC Statement 1RS, PAWC Statement 13-R, at 10-12, PAWC Statement 14-R at 12-17).

Finally, PAWC agreed to the entry of a Commission Order regarding the continuation of meetings with APCPPOA and the commencement of similar meetings with SCECA. (Tr. at 1449 – 1450). The ALJ recommended that the final Order in this case contain such a provision and, finding that recommendation to be reasonable, appropriate, and in the public interest, we will adopt it. (R.D. at 79).

IX. Rate Structure and Rate Design

The Stipulation concerning Rate Structure and Rate Design is appended to the Recommended Decision of ALJ Weismandel as an Appendix. All fourteen active participants in this general rate case agreed to and were signatories to the Stipulation regarding rate structure and rate design. The ALJ noted that the active participants represented every category of persons or entities that may be affected by the rate structure and rate design adopted in this proceeding. (R.D. at 79). The ALJ determined that the Stipulation is reasonable, appropriate and in the public interest and, therefore, recommended its adoption. (R.D. at 80).

We have carefully reviewed the Stipulation in light of the record evidence. We agree with the ALJ that the adoption and approval of the Stipulation will serve to foster and promote the public interest. We find that the Stipulation provides the basis for a reasonable rate structure for purposes of this proceeding and appropriately balances the interests and concerns of the stipulating Parties as expressed in the testimony and other evidence presented on the record. In addition, we recognize that adoption and approval of the Stipulation will avoid the need for extensive briefing of the numerous and complex issues raised by the Parties with regard to cost of service, rate structure and rate design and will ultimately inure to the benefit of the ratepayers.

Accordingly, the Stipulation concerning Rate Structure and Rate Design is adopted.

X. **Conclusion**

We have carefully reviewed the record as developed in this proceeding, including the ALJ's Recommended Decision and the Exceptions filed thereto. PAWC initially requested an overall revenue increase of $64,946,533, or about 18.2%. (PAWC Initial Brief at 3). With adjustments to the cost of debt and in various other areas, PAWC's final claim here, as of its correspondence dated October 20, 2003, and attached tables, was for a revenue increase of $59,246,159, or about 16.6%. The ALJ recommended an allowable revenue increase in the amount of no more than $26,174,845. (Table 1 attached to the R. D.). The ALJ also recommended that the increase be spread among the rate classes in accordance with the Stipulation which had been reached thereon, a copy of which was attached to the Recommended Decision.

Based on our review, evaluation, and analysis of the record evidence, we have adopted different conclusions than the ALJ in two key areas by allowing the deferred security costs, as adjusted herein, and by concluding that a cost of common equity of 10.6% is reasonable, appropriate and in accord with the record evidence. The resulting allowable revenue increase is $34,314,15, or about 9.5%. As such, the Exceptions filed by the various Parties hereto, are granted or denied, as discussed *supra*. Accordingly, the ALJ's Recommended Decision is adopted only to the extent that it is consistent with this Opinion and Order.

XI. ORDER

THEREFORE; IT IS ORDERED:

1. That the Exceptions filed by the Office of Consumer Advocate on December 17, 2003, to the Recommended Decision of Administrative Law Judge Wayne L. Weismandel herein, are denied.

2. That the Exceptions filed by Pennsylvania-American Water Company on December 17, 2003, to the Recommended Decision of Administrative Law Judge Wayne L. Weismandel herein, are granted or denied, consistent with this Opinion and Order.

3. That the Recommended Decision of Administrative Law Judge Wayne L. Weismandel herein, issued on December 2, 2003, is adopted only to the extent that it is consistent with this Opinion and Order, and rejected in other regards.

4. That the Pennsylvania-American Water Company shall not place into effect the rates contained in Supplement 141 to Tariff Water–Pa. P.U.C. No. 4, which have been found to be unjust, unreasonable and, therefore, unlawful.

5. That the Pennsylvania-American Water Company is hereby authorized to file tariffs, tariff supplements, or tariff revisions containing rates, provisions, rules and regulations, consistent with the findings here, to produce revenues not in excess of $392,181,547.

6. That Pennsylvania-American Water Company's tariffs, tariff supplements, or tariff revisions may be filed upon less than statutory notice, and pursuant

to the provisions of 52 Pa. Code §§ 53.31 and 53.101, may be filed to be effective for service rendered on and after the date of entry of the instant Opinion and Order.

7. That Pennsylvania-American Water Company shall file detailed calculations with its tariff filing, which shall demonstrate to this Commission's satisfaction that the filed rates comply with the proof of revenue, in the form and manner customarily filed in support of compliance tariffs.

8. That Pennsylvania-American Water Company shall comply with all directives, conclusions and recommendations contained in the instant Opinion and Order that are not the subject of individual ordering paragraphs as fully as if they were the subject of specific ordering paragraphs.

9. That the Stipulation Concerning Rate Structure And Rate Design filed in this case on October 28, 2003, be, and hereby is, approved, and incorporated herein by reference as though set forth in full.

10. That Pennsylvania-American Water Company shall allocate the authorized increase in operating revenues to each customer class and rate schedule within each class in accordance with the Stipulation Concerning Rate Structure And Rate Design filed in this case on October 28, 2003, and in the manner prescribed in this Opinion and Order.

11. That Pennsylvania-American Water Company, as it has agreed to do, expand the benefits available to eligible low-income customers by increasing the existing low-income customer discount from 20% to 50%.

12. That Pennsylvania-American Water Company, as it has agreed to do, continue its regular meetings with designated representatives of A Pocono Country Place

Property Owners Association and commence a similar program of regular meetings with designated representatives of Saw Creek Estates Community Association, Inc.

13. That the Complaints filed by the various participants to this proceeding at Docket Numbers R-00038304C0001 through R-00038304C0171, inclusive, are, to the extent they have not been previously marked closed, sustained in part and dismissed in part, consistent with this Opinion and Order.

14. That the Pennsylvania Public Utility Commission's inquiry and investigation in Docket Number R-00038304 is terminated and the record closed.

BY THE COMMISSION,

James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: January 16, 2004

ORDER ENTERED: January 29, 2004

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held July 23, 2004

Commissioners Present:

Terrance J. Fitzpatrick, Chairman
Robert K. Bloom, Vice Chairman
Glen R. Thomas
Kim Pizzingrilli
Wendell F. Holland

Pennsylvania Public Utility Commission	R-00038805 R-00038805C0001- R-00038805C0086 P-00032025
v.	
Aqua Pennsylvania, Inc. (formerly Pennsylvania Suburban Water Company)	

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OPINION AND ORDER

BY THE COMMISSION:

I. Introduction

Before the Commission for consideration and disposition is the Recommended Decision of Administrative Law Judge (ALJ) Cynthia Williams Fordham, issued on June 16, 2004, relative to the above-captioned general rate increase proceedings. Also before the Commission are the Exceptions and Replies filed by the various Parties with respect thereto.

Exceptions to the Recommended Decision were filed by the following Parties: Upper Dublin Township, Montgomery County (Upper Dublin), on June 24, 2004; the Commission's Office of Trial Staff (OTS), on July 1, 2004; the Office of Consumer Advocate (OCA), on July 1, 2004; and Aqua Pennsylvania, Inc., formerly Pennsylvania Suburban Water Company (AP)[1], on July 1, 2004. Letters were received from the following Parties indicating that they would not be filing Exceptions: the Office of Small Business Advocate (OSBA), on July 1, 2004, and Aqua Large Users Group (Aqua LUG), on July 1, 2004[2]

Reply Exceptions were filed by the following Parties: the OSBA, on July 12, 2004; AP, on July 12, 2004; the OTS, on July 12, 2004; Aqua LUG, on July 12, 2004; and the OCA, on July 12, 2004. Also on July 12, 2004, Upper Dublin filed a Letter advising that it would not be filing Reply Exceptions.

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[1] Pennsylvania Suburban Water Company changed its name to Aqua Pennsylvania, Inc., effective at the close of business on January 16, 2004. Accordingly, that company will be referred to as "AP" throughout this Opinion and Order.

[2] "Aqua Large Users Group" was formerly known as "Pennsylvania Suburban Water Large Users Group" (PSWLUG).

II. History of the Proceeding[3]

On November 14, 2003, the former Pennsylvania Suburban Water Company, now AP, filed Supplement No. 30 to Tariff Water-Pa. P.U.C. No. 1 to become effective January 14, 2004, containing proposed changes in rates, rules, and regulations calculated to produce $25,300,000 (10.2%) in additional annual revenues based on a future test year ending June 30, 2004.

By Order entered December 18, 2003, the Pennsylvania Public Utility Commission (Commission) instituted an investigation into the lawfulness, justness and reasonableness of the proposed rate increase. Pursuant to section 1308(d) of the Public Utility Code (Code), 66 Pa. C.S. § 1308(d), Supplement No. 30 to Tariff Water–Pa. P.U.C. No. 1 was suspended by operation of law on January 14, 2004, until August 14, 2004, unless otherwise permitted by Commission Order to become effective at an earlier date. In addition, the Commission ordered that the investigation include consideration of the lawfulness, justness and reasonableness of AP's existing rates, rules and regulations. The matter was assigned to the Office of Administrative Law Judge (OALJ) for Alternative Dispute Resolution, if possible, or for hearings culminating in the issuance of a Recommended Decision. In accordance with the Commission's Order, the matter was assigned to ALJ Fordham.

On March 13, 2003, AP filed a Petition requesting that the Commission issue an Order authorizing AP to: (1) defer, for accounting purposes, certain unanticipated employee pension expenses; and (2) seek recovery of such deferred amounts in future base rate proceedings. Answers to the Petition were filed by the OTS on March 31, 2003, and by the OCA on April 4, 2003. On April 21, 2003, AP filed a

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[3] We have extracted liberally from the Recommended Decision in setting forth the History of the Proceedings and the positions of the Parties as presented during the evidentiary phase of this matter.

Reply to the Answers and New Matter Filed by the OTS and the OCA. No Protests were filed and no hearings were held.

The OTS and the OCA asserted that the Petition should be rejected on the grounds that it constitutes a single-issue and/or retroactive ratemaking. By Order entered on July 2, 2003, we assigned the Petition to the OALJ for hearings and the issuance of a Recommended Decision.

The matter was assigned to ALJ Fordham. A telephonic Prehearing Conference in the rate case and a further telephonic Prehearing Conference on the Petition were held on January 15, 2004. During that Conference, the ALJ acted to: (1) consolidate the rate proceeding with the Petition proceeding; (2) modify the discovery rules to allow expedited discovery; and (3) establish a litigation schedule and determine that a number of Public Input hearings would be scheduled. These actions were confirmed in the January 27, 2004 Prehearing Order.

AP, the OTS, the OCA, the OSBA, PSWLUG and White Rock Association were identified as active Parties. Counsel for AP noted that, effective at the close of business on January 16, 2004, Philadelphia Suburban Water Corporation was changing its name officially to Aqua America, Inc. (Tr. at 14-15). Subsequently, as above noted, PSWLUG changed its name to Aqua Large Users Group (Aqua LUG).

Upper Dublin filed a Complaint on February 13, 2004, and subsequently filed a Petition to Intervene to in the rate case. That Petition was granted. A total of eighty-six Formal Complaints were filed in this matter. Public Input sessions were held in Mechanicsburg, Ardmore, Media, and Shavertown. Forty-five witnesses, including state representatives, local officials, community groups and non-profit organizations, presented sworn testimony.[4]

Evidentiary hearings were held in this matter in Harrisburg on April 7, 8 and 13, 2004, before ALJ Fordham. AP, the OTS, the OCA, the OSBA, Aqua LUG and Upper Dublin participated. Although the record concerning the evidentiary hearing officially closed on April 15, 2004, it was noted that the record would be open for submission of data produced in on the record requests (Tr. at 606, 607). AP, the OCA, the OTS, the OSBA, Aqua LUG and Upper Dublin filed Main and Reply Briefs in accordance with the established schedule.

The Recommended Decision of ALJ Fordham's was issued on June 16, 2004. In her Recommended Decision the ALJ found, *inter alia*, that AP's proposed Tariff Water - Pa. P.U.C. No. 30 proposing an annual increase of $25,300,000, should be rejected. The ALJ stated that the rates contained in that Tariff were not just and reasonable, or otherwise in accordance with the Pennsylvania Public Utility Code (Code) and the Commission's Regulations. The ALJ further recommended that the Commission issue an Opinion and Order directing AP to file a tariff allowing recovery of no more than $8,335,773 in additional annual operating revenue.

Exceptions and Reply Exceptions to the Recommended Decision were filed as above noted.

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[4] On February 9, 2004, Wendy Eisenhauer filed a Petition to Withdraw her Complaint, which was docketed at No. R-00038805C0064. That Complaint was marked closed on April 23, 2004.

III. Description of The Company and General Principles

A. The Company

AP is a regulated Pennsylvania public utility and is a wholly owned subsidiary of Aqua America, Inc. AP furnishes water service to approximately 384,000 customers in a service territory covering portions of twenty-two counties across the Commonwealth. Its principal executive offices are located in Bryn Mawr, Pennsylvania. (AP's M.B. at 1).

On November 14, 2003, AP filed Supplement No. 30 to Tariff Water-Pa. P.U.C. No. 1, requesting an increase in its total annual operating revenues of $25.3 million. As a result of various revisions and updates made by AP during the course of the proceeding, it was able to reduce its requested increase by $700,000, or to $24.6 million. (AP Exh. 1-A (a)). Schedules setting forth AP's final revenue, expense and rate base claims were attached to its Main Brief as Appendix A.[5] (AP's M.B. at 1).

AP expects to spend over $100 million on new utility plant in the future test year, and approximately $658 million over the period 2003-2007 in order to: (1) maintain compliance with the Safe Drinking Water Act; (2) replace aging infrastructure; (3) install security-related enhancements in response to the events of September 11, 2001; and (4) help address regional water supply problems. (AP's M.B. at 6, 39, AP's R.B. at 2).

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[5] The only difference between the schedules set forth in Appendix A and those contained in AP's final accounting exhibit (AP Exh. 1-A(a)) is that AP, in accordance with an adjustment proposed by OCA witness Crane, has reduced its claim for water purchased from the City of Philadelphia through the Tinicum interconnection. As noted by Mr. Schreyer, this adjustment was inadvertently omitted from Exhibit 1-A(a). (AP St. 3-R, at 2).

B. Burden of Proof

Initially, we note that the burden of proof to establish the justness and reasonableness of every element of AP's rate increase rests solely upon the public utility in all proceedings under Section 1308(d) of the Code. That standard is set forth in Section 315(a) of the Code, 66 Pa. C.S. § 315(a), as follows:

> **Reasonableness of rates**. In any proceeding upon the motion of the Commission, involving any proposed or existing rate of any public utility, or in any proceeding upon complaint involving any proposed increase in rates, the burden of proof to show that the rate involved is just and reasonable shall be upon the public utility.

66 Pa. C.S. § 315(a).

The above-quoted statutory provision reveals a legislative intent that the utility carry the burden of proving the justness and reasonableness of proposed and existing rates. The Commonwealth Court in reviewing Section 315(a) interpreted the utility's burden of proof in rate proceedings as follows:

> Section 315(a) of the Public Utility Code, 66 Pa. C.S. § 315(a), places the burden of proving the justness and reasonableness of a proposed rate hike squarely on the public utility. It is well established that the evidence adduced by a utility to meet this burden must be substantial.

Lower Frederick Township v. Pennsylvania Public Utility Commission, 409 A.2d 505, 507 (Pa. Commw. Ct. 1980); *See also Brockway Glass v. Pennsylvania Public Utility Commission*, 437 A.2d 1067 (Pa. Commw. Ct. 1981). In rate proceedings, it is well established that the burden of proof does not shift to the parties challenging a rate increase. The utility's burden of establishing the justness and reasonableness of every component of its rate request is an affirmative one.

The Commission has affirmed the utilities' burden of proof in base rate proceedings in numerous cases including *Pennsylvania Public Utility Commission v. Equitable Gas Company,* 57 Pa P.U.C. 423, 471 (1983); *Pennsylvania Public Utility Commission v. Breezewood Telephone Company*, 74 Pa. P.U.C. 431 (1991); and *Pennsylvania Public Utility Commission v. National Fuel Gas Distribution Corporation*, 1994 Pa. P.U.C. LEXIS 134 *5 (1994). In *Breezewood*, the Commission made the following ruling:

> Thus, where a party has raised a question concerning an element at issue, the affirmative burden of proving justness and reasonableness of its claim is upon [Breezewood].

74 Pa. PUC at 442.

Accordingly, in the instant proceeding, it is incumbent upon AP to affirmatively prove the reasonableness of every element of its claim.

As we proceed in our review of the various positions espoused in this proceeding, we are reminded that we are not required to consider expressly or at great length each and every contention raised by a party to our proceedings. (*University of Pennsylvania, et al. v. Pennsylvania Public Utility Commission*, 485 A.2d 1217, 1222 (Pa. Commw. Ct. 1984)). Moreover, any exception or argument that is not specifically addressed herein shall be deemed to have been duly considered and denied without further discussion.

C. Summary of Result

As will be further delineated herein, based upon our careful review and consideration of the evidentiary record as developed in this proceeding, including the

Recommended Decision of ALJ Fordham, the Exceptions of the Parties and Replies filed with respect thereto, we conclude that AP is entitled to an opportunity to earn income available for a return of $85,472,017. In furtherance of such objective, AP is authorized to establish rates that will produce not in excess of $261,877,106 in jurisdictional operating revenues. The increase in annual operating revenues authorized herein of $13,794,205 is approximately 54.5% of the $25,300,000 originally sought and an increase of approximately 5.6 % over revenues generated through current rates.

IV. Rate Base

A. Fair Value

AP's proposed rate base, representing its claimed measure of value at future test year end, equals $996,304,307. (AP's M.B. Appendix A). To develop the level of plant in service as of June 30, 2004, AP adjusted actual plant balances at June 30, 2003, as set forth in its books of account, to reflect the plant additions and retirements, and system acquisitions anticipated to occur during the twelve months ending June 30, 2004. (AP St. 1 at 15-16 and Sch. 1; AP St. 1-S at 3-4 and Sch. 9). AP then added requested allowances for material and supplies, cash working capital and certain other balance sheet items in the process of being amortized, and made the normal ratemaking deductions for, *inter alia*, accrued depreciation, customer contributions, advances and deposits, deferred income taxes and accrued interest. (AP's M.B. at 4).

B. Plant in Service

1. Future Test Year Plant Additions

a. Positions of the Parties

Originally, AP proposed $90.5 million in new projects in the future test year. After AP finalized its 2004 capital budget, its witness Mr. Griffin updated its claimed future test year end plant balances to include $6.4 million of additional projects which are expected to be completed by June 30, 2004. (AP's M.B. at 5-7; AP St. 1-S at 3-4 and Sch. 9). Therefore, the total amount for new projects is $96.9 million.

After a review of the actuals through March 31, 2004, and based on the assumption that all of the Construction Work in Progress (CWIP) would be completed and placed into service by June 30, 2004, the OCA stated that AP's utility plant in service claim appeared to be reasonable. Accordingly, the OCA did not oppose AP's updated plant in service claim of $1,393,675,928. (OCA's M.B. at 7; App. A, Sch. ACC-2 (final)). However, the OCA recommended that further adjustments must be made to update the Contributions in Aid of Construction (CIAC) and Customer Advances in Construction (CAC). (AP's R.B. at 2; OCA's M.B. at 7; OCA Post-Hearing Exh. No. 1).

b. ALJ's Recommendation

Since the OCA withdrew its objection to AP's updated plant in service claim, and since that claim is supported by the evidence in the record, the ALJ recommended that the claim be approved. (R.D. at 11).

c. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted. We will address the OCA's objections to the CIAC and CAC below, in Section IV, C.

2. Newly Acquired Systems

a. Positions of the Parties

The OCA's witness Kraus, in her direct testimony, proposed that four newly acquired water systems, which were purchased for less than their depreciated original cost, be added to rate base at their lower purchase price, and that the "negative acquisition adjustments," *i.e.,* the difference between purchase price and depreciated original cost, be amortized as a reduction to revenue requirement. (OCA St. 3). After AP incorporated an amortization of the negative acquisition adjustments in its final income schedules, the OCA withdrew its proposed rate base adjustments. (Tr. at 319-21, 494-95; AP's M.B. at 8; AP St. 1-R at 8-9, 12-13; AP Exh. 1-A (a) at 34, Revised). Accordingly, the ratemaking treatment of the relevant acquisitions is no longer in dispute. (AP's M.B. at 7).

b. ALJ's Recommendation

Since AP satisfied the OCA's objections, and finding this claim to be otherwise reasonable, the ALJ recommended that AP's now uncontested calculation be approved. (R.D. at 11).

c. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

C. Contributions in Aid of Construction and Advances for Construction

1. Positions of the Parties

The OCA urged that AP's claimed rate base offset for CIAC and CAC be "updated" to March 31, 2004 levels. The OCA suggested that this proposal would reduce AP's measure of value by approximately $2.6 million. (OCA's M.B. at 7-9, AP's R.B. at 2, 3).

AP rejoined that its utility plant in service claim, as initially filed and as revised by Mr. Griffin in his supplemental testimony, includes no future test year projects which have been, or will be, financed with customer-provided funds. Accordingly, AP argued that if customer contribution and advance balances are increased by $2.6 million, utility plant in service must also be increased by $2.6 million. (AP's M.B. at 8-9, AP's R.B. at 3; AP St. 1-R at 16-17). AP further argued that the OCA's acceptance of AP's plant in service claim fails to justify the recommended adjustment. According to AP, a review of its Post Hearing Exhibit No. 1, attached to its Reply Brief as Appendix A, demonstrates that AP's depreciated utility plant in service, inclusive of CWIP and net of contributions and advances, equaled $1,048,600,590 as of March 31, 2004. That amount is $3.5 million more than AP's claim for the same items for the future test year ended June 30, 2004, which was $1,045,147,603. AP averred that it is thus clear that the March 31, 2004, plant balances do not include the capital expenditures that AP will make during the months of April, May and June.

In short, it is AP's position that the OCA's recommended update is not warranted, because AP's utility plant in service claim does not include future test year projects that will be financed with customer provided funds. (AP's M.B. at 8, 9; AP's R.B. at 3; AP St. 1-R at 16-17).

When it accepted AP's updated rate base claim, the OCA proposed that an adjustment should also be made to CIAC and to CAC. The OCA noted that AP included a claim of $47,834,810.00 for its CIAC balance in its original filing. (AP St. 1 at 17; Tr. at 449). As of December 31, 2003, this amount was $48,860,504.00 (Tr. at 449; OCA St. 1 at App. C, OCA Set VII-17). The OCA argued that the March 31, 2004 actual numbers demonstrated that the contributions were $48,925,230. (OCA's M.B. at 8; OCA Post hearing Exh. No. 1).

The OCA pointed out that the historic numbers are significantly lower than those proposed by AP, and that the actual annual additions to CIAC numbers have not significantly varied. The OCA's witness Crane testified that the future test year contributions of only $49,899 was very low, relative to the actual level of contributions received in each of the past five years. Therefore, in Schedule ACC-4, she made an adjustment to reflect this latest CIAC balance. (OCA's M.B. at 8, 9; OCA St. 1 at 14; App. A, Sch. ACC-4 (final)).

2. ALJ's Recommendation

The ALJ concluded that, based on the evidentiary record, the OCA's recommended update is not warranted because AP's utility plant in service claim does not include future test year projects that will be financed with customer provided funds. Thus, the ALJ concluded that the OCA's proposed adjustments should be rejected. (R.D. at 13).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

D. Cash Working Capital

AP's claim for cash working capital is designed to provide it with the funds required to defray the cost of operating and maintenance expenses and taxes incurred in advance of the receipt of revenue. The calculations for AP's final cash working capital claim are set forth in the schedules included in AP's Main Brief at Appendix A.

The portion of AP's cash working capital claim attributable to operating and maintenance expenses was determined from a revenue-expense lead/lag study and was calculated in the same manner as approved in its previous rate cases. (AP's M.B. at

10; AP St. 1 at 17; AP St. 1-R at 10). That study, which was updated to reflect AP's final claims in this proceeding, indicates an average lag in receipt of revenue of 67.0 days, which is offset by an average lag in the payment of expenses of 34.2 days. (AP's M.B. Appendix A; AP Exh. 1-A(a) at 83 Revised). AP then multiplied the resulting net lag in receipt of revenues of 32.8 days by the average daily future test year operating and maintenance expense level of $242,862, to derive a cash investment required of investors of $7,953,700.

AP performed a separate lead/lag study to determine the cash working capital needed to cover various tax liabilities, exclusive of payroll taxes, which are paid during the year. (AP's M.B. at 10). The revenue lag of 67.0 days was offset by an average lag of 38.9 days in the payment of taxes. The net 28.1-day lag was multiplied by AP's daily adjusted pro forma future test year tax expense claim of $92,780, to obtain the working capital requirement of $2,607,600. (AP's M.B. Appendix A). A separate lead/lag analysis of payroll taxes produced working capital needs of $337,000.

AP noted that its cash working capital allowance would have to be recalculated if any adjustments are made to its requested operating expense and/or tax levels. The three contested issues concerning the development of AP's cash working capital claim are revenue lag, pension expense lag and PURTA tax lag.

1. Revenue Lag

a. Positions of the Parties

Revenue lag refers to the time from the midpoint of a service period to the point when, on average, payment for service is received by the utility. AP's claimed revenue lag of 67.0 days consists of three components: (1) an average use period (15.2 days for monthly customers, and 45.6 days for quarterly customers); (2) a bill issue period (2.0 days); and (3) a collection lag period (37.0 days). The first two components are undisputed, and the last element is determined by analyzing the customers' actual payment practices. (AP's M.B. at 10-11).

OCA witness Crane accepted AP's 37-day collection lag for quarterly customers but urged that the collection lag for monthly customers should be 30 days instead of 37 days. That adjustment would reduce AP's composite revenue lag from 67 days to 62.9 days on a weighted average basis. (OCA St. 1, Schedule. ACC-6-9). Ms. Crane also recommended using a total revenue lag of 47.2 days for monthly customers. That revenue lag consists of a 15.2 day service lag, 2 day billing lag, and a 30 day payment lag. (OCA St. 1 at 18; App. A, Sch. ACC-6 (final)). The OCA's recommendation is based on Ms. Crane's testimony that, in previous rate cases, AP demonstrated that customers paid their bills more frequently when they were billed more frequently. (OCA St. 1 at 17). AP's current tariff requires the payment of monthly and quarterly bills within 21 days of bill issuance. (OCA St.1 at 18).

AP rejected the OCA's contention that the more frequently customers are billed, the more quickly they pay their bills. AP opined that there actually is very little difference in the payment habits of monthly and quarterly customers. AP's witness Mr. Griffin observed that the collection lags in AP's last rate proceeding were 39.0 days for quarterly customers and 37.3 days for monthly customers. (AP St. 1-R at 18). Consequently, AP contended that the migration of customers from quarterly to monthly billing has not had, and is not expected to have, a material effect on the timing of AP's receipt of revenue. (AP's M.B. at 11, AP's R.B. at 4).

b. ALJ's Recommendation

The ALJ concluded that AP's data demonstrated that the 37-day lag is consistent with, and supported by, actual payment data. The OCA recommendation, on the other hand, was based on an assumption that people will pay their bills more quickly when they are billed monthly instead of quarterly. Since there is no data in the record to support this assumption, the ALJ recommended that AP's proposed 37 day lag should be approved. (R.D. at 15).

c. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

2. Pension Expense Lag

a. Positions of the Parties

AP calculated a composite expense lag for pension expense of 34.2 days. As shown on page 83-2 Revised of Exhibit 1-A(a), the specific lag attributable to the payment of this item equals 131.6 days. Mr. Griffin noted that this figure reflects the projected timing of AP's pension fund contributions during 2004 and 2005. (AP's M.B. at 12, 13; AP St. 1-R at 19).

OCA's witness Crane, on the other hand, recommended a significant adjustment to AP's cash working capital allowance by imputing a pension expense payment lag of 278.6 days. Although Mr. Griffin subsequently corrected this figure to 131.6 days,[6] Ms. Crane declined to accept AP's revision. In support of her position, Ms. Crane asserted that AP "had significant discretion as to when to actually make these pension plan contributions," and also that it "should not be permitted to increase its cash working capital claim simply because it unilaterally decides to accelerate these payments." (OCA St. 1S at 6). However, Ms. Crane later stated that she was not questioning the reasonableness of the Company's payment plans. (Tr. at 513-14).

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[6] Mr. Griffin explained that the 278.6 day figure that he quoted in discovery was in error because it reflected statutory minimum contribution requirements, and not AP's actual pension funding plans. (Tr. at 457).

AP pointed out that this is the third time that opposing parties have proposed hypothetical pension payment schedules in an effort to reduce the Company's cash working capital allowance. In *Pennsylvania Public Utility Commission v. Philadelphia Suburban Water Company,* 61 Pa. P.U.C. 328 (1986), the OCA's accounting witness would have disallowed over $1.0 million of Philadelphia Suburban's working capital claim by converting a 15 day pension payment lead into a 440 day lag. In that case, Philadelphia Suburban, while conceding that it was not precluded from making pension plan contributions in the manner suggested by the OCA's proposed adjustment, argued that such action would, in its judgment, be foolish and inappropriate. The Commission agreed.

Two years later, the OTS recommended that AP's cash working capital allowance should be calculated based on a hypothetical lag in the payment of pension expense of 182.5 days. The OCA suggested a 43 day lag period. The Commission rejected both proposals because they did not reflect AP's ongoing pension payment practices. *Pennsylvania Public Utility Commission v. Philadelphia Suburban Water Company,* 67 Pa. P.U.C. 752, 767-68 (1988).

In view of the foregoing, AP contended that the OCA's proposed pension expense lag day adjustment should be denied.

b. ALJ's Recommendation

The ALJ concluded that AP's 131.6-day lag should be approved, based on AP's demonstrated compliance with its long-standing policy of submitting its pension dollars to the professional investment managers in a timely manner. Additionally, the evidentiary record herein does not demonstrate that AP has accelerated its pension plan funding. (AP's R.B. at 4). (R.D. at 17).

c. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

3. PURTA Tax Lag

a. Positions of the Parties

AP performed a separate lead/lag study to determine the cash working capital required to cover various tax liabilities that are due during the year. In this instance, the revenue lag of 67.0 days was offset by an average 39.2 day lag in the payment of taxes. Included in the composite 39.2 lag day figure was a claimed lead in the payment of Public Utility Realty Tax (PURTA) of 9 days. However, after OTS witness Keim pointed out that AP had inadvertently utilized statutory due dates that were no longer in effect, AP adjusted its working capital claim to reflect a 10.8 day lead in PURTA payments. (AP's M.B. at 14; AP St. 1-R at 11; AP Exh. 1-A(a) at 84 Revised).

Because AP has corrected the statutory due dates, it asserted that the only issue remaining is the percentage of tax liability that is due on those dates. In his revised calculations, Mr. Griffin elected to use the "estimated tax" method that calls for the payment of 90% of a utility's anticipated PURTA liability on May 1 of the tax year, and the balance on September 15 of the following year. Mr. Keim assumed that AP would utilize the so-called "safe harbor" method and, on that basis, developed a 36.9 day payment lag. (AP's M.B. at 14; OTS's R.B. at 7; OTS St. 2 at 32).

AP argued that since taxpayers are given two options for the payment of PURTA, there is no one correct answer. According to AP, while the OTS' approach would unquestionably produce a lower working capital allowance in this case, one should not conclude that the payment schedule assumed by Mr. Griffin is either imprudent or unreasonable. For that reason, AP requested that the Commission reject the OTS' proposed adjustment. (AP's M.B. at 14).

The OTS recommended that AP's cash working capital claim be reduced by $344,430. (OTS' M.B. at 14-18; OTS' R.B. at 7). The OTS pointed out that, in the initial filing, the safe harbor method was used at the time AP reported tentative payments of 80.5%, and a final payment of 19.5%. (OTS St. 2-SR at 4-5). The initial claim was $10,301,100. Mr. Keim's testimony noted that the payments are no longer due on April 15. Under the new statutory provisions, a tentative payment for PURTA is due on May 1 of the taxable year, *supra*. The tax rate is a floating rate calculated annually by the Department of Revenue. Consequently, AP revised its calculation based on a change in the statutory dates for payment.

The OTS agreed that Mr. Griffin's calculation is correct for those companies which use the estimated payment methodology. However, according to the OTS, that method does not reflect the actual practice of AP, and it is not a prudent option. The OTS disagreed with AP's assessment that either method is prudent or reasonable. The first option, safe harbor, would require a tentative payment equal to the tax imposed for the second preceding tax year. On the other hand, the second option bases the tentative tax on an estimate of the current tax year liability. (OTS' M.B. at 15-16).

b. ALJ's Recommendation

The ALJ noted that, while corporate taxpayers are given two options to determine their tentative PURTA tax obligations, AP has here failed to show why it changed to a different option when recalculating the tax after OCA's witness mentioned the change in statutory dates. The ALJ opined that the safe harbor method is the method that AP has historically used, and the method that was used in the initial filing. Additionally, the OTS has provided analysis that the estimated payment option is not prudent or reasonable in the instant case. Accordingly, the ALJ concluded that AP has not satisfied its burden of showing why it used the estimated tax option, and, consequently, the OTS' proposed adjustment reducing Cash Working Capital by $344,430 should be approved. (R.D. at 20).

c. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

E. Capitalized Payroll

1. Positions of the Parties

OTS' witness Keim proposed to reduce AP's rate base by approximately $92,000, in order to reflect adjustments to capitalized payroll, payroll benefits and payroll taxes. (Second Revised OTS Exh. 2-SR, Sch. 4 at 2; OTS' M.B. at 18, 19).[7] This recommendation related to Mr. Keim's proposed disallowance of the costs of certain employee positions that were unfilled at the time hearings in this matter were held in early April of 2004. (OTS St. 2 at 24-25; Tr. at 539).

In the Section of its Brief concerning personnel costs, AP averred that the Commission should reject Mr. Keim's proposed payroll expense adjustment. AP posited that, if its recommendation regarding unfilled employee positions is accepted, the OTS' associated capitalized payroll adjustments should also be rejected. (AP's M.B. at 14-15). AP argued that, apart from the merits of his underlying expense adjustment, Mr. Keim's conclusions regarding capitalized payroll are without merit. (AP St. 2-R at 15). (AP's M.B. at 14-15).

2. ALJ's Recommendation

The ALJ concluded that AP's position on this issue is supported by the evidentiary record. In the Personnel Section of her Recommended Decision, the ALJ recommended that the OTS' and OCA's proposed adjustments be denied. Accordingly, in recommending the rejection of the OTS proposal on capitalized payroll expenses, the ALJ noted the need for consistency in the disposition of these related issues.

3. Disposition

There were no exceptions filed to this issue. We agree with the ALJ that the Company's position is supported by the evidentiary record. Since we accept the ALJ's recommendation to reject the OTS and OCA adjustments in the personnel section, we also reject the OTS' recommendation on the issue of capitalized payroll expenses. (R.D. at 21).

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[7] Mr. Keim's surrebuttal adjustments totaling $102,000 were reduced when the OTS distributed final revenue requirement schedules, because of an inadvertent error in his payroll expense adjustment. (Tr. at 539).

V. Revenues

A. Positions of the Parties

AP submitted extensive financial and accounting data depicting the results of its operations during the historic test year ended June 30, 2003, and as projected for the future test year ending June 30, 2004. (AP Exh. 1-A(a)). A summary statement of income, together with AP's revenue and expense claims, is included in the schedules attached to AP's Main Brief as Appendix A.

To develop its claimed pro forma future test year revenue level, AP began with the level of revenue experienced during the historic test year. In accordance with established Commission practice, the historic data were then adjusted to: (1) annualize revenues associated with acquired systems; (2) annualize the effect of actual and anticipated changes in the number of customers during the historic and future test years; and (3) reflect known and measurable changes affecting the consumption levels of specific large customers. Additionally, AP imputed rental income attributable to the lease of space to AA's newly-formed service company, Aqua Resources. (AP's M.B. at 16; AP Exh. 1-A(a)).

AP accepted the revenue adjustments proposed by the OTS and the OCA, and corrected errors detected during discovery regarding the treatment of the Distribution System Improvement Charge (DSIC), public fire service and certain industrial revenues (AP's M.B. at 16, 17; OTS' M.B. at 11; OCA's M.B. at 15).

B. ALJ's Recommendation

The ALJ concluded that AP's revised revenue recommendation should be approved because there were no objections to it, and also because that recommendation is supported by the evidentiary record.

C. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

VI. Expenses

A. Payroll Expenses

1. Unfilled Positions

a. Positions of the Parties

At the time the Company's direct testimony was filed, there were six positions unfilled. The OTS proposed to reduce the amount claimed by AP to account for all unfilled positions. (OTS' M.B. at 32-35). Employee positions 413 and 414 were transferred to the service company. Since those positions were not filled, the OTS recommended that they be eliminated from AP's service company expense claim, and that the service fee claim be accordingly reduced. (OTS Exh. 2, Schedule 3). (OTS' M.B. at 31; OTS St. 2 at 17-18).

At the time the ALJ's Recommended Decision was issued, Positions 412, 416 and 835 had been filled, and positions 415, 417 and 834 were in the process of being filled. AP posited that those positions should be filled by the end of the future test year. The OTS opined that, until AP provides evidence that the positions have been filled, the OTS' proposed adjustments are appropriate, and should be adopted by the Commission. (OTS St. 2-SR at 6-7). (OTS' M.B. at 34, OTS' R.B. at 16; Tr. at 530-531).

The OCA took the position that this claim should be adjusted to eliminate fees for new, unfilled positions, and that its proposed adjustment of $117,054 was limited to new positions that have not been filled. (OCA's M.B. at 43, 44). OCA's witness Crane testified that it is more likely that vacancies, as opposed to new positions, will be filled. The OCA also noted that the Commission has previously held that expenses must be "known and certain" to be included in rate base. (OCA's M.B. at 45).

AP objected to the OTS' and OCA's proposed adjustments. AP argued that the three full-time positions include an engineering aide, project coordinator and field inspector, and that the individuals chosen for the positions will play an important role in AP's infrastructure rehabilitation and replacement program. (Tr. at 478). AP's witness asserted that it was in the process of recruitment and hiring, and that it expected the three positions to be filled by the end of the future test year. (AP St. 2-R at 5-7; Tr. at 475). AP asserted that, under similar circumstances, the Commission has in the past rejected adjustments to a utility's payroll expense to account for as yet unfilled positions.

b. ALJ's Recommendation

The ALJ approved the Company's claim noting that AP is actively hiring for the three unfilled positions, and also in consideration of the Commission's decision in *Pennsylvania Public Utility Commission v. National Fuel Gas Distribution Corporation*, 1994 Pa. PUC LEXIS 134. (R.D. at 24). In *National Fuel*, the Commission stated as follows:

> Upon review of the issue, we find credible the Company's Testimony and Exception that it was actively seeking, and in fact, had requisitions in order to hire 5 employees in local 22 to replace those who had retired under the early retirement program. Therefore, we will allow a complement of 501 customers, as opposed to the 496 recommended by the ALJ.

1994 Pa. PUC LEXIS 134.

c. Exceptions and Replies

The OTS excepts to the ALJ's recommendation on this issue, and reiterates its position that, until AP produces evidence that the identified vacancies have been filled, the Commission should adopt the OTS' recommended adjustment for this expense item.

Additionally, the OTS emphasizes that: (1) it was AP who chose the date for filing the instant rate increase request, and, arguably, AP should therefore have ensured that the positions were filled within the time-frame for recognized expense recovery; and (2) AP is asking the Commission to "take on faith" that the positions will be filled before the end of the future test year. (OTS' R.B. at 15). (OTS Exc. at 12-13).

In response, AP reiterates that the individuals who step into the three full-time positions, of engineering aide, project coordinator and field inspector, will play an important role in AP's infrastructure rehabilitation and replacement program. (AP St. 2-R at 6-7). (AP R. Exc. at 7-8).

d. Disposition

On review of this issue, we adopt the recommendation of the ALJ. We find AP's claim that it has implemented the process of recruitment and hiring for the relevant positions, and that it expects that the positions will be filled by the end of the future test year, to be credible and duly supported by the evidentiary record herein. (AP St. 2-R at 5-7; Tr. at 475). As the ALJ noted, this disposition is consistent with established precedent, wherein under similar circumstances we have rejected adjustments to a utility's payroll expense to account for as yet unfilled positions. *National Fuel, supra.* Accordingly, the OTS' Exceptions on this issue are denied.

2. Overtime

a. Positions of the Parties

The OTS recommended a downward adjustment to AP's payroll expense claim, to reflect the proper calculation of the overtime-related expense item. While AP had annualized the expense, the OTS recommended that this item instead be normalized, since overtime is an ongoing cost of doing business. (OTS St. 2 at 24). As noted by OTS' witness Keim, AP included in its payroll expense claim an amount for overtime for union and non-union hourly employees. AP's calculation involved annualizing its historic test year overtime payroll, and making adjustments for wage increases for the future test year. (OTS St. 2 at 21; OTS' M.B. at 35).

The OTS further contended that since overtime is an ongoing cost of doing business, it would be inappropriate, for ratemaking purposes, to base a claim only on the amount of overtime experienced in the historic test year, and then adjust it upward for pay increases. Instead, the OTS recommended that the more appropriate treatment would be to normalize the payroll expense claim, based upon three years of historical data. (OTS St. 2 at 22). Based upon its calculations, the OTS determined that the total amount of its adjustment for overtime would be a net reduction to payroll expense of $43,012. (OTS St. 2 at 24; OTS Exh. 2, Sch. 4 at 1 of 8).

In contrast, AP contended that the Commission's adoption of OTS' proposed overtime adjustment would be improper, because the increase in overtime hours during the historic test year is not abnormal. Rather, it is a result of AP's experienced growth in the number of customers and service territory. AP argued that the OTS failed to recognize that a higher percentage of overtime work is tied up in construction projects, and is therefore capitalized. (AP's M.B. at 18, 19, AP's R.B. at 7; AP St. 2-R at 13, 14).

b. ALJ's Recommendation

The ALJ recommended that AP's claim for overtime should be accepted, in light of the fact that its customer base and its service territory have increased significantly. The ALJ also stated that the OTS' proposal to normalize the adjustment based on three years of historical data would be appropriate in some instances, but since the territory and the number of construction projects have grown significantly within the last two years, that proposal would be inappropriate here. (R.D. at 25-26).

c. Exceptions and Replies

The OTS excepts to the ALJ's recommendation on this item, reiterating that AP's method of calculating its overtime expense claim, by annualizing historic test year overtime payroll and adjusting for wage increases for the future test year, has the result of overstating the appropriate amount for overtime. (OTS' M.B. at 35-37). The OTS again claims that this item should be normalized, based upon three years of historical data. (OTS Exc. at 13-14).

In response, AP reiterates that the increase in its overtime hours was by no means abnormal, but instead was attributable to growth in the number of customers and the extent of the territory served by AP. (AP R. Exc. at 8-9).

d. Disposition

On review of this issue, we adopt the recommendation of the ALJ. We note in this regard that both AP's customer base and its service territory have increased significantly, and we also note that AP is at present engaged in numerous construction projects in order to correct problems which were found in its newly acquired territories. Given those circumstances, OTS' proposal to normalize this expense is improper, because the increase in overtime hours is not abnormal, but rather is a result of the above-outlined circumstances. Accordingly, OTS' Exceptions on this issue are denied.

B. Pension Expense

1. Introduction

On March 13, 2003, AP filed a Petition, docketed at No. P-00032025, which was consolidated with the instant base rate case in January 2004. That Petition requested that the Commission issue an Order authorizing it to: (1) defer, for accounting purposes, certain unanticipated employee pension expenses; and (2) seek recovery of such deferred amounts in future base rate proceedings. The subject matter of that request is now included in the instant base rate case filing as a portion of AP's overall pension expense claim, and is described in AP's direct and rebuttal testimony at AP Statement 2, pages 4-7 and AP Statement 2-SR pages 8-12 and 15.

AP's overall claim for this expense item was $5,658,800. That claim is composed of two parts: (1) the estimated future test year cash contribution to AP's pension funds of $6,400,000; and (2) deferred costs of $2,206,319 which AP proposed to amortize over two years for an annual expense of $1,103,159. (AP's M.B. at 19; OTS' M.B. at 21, 22; AP Exh. 1-A(a)).[8]

2. Future Test Year Pension Contributions

a. Positions of Parties

AP makes contributions into a pension trust which is invested in a portfolio of professionally managed pension plan assets. (AP's M.B. at 19; AP St. 2 at 4). AP's actuary, Towers Perrin, provides two calculations relevant to the pension fund contribution. The first calculation determines the minimum contribution required by the Employee Retirement Income Security Act of 1974 (ERISA).[9] The second calculation establishes the maximum deductible contribution for federal income tax purposes. AP contended that, for 2004, the projected maximum deductible pension contribution is approximately $10 million. (AP's M.B. at 20).

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[8] The total pension claim of $7,503,159 was further adjusted by AP to reflect a capitalized portion of $1,844,322 resulting in a net pension expense claim of $5,658,838. (AP Exh. 1-A at 43). The proposed deferred amount of $2,206,319 is the sum of the actual pension contribution for 2003 of $1,470,879 and the first six months of 2004 of $735,440. (AP Exh. 1-A at 43).

AP averred that its actual funding amount is determined by its pension committee and that, historically, its contribution level has been established at the mid-point between the ERISA minimum and IRS maximum contributions for the pension plan year. (Tr. at 480-81). Accordingly, AP claimed a future test year pension cost of $6.4 million, *viz.*, $10.0 million plus $2.8 million divided by 2. (AP's M.B. at 20, 21).

The OCA proposed that the Commission reduce AP's ongoing pension expense from the $6.4 million claimed, to $5.8 million, which is twice the estimated minimum requirement. (OCA's M.B. at 25-27; AP's R.B. at 7). The OCA based its proposed reduction on the fact that the Commission has traditionally determined a utility's pension expense, for ratemaking purposes, on the amount of cash contributions made to the utility's pension fund. However, according to the OCA, AP was not required to make any cash contributions to its pension fund from 1996 until 2002. (OCA's M.B. at 27; App.A, Sch. ACC-22(final)).

b. ALJ's Recommendation

The ALJ recommended that the Commission reject the OCA's proposed adjustment for this item. The ALJ pointed out that AP has shown that it relied on a professional actuary to determine the minimum contribution required for ERISA, and also to determine the maximum deductible contribution for federal income tax purposes.

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[9] 29 U.S.C. §§ 1001-1461.

The ALJ also noted that, although the OCA indicated that the Commission relied on past cash contributions to determine whether the pension contribution is reasonable, that rule is inapplicable herein since AP was not required to make contributions for six years. Finally, the ALJ noted that the evidentiary record demonstrated that AP's pension committee determines the actual funding amount by establishing the mid-point between the ERISA minimum and the IRS maximum contribution. The ALJ concluded that, under the circumstances, that approach seems reasonable and in accordance with AP's past practices. Accordingly, the ALJ recommends that AP's claim of $6.4 million for this item should be approved. (R.D. at 28-29).

c. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

3. Amortization of Deferred Pension Cost

a. Positions of Parties

AP claimed deferred pension costs in the amount of $2,206,319. The annual amortization amount would be $1,103,159, and the expense portion would be $832,002. (AP's M.B. at 22). In support of its claim, AP cited *Popowsky v. Pennsylvania Public Utility Commission*, 695 A.2d 448 (Pa. Commw. Ct. 1997) (*PP&L II*). That proceeding concerned the recovery, in a general rate case, of deferred, incremental expenses that Pennsylvania Power & Light Company (PP&L) incurred following its adoption of Statement of Financial Accounting Standards No. 106 (SFAS 106). PP&L claimed recovery of the incremental SFAS 106 costs it booked from January 1, 1993, the effective date of SFAS 106, through the conclusion of that case, a period of approximately 33 months. AP noted that the Commission approved PP&L's claim, and that the Commonwealth Court subsequently affirmed the Commission's decision in *Popowsky v. Pennsylvania Public Utility Commission*, 643 A.2d 1146 (Pa. Commw. Ct. 1994). (AP's M.B. at 23, 24). In the same way, AP argued, its pension liability incurred beginning on January 1, 2003, was the result of extraordinary and nonrecurring circumstances. (AP's M.B. at 26).

The OTS argued that the $1,103,159 annual expense claim should be rejected on the grounds that recognition would constitute improper and prohibited retroactive ratemaking. (OTS' M.B. at 22). The OTS' witness Keim explained that ratemaking is designed to be forward looking, and that the purpose of the future test year is to establish an on-going level of expense. Accordingly, it should not include the proposed line item reconciliation of pension expense from January 1, 2003, through the end of the future test year on June 30, 2004. (OTS' M.B. at 22; OTS St. 2 at 7).

The OCA noted that an exception to the rule against retroactive ratemaking occurs when expenditures are demonstrated to be both extraordinary and nonrecurring. However, according to the OCA, the fact that AP's pension fund herein was previously devalued, due to a reduction in the value of its stock portfolio, is neither extraordinary nor nonrecurring. The stock market has historically gone up and down, and it will in all likelihood continue to do so.

b. ALJ's Recommendation

The ALJ recommended that AP's claim for this item should be rejected, reasoning that approval of this claim would violate the rule against retroactive ratemaking. The ALJ noted that ratemaking is designed to be prospective, and that the relevant pension expenses would not qualify as an exception to the rule against retroactive ratemaking, because they are not extraordinary and nonrecurring expenses.

Finally, the ALJ opined that, although the devaluation of the stock market might have been devastating to AP's stock portfolio, it was neither extraordinary nor nonrecurring because, historically, the stock market is known to go up and down. (R.D. at 33). The ALJ's recommended adjustment would reduce AP's claimed operation and maintenance (O&M) expenses for pensions by the amount of $1,103,160. (OTS' M.B. at 21-27).

c. Exceptions and Replies

AP excepts to the ALJ's recommendation on this issue, citing to *PPL II* for the proposition that "the issue of 'retroactive ratemaking' arises only when an 'isolated' prior period item of income or expense is offered as the basis for a rate adjustment 'without more.'" AP also argues that, even if the retroactive ratemaking doctrine were implicated here, AP's deferred costs fit within the "extraordinary and nonrecurring" exception. Immediately following the close of the record in its last rate proceeding, AP's pension trust experienced the following events: (1) an enormous loss in the value of the plan due to the bear market which began with a recession late in the year 2000 and plummeted further following September 11, 2001; and (2) a drop in interest rates to historic lows, resulting from the decisions of the Federal Reserve Board to reduce interest rates in order to avoid an even deeper recession after September 11, 2001. (AP St. 5, App. F at F-6-F-7). (AP Exc. at 10-14).

In response, the OTS reiterates its position that AP had the burden of proof on this issue and, as such, it had to demonstrate that its claim representing a proposed line item reconciliation of pension expense from January 1, 2003, through the end of the future test year on June 30, 2004, is not retroactive ratemaking. According to the OTS, AP has not successfully carried its burden of proof on this issue. Additionally, the OTS rejects AP's argument that the relevant deferred costs fit within the "extraordinary and nonrecurring" exception to the prohibition against retroactive ratemaking. (OTS R. Exc. at 8-10).

The OCA also reiterates that the relevant costs do not fall within the exception to the rule against retroactive ratemaking, because those costs were not unanticipated, extraordinary and non-recurring. (OCA R. Exc. at 8-14).

d. Disposition

As outlined above, AP claimed an annual amortization of deferred pension costs based on a two-year amortization of pension costs incurred from January 1, 2003, to June 30, 2004. We agree with the ALJ's recommendation to deny this item of expense. As noted by the ALJ, although the devaluation of the stock market may have been devastating to AP's stock portfolio, the relevant costs are not extraordinary and non-recurring. (R.D. at 33).

Additionally, we find that AP's cite of *PPL II* is misplaced. According to AP, that case stands for the proposition that certain deferred cost claims were allowable as exceptions to the general legal prohibition against retroactive ratemaking because the underlying events which generated the expense were determined to be "extraordinary and nonrecurring." We reject this argument based on several factors. First, the legal standard for any such deferred claim as an exception to the prohibition against retroactive ratemaking is that it must be both "extraordinary" and nonrecurring, not simply one or the other. AP alleges that the reduction in the value of its stock portfolio used for investment of its pension fund assets constitutes an "extraordinary" event. However, we are not convinced that the fact that such publicly traded stocks went down in value is extraordinary. As noted by the ALJ, the stock market has historically gone up and down.

AP has also failed to meet the second requirement for an exemption from the retroactive ratemaking prohibition, namely, that the relevant event is nonrecurring. It is an axiom of ratemaking that pension fund costs are recurring and are a traditionally claimed expense item in any and all base rate filings made by jurisdictional utilities which provide such pension benefits. If, on the other hand, AP is actually asserting that it was the drop, or the level of the drop, in the value of the publicly traded stocks that is the nonrecurring event, then that argument is easily refutable since such stocks, and stock markets by their nature continually rise and fall in value, and those events will continue to recur.

Nonetheless, we agree that the ALJ's recommended $1.1 million adjustment should be changed to $831,996, consistent with AP's Exceptions. This error arose because the entire amount of the proposed amortization, specifically, $1,103,160, and not just the portion which AP expensed and included in its rate request ($1,103,160 × 75.42%) (AP Exh. 1-A)a) at 43), was inadvertently deducted in calculating AP's allowed operating expenses. (AP Exc. at 14). As shown in Schedule ACC-21 attached to the OCA's Main Brief, the correct adjustment is $831,996. AP's Exceptions are granted to the extent limited to the matter of the correct adjustment.

4. AP's Proposed Pension Tracking Mechanism

a. Positions of Parties

AP contended that unanticipated events have created a new era of volatility, which is substantially outside its control, in the level of its pension costs, resulting from, *inter alia*, changes in trust assets, fund earnings, and in interest rate assumptions. (AP's M.B. at 26). For example, AP's minimum required contribution, $0 in 2002, jumped to nearly $1.5 million in 2003, grew further to $2.8 million in 2004, and is expected to increase over the 2004 level by $200,000 in 2005 and $800,000 in 2006. (AP St. 2-R at 10). AP's expected pension contributions for 2004-2006, are $6.4 million, $6.5 million and $6.8 million, respectively; however future pension contributions could decrease significantly. (AP St. 2-R, p. 11).

Consequently, AP averred that it has become difficult to establish an accurate pension expense, for ratemaking purposes. Thus, AP proposed to establish a true-up, or "tracker" mechanism, for pension expense which would be patterned after the currently-existing Other Post-Employment Benefits (OPEB) tracker that is used for SFAS 106 purposes. (AP St. 2 at 6). Like pensions, SFAS funding is determined on the basis of annual actuarial studies which rely upon a variety of estimates which change over time. (AP St. 3 at 3).

The OTS objected to this proposal on the grounds that it constituted impermissible line item reconciliation and, as such, recommended that it be disallowed. The OTS argued that pension expenses are standard ratemaking items, and that ongoing pension liabilities are neither extraordinary nor nonrecurring. Thus, they cannot and should not be the subject of the proposed reconciliation through a "true-up" mechanism. Accordingly, the OTS urges that the AP proposal should be denied on the basis that it violates the fundamental rules of ratemaking, and also on the basis that its approval would establish a bad precedent which might serve to encourage utilities to seek such true-ups for virtually any traditional base ratemaking expense. (OTS' M.B. at 28, 29).

The OCA also argued that AP's proposed "tracker" mechanism for pension expenses should be rejected because the Commission's acceptance of that proposal would violate the Commission's long-established rules against single issue ratemaking and retroactive ratemaking. (OCA's M.B. at 28-32).

b. ALJ's Recommendation

The ALJ concluded that AP failed to sustain its burden of proving the reasonableness of the proposed tracker mechanism, and failed to demonstrate that it does not violate the rules against single issue ratemaking and retroactive ratemaking.

Accordingly, she recommended that AP's proposal on this issue should be denied, and that, since AP failed to demonstrate that its deferred pension claim and the proposed tracker mechanism should be approved, AP's Petition at Docket No. P-00032025 should be denied and dismissed in its entirety. (R.D. at 35).

c. Exceptions and Replies

AP excepts to the ALJ's recommendation on this issue, arguing that the opposing Parties were wrong in their conclusion that the adjustment mechanism is intended to reconcile past costs. As to both other post-employment benefits (OPEBs) and pensions, the rate allowance represents amounts to be paid into trusts, which will be paid out in the future as benefits. Ultimately, the sum of the contributions made, and the trust earnings received, must reconcile to the future benefits paid, and the amount of those are not known with certainty at the time contributions are made. Therefore, according to AP, this is not a retroactive adjustment, because it is not reconciling to a prior, experienced cost. Additionally, the tracking mechanism does not represent improper "single issue" ratemaking. AP points out that basic retirement principles encourage early investment to grow assets for the future. A pension tracker encourages the right contribution, and eliminates any temptation of "timing" of rate cases to match high pension contribution periods, or the "low-balling" of the prospective pension allowance by other parties. (Tr. at 480, 488-89). (AP Exc. at 14-16).

In response, both the OTS and the OCA reiterate their positions that adoption of AP's proposal for a tracker mechanism for this item would violate both the rule against retroactive ratemaking and the rule against single issue ratemaking. (OTS R. Exc. at 11-12; OCA R. Exc. at 14-19).

d. Disposition

On review of this issue, we adopt the recommendation of the ALJ. We note that pension expense is a standard ratemaking item and, accordingly, ongoing pension liabilities are neither extraordinary nor nonrecurring, and thus should not be the subject of AP's proposed reconciliation through a "true-up" mechanism. Approval of this item would clearly violate the rule against single issue ratemaking, and would connote the propriety of future claims for "true-ups" of virtually any traditional base ratemaking expense. Accordingly, AP's Exceptions on this issue are denied.

C. Other Post-Employment Benefits (OPEBs)

1. Positions of the Parties

AP included in its claim for OPEBs expense the amount of $275,901, representing a two-year amortization of the difference between the OPEB costs recoverable in the rates established in AP's last rate proceeding, and the amount of OPEB costs funded from the end of that case through the end of the future test year in the instant case. (AP Ex. 1-A(a) at 45). This true-up or reconciliation of the funding deficit was done in accordance with the terms of a tracking mechanism approved by the Commission in its final Order at *Pennsylvania Public Utility Commission v. Philadelphia Suburban Water Company, et al.* (Docket No. R-00973952), 1997 Pa. PUC LEXIS 93.

In that proceeding, the Commission directed Philadelphia Suburban to "establish a revised procedure for accounting for OPEB accruals and recoveries from ratepayers" and to "account for the difference between the net periodic postretirement benefit expense determined annually by the actuary in accordance with SFAS 106 and the amount of SFAS 106 postretirement benefit expense included in rates." In other words, the Commission determined that, like most other aspects of the ratemaking process, the funding deficit mechanism should operate on an accrual, and not on a cash, basis. AP claimed that, consistent with that directive, it has utilized its actuarially determined 2004 OPEB cost estimate to determine the amount to be accrued from January 1, 2004, through June 30, 2004, and has then netted it against six months of rate recovery. Accordingly, it is AP's position that its claim is in accord with the Commission's 1997 Order and should, therefore, be approved. (AP's M.B. at 27, 28).

The OCA, on the other hand, took the position that AP's OPEB tracker mechanism should be adjusted to reflect the actual amounts placed in trust. AP claimed a "funding deficit" of $551,802 which AP proposed to recover over a period of two years. (AP St. 3 at 3-4; OCA St. 1 at 34). The OCA argued that AP failed to provide adequate supporting documentation for the purported funding deficit, and also that AP used an unreliable methodology by which to calculate the funding deficit. (OCA St. 1 at 34-35).

OCA's witness Crane recommended that AP's "funding deficit" be limited to the difference between actual funding of $2,721,688, through December 31, 2003, and the amount recovered in rates through that date, of $2,424,353. (OCA St. 1 at 35). If a two-year amortization period is assumed, the OCA posited, an annual expense of $148,667 would result, an amount significantly less than the amount of AP's claim. (Sch. ACC-23 (final); OCA's M.B. at 32-35). Additionally, the OCA recommended that the funding deficit be determined for the period August, 2002, through December 31, 2003. AP recommended a calculation for the period August, 2002, through June 30, 2004. (AP St. 2 at 7; OCA St. 1-S at 13).

2. ALJ's Recommendation

The ALJ noted that the Commission previously approved a Settlement which would allow it to recover the deficit based on an accrual basis. Accordingly, she recommended that AP's claim of $275,901, which represents a two-year amortization of the difference between the OPEB costs recoverable in the rates established in AP's last rate proceeding, and the amount of OPEB costs funded from the end of that case through the end of the future test year in this case, should be approved, and that the OCA's proposed adjustment, based on actual costs incurred, should be rejected. (R.D. at 39).

3. Exceptions and Replies

The OCA excepts to the ALJ's recommendation on this item, reiterating that AP is not in compliance with the OPEB tracker mechanism established in AP's Settlement at Docket No. R-00097352. The OCA explains that the key point which the ALJ and AP have misunderstood is that the reconciliation for the "true-up" mechanism occurs on the deposits. As of the close of the record, AP had not made the January 1, 2004, to June 30, 2004 deposits. (Tr. at 466; AP's M.B. at 28). Under the Commission-approved Settlement terms, an actuarial estimate is to be made to determine the amounts to be deposited in the trust. Then, AP is to account for the difference between net postretirement benefit expense and the amount included in rates. Since the monies have not been deposited, they cannot be reconciled, for rate recovery purposes. (OCA Exc. at 9-11).

In response, AP notes that the OCA continues to argue that its proposed adjustment is necessary to preserve the integrity of the OPEB true-up mechanism. However, AP posits, in doing so the OCA ignores the clear and unequivocal language AP's Settlement at Docket No. R-00973952, *supra*. (AP R. Exc. at 9-10).

4. Disposition

On review of this issue, we adopt the recommendation of the ALJ. As noted, the Commission has previously approved a Settlement which would allow AP to recover the deficit based on an accrual basis. Specifically, in that Settlement, the Commission directed AP to "establish a revised procedure for accounting for OPEB accruals and recoveries from ratepayers," and "to account for the difference between the net periodic postretirement benefit expense determined annually by the actuary in accordance with SFAS 106 and the amount of SFAS 106 postretirement benefit expense included in rates." The Commission has determined that, like most other aspects of the ratemaking process, the funding deficit mechanism was intended to operate on an accrual, and not cash, basis. Additionally, we agree with the Company's observations (R.E. at 10) that the OPEB tracker does not require that deposits be made to the OPEB trusts on either a monthly or quarterly basis. ("PSW will deposit, into irrevocable trusts, the full amount of payments calculated annually by its actuary pursuant to SFAS 106"). Accordingly, the OCA's Exceptions on this item are denied.

D. Service Company Charges

1. Positions of the Parties

The OTS' witness Keim proposed that AP's claim for service company, *viz.*, Aqua Resources, fees be reduced by $94,398 to reflect the elimination of the salaries, benefits and payroll taxes attributable to two positions, a Human Resources Assistant and an Assistant Accountant Accounts Payable. Those positions were unfilled at the time the record closed. (OTS St. 2 at 16-18; OTS Exh. 2, Schs. 3 and 4).

AP's witness Schreyer explained however, in his rebuttal testimony, that those positions are expected to be filled by the end of the future test year and, accordingly, the OTS' proposed adjustment to this item should be rejected. (AP's M.B. at 29; St. 3-R at 7-8).

2. ALJ's Recommendation

The ALJ noted that, in the Expenses Section concerning unfilled positions, *supra*, the Parties explained their positions on the issue of whether positions that were not filled at the close of the evidentiary record should be included in rate base. The ALJ concluded that, based on AP's documentation that it is in the process of filling the relevant positions, its claim for this item should be approved. (R.D. at 39-40).

3. Exceptions and Replies

The OTS contends that the ALJ erred in her recommendation on this issue. The OTS reiterates its position that, until AP produces evidence that those two positions have been filled, AP should not be allowed to include the expense for the unfilled positions in its total expense claim. (OTS Exc. at 10-11).

In response, AP avers that the ALJ properly noted that the relevant positions were expected to be filled by the end of the future test year. Accordingly, AP urges that the OTS' proposed adjustment for this item should be rejected. (AP R. Exc. at 10).

4. Disposition

On review of this issue, we adopt the recommendation of the ALJ. As explained by AP's witness in his rebuttal testimony, the relevant positions are expected to be filled by the end of the future test year. (AP St. 3-R at 7-8). We find this testimony to be credible and duly supported by the evidentiary record herein. Accordingly, we reject the OTS' proposed adjustment on this item, and the OTS' Exceptions thereon are also denied.

E. General Price Level Adjustment

1. Positions of the Parties

As has been its practice for many years, AP included an adjustment for General Price Level, *i.e.*, inflation, increases applicable to historic test year operating expenses, exclusive of noncash amortizations and items that were specifically adjusted. AP's initial claim for this item was $775,600, later adjusted to $639, 900, due to the removal of certain expense items in the calculation. (OTS' M.B. at 41; Tr. at 532-533). The principal difference in the procedures utilized in this case is that AP's witness Griffin escalated expense levels to account for inflationary effects through June 30, 2004, rather than through the midpoint of the future test year, January 1, 2004. AP averred that it was logical to use the 18 month time period since prices will continue to increase through the end of the future test year. (AP's M.B. at 29; AP St. 1-R at 22-23).

AP's witness Griffin further explained that AP incurred increases in the distribution charges paid to PECO in 2003, and again in 2004, and will likely experience an increase in electric generation costs when its current contract with Electric America expires in May of this year. Thus, because AP's power costs continue to rise, the escalation factor applied by Griffin is a reasonable, and arguably conservative, means of reflecting those increases. (AP St. 1-R at 21-22).

The OTS' witness Keim admitted that an inflation adjustment claim is a reasonable method by which to project an inflation percentage, and apply it to those expenses that a company considers to be inflation sensitive. However, in this case, the OTS objected to the use of an inflation rate that represents an eighteen month period, the amount of price changes from the fourth quarter of 2002, to the second quarter of 2004, instead of an annual rate. (OTS' M.B. at 38). According to the OTS, if AP had annualized the change from December 31, 2002, to June 30, 2004, it would have determined the change to be 1.44% (2.2%/18 x 12). (OTS St. 2 at 27). Accordingly, based on a review of the initial filing and using the correct time and method of calculation, the OTS recommended an inflation expense of $530,550, which represented a reduction of $245,050 from AP's unadjusted claim of $775,600 for the future test year. (OTS St. 2 at 27; OTS Exh. 2, Sch. 5 at 1 of 5) [10]. After taking into account the effects of his payroll revisions and the removal of position 411, the OTS recalculated its inflation adjustment from a $245,050 reduction to a $206,035 reduction. (OTS' M.B. at 40, 41).

The OCA argued that AP's general price level adjustment should be denied, because it applied its adjustment to items that do not track with inflation, and also because it applied the factor to eighteen months of expenses rather than 12 months. (OCA's M.B. at 37-38) The OCA's witness Crane recommended that elements which do not track with inflation, including the purchased power claim for $9,116,210, should be eliminated. (OCA's M.B. at 26).

2. ALJ's Recommendation

The ALJ concluded that AP has failed to prove that it is entitled to calculate the general price level adjustment on an eighteen month basis. The ALJ noted that while the OCA recommended denial of the entire adjustment, she was of the opinion that the OTS' approach has more merit. Accordingly, the ALJ recommended that the Commission adopt the OTS' proposed methodology, and that this adjustment should be based on twelve months calculation, with the 1.48% figure to be used. (R.D. at 42-43).

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[10] The OTS concluded that the average inflation for the future test year is 1.48%. This 1.48% figure used information from Blue Chip Financial Forecasts while the 1.44% figure that the Company should have calculated using the proper 12 month period is slightly different because the source of the Company data was the Blue Chip Economic Indicators instead of the Blue Chip Financial Forecasts.

3. Exceptions and Replies

AP excepts to the ALJ's recommendation, arguing that the ALJ accepted the OCA's argument that AP's methodology somehow "double counted" six months of inflationary effects. According to AP, that argument is simply not correct. The expenses to which AP applied its general price level adjustment were incurred over the twelve month period from July 1, 2002, to June 30, 2003. If those historic test year costs are then moved forward a year, *i.e.,* by the application of a twelve month inflation factor, they are, on average, effectively restated at January 1, 2004, price levels. In other words, under the approach favored by the OTS and the OCA, and adopted by the ALJ, the costs in question, on average, will be seven and half months out of date by the time new rates go into effect in mid-August. (AP Exc. at 17-18).

In response, the OTS avers that its witness followed the traditional method, and calculated the expected average inflation for the four quarters which constitute the future test year. He then properly concluded that the average inflation for the future test year is 1.48%. (OTS R. Exc. at 12-13).

The OCA also responds that the ALJ correctly determined that AP's attempt to use eighteen months' worth of inflation expenses for this item is incorrect, and inconsistent with Commission precedent. The OCA argues that adoption of AP's proposal on this issue would have the result of double-counting six months' worth of inflation. (OCA R. Exc. at 19-22).

4. Disposition

On review of this issue, we agree with the recommendation of the ALJ. An inflation adjustment claim is a reasonable attempt to project an inflation percentage, and then apply it to those expenses which AP considers to be inflation-sensitive. In this proceeding, we conclude that AP has failed to prove that it is entitled to calculate the general price level adjustment on an eighteen month basis. The OTS recommended that we use the future test year period to determine the proper percentage to apply to the identified inflation-sensitive expenses. In our view, this approach is reasonable, and will be adopted. Accordingly, AP's Exceptions on this issue are denied.

F. Sarbanes-Oxley Auditing Fees

1. Positions of the Parties

AP claimed approximately $541,000 in outside auditing fees. Of that amount, $283,824 was attributable to new requirements imposed by Section 404 of the Sarbanes-Oxley Act of 2002 (SOX), which requires an annual assessment by management of the effectiveness of internal controls over financial reporting, and an attestation by a company's independent auditors of management's assessment. AP, in its initial filing, claimed $78,844 for the relevant work. (AP Exh. 1-A at 29). However, in his supplemental testimony, AP's witness Schreyer, based on his receipt of additional and more current information, revised the figure to $283,824. (AP Exh. 1-A(a) at 29 Revised). The $283,824 figure represents AP's share of the total cost of the project as estimated by AA's outside auditors, PricewaterhouseCoopers (PWC). As explained by AP, failure to comply with Section 404 is not an option. (AP St. 3-R at 4-5).

AP further asserted that the Section 404 compliance work was not competitively bid because the applicable regulations mandate that AP's annual financial audit and its Section 404 compliance audit be performed by the same firm. Additionally, since that Section imposes a new set of requirements, there is no track record to reference, and the actual cost of the work will not be known with certainty until after it has been performed. AP is, however, confident that its estimate for the relevant work is reasonable.

The OCA's witness Crane proposed that nearly 68% of AP's Section 404 compliance costs, or $192,700, be disallowed, asserting that AP had not demonstrated the reasonableness of PWC's projected charges. Specifically, the OCA criticized AP for: (1) not soliciting competitive bids; and (2) not submitting a "detailed work plan." (OCA St. 1S at 14-15). The OCA also argued that while AP must unquestionably comply with SOX requirements, the costs expended must be incurred within the future test year, and the claim must be based on known and certain amounts. (OCA's M.B. at 42).

2. ALJ's Recommendation

The ALJ recommended approval of this expense item, noting that AP has demonstrated, based on the evidentiary record, that its claimed audit fees are reasonable and necessary in order to ensure compliance with SOX. (R.D. at 46).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate, and in accord with the record evidence, it is adopted.

G. Customer Education Costs

1. Positions of the Parties

AP claimed a total projected cost of $811,350 for a customer education campaign in 2004, and requested that this expense be amortized over a five year period, resulting in an annual allowance of $162,270 to be recovered through rates. (AP Exh. 1-A(a) at 31 Revised).

The OCA argued that this claimed expense should be denied, on the grounds that it is the result of the decision of AP's shareholders to change the name of the former Philadelphia Suburban Water Company to Aqua Pennsylvania. Additionally, averred the OCA, the Aqua America acquisition and resultant name change benefited the expanded Pennsylvania Suburban Water Company and customers outside of the state of Pennsylvania. The claim should be denied on the additional grounds that customer education is a one-time event, primarily for the purpose of "educating" the consumers about a decision made by the shareholders to change the corporate name. Pennsylvania ratepayers did not request that change, nor will they experience any tangible benefit as a result of it. Consequently, the OCA averred that the Commission should deny the entire claim. (OCA's M.B. at 53-57).

2. ALJ's Recommendation

The ALJ recommended approval of this item, noting that, while AP was educating the customer about the new name, it was at the same time providing information to its customers about the services and the product that they receive. (R.D. at 48).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accord with the record evidence, it is adopted.

VII. Depreciation Accrual and Taxes

A. Depreciation Accrual

1. Positions of the Parties

AP's annual depreciation accrual applicable to plant in service on June 30, 2004 is $36,686,127. (AP Exh. 1-A(a) at 60 Revised). The annual accrual is based upon a detailed depreciation study prepared by AP's consultant, Gannett Fleming, as adjusted for its final claim for future test year plant additions. (AP Exh. 6-A, Part II at II-8; AP St. 1-S, Schedule 9; AP St. 1-R at 5). No Party contested the service lives or depreciation calculations prepared by Gannett Fleming. The OCA initially challenged AP's updated future test year plant additions claim, which adjustment carried with it a related disallowance of AP's depreciation accrual in the amount of ($101,233). However, the OCA's underlying plant additions adjustment has been withdrawn. (AP's M.B. at 34).

2. ALJ's Recommendation

The ALJ's Recommended Decision summarizes the positions of the Parties and, after noting the absence of opposition to AP's claim, incorporates the proposed allowance in the Income Summary. (R.D. at 48 and Table 1).

3. Disposition

No Party excepts to this issue. Finding the claim to be reasonable, appropriate and otherwise in accord with the record evidence, it is adopted.

B. Taxes

1. Positions of the Parties

AP's claims for State and Federal taxes are set forth in Exhibit 1-A(a), pages 63-67. The OTS and the OCA contested AP's consolidated tax savings claim. In his rebuttal testimony, AP's witness Jerdon incorporated a consolidated tax savings adjustment in the amount of $75,306 (AP St. 7-R; AP Exh. 1-A(a) at 66 Revised) and that adjustment was accepted by both OTS' witness Keim and OCA's witness Crane. (AP's M.B. at 34, 35).

The OTS' recommended adjustments to AP's taxes claim is limited to the effect of the OTS' adjustments to determine the proper level of the Payroll Tax Expense. (OTS' M.B. at 42). The amount of the OTS' payroll expense adjustment for the item "Additional Positions not Filled" was determined by taking the total payroll adjustment of ($108,230), and multiplying by the non-union expense allocation factor of 78.95% for a product of ($85,448) in adjustment to payroll expense. This amount was then multiplied by the various Federal and State tax factors for FICA, FUTA and SUI to arrive at the payroll tax expense adjustment of ($8,444). (OTS Exh. No. 2, Schedule 4, Page 1 of 8 (Second Revised), attached as part of Attachment I to OTS's M.B.).

This procedure was then followed for the other payroll expense adjustments on this Schedule. (OTS Exh. No. 2, Schedule 4, Page 1 of 8 (Second Revised)).

2. ALJ's Recommendation

The ALJ concluded that, in light of her determinations regarding OTS' other adjustments for unfilled positions, the adjustment for taxes should be rejected. (R.D. at 49).

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accord with the record evidence, it is adopted.

VIII. Rate of Return

A. Introduction

It is well settled that a public utility is entitled to an opportunity to earn a fair rate of return on the value of its property which is dedicated to public service. *Pennsylvania Gas & Water Company v. Pennsylvania Public Utility Commission*, 341 A.2d 239 (Pa. Cmwlth. 1975). This is consistent with longstanding decisions by the United States Supreme Court, including *Bluefield Water Works and Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679, 690-93 (1923), and *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944).

A utility's rate of return has been defined as follows:

> [t]he *rate of return* is the amount of money a utility earns, over and above operating expenses, depreciation expense and taxes, expressed as a percentage of the legally established net valuation of utility property, the rate base. Included in the 'return' is interest on long-term debt, dividends on preferred stock, and earnings on common stock equity. In other words, the return is that money earned from operations which is available for distribution among the capital. In the case of common stockholders, part of their share may be retained as surplus. The rate-of-return concept merely converts the dollars earned on the rate base into a percentage figure, thus making the item more easily comparable with that in other companies or industries.

(P. Garfield and W. Lovejoy, *Public Utility Economics*, (1964), at 116)

In determining a fair rate of return, we have traditionally considered the utility's capital structure in conjunction with its costs of debt, preferred stock, and common equity. The Parties' recommendations in this matter are discussed in detail below.

B. Capital Structure

1. Positions of the Parties

AP's proposed Capital Structure is as follows:

Long-term Debt	50.57%
Common Equity	49.43%
Total Capital	100.00

(AP St. 4 at 20-21)

AP argues that the proposed debt/equity ratio is indicative of that needed to finance its claimed rate base during the time period that the rates are expected to be in effect. AP contends that the Commission has accepted this ratio in several prior rate proceedings. We note that no Party opposed AP's proposed Capital Structure.

2. ALJ's Recommendation

The ALJ recommended adoption of AP's proposed Capital Structure.

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accord with the record evidence, it is adopted.

C. Cost of Debt

1. Positions of the Parties

Regarding its cost of debt, AP's claimed cost of long-term debt for this proceeding is 6.60 percent. (AP St. 4 at 21). No Party contested this cost rate.

2. ALJ's Recommendation

The ALJ recommended adoption of AP's 6.60% cost of long-term debt.

3. Disposition

No Party excepts to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accord with the record evidence, it is adopted.

D. Cost of Common Equity

1. Summary

The following table summarizes the cost of common equity claims made, and methodologies used, by the Parties in this proceeding:

Methodology	Company(1) %	OTS(2) %	OCA(3) %
Discounted Cash Flow Range (DCF)	10.40	9.50	9.82
Risk Premium Model (RPM)	11.25		
Capital Asset Pricing Model (CAPM)	12.24		8.22-9.37
Comparable Earnings Method (CEM)	14.80		
Modified Earnings Price Ratio			7.64-8.95
Market to Book Ratio			9.57-9.80
Recommendation	11.75%	9.50%	9.25%

(1) AP Statement 4.
(2) OTS Statement 1, at 22.
(3) OCA Statement 2, at 29.

2. Positions of the Parties

AP, after applying four of the above cited and widely recognized market-based models to market data for its corporate parent AP, f/k/a Philadelphia Suburban Corporation (PSC), a barometer group of water utilities and a barometer group of gas distribution utilities, arrived at an 11.75% cost of common equity recommendation. AP's water barometer group consists of three water utilities with actively traded common stock. These water utilities appear in the Water Utility Industry section of the *Value Line Investment Survey*. (AP Exh. 4-A, Sch. 3 at 2). AP's gas barometer group consists of ten gas distribution utilities with actively traded common stock which engage in similar business lines. These gas distribution utilities appear in the Gas Distribution Utility Industry section of the *Value Line Investment Survey*. (AP Exh. 4-A, Sch. 3 at 7).

AP contended that the above cited common equity cost rate models, used *in tandem*, are based on the premise that no one method or model of the cost of equity can be applied in an isolated manner. According to AP, informed judgment must be used to take into consideration the relative risk traits of the firm. It is for this reason that AP uses more than one method to measure its cost of common equity. (AP St. 4 at 22). It should be noted that AP's recommended range of DCF common equity cost rates of 10.53 to 12.09 percent, calculated from its water and gas groups, include 64 and 67 basis point upward adjustments respectively, to reconcile the divergence between the market and book value of the common equity. (AP. St. 4 at 35).

Specifically, AP calculated recent six-month average dividend yields of its barometer groups which it basically increased by (1+.5) to incorporate the respective growth rates, to reach a 2.48% dividend yield for AP, a 3.44% dividend yield for its water group and a dividend yield of 4.54% for its gas distribution group. The 2.48% dividend yield + 9.25% growth rate results in an 11.73% DCF result that is subsequently increased by 202 basis points to 13.75% for AP. The 3.44% dividend yield + 5.75% growth rate results in a 9.19% DCF result that is subsequently increased by 64 basis points to 9.83% for its water group. The 4.54% dividend yield + 5.75% growth rate results in a 10.29% DCF result that is subsequently increased by 67 basis points to 10.96% for its gas distribution group. (AP St. 4 at 36)

According to AP, the average of the DCF, Risk Premium and CAPM equals 11.30% for the water and gas barometer groups, and 12.75% for the corporate parent. From this range, AP chooses 11.75 percent, which recognizes the alleged exemplary performance of AP's management. (AP St. 4 at 4-5).

The OTS relied solely on the DCF method to arrive at its 9.5% recommended cost rate of common equity. The OTS applied the DCF method to its barometer group of water utilities whose stock is actively traded. The OTS' barometer group consists of seven publicly traded water utilities that have at least two sources of analysts' forecasts of earnings growth, and are not the announced subject of an acquisition. (OTS St. 1 at 10). Specifically, the OTS averaged the spot dividend yield and the 52-week average dividend yield of its barometer group to reach a 3.06% composite dividend yield. It then added its 6.75% growth rate recommendation to the 3.06% dividend yield to reach a 9.81% DCF recommendation for its barometer group.

Next, the OTS averaged the spot dividend yield and the 52-week average dividend yield of AP's three water utility barometer group, which is a subset of the aforementioned OTS group, to reach a 3.32% composite dividend yield. The OTS then added a 5.5% growth rate recommendation to the 3.32% dividend yield to reach an 8.82% DCF recommendation for AP's barometer group. The OTS chose 9.5% as its recommended cost rate of common equity from its recommended range of 8.82% to 9.81%, reasoning that since AP's common equity ratio is estimated at only 42.20% as of June 30, 2003, as opposed to the 55.28% common equity ratios of its seven company barometer group, AP faces less financial risk than the group. (OTS St. 1 at 21-22).

The OCA relied upon the DCF method and the CAPM, Modified Earnings Price Ratio (MEPR) and Market to Book (MTB) methods to its group of three water utilities with actively traded common stock which appear in the Water Utility Industry section of the *Value Line Investment Survey,* and a group of gas companies followed by *Value Line.* (OCA St. 2 at 20-21). The application of the three aforementioned methods produces common equity cost rates of between 9.53 and 9.82% for DCF, 8.22% to 9.37% for CAPM, 7.64% to 8.95% for MEPR, and from 9.57% to 9.80% for MTB. The OCA then chose 9.25% as its common equity cost rate recommendation, because it primarily employs the DCF model to estimate its common equity cost rate. (OCA St. 5 at 29).

3. ALJ's Recommendation

Based on her review, evaluation and analysis of the record, regarding the cost of common equity, the ALJ recommended that we afford AP the opportunity to earn a rate of return on common equity of 10.0 percent. The ALJ found that the Commission favors the DCF method to determine the cost of equity capital. However, the ALJ also noted that in the most recent rate proceeding involving Pennsylvania-American Water Company (PAWC), at Docket No. R-00038304 (Opinion and Order entered January 29, 2004), the Commission stated that although the DCF method is the preferred method of analysis to determine cost of equity, it is also appropriate to consider other factors. These factors include, but are not limited to, the utility's capital structure, credit standing, dividends, risks, regulatory lag, wasting assets and any peculiar features of the utility involved.

The ALJ noted further that, in the PAWC case, the Commission made an adjustment to the market based DCF rate to account for the application of a market based common equity cost rate to a book value common equity ratio. The ALJ opined that in the instant matter, a reasonable market based DCF range was between 9.19% and 10%. The ALJ concluded that a market based, DCF return which accounts for the adjustment for market to book common equity would be 10.0%. (R.D. at 86).

4. Exceptions and Replies

AP excepts to the ALJ's recommended 10.0% common equity cost rate, contending, *inter alia*, that such a recommendation results from an excessive reliance on the DCF result. AP also contends that the ALJ improperly ignores the other equity cost determinations it has employed in the past, such as Risk Premium, CAPM and comparable earnings. AP asserts that the OTS' DCF equity cost range of 9.5-10.0% was understated, and that the growth rates employed in those OTS-sponsored recommendations were seriously outdated. AP contends that the growth rates for three companies in its barometer group had increased significantly since its direct testimony was filed. AP adds that the ALJ did take into account rising interest rates in her recommended 10% equity return.

AP furthermore contends that the ALJ's recommended rate of return gives no consideration to its outstanding management performance. Section 523 of the Code, 66 Pa. C.S. §523, directs the Commission to consider the efficiency, adequacy, and effectiveness of service in setting just and reasonable rates. AP contends in this regard that its management performance merits a reward for efficiency, based upon its record for excellent water quality, for cost containment, regionalization and acquiring small, troubled water companies. (AP Exc. at 4-10).

The OTS also excepts to the ALJ's recommendation, arguing that the return on equity should not exceed 9.5 percent. The OTS also asserts that the ALJ did not consider the reduction in financial risk resulting from AP's capital structure, which is comprised of a smaller portion of debt than any of the barometer group companies. Based on those factors, the OTS contends that a lower level of return on equity is justified in this matter. (OTS Exc. at 14-16).

The OCA also excepts to the ALJ's recommendation on this issue, arguing that the ALJ's recommended level is excessive in light of current conditions. The OCA argues that the common equity cost rate should be 9.25 percent, pointing out that the ALJ's recommendation does not take into account the post-tax effect on dividend yields, the recent decline in interest rates, or the current level of yields for 10-year Treasury Bonds. The OCA points out that interest rates are at a 45-year low, and that the market-to-book adjustment to the DCF result was not based upon sound financial theory. The use of debt and not equity raises the financial risk of a firm. (OCA Exc. at 1-7).

The Parties also filed Reply Exceptions. AP argues therein that the ALJ erroneously concluded that AP's debt/equity ratio is less than the water barometer group, because the figures in question related to different time periods and are misleading. Specifically, AP points out that the 49.43% common equity ratio was taken from its projected capitalization at June 30, 2004, while the 44.9% barometer group figure relates to the period ending December 31, 2002. AP also argues that interest rates are no longer declining, and, citing OTS' observation, it expects the "Aaa" corporate bond yield to increase to 7.6%from the current level of 5.70%. (AP R.Exc. at 6).

In its Reply Exceptions, the OTS rejoins that AP's argument regarding outdated growth rates lacked legitimacy because a proper DCF analysis would require updated dividend yields before any change in the recommendation could be made. AP made no effort to update either its dividend yields or its growth rates. (OTS R.Exc. at 3-7).

The OCA, in its Reply Exceptions, asserts that AP's claim for equity return is excessive, pointing out that the ALJ did not consider an upward adjustment for the market to book ratio. The OCA recommends that the Commission deny AP's claim in this regard. Additionally, the OCA counters AP's argument regarding the use of methodologies other than DCF, contending that the use of other methodologies by the ALJ would have resulted in an equity return recommendation lower than the 10.0% recommended by the ALJ. (OCA R.Exc. at 1-7).

5. Disposition

We have often relied on the DCF methodology and informed judgment in arriving at our determination of the proper cost of common equity. *See Pennsylvania Public Utility Commission v. Philadelphia Suburban Water Company*, 71 Pa. PUC 593, 623-632 (1989); *Pennsylvania Public Utility Commission v. Western Pennsylvania Water*

Company, 67 Pa. PUC 529, 559-570 (1988); *Pennsylvania Public Utility Commission v. Roaring Creek Water Company*, 150 PUR4th 449, 483-488 (1994); *Pennsylvania Public Utility Commission v. York Water Company,* 75 Pa. PUC 134, 153-167 (1991); *Pennsylvania Public Utility Commission v. Equitable Gas Company*, 73 Pa. PUC 345-346 (1990).

In *Lower Paxton Township v. Pennsylvania Public Utility Commission,* 317 A.2d 917 (Pa. Cmwlth. Ct. 1974) (*Lower Paxton Township),* the Court recognized that the Commission may consider factors which affect the cost of capital, such as the utility's financial structure, credit standing, dividends, risks, regulatory lag, wasting assets and any peculiar features of the utility involved. Here, as in *PAWC,* we are guided by the spirit and intent of *Lower Paxton.*

The ALJ recommended a 10.0% cost of equity, relying too heavily on the DCF methodology. However, the ALJ failed to sufficiently consider the other standard financial models, including Comparable Earnings, the Risk Premium Model, and the CAPM, as checks upon the reasonableness of the DCF results. *See generally*, *PA P.U.C. v. Pennsylvania Suburban Water Company,* 219 PUR 4th 272 (2002).

Furthermore, the ALJ's recommendation does not fully reflect consideration of a number of other factors in the record. First, as discussed, *supra,* in AP's Exceptions, AP's 49.43% common equity ratio was taken from its projected capitalization at June 30, 2004, while the 44.9 per cent barometer group figure relates to the period ending December 31, 2002. We agree that the ALJ failed to consider the latest available data in considering AP's financial risk.

Next, we find that AP has offered evidence that "Aaa" corporate bond yield is expected to increase to 7.6 percent, from the current level of 5.7 percent. (AP R.Exc.

at 1-7). We are of the opinion that the evidence proffered by the OTS and the OCA on this issue does not rise to a level such as to refute AP's evidence.

We are also persuaded by AP's reasoning that a financial risk adjustment is necessary to compensate it for the application of a market based cost of common equity to a book value common equity ratio. We note that preliminary the DCF calculation, which is computed using the market price of AP's common stock, should be adjusted to reconcile the divergence between market and book values[11]. Additionally, when investors value a company's common stock, they employ actual market capitalization data, and not book data, although book capitalization is employed for ratemaking purposes.

We also find that the ALJ did not give sufficient weight to the quality of AP's management performance in the areas of:

i) Water quality;

ii) Customer service;

iii) Low income customer assistance; and

iv) Regionalization efforts –AP has been keenly responsive to existing and prospective regional water supply problems. Its acquisitions of portions of profoundly-troubled National Utilities, Inc. (NUI) systems exemplifies its efforts.

AP's acquisition of NUI is particularly noteworthy because long-suffering customers of NUI now have the benefit of AP's caliber of service. This is due, in large part, to AP's commitment to resolving problems of that troubled water company, and to its perseverance in completing this challenging acquisition.[12] The record offers two glaring examples -- namely:

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[11] *See Pa. P.U.C. v. Pennsylvania-American Water Co.*, 2002 Pa. PUC LEXIS 1; *Pa. P.U.C. v. Philadelphia Suburban Water Co.*, 219 PUR 4th 272 (2002); *Pa. P.U.C. v. Pennsylvania-American Water Co.*, 231 PUR 4th 277 (2004).

a) Former NUI customers of the Harvey's Lake system sent a letter to Aqua to thank them for taking over the system. They state:

> Although we know that it will be a long process to correct problems created by neglected [*sic*] for so many years, their efforts have already made a significant difference. For the first time in five years, we have had water on the Fourth of July and can fill a washing machine in less than 20 minutes.[13]

b) A newspaper article entitled *New Water Company Fixes Leak in a Jiffy*,[14] described the frustrating saga of a customer's attempt to get a leak repaired in NUI's Midway Manor system. The leak was described as a pond "forming atop a domestic water line which in the past has been a source of breaks and headaches for Burgess and her neighbors in Midway Manor."[15] A NUI repairman told Ms. Burgess that no chlorine could be found in the water [so presumably it was not the company's main which was the source of the leak] and that the problem was accumulated rainwater runoff. After the water continued to accumulate, and further calls to NUI produced no solution, an Aqua manager made a service call and repaired the company water line, since Aqua had just taken over the system. Apparently, NUI had not alerted Aqua to the still pending service complaint. Aqua's White Haven division manager was quoted as concluding:

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[12] That AP took on the challenge of acquiring NUI is common knowledge among Commission staff, affected parties, and water industry individuals who assisted with the numerous attempts to solve the NUI dilemma over the past decade or so.

[13] Letter from Barbara and Bruce Leggat dated July 22, 2002. (Aqua Direct Testimony, St. 1-7; Section 2; Sch. 3, at 1).

[14] *Dallas Post*, July 11, 2002. (Aqua Direct Testimony, St. 1-7; Section 2; Sch. 3, at 2,3).

[15] *Ibid.*, at 2.

> "It was pretty obvious to us that there was a leak. . . We're in the middle of a drought, and there was a lot of water in the yard, and there was a high rate of water coming out of the pump house. . . It seems like that is all we have been doing (since taking over NUI) is repairing leaks in the water lines."[16]

Based upon the foregoing factors and those identified by the ALJ, all supported by the evidentiary record, we shall allow a cost of equity of 10.60%.

In a broader sense, aside from the record evidence, this company's performance fosters economic development, which has resulted in benefits to the state, the economy, and to the overall quality of life. The Distribution System Improvement Charge ("DSIC") has led to additional jobs, while enabling the much-needed acceleration of the rehabilitation of aging infrastructure, resulting in a safer and more reliable quality of service for the communities that it serves. Through a strong balance sheet, Aqua has been able to acquire utilities both in this state and throughout the country. These acquisitions serve to significantly increase economies of scale to the benefit of all of the company's ratepayers, while vastly improving service for the previously troubled systems' ratepayers.

The following table summarizes our determinations concerning AP's capital structure, cost of debt, cost of preferred stock, and cost of common equity, as well as the resulting weighted costs and overall rate of return:

Capital Structure	Ratio	Cost Rate	Weighted Cost
Debt	50.57%	6.60%	3.34%
Common Equity	49.43%	10.60%	5.23%
	100.00%		8.57 %

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[16] *Ibid.*, p. 3

Accordingly, the Exceptions of the OCA and the OTS on this issue are denied. AP's Exceptions are granted, in part, and denied, in part, consistent with the above discussion.

IX. Rate Structure - Fire Protection

A. Introduction

AP's rate design proposals herein also are designed to continue the implementation of the Commission-approved concept of rate equalization. AP proposed to establish two rate targets. For the overwhelming majority of rate divisions, the target is the Company's Main Division rates. For five divisions which have unique service characteristics, AP proposed to establish Seasonal Rates.

AP asserted that when moving to consolidate districts, it is necessary to keep in mind that many of the municipal systems and troubled water companies that it has acquired in recent years were served under rates that were substantially different from AP's rates. Accordingly, those rate changes cannot be undertaken immediately. Greater than average percentage increases are needed over a period of years to consolidate these rates and judgment is needed to establish the amount of the increase for each division, taking into account not only the percentage increase but also the actual dollar effect of the increase. (AP's M.B. at 61, 62; AP St. 1-R at 26-27).

Specifically, AP proposed a $10.00 per month customer charge for a 5/8-inch meter. The current 5/8-inch meter charge is $8.75 per month exclusive of the DSIC, or $9.19 per month inclusive of the 5% DSIC. (AP Exh. 50-A at 119). Comparable increases in customer charges are also proposed for other meter sizes. AP has proposed an increase in metered Main Division revenues of about 10.4%, and has additionally proposed a new 2,000 gallon per month initial block rate for residential customers, as part of its low income customer assistance program. For the Main Division, there is no rate increase for usage within this initial rate block.

After reviewing the recommendations of the other Parties, AP proposed to eliminate the limited usage rate proposal and redesigned the rates of the other divisions as follows:

> Susquehanna Division metered customer charges and consumption charges have been set equal to Main Division rates. (AP St. 1-R, Sch. 13). Customer charges in Ariana, Wapwallopin, NUI Division III and Maple Crest (with the exception of ¾" meters) are all proposed to be equal to proposed Main Division customer charges. (AP St. 1-R, Sch. 13). NUI Division I customer charges have not been increased, and Brooklyn Division customer charges are proposed to be equal to NUI Division II customer charges. (AP St. 1-R, Sch. 13). Customer charges for 6", 8" and 10" meters have been added to NUI Division I and NUI Division II (AP St. 1-R, Sch. 13). Consumption charges for Ariana, Wapwallopin, NUI Division I, NUI Division II, NUI Division III and Brooklyn have been moved toward Main Division rates. (AP St. 1-R, Sch. 13). Flat rate charges in the NUI Divisions also have been increased. (AP St. 1-R, Sch. 13). Maple Crest consumption charges have not been changed, and the customer charges for both 5/8" and 3/4" meters are proposed to be set equal to the Main Division 5/8" customer charge. (AP St. 1-R at 42).
>
> AP also revised its rate proposal for the White Rock Division, as set forth in the Stipulation with White Rock. (Appendix 1).
>
> For the West Chester Division, the remaining minimum allowances were eliminated and the proposed minimum charges are the same as the Main Division rates. The consumption charges were set equal to the proposed Main Division for all classes except for the second block for residential. (AP St. 5 at 13).
>
> For the Bristol Division, the minimum allowance was reduced from 1,400 gallons per month to 1,000 gallons per month for 5/8-inch meters. Similar reductions were made to the allowances for the remaining meter sizes. The proposed minimum charges reduce the difference to Main Division

rates by approximately 33%. Consumption charges were also moved toward Main Division rates. (AP. St. 1 at 13). In addition, AP concurs with OTS' proposal that proposed Bristol private fire rates should be increased to $145/mo. for 6" metered service and $235/mo. for 8" metered service. (AP St. 1-R at 33).

For Bensalem, the 5/8-inch allowance was reduced from 1,400 gallons per month to 1,000 gallons per month. The 5/8–inch, 3/4-inch, 1-inch and 1-1/2-inch minimum charges were increased $1.80, $1.50, $2.80 and $3.20 per month, respectively. The remaining minimum charges were left unchanged; however, significant reductions to the minimum allowances were made. (AP St. 1 at 13-14). AP accepted OTS' proposal that the consumption charge be set at $3.00 per thousand gallons for all usage. (AP St. 1-R at 33).

Rates for Fulmor Heights, Hawley, DLWB and Shickshinny Lake are merged into Main Division. Rates for Flying Hills were moved toward Main Division in the third phase of a five-step equalization plan. Minimum allowances were reduced and minimum charges and consumption rates were increased to close the gap to the Main Division by about one-half. (AP St. 1 at 14; AP St. 1-R Sch. 13).

For Waymart, Rolling Green, Monroe Manor and Jefferson Divisions, the rates were moved toward Main Division rates. (AP St. 1 at 14). Rolling Green and Monroe Manor rates are the same because these divisions are adjacent to each other and it is AP's plan to move the rates together until they are merged with the Main Division. (AP St. 1-R at 39). Chalfont and White Haven Divisions are on a step-rate program to achieve rate equalization over a period of years. (AP St. 1 at 14).

For Roaring Creek, the customer charges were set equal to the Main Division. The consumption charges were converted to a three-block structure with the first and third blocks the same as existing rates and the second block with an 8.7% increase over the existing second-block rate. (AP St. 1 at 14).

For Shenango Valley, customer charges and consumption charges are equal to Main Division charges, with the

> exception of certain rates for sales to other water utilities.
> (AP Exh. 50-A at 41).

(R.D. at 90-92).

Additionally, the Company proposed a special rate for "seasonal customers" in certain of its divisions which contain "high numbers" of seasonal customers. Seasonal customers are defined as those who pay for six or seven months of service per year. Specifically, AP proposed that a higher fixed charge, *i.e.* a customer charge of $17 for a 5/8-inch meter customer, be applied to those customers to recover a portion of fixed costs. (AP St. 1 at 22). AP described the new rate structure for seasonal customers as also having a lower commodity rate than for Main Division customers.

AP also proposed to remove availability charges that were formerly imposed in several recently acquired systems. AP designed its proposal after considering: (1) the charge produces phantom income, due to the fact that few owners of vacant lots actually pay the charge; and (2) the charge no longer serves the purpose it once did. There were several areas of controversy regarding AP's rate structure proposal.

B. Customer Charge

1. Positions of Parties

The OTS opposed AP's proposal to increase the customer charge from $8.75 per month to $10.00, arguing that the charge should remain at its current level of $8.75 per month. The OCA also argued that the charge should be scaled back to reflect the final cost of service. Specifically, the OTS and the OCA asserted that direct customer costs were $8.44 per month and $10.36 per month, respectively.

AP rejoined that the direct customer costs associated with a 5/8 inch meter are $12.25 per month, and that both the OTS and OCA calculations did not contain an allocable share of computer costs for billing. AP also asserted that the other Parties' calculations do not include the cost to maintain meters which are clearly customer related costs.

2. ALJ's Recommendation

The ALJ recommended that the Commission adopt AP's proposed customer charge of $10 per month, citing *Pa. PUC v. Citizens Water Company of Pennsylvania,* 86 Pa. PUC 51, 107 (1996), (*Citizens*) for the proposition that customer equipment should be included in a proper direct customer cost study. The ALJ also concluded that AP has demonstrated that the proposed customer charge is correctly computed and consistent with prior precedent. (R.D. at 102).

3. Exceptions and Replies

The OTS excepts to the ALJ's recommendation, arguing that AP's calculation of the customer charge included transmission and distribution expense, maintenance expenses and other such costs, and that only direct customer costs should be included in the calculation. (OTS Exc. at 3-6).

The OCA offers a similar argument to that of the OTS. Additionally, the OCA argues that the ALJ misinterpreted *Citizens, supra,* which, in the OCA's view, stands for the proposition that only *direct customer costs* can be included in the calculation of the customer charge. (OCA Exc. at 15-17).

AP rejoins that neither the OCA nor the OTS recognized any capital investment, other than meters and services, as customer costs. AP also argued that, although the OTS and the OCA recognize the savings in meter reading costs resulting from new technology, they ignore the costs of computers and other facilities needed to produce those savings. Additionally, the costs cited by the OTS as improperly considered are not included in the customer charge calculation, other than as allocated portions of costs. AP asserts that it is permissible to include allocations of such costs pursuant to C*itizens, supra.* (AP R.Exc. at 10-14).

4. Disposition

On review of the evidentiary record herein, we shall adopt the ALJ's Recommendation on this issue. First, the ALJ correctly found that the cost of customer equipment, and also of meters and service line maintenance, is properly includable in a cost study. We find that the OTS' proposed limitation of costs to only services and meters is unreasonably narrow.

Second, we find that it is reasonable and proper to include allocated portions of indirect costs, such as employee benefits, local taxes and other general and administrative costs, in a cost study. We caution that these are costs which may be considered for inclusion in the customer charge, but such claims are subject to scrutiny on a case-by-case basis.

We note that in *Citizens, supra,* the Commission adopted the utility's claim to include the allocated portion of associated payroll taxes and benefits as part of customer expenses. In the matter before us, we find that AP met its statutory burden pursuant to Section 332(a) of the Code, of establishing the reasonableness of its claim. Accordingly, the Exceptions of the OTS and the OCA on this issue are denied.

C. Seasonal Rates

1. Positions of the Parties

As noted previously, AP proposed that a higher fixed charge, *i.e.* a customer charge of $17 for a 5/8-inch meter customer in divisions where 50-80% of the customers are part-year residents, be applied to those customers to recover a portion of fixed costs. (AP St. 1 at 22). AP described the new rate structure for seasonal customers as also having a lower commodity rate than for Main Division customers. AP subsequently modified its proposal to exclude year round customers from the higher charge. (R.D. at 103).

The OCA stated that AP's revised proposal is acceptable. The OTS opposed the seasonal rate design, asserting that the proposal violates single tariff pricing. Secondly, the OTS objected to a reduction to the usage rate in certain seasonal rate divisions. Thirdly, the OTS objected to imposing a higher customer charge on all customers to respond to part-year customers. (OTS St. 3 at 27).

AP responded that, without a special rate design for these divisions, part year residents who have their service turned off in the off-season will not pay their share of the basic facilities and costs incurred to serve them. (AP St. 1-R at 29-30).

2. ALJ's Recommendation

The ALJ recommended adoption of AP's seasonal rate proposal, noting that AP has acquired a number of troubled water companies recently, and that it is difficult to bring all customers into one rate classification immediately. The ALJ also noted that no other Party has suggested another solution that would address this problem. (R.D. at 104-105).

3. Exceptions and Replies

In its Exceptions, the OTS argues that the Company's proposal to reclassify certain divisions as seasonal usage would allow the Company to collect higher legitimate customer charges from the "seasonal" customers. (OTS Exc. at 8-10).

The OCA argues in its Exceptions that the ALJ appears to be unclear in the amount of the customer charge that would be imposed upon seasonal customers under the Recommended Decision. The OCA also points out that the ALJ did not make any recommendation on the issue regarding Woodloch Springs, but that Woodloch Springs should receive the same rate treatment as all of the other seasonal divisions. The OCA notes that the customer charges in seasonal divisions of Fawn Lake, Woodledge Village, Western and Paupack is $17.00 per month, while AP proposed to charge Woodloch Springs $37.60 per month. The OCA argues that AP cannot arbitrarily exclude the Seasonal Division of Woodloch Springs from the same rate treatment given to all of its other seasonal customers. (OCA Exc. at 17-21).

AP rejoins that the OTS' assertion that the imposition of a seasonal customer charge would result in an over collection is erroneous. AP illustrates what it claims to be the fairness of its proposal as follows:

> ...a seasonal customer who resides in the home for 7 months during the year will pay $119 annually, which is virtually the same annual customer charge that would be paid by an average resident customer in the Main Division, at the Company's proposed $10/month customer charge ($10 x 12). In order not to overcharge the year-round customers in the Seasonal Use divisions, I have set the commodity charges below the Main Division commodity charges. Under my proposal, a year-round customer in a seasonal rate division who uses 4800 gallons per month, which is a relatively

> normal level of usage, will pay the same monthly amount as a Main Division customer using 4800 gallons per month.

(AP St. 1-R at 30).

Finally, AP argues that it is appropriate to treat Woodloch Springs in the same manner as the other similarly situated divisions if its seasonal rate is adopted. (AP R.Exc. at 17-18).

4. Disposition

On review of the evidentiary record, we shall adopt the ALJ's recommendation on this issue. We note that AP has met its statutory burden pursuant to Section 332(a) of the Code, of proving that: (1) the proposed rate is necessary; and (2) the proposed rate is fair. We also find that the proposed charges are necessary because, without a special rate design for these divisions, part year residents who have their service turned off in the off-season will not pay their fair share of the basic facilities and costs incurred to serve them.

We also find that AP has effectively rebutted the OTS' argument that a disparity of collection would exist if the seasonal rate design were to be implemented. We shall grant the OCA's Exceptions to the extent that we shall require that the Woodloch Springs Division be given the same rate treatment accorded to all of AP's other seasonal customers, and we shall deny the OCA's Exceptions in all other respects. Similarly, we shall deny the OTS' Exceptions on this issue.

D. Availability Charges

1. Positions of the Parties

As noted previously, AP proposed to remove availability charges that were imposed in several recently acquired systems because, according to AP, the charges produce "phantom income," because: 1) few owners of vacant lots actually pay the charges; and 2) the charges no longer serve the purpose for which they were designed.

The OCA opposed AP's proposal arguing that retention of availability charges will promote cost sharing between usage customers and unconnected customers who benefit from AP's infrastructure.

2. ALJ's Recommendation

The ALJ recommended that AP's proposal be adopted, reasoning that most customers do not actually pay the charge, and that large utilities, such as AP, do not need such charges to maintain their systems. (R.D. at 107).

3. Exceptions and Replies

The OCA argues that AP's argument of "phantom income" must fail because, where a large portion of the balance of availability charges are late paid, AP can claim an uncollectible account expense. The OCA submits that such claims are routinely made by utilities and that the retention of availability charges will create cost sharing between usage customers and unconnected property owners who benefit from AP's infrastructure. (OCA Exc. at 12-15).

AP rejoins that it is not a resort developer who typically would need availability charges to control rates to improved lots, or to provide a source of revenue to maintain its system. Rather, all owners of vacant lots throughout its divisions are assured that they will be able to receive water from AP at any time in the future. Accordingly, since the owners of vacant lots elsewhere in AP's system are assured water service, there is no reason that vacant lots in the four affected divisions should not have the same assurance.

Regarding the uncollectible availability charge issue, AP argues that to simply write off the unpaid availability charge is a more expensive route to the same conclusion. According to AP, when nearly every lot owner fails to pay the charge, and the resulting revenue is charged off as uncollectible, the rates of usage customers would increase just as if the charges were eliminated. (AP R.Exc. at 15-16).

4. Disposition

On review of the evidentiary record, we shall adopt the ALJ's recommendation on this issue. The ALJ properly found that the purpose of the relevant charge is now moot.

Historically, availability charges were useful during the 1960s and 1970s when developers owned the systems and the developments were only partially built. At that time, the purpose of the charge was to share the cost of maintaining the water system's infrastructure, so that the system would be ready to accommodate the vacant lot owners when they were ready to connect. Based upon the evidentiary record herein, however, we conclude that those charges are no longer necessary in order for AP to assure future water service to vacant lots. However, those charges may continue to be utilized by other utility systems, when they can serve their original purpose.

The phantom revenue issue arose because few owners actually pay the availability charge. We note that the AP's total accounts receivables for the charge totals close to $1.0 million. We note that costs may be even higher with the availability charge than without, due to write offs, collection costs and cash working capital collection lag. Additionally, owners of vacant lots elsewhere in AP's system are not charged an availability charge, and equity dictates that owners in the relevant divisions should not be charged for them either. Furthermore, a charge that produces no actual revenues, and serves only to increase operating costs, is clearly ineffective and should be eliminated.

For the above reasons, we shall deny the OCA's Exceptions on this issue.

E. Fire Hydrant Rates

1. Positions of the Parties

Under current rates, Upper Dublin pays $25.25 for each of its 193 fire hydrants, or $303 per hydrant annually. AP proposed no increase to the rate schedule for fire hydrant service applicable to Upper Dublin Township. The full cost of service for the public fire hydrant class is $12,404,367. AP's proposed rates would produce $4,914,764 in revenues. Consequently, the proposed rates will recover approximately 40% of the cost of service.[17]

Upper Dublin Township challenged the public fire hydrant rates set forth in AP's proposed rate structure. Upper Dublin maintains that Section 1328 of the Code, 66 Pa. C.S. § 1328, limits the rates that can be charged for public fire hydrant service to no more than 25% of the cost of service. Upper Dublin contends that, in order to comply with the law, AP must reduce the revenues from public fire customers by $1,813,764, and that such amount should be recovered through the fixed customer charge or minimum bill.

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[17] Specifically $1,813,764 and $3,101,000, respectively.

Upper Dublin cited *Pennsylvania Public Utility Commission v. Pennsylvania American Water Company,* 2002 Pa. PUC LEXIS 1 (Docket No. R-00016339) (Order entered January 25, 2002), *(PAWC 2002)* for the proposition that while Section 1328(c) provides that rates in effect on the effective date of Section 1328 (*viz*. June 30, 1995), shall remain frozen, the freeze was to apply only until the utility's next general rate proceeding. Therefore, Upper Dublin contended that the Commission must reduce the rates charged by AP for fire hydrant service to comply with the legislative mandate in Section 1328.

AP responded that Section 1328 provides that unrecovered fire charges are to be recovered through the fixed or minimum bill of other customers. AP also proffered an analysis as to how unrecovered fire costs are to be recovered through the fixed customer charge. AP asserted that no Party has challenged the proposed procedure. AP averred that, if an additional $1.8 million in public fire costs are to be reallocated, the additional cost per 5/8" meter would be 36¢ per month.

Aqua LUG objected to Upper Dublin's proposal to decrease public fire hydrant rates, positing that AP has appropriately set all public fire hydrant rates, including Upper Dublin's. Aqua LUG urged the Commission to deny Upper Dublin's proposal as violating legislatively enacted requirements, and as detrimental to other customers of AP. Aqua LUG posited further that Upper Dublin failed to recognize that Section 1328(b) must be read in the context of Section 1328(c), which provides that current public fire service rates are frozen until the appropriate cost of service levels are reached.

The OSBA posited that Upper Dublin's reliance on *PAWC 2002* is misplaced, noting that, in that proceeding, PAWC had acquired the Pennsylvania Gas and Water Company (PG&W) system, which had divisions with public fire rates ranging from $21.57 to $37.75. PAWC proposed that all public fire rates be reduced to the Main Division rate of $20, which was the PAWC rate that was in effect on the effective date of Section 1328. The OSBA indicated that the rate was approved by the Commission, and was approximately 50% of PAWC's cost of service for public fire hydrants.

2. ALJ's Recommendation

The ALJ found that the OSBA's and Aqua LUG's interpretation of Section 1328 had merit, because it allowed the entire Section to be read in conjunction, and because it was consistent with the *PAWC 2002*. Upper Dublin suggested that the Commission failed to comply with the legislation that was passed in 1995. However, if the rate was only frozen until the next rate case, we would already have numerous decisions concerning this issue. The ALJ concluded that the reasonable reading of the statute indicates that the rate should remain frozen until it is 25% of the cost of service. (R.D. at 115)

3. Exceptions and Replies

In its Exceptions, Upper Dublin argues that Section 1328(b)(1) is clear and unambiguous in stating that, in a utility's general rate proceeding, fire hydrant rates may be set at no more than 25% of the cost of service. In Upper Dublin's view, this subsection is not subject to interpretation, and the ALJ did not give effect to Section 1328 in its entirety. Additionally, adoption of the ALJ's recommendation would create much uncertainty on issues such as the time it may take public fire hydrant rates to reach the 25% cost of service threshold.

Furthermore, Upper Dublin argues that the ALJ's interpretation would make Section 1328(b)(1) essentially meaningless. There would be no need for the legislative mandate to the Commission contained in Section 1328(b)(1) if Section 1328(c) is interpreted to mean that hydrant rates are to be reduced to no more than 25% of the cost of service through a natural process, as opposed to Commission intervention. Upper Dublin also maintains that acceptance of the ALJ's recommendation would nullify Section 1328(b)(1) altogether, because that subsection *demands* that the Commission intervene once a general rate case is filed. (Upper Dublin Exc. at 1-5).

The OSBA rejoins that Section 1328(b)(1) is not nullified by the ALJ's recommendation. Rather, it is given full effect after a utility's public fire rate completes the transition period from its current frozen rate to 25% of the cost of service. The OSBA asserts that this becomes very clear when Section 1328 is viewed under the Rules of Statutory Construction. Legislative intent controls with regard to statutory interpretation, and Section 1328's legislative history clearly shows that the legislature intended to cap the public fire rates in effect at that time, if those rates exceeded 25% of the cost of service, and also intended that the freeze on the then-current rates be maintained until those rates fell to 25% or less of the cost of service. The OSBA concludes that there is no time limit on how long the frozen rates may remain in effect, and that Upper Dublin's theory, as outlined above, is not specifically mentioned in Section 1328. (OSBA R.Exc. at 2-6).

Aqua LUG concurs with the OSBA and it also asserts that Upper Dublin's reliance on *PAWC 2002* is misplaced. Aqua LUG states that PAWC argued in that case that a rate modification was appropriate because the proposed rates for the former PG&W service area were the rates then applicable on the effective date of enactment of Section 1328. (Aqua LUG R.Exc. at 2-4).

4. Disposition

On review of the evidentiary record, we reject Upper Dublin's position on this issue. At issue here is a determination of the meaning of Section 1328. Although we reach the same result as the ALJ, we believe that the clarification provided by the OSBA and Aqua LUG is necessary for a complete understanding of the issue.

Upper Dublin asserts that §1328 requires AP to lower fire hydrant rates to an amount no more than 25% of the cost of service. We do not agree with this reading of Section 1328, which would also fail to account for the entirety of those provisions, as well as for the intent of the Legislature. However, we are of the opinion that Section 1328 mandates a freeze of public fire hydrant rates in effect at the time that section of the code became effective (namely, June 30, 1995), if the rates were higher than 25% of the cost of service.

AP proposed to charge Upper Dublin public fire hydrant rates of $25.25 per month per fire hydrant, which equates to 40% of the cost of service. This is the same rate AP has charged Upper Dublin for nearly a decade, having appropriately frozen the rate since the enactment of Section 1328. Clearly, Upper Dublin has received the benefit of the Statute. Upper Dublin, however, now asserts that the freeze was only to apply until the utility's next rate case, and is seeking a $1.8 million reduction.

We conclude that Section 1328(b) and Section 1382(c) must be read in conjunction, and we also conclude that AP's actions are consistent with these Sections, as well as with case law. Additionally, Upper Dublin's reliance upon *PAWC 2002* is misplaced because the actual issue in that case involved PAWC's proposal to reduce the hydrant rates, ranging from $21.57 to $37.75, in newly acquired divisions, to the $20 rate of its Main Division. PAWC's Main Division rate of $20, or 50% of the cost of service, remained frozen when Section 1328 became effective in 1995, and continued as the effective rate at the end of the pendency of *PAWC 2002*.

In *PAWC 2002*, the Commission determined that the Code did not prohibit a reduction in the applicable public fire hydrant rates in light of the fact that the newly established rates would be the rates in existence at the time of the statute's enactment. Unlike the fire hydrant rates at issue in the former PG&W service territory, Upper Dublin's rates are currently set at the level in existence at the time of Section 1328's enactment.

Accordingly, for the above reasons, Upper Dublin's Exceptions on this issue are denied.

X. Quality of Service--Stipulation

White Rock Acres, an acquired territory serving 280 customers in Boiling Springs, Monroe Township, Cumberland County, was the main area in which substantial water quality concerns were expressed by AP customers. (Tr. at 51-134). AP's predecessor, Pennsylvania Suburban Water Company, acquired the White Rock System on November 22, 2002, pursuant to the authority granted at Docket No. A-210104F0019 (October 10, 2002).

Rich Moore, President of the White Rock Acres Civic Association (Association), filed two Formal Complaints, individually and on behalf of the Association, raising these concerns. See R-00038805C009 and R-00038805C0080, respectively. Following the Public Input Hearing on February 23, 2004, representatives of the Association, the OCA and AP engaged in discussions which culminated in the submission of the "Stipulation in Settlement of The Outstanding Complaint of The White Rock Civic Association (Stipulation)," to the presiding officer on April 15, 2004, with copies served on all White Rock Complainants on April 16, 2004.

The Stipulation, which appears in its entirety at pages 116 through 119 of the Recommended Decision and is hereby incorporated by reference, was intended to fully resolve all rate issues and all water and service issues associated with the acquired White Rock territory. AP and the OCA requested that the Stipulation be approved, and the ALJ recommended that the Commission adopt it. (R.D. at 120). A brief summary of the key provisions of the Stipulation is as follows.

First, AP shall make significant plant improvements, specifically, to its Pump Station No. 3, including an emergency generator by June 2004, at a cost of $25,000. AP shall also construct a new well building and install emergency generator connections by September, 2004, at a cost of $160,000 for both projects. (Stipulation, ¶¶ 6-8).

Second, during 2004, AP shall install up to 12 fire hydrants at an estimated cost of $30,000. By the end of calendar year 2005, AP shall install a 250,000 gallon storage tank at an estimated cost of $250,000. (Stipulation, ¶¶ 10-11).

Third, upon completion of the improvements specified in Paragraphs 6-10 of the Stipulation, or January 1, 2005, AP will be allowed to implement the rates specified in Appendix A of the Stipulation on one day's notice. Upon completion of the items specified in Paragraphs 11-12 of the Stipulation, or January 1, 2006, AP will be allowed to implement the rates that are approved for its Main Division Customers. (Stipulation ¶¶ 17-18).

Upon our review of the terms of the Stipulation, we find the Stipulation to be fair, reasonable, in the public interest, and to fairly balance the interests of the parties. We also find that it represents a fair balancing of the interests of the Association and AP. The Stipulation allows for the increase in rates to be delayed until certain improvements are made, or until a specific date. Moreover, AP has responded to the concerns of the Association by explaining the improvements that have been made already, and also by providing a timetable for the proposed improvements. A system has been established, pursuant to the Stipulation, to continue to communicate with the Association and with the residents. (Stipulation ¶¶ 13-16). Specifically, no Party has objected to the Stipulation.

Based upon the foregoing discussion, we approve the Stipulation.

XI. Conclusion

We have carefully reviewed the record as developed in this proceeding, including the ALJ's Recommended Decision and the Exceptions filed thereto. AP initially requested an overall revenue increase of $25,300,000, or about 10.2%. The ALJ recommended an allowable revenue increase in the amount of no more than $8,335,773. (Table 1 attached to the R. D.).

Based on our review, evaluation, and analysis of the record evidence, we conclude that AP is entitled to an opportunity to earn income available for return of $85,472,017. In furtherance of such objective, AP is authorized to establish rates that will produce not in excess of $261,877,106 in jurisdictional operating revenues. The increase in annual operating revenues authorized herein of $13,794,205 is approximately 54.5 % of the $25,300,000 originally sought and an increase of approximately 5.6 % over revenues generated through current rates. The approved cost of common equity of 10.6% is reasonable, appropriate and in accord with the record evidence. As such, the Exceptions filed by the various Parties hereto, are granted or denied, as discussed *supra*. Accordingly, the ALJ's Recommended Decision is adopted only to the extent that it is consistent with this Opinion and Order.

XII. ORDER

THEREFORE; IT IS ORDERED:

1. That the Exceptions filed by Aqua Pennsylvania, Inc., on July 1, 2004, to the Recommended Decision of Administrative Law Judge Cynthia Williams Fordham herein, are granted or denied, consistent with this Opinion and Order.

2. That the Exceptions filed by the Office of Trial Staff on July 1, 2004, to the Recommended Decision of Administrative Law Judge Cynthia Williams Fordham herein, are denied.

3. That the Exceptions filed by the Office of Consumer Advocate on July 1, 2004, to the Recommended Decision of Administrative Law Judge Cynthia Williams Fordham herein, are granted or denied, consistent with this Opinion and Order.

4. That the Exceptions filed by Upper Dublin Township, Montgomery County, on June 24, 2004, to the Recommended Decision of Administrative Law Judge Cynthia Williams Fordham herein, are granted or denied, consistent with this Opinion and Order.

5. That the Recommended Decision of Administrative Law Judge Cynthia Williams Fordham herein, issued on June 16, 2004, is adopted only to the extent that it is consistent with this Opinion and Order, and otherwise rejected.

6. That Aqua Pennsylvania, Inc., shall not place into effect the rates contained in Tariff Water-Pa. P. U. C. No. 30, which have been found to be unjust and unreasonable and therefore, unlawful.

7. That Aqua Pennsylvania, Inc., is hereby authorized to file tariffs, tariff supplements, or tariff revisions containing rates, provisions, rules and regulations, consistent with the findings here, to produce revenues not in excess of $261,877,106.

8. That Aqua Pennsylvania, Inc.'s tariffs, tariff supplements, or tariff revisions may be filed upon less than statutory notice, and pursuant to the provisions of 52 Pa. Code §§ 53.31 and 53.101, may be filed to be effective for service rendered on and after the date of entry of the instant Opinion and Order.

9. That Aqua Pennsylvania, Inc. shall file detailed calculations with its tariff filing, which shall demonstrate to this Commission's satisfaction that the filed rates comply with the proof of revenue, in the form and manner customarily filed in support of compliance tariffs.

10. That Aqua Pennsylvania, Inc. shall comply with all directives, conclusions and recommendations contained in the instant Opinion and Order that are not the subject of individual ordering paragraphs as fully as if they were the subject of specific ordering paragraphs.

11. That the Stipulation in Settlement of the Outstanding Complaint of the White Rock Civic Association, submitted by Aqua Pennsylvania, Inc., the Office of Consumer Advocate and the White Rock Civic Association at Docket No. R-00038805 is hereby approved and incorporated herein by reference as though set forth in full. That Aqua Pennsylvania, Inc. shall allocate the authorized increase in operating revenues for the White Rock System to each customer class and rate schedule within each class in accordance with the Stipulation in Settlement filed in that proceeding, and in the manner prescribed in this Opinion and Order.

12. That Aqua Pennsylvania shall allocate the authorized increase in operating revenue to each customer class and rate schedule within each class in the manner prescribed in this Opinion and Order.

13. That the Formal Complaints filed by: the White Rock Civic Association at Docket No. R-00038805C0080; Richard Moore at Docket No. R-00038805C0009; Arnold Poster at Docket No. R-00038805C0021; John Codner at Docket No. R-00038805C0023; H. Alan Snell at Docket No. R-00038805C0028; Rev. William J. Murphy at Docket No. R-00038805C0032; Ginger Keck at Docket No. R-00038805C0034; Frank Waverka at Docket No. R-00038805C0036; Richard L. Recordon at Docket No. R-00038805C0044; William and Carol Frankland at Docket No. R-00038805C0048; Joseph P. Spielbauer at Docket No. R-00038805C0058; Peter J. Ray at Docket No. R-00038805C0068; and Barbara A. Kase Docket No. R-00038805C0081 are withdrawn.

14. That the Formal Complaint filed by Wendy Eisenhauer at Docket No. R-00038805C0064 has previously been withdrawn and marked closed.

15. That the Formal Complaints filed by: the Office of Consumer Advocate at Docket No. R-00038805C0012; the Aqua Pennsylvania Large Users Group at Docket No. R-00038805C0045; and by the Office of Small Business Advocate at Docket No. R-00038805C0046 are, to the extent that they have not previously been marked closed, sustained, in part, and dismissed in part, consistent with this Opinion and Order.

16. That the Formal Complaints filed by Complainants at Docket Nos. R-00038805C001-08, C0010-11, C013-20, C0022, C0024-27, C0029-31, C0033, C0035, C0037-43, C0047, C0049-57, C0059-63, C0065-67, C0069-79, C-0082-83, C0085 and C0086 are dismissed.

17. That the Petition to Intervene filed by the Office of Trial Staff is granted to the extent consistent with this Opinion and Order, and is otherwise denied.

18. That the Petition to Intervene filed by Upper Dublin Township, Montgomery County, is granted to the extent consistent with this Opinion and Order. That the Formal Complaint filed by Upper Dublin Township, Montgomery County, at Docket No. R-00038805C0084, is dismissed.

19. That the Petition filed by Aqua Pennsylvania, Inc., at Docket No. P-00032025, is denied and dismissed in its entirety.

20. That the Pennsylvania Public Utility Commission's inquiry and investigation in Docket No. R-00038805, *et al.*, is terminated and the record closed.

BY THE COMMISSION,

James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: July 23, 2004

ORDER ENTERED: August 5, 2004

AG DR Set 1-209 Attachment A

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held December 2, 2004

Commissioners Present:

Wendell F. Holland Chairman
Robert K. Bloom, Vice Chairman, Partial Dissenting Statement attached
Glen R Thomas
Kim Pizzingrilli

Pennsylvania Public Utility Commission	:	R-00049255
U.S. Department of Defense & Federal Executive Agencies	:	R-00049255C0001
PPL Industrial Customer Alliance	:	R-00049255C0002
Office of Small Business Advocate	:	R-00049255C0003
Office of Consumer Advocate	:	R-00049255C0004
Anthony J. Graziano	:	R-00049255C0005
Brenda Hoover	:	R-00049255C0006
Eric Joseph Epstein	:	R-00049255C0007
Victoria K. Mackin, et al.	:	R-00049255C0008
Cheryl & Jeremy Ebert	:	R-00049255C0009
Martha Wells	:	R-00049255C0010
Margaret M. Stuski	:	R-00049255C0011
Wal-Mart Store East, LP.	:	R-00049255C0012
Pennsylvania Energy Consortium	:	R-00049255C0013
Donald F. McGarrigle	:	R-00049255C0014
Curvin L. Snyder	:	R-00049255C0015
William J. Junkin, III	:	R-00049255C0016
Philip A. Trump	:	R-00049255C0017
Pennsylvania Retailers Association	:	R-00049255C0018
Christy Meyers	:	R-00049255C0019
Steven P. Carlyle	:	R-00049255C0020

v.

PPL Electric Utilities Corporation

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OPINION AND ORDER

BY THE COMMISSION:

Before the Commission are the Recommended Decision of Administrative Law Judge (ALJ) Allison K. Turner issued October 22, 2004, and the Exceptions filed thereto. Citizens for Pennsylvania's Future (PennFuture) filed its Exceptions on November 10, 2004. Exceptions were filed on November 12, 2004, by Commercial Customer Consortium (CCC), Commission on Economic Opportunity (CEO), Eric Joseph Epstein (Mr. Epstein), Office of Consumer Advocate (OCA), Office of Small Business Advocate (OSBA), Office of Trial Staff (OTS), PPL Electric Utilities Corporation (PPL), PPL Industrial Customer Alliance (PPLICA), PPL Public Lighting User Group (PLUG), and Sustainable Energy Fund of Central Eastern Pennsylvania (SEF). Replies to Exceptions were filed by the OCA, OSBA, OTS, CCC, SEF, PPLICA, PennFuture, PLUG, and PPL on November 22, 2004.

VIII. RATE OF RETURN

A. Capital Structure

1. Summary

The Capital Structure recommendations submitted by the Parties in this proceeding are summarized in the following table:

Capital Type	**PPL (1) (%)**	**OCA (2) (%)**	**OTS (3) (%)**
Short-term Debt	0.00	0.00	0.00
Long-term Debt	51.30	51.59	51.30
Preferred Stock	1.83	1.85	1.83
Common Equity	46.87	46.56	46.87
Total	***100.00***	***100.00***	***100.00***

(1) PPL St. 9, Exh. PRM-1, Sch. 1.
(2) OCA St. 3, Sch. MIK-1 at 1.
(3) OTS St. 1, Exh. 1, Sch.1.

2. Positions of the Parties

PPL's proposed capital structure reflects the estimated balances of long-term debt, preferred stock and common equity at the end of the future test year, December 31, 2004. The OTS accepted PPL's proposed capital structure.

The OCA argued that the common equity component of the capital structure be reduced from 46.87% to 46.56%. This adjustment removes PPL's addition of $15 million to retained earnings at the future test year's end. According to the OCA, the $15 million addition is inappropriate and contrary to PPL's own cash flow statements which show that PPL's retained earnings have declined over the past two years. The OCA's reservations concerning the addition of $15 million to equity capital, center on the need to finance future construction projects out of earnings. (OCA M.B. at 48-49).

PPL counters that the OCA did not make any examination of the expenses incurred during 2002 and 2003 to determine whether abnormal expenses were incurred which would cause PPL to retain less than $15 million in retained earnings (PPL M.B. at 74-75).

3. ALJ Recommendation

The ALJ recommended adoption of the OCA proposed capital structure, reasoning that PPL will not be able to build up or retain the level of retained earnings that it is claiming. (R.D. at 100).

4. Exceptions

In its Exceptions, PPL rejoins that the evidence of record indicates that its retained earnings, net of $2 million in dividends, increased by $34 million in the first half of 2004, which would be more than enough to justify its position that retained earnings would increase by $15 million for the entire year.

PPL contends that the ALJ did not understand its claim. Specifically, PPL contends that the ALJ concluded that the $15 million should not be added to the test year retained earnings balance because "PPL may not be able to build up or retain a high level of retained earnings in the future." PPL rejoins that this contention was not made by any party. PPL continues that there is no evidence to suggest that its retained earnings will decline after 2004. (PPL Exc. at 11-12).

The OCA rejoins that the ALJ correctly found that there is no historical precedent to this claim. The OCA argues further that 2004 retained earnings bear no relationship to retained earnings in 2005. (OCA Reply Exc. at 10-11).

5. Disposition

The resolution of this issue turns on a determination of whether PPL would be able to retain the $15 million of retained earning that it is projecting to add at the end of the future test year, December 31, 2004. Our review of the evidence of record leads us to adopt the capital structure recommended by PPL and accepted as reasonable by OTS. The difference in capital structure ratios is a PPL projection of an increase in retained earnings for the future test year of $15.071 million ($318.762 million - $303.691 million). We reject the contention that the estimate of retained earnings of $15.071 million in retained earnings is unattainable.

PPL has demonstrated that for the first 6 months of 2004, its earnings available for common equity were $36 million, with dividend payments for that time period of $2 million for a net of $34 million for retained earnings. We find that it is reasonable to expect that PPL's projected increase in retained earnings for 2004 of $15 million is attainable. The OCA's arguments do not rise to a level that would persuade us otherwise, particularly in light of the 6-month data provided by PPL.

Although the OCA's proposed adjustment arises from its concerns regarding PPL's need to finance future construction projects from earnings, the OCA's testimony in support of its proposed equity return appears to fly in the face of this position. Specifically, the OCA proffered the following testimony in support of its 9.5% return on equity recommendation:

> I agree that the ability to fund construction is important, and the Company's cash flow appears adequate in that regard. The construction estimates cited by [PPL witness] Mr. Moul appear to be a slight reduction from PPL's actual construction outlays in 2002 and 2003.

(OCA St. No. 3 at 21).

***

> Cash flow from operations adjusted for earnings of $17 million (i.e. 9.5 percent ROE) clearly is strong and can finance construction. Moreover, cash flow coverage appears to be more than sufficient to meet the 3.0 x to 3.1 xs,

> standard cited by Ms. Cannell. For example, the *pro forma* 2003 results, at a 9.5 percent R.O.E. would provide a cash flow coverage of nearly 4.0x.

(OCA St. No. 3 at 21).

Additionally, we find that the projected increase in revenues resulting from the instant proceeding will contribute to PPL's ability to retain an additional $15 million in earnings. Accordingly, we grant the Exceptions of PPL and reverse the finding and recommendation of the ALJ on this issue.

B. Cost of Debt and Cost of Preferred Stock

PPL's proposed cost rate for preferred stock is 6.43 %. The long-term debt cost rate proposal is 6.19 %. (R.D. at 101, *citing* PPL Exh. PRM 1 at 1). No party contested these rates. The ALJ recommended that the Commission accept the rates proposed by PPL. (R.D. at 101). No Exceptions were filed to this issue. Finding the Recommendation of the ALJ to be reasonable, we adopt it without further comment.

C. Cost of Common Equity

1. Overview

Although there are various models used to estimate the cost of equity, the Commission favors the popular Discounted Cash Flow (DCF) Model. The DCF model assumes that the market price of a stock is the present value of the future benefits of holding that stock. These benefits are the future cash flows of holding the stock, i.e., the dividends paid and the proceeds from the ultimate sale of the stock. Because dollars received in the future are worth less than dollars received today, the cash flow must be "discounted" back to the present value at the investor's rate of return.

2. Summary

The ALJ proffered the following table which summarizes the cost of common equity claims made, and methodologies used by the parties in this proceeding:

	DCF	**Risk Premium (RP)**	**Capital Asset Pricing Model (CAPM)**	**Compar-able Earnings**	**Reasonable Range**	**Point Recommendation**
PPL (1)	10.69%(E) to 11.22%(NG)	11.75% (E & NG)	10.71% (E) to 11.22%(NG)	14.25%	11.0% to 11.75%	11.50%
USDOD (2)	9.3% to 10.26%	10.44%	11.00%	None	10.25% to 11.0%	10.75%
OCA (3)	8.5% to 9.5%	None	9.1% to 10%	None	8.5% to 9.5%	9.5%
OTS (4)	8.76% to 9.07%	None	None	None	8.75% to 9.0%	9.0%

(1) PPL Statement No. 9 (2) USDOD Statement No. 2 (3) OCA Statement No. 3 (4) OTS Statement No. 1
(E) Electric Company Barometer Group (NG) Natural Gas Company Barometer Group

3. Positions of the Parties

PPL applied four different market based models to two barometer groups; one consisting of electric companies and another consisting of natural gas companies to arrive at a common equity return claim of 11.50%. PPL's electric barometer group consists of nine electric companies with the following common characteristics: (1) listed in the Electric Utility (East) Section of the *Value Line Investment Survey* (*Value Line*); (2) stock is traded on the New York Stock Exchange (NYSE); (3) operate in either the Northeastern or Southeastern region of the United States; (4) not currently the target of a takeover or acquisition; and (5) do not have a significant amount of unregulated electric generation. PPL's gas barometer group consists of companies that have the following common characteristics: (1) listed in the Natural Gas Distribution Section of the *Value Line Investment Survey*; (2) listed on the NYSE; (3) operations in the Northeastern or Southeastern region of the United States; and (4) not currently the target of a takeover or acquisition. (PPL Statement No. 9 at 12-13)

PPL was the only party to use a gas barometer group in this proceeding. PPL argued that it was necessary to use a gas utility barometer group to account for the element of circularity in the DCF method. Specifically, PPL argued that investors' expectations depend on regulatory decisions. In turn, says PPL, regulators depend on investor expectations to make those decisions. (PPL M.B. at 76)

For its electric company barometer group, PPL calculated a six-month average dividend yield of 4.61% adjusted to 4.75% for expected dividend growth. Then PPL added a growth rate of 5.5% based on analysts' projections of earnings growth. This computation resulted in an unadjusted DCF rate of 10.25%. PPL then added a financial risk adjustment of 44 basis points (.44%) to adjust for what it states is an understatement of the allowed return on equity resulting from market prices exceeding book value of the barometer group. This calculation resulted in a risk adjusted DCF return of 10.69% for the electric company barometer group.

For its gas company barometer group, PPL calculated a six-month average dividend yield of 4.18% unadjusted for expected dividend growth. Then, PPL added a growth rate of 6.25% based upon analysts' projections of earnings growth. This computation resulted in an unadjusted DCF rate of 10.43%. PPL added a financial risk adjustment of 79 basis points (.79%) to the unadjusted DCF rate. This calculation resulted in a risk adjusted DCF return of 11.22% for the gas company barometer group. Thus, PPL's DCF range, adjusted to reconcile the divergence between the market and book value of its common equity, is from 10.69% to 11.22%.

For its Risk Premium (RP) computation, PPL used an average prospective yield of 7.25% on an A rated public utility bond based on *Blue Chip Financial Forecasts*. PPL then calculated the risk premium of 4.50% based upon the average risk premiums earned by the Standard and Poor's (S&P) utilities' stock over the utility bonds for the periods 1928-2003, and 1974-2003. Adding the prospective dividend yield to the risk premium yields results in an RP equity return of 11.75%.

Since PPL's equity cost range extends from the low end of the DCF range of 10.69% to the RP return of 11.75%, and the Capital Asset Pricing Model (CAPM) and Comparable Earnings returns fall within that range, PPL argued that an equity return well in excess of the 10.6% granted in the Commission's most recent litigated case, *Pennsylvania Public Utility Commission v. Aqua Pennsylvania, Inc.*, Docket No.
R-00038805, (Order entered August 5, 2004) (*Aqua)*,[1] is appropriate. Based upon the foregoing discussion PPL claims a return on equity of 11.50% in this proceeding.

The USDOD applied the DCF, RP and CAPM methods to the same electric company barometer group used by PPL. For its DCF calculation, the USDOD arrived at a 12-month dividend yield of 4.51%. For the growth rate component, the USDOD eliminated one company, CH Energy Group, from consideration to calculate a range of growth rates from 4.6% to 5.5%. The USDOD then uses the growth rate range to arrive at an average expected dividend yield over the next twelve months. This, according to the USDOD, results in a DCF cost of equity range from 9.30% to 10.26%.

The USDOD calculated an RP return of 10.44%. The calculation was based upon a dividend yield of 5.21% based upon the yield to maturity of 20-year treasury bonds. The risk premium of 5.23% was calculated using the income return series.

The USDOD equity return recommendation of 10.75%, was computed by considering the average of the DCF, RP and CAPM returns which is 10.72%. The USDOD used the high side of the DCF analysis of 10.26% as the low side of its equity range. The CAPM result of 11.0% was considered the high side of the range. The USDOD urged that a return on equity not exceed the upper limits of this range. The USDOD opined that since the lower end of its reasonable range is the DCF calculation, the financial risk adjustment is unnecessary. (USDOD St. No. 2).

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[1] *See also, Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company,* docketed at R-00016339 (Order entered January 16, 2004.) *(PAWC)*.

The OCA's electric company barometer group consisted of 8 companies, 7 of which also were included in the electric company barometer groups used by PPL and the USDOD. The common characteristics of the OCA's barometer group were as follows: (1) inclusion in the *Value Line* Utility East data base; (2) primary operation as electric delivery service utility; and (3) operation in retail access states. (OCA St. No. 3 at 26).

The OCA applied the DCF and the CAPM methods to its barometer group. For its DCF calculation, the OCA calculated a 6-month dividend yield of 4.86% adjusted for a half year dividend growth to 5.0%. For the growth component, the OCA used analysts' earnings projections to arrive at a range between 3.5% and 4.5%. The OCA's DCF recommendation was 9.5%, the upper end of its DCF range of 8.5 to 9.5%. The OCA chose the upper end of its range due to recent upward movements in interest rates. The OCA did not adjust its DCF result for financial risk. (OCA St. No. 3 at 30).

The OCA used the CAPM method to test the reasonableness of its DCF calculation. The OCA's CAPM calculation resulted in a range of 9.1% to 10.0%. The OCA commented that its CAPM result confirmed the reasonableness of its DCF calculation. The OCA's cost of equity recommendation is 9.5% based on the foregoing calculations.

The OTS was the only party in the proceeding to rely exclusively on an unadjusted DCF result for its equity cost recommendation. The OTS used two barometer groups: (1) a six-electric-company barometer group; and (2) a nine-company group which consisted of the companies in the group used by PPL and the USDOD, but excluded companies that did not have at least two sources of analysts' forecasts of earnings growth. The OTS applied the DCF method to its two barometer groups and PPL.

The OTS calculated dividend yields that were the average of spot yields as of May 21, 2004, and fifty-two-week average dividend yields. The average dividend yields, calculated by the OTS, were as follows: 5.02% for the six-company electric barometer group; 4.83% for the nine-company barometer group; and 4.05% for PPL. The OTS then averaged the growth rate estimates of several publications to arrive at growth rates of 3.9% for the six-company barometer group, 3.65% for the nine-company barometer group and 4.90% for PPL.

The OTS calculations resulted in equity returns of 8.84% to 9.0% for the six company barometer group, 8.40% to 8.55 % for the nine-company barometer group and 8.84% to 9.06% for PPL. These calculations become the basis for the OTS DCF-based recommendation of 9.0% for the cost of common equity.

4. ALJ Recommendation

Based on her review, evaluation and analysis of the evidentiary record, the ALJ recommended adoption of USDOD's DCF calculation of 10.25%. This result was not adjusted for financial risk. The ALJ opined that the Commission was not bound by its action in *Aqua* to consider different methods than DCF. Specifically, the ALJ states as follows:

> The ALJ does not read *Pa American* and *Aqua Pa* to hold that the DCF result should be adjusted automatically and inclusively by the ALJ to a cost rate that one or more parties argue to be desirable and correct, or that the cost of equity should be a composite of the DCF and other methods such as R/P or CAPM.

(R.D. at 113).

The ALJ found that adoption of USDOD'S DCF method and result seemed to include enough risk factors to reduce the disparity so as to produce a result that does not require a financial risk adjustment. (R.D. at 121).

5. Exceptions

In its Exceptions, PPL argues that the ALJ erred in using an unadjusted DCF return of 10.25%, which did not include a specific financial risk adjustment. PPL continues that the unadjusted USDOD recommendation of 10.25%, which the ALJ recommended, attempts to ameliorate the financial risk by recommending the higher end of its growth rate range. PPL argues that this approach does not adequately account for financial risk.

PPL continues that in both *Aqua* and *PAWC,* the Commission allowed an equity return of 10.6%. PPL argues than in light of rising interest rates since the issuance of those previous rate orders, an equity return allowance of 10.25% is clearly inadequate. (PPL Exc. at 6-8).

The OCA rejoined that its recommended equity return of 9.5% is adequate because it meets the expectations of the capital market. The OCA continued that its CAPM calculation confirms the reasonableness of its recommendation.

The OCA labels the financial risk adjustment as unsupported. The OCA argues further that PPL overstated the difference between market and book capital structure, and that the comparison is different from that performed in *PAWC* or *Aqua.*
(OCA R.Exc. at 4-10). The OTS argues that the facts in *PAWC* and *Aqua* are distinguishable from those in the case before us and neither case can be relied upon for guidance in this matter. (OTS R.Exc. at 12-14).

In its Exceptions the OCA argues that the ALJ erred in adopting the DCF recommendation of 10.25% of the USDOD. The OCA argues that the USDOD's growth rate of 5.5% is inflated. Specifically, the OCA argues that both PPL and USDOD mistakenly use a 16% growth rate for PEPCO holdings. This figure, says the OCA, is anomalous because of PEPCO's merger with Conectiv Energy (Conectiv) in August 2002.

The OCA continues that the 16% growth rate is anomalous because *Value Line* included no dividend for the year 2001 for PEPCO, due to the impending merger with Conectiv, and this understated the dividend received by shareholders in 2002. The OCA submits that due to the *Value Line* calculation, the average growth rate should be 3.3% and not 5.5%. Thus, the OCA maintains that its equity return recommendation of 9.5% is appropriate. (OCA Exc. at 20-25). PPLICA, in its Exceptions, supported the OCA recommendations. (PPLICA Exc. at 12).

PPL rejoins that a growth rate of 5.5% is not anomalous or overstated due to the *Value Line* calculation. PPL continues that a growth rate of 5.5% should be adopted as part of the DCF return. PPL argues that a recommendation on the high end of the growth rate range is reasonable due to high interest rates. PPL continues that the same *Value Line* projection, criticized by the OCA and the OTS, contained a dividend growth rate of (-4%) for Duquesne Light Company. PPL contends that it is the purpose of a barometer group to smooth out aberrations in data.

PPL argues, as well, that the Commission should not rely on unadjusted DCF findings. PPL continues that the DCF calculations understate the cost of equity when market price exceeds book value. (PPL R.Exc. at 2-6).

In its Exceptions, the OTS also discusses the data used by PPL and the USDOD to calculate the growth rate of 5.5%. The OTS also argued that the *Value Line* data and methods produced distorted results. (OTS Exc. at 23-24).

PPL addressed this issue in its Replies to the OCA Exceptions. The discussion will not be repeated. We note, further, that although the USDOD was an active participant in this proceeding, particularly in the equity return deliberations, it did not file Exceptions.

6. Disposition

As noted previously, we have primarily relied upon the DCF methodology in arriving at our determination of the proper cost of common equity. The ALJ interpreted our previous actions in *PAWC* and *Aqua* as not compelling the use of other methods such as RP and CAPM to form an equity return based upon a composite of the DCF and other methods. We agree with the ALJ insofar as these prior actions do not compel the use of methods in addition to the DCF method. However, we conclude that methods other than the DCF can be used as a check upon the reasonableness of the DCF derived equity return calculation. We note that all of the parties in this proceeding with the exception of the OTS have done so. We will also use the results of the CAPM and RP methods as a check of the reasonableness of our DCF calculation.

At the outset of our discussion, we agree with the ALJ's determination that the use of a natural gas proxy group in this proceeding is inappropriate. Accordingly, we gave no consideration to the calculations resulting from its use. We reach this conclusion for several reasons.

First, all of the parties in this proceeding were able to identify a base group of electric companies suitable for use as a proxy group. As previously noted, PPL and the USDOD used identical electric company barometer groups. We observe that the barometer groups used by the OCA and the OTS contain many of the same companies used by PPL and the USDOD, although individual companies were rejected by the witnesses for a variety of reasons. Therefore, we find that a sufficient base group of electric companies exists to create a reliable proxy group.

Next, we find that PPL has not presented a persuasive argument to support its assertion that the use of a gas company barometer group eliminates a circularity problem defined as investors trying to determine what regulatory commissions will do while the regulatory commissions are trying to determine what investors will require. We find further that PPL's Exceptions do not offer a convincing argument or evidence to refute the ALJ's finding that use of a gas proxy group does not address the circularity problem it envisions, or that the circularity problems exist to the extent that PPL alleges.

Finally, we find that PPL has not presented convincing evidence that the gas industry is sufficiently similar to the electric industry to be considered a reliable proxy. We find that PPL has failed to show the electric and natural gas industries are sufficiently similar that investors would expect the same equity return for both gas and electric companies.

Based upon our analysis and review of the record evidence, the Recommended Decision and the Exceptions and Replies thereto, we reject the ALJ's recommendation to adopt of the unadjusted DCF return of 10.25% calculated by the USDOD. Although we find the 10.25% figure to be a good starting point, it does not reflect the financial risk resulting from the divergence between the market and book value of PPL's common equity.

As discussed previously herein, PPL also calculated an unadjusted DCF equity return of 10.25% using the same electric company barometer group as the USDOD. After PPL added the adjustment of 44 basis points for financial risk, its DCF return increased to 10.69%.

We recognize that the PPL estimate of an appropriate DCF growth rate of 5.5 % is at the high end of the array of growth rates offered by all parties of record. However, we conclude that the high end of the growth rate range is justified at this time due to the current uncertainties surrounding electric distribution companies.

We agree with PPL's Reply Exceptions that the *Value Line* growth rate calculations used by both the USDOD and PPL witnesses are not anomalous and can be relied upon in a calculation of a reasonable growth rate. PPL's point is well taken that the purpose of a barometer group is to smooth out aberrations in data. We find no rational basis for ignoring the PEPCO growth rate of 16 % while considering the negative Duquesne growth rate of -4%.

We also agree with PPL's contention that it is appropriate to use the higher end of the growth rate range, in light of the fact that electric distribution companies are relatively new entities and there have been few rate allowances for such companies due to Transmission and Distribution (T&D) rate caps. We find it likely that current earnings projections reflect a conservative approach to future growth rates. In recognition of this depressing effect on DCF results, we agree that the 5.5 % growth rate as proposed by PPL, at the high end of the growth rate range, is appropriate at this time.

We found that the dividend yield rate of 4.75 % as embodied in the PPL Electric Proxy Group DCF estimate is reasonable. This rate is within the range of dividend yield estimates offered by all parties of 4.75 % to 5.00%. This yield has been recommended by PPL and the USDOD witness and has been accepted by the ALJ in her recommended decision. The 4.75 % dividend yield represents a conservative estimate of those presented within the DCF analysis of the parties offering an equity return recommendation.

We find it reasonable that a financial risk adjustment, as proposed by PPL, is necessary to compensate PPL for the mismatched application of a market based cost of common equity to a book value common equity ratio. The adjustment is necessary because the DCF method produces the investor required return based on the current market price, not the return on the book value capitalization.

PPL has demonstrated that the market value of the equity in its Electric Company Proxy Group's capitalization is much higher than its equity book value capitalization. At PPL Statement 9, Appendix E, PPL depicts the comparison of capital structure ratios based on market value and on book value:

	Electric Group	
	Market Value %	Book Value %
Long Term Debt	46.81	52.19
Preferred Stock	3.39	4.42
Common Equity	49.79	43.38
	100.00	100.00

Book value equity capitalization (43.38%) is used for rate setting purposes whereas market based cost of equity estimates are derived from DCF analysis that reflects a different level of financial risk (49.79% common equity). This creates a mismatch between the financial risk on which the DCF return on equity capital is based and the financial risk embodied in rate setting (book value capitalization). This results as the capitalization of a utility measured at its market value contains relatively less debt than the capitalization measured at its book value when market price is above book value.

The capital structure ratios measured at the book value show more financial leverage (debt) and, therefore, higher risk than the capitalization measured at its market value. It is then necessary to adjust the market based DCF results to reflect the higher financial risk of the book value capital structure used for rate setting purposes.

We note that the USDOD recognized that when market price exceeds book value, the constant growth DCF model is less reliable as growth in earnings, and dividends and book value are less likely to be equal under this circumstance. This is a key assumption of the constant growth DCF model. (USDOD Statement No. 2 at 14).

We agree with the USDOD that investors purchasing stock at market prices greater than book value are at greater risk that the price will actually decline in the near future to approach book value, and increasing the risk that growth rates in earnings, dividends and book value will diverge from each other.

Based upon the foregoing discussion, we conclude that a financial risk adjustment to the market derived DCF return of 10.25% for PPL's Electric Company Proxy Group is appropriate at this time. This places the DCF return on a constant basis with the greater financial risk inherent in PPL's book value derived capital structure ratios. Accordingly, we adopt the 45 basis point adjustment for increased financial risk offered by PPL as reasonable at this time.

Those returns indicated by alternative, standard cost-estimation techniques provide additional measures so as to test the reasonableness of our DCF based cost of equity capital rate of 10.70% (10.25 + .45 for financial risk). The PPL CAPM study produces a 10.70% return rate for its Electric Company Proxy Group. A USDOD CAPM study estimates an appropriate equity return of 11.00%. The USDOD risk premium result is 10.44%. The OCA estimates a CAPM rate range of 9.0 to

10.0%. Additionally, PPL has presented a Risk Premium analysis that indicates an appropriate return on equity for its electric proxy group of 11.75%.

Based upon the evidence of record, we find a range of reasonableness from 10.25% to 11.0%. We further find that within that range, a cost of common equity of 10.70 % is reasonable, appropriate and in accord with the record evidence. As such, we will use this figure for our determination of the cost of common equity in this proceeding.

The following table summarizes our determinations concerning PPL's capital structure, cost of debt, cost of preferred stock, and cost of common equity, as well as the resulting weighted costs and overall rate of return:

Capital Structure	Ratio	Cost Rate	Weighted Cost
	%	%	%
Debt	51.30	6.43	3.30
Preferred Stock	1.83	6.19	.11
Common Equity	46.87	10.70	5.02
	100.00		8.43

Accordingly, the Exceptions of PPL are granted to the extent consistent with the foregoing discussion, and otherwise denied. The Exceptions of the OCA, the OTS and PPLICA on this issue are denied.

XIII. CONCLUSION

For the reasons discussed above, we will adopt the Recommended Decision of Administrative Law Judge Allison K. Turner as modified by, and consistent with the foregoing Opinion and Order; **THEREFORE,**

IT IS ORDERED:

1. That the Exceptions of the Citizens for Pennsylvania's Future, Commercial Customer Consortium, Eric Joseph Epstein, Office of Consumer Advocate, Office of Small Business Advocate, PPL Industrial Customer Alliance, PPL Public Lighting User Group, and Sustainable Energy Fund of Central Eastern Pennsylvania are denied, consistent with this Opinion and Order.

2. That the Exceptions of the Commission on Economic Opportunity, Office of Trial Staff, and PPL Electric Utilities Corporation are granted in part, and denied in part, consistent with this Opinion and Order.

3. That the Recommended Decision of Administrative Law Judge Allison K. Turner is adopted as modified by this Opinion and Order.

4. That the Complaints docketed at R-00049255C0001 to R-00049255C0020 are hereby granted or denied to the extent consistent with this Opinion and Order and shall be marked closed.

5. That the Petitions to Intervene filed by the International Brotherhood of Electrical Workers, Local 1600; West Penn Power Company d/b/a Allegheny Power; and PECO Energy Company are hereby dismissed.

6. That PPL Electric Utilities Corporation shall not place into effect the rules, rates and regulations contained in Supplement 38 to Tariff Electric-Pa. P. U. C. No. 201, the same having been found to be unjust and unreasonable and therefore, unlawful.

7. That PPL Electric Utilities Corporation is hereby authorized to file tariffs, tariff supplements or tariff revisions containing rates, rules and regulations, consistent with this Opinion and Order, to produce annual operating distribution system revenues not exceeding $661,815,964 on a Pennsylvania jurisdictional basis.

8. That PPL Electric Utilities Corporation is authorized to establish a Transmission Service Charge, and the Transmission Service Charge rate shall be initially set at $0.00564 per kWh for services as set forth in the tariff, and shall be applicable to transmission services purchased by PPL Electric Utilities Corporation from PJM under the OATT to provide service to its POLR customers and others requiring the service.

9. That assessment of interest on Transmission Service Charge overcollections and undercollections shall be calculated at the statutory rate provided for in 66 Pa. C.S. § 1308.

10. That PPL Electric Utilities Corporation shall modify its proposed Tariff Rule 5A consistent with this Opinion and Order.

11. That PPL shall continue funding the Sustainable Energy Fund as part of its distribution rates at its current level of 0.01 cents per kWh from all customers through December 31, 2005, and thereafter, at the rate of 0.005 cents per kWh until December 31, 2006. At that time, the funding of the Sustainable Energy Fund through distribution rates shall cease.

12. That if a subsequent base rate case has not been concluded on or before December 31, 2006, PPL Electric Utilities shall institute a negative State Tax Adjustment Surcharge designed to exclude funding from the Sustainable Energy Fund as provided above.

13. That consistent with the Commission Order in *PPL's Universal Service and Energy Conservation Plan Submission in Compliance with 52 Pa. Code § 54.74*, Docket No. M-00031698, entered June 13, 2003, PPL Electric Utilities shall revise the eligibility criteria of its Customer Assistance Program, OnTrack, to be consistent with the definition of a low income payment troubled customer at 52 Pa. Code § 54.72.

14. That consistent with Ordering Paragraph 13 above, PPL shall remove the $150 arrearage and the $150 subsidized housing criterion currently required for OnTrack eligibility.

15. That PPL Electric Utilities Corporation tariffs, tariff supplements and/or tariff revisions may be filed on less than statutory notice, and pursuant to the provisions of 52 Pa. Code §§ 53.1, *et seq*., and 53.101, may be filed to be effective for service rendered on and after January 1, 2005.

16. That PPL Electric Utilities Corporation shall file detailed calculations with its tariff filing, which shall demonstrate to the Commission's satisfaction that the filed tariffs and adjustments comply with the provisions of this Opinion and Order.

17. That PPL Electric Utilities Corporation shall allocate the authorized increase in operating revenue to each customer class and rate schedule in the manner prescribed in this Opinion and Order.

18. That PPL Electric Utilities Corporation shall not include language in its tariff that establishes a Distribution System Improvement Clause.

19. That PPL Electric Utilities Corporation shall comply with all directives, conclusions, and recommendations contained in the body of the ALJ Recommended Decision, which are not the subject of an individual directive in these ordering paragraphs, as fully as if they were the subject of a specific ordering paragraph.

20. That, upon Commission approval of the tariffs filed in compliance with this Opinion and Order, these proceedings at R-00049255 shall be marked closed.

BY THE COMMISSION,

James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: December 2, 2004

ORDER ENTERED: December 22, 2004

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held February 8, 2007

Commissioners Present:

Wendell F. Holland, Chairman
James H. Cawley, Vice Chairman, Concurring and Dissenting Statement attached
Kim Pizzingrilli
Terrance J. Fitzpatrick

Pennsylvania Public Utility Commission,
Office of Small Business Advocate, Office of
Consumer Advocate, Mary Kay Gummo,
Michael Blake

v.

PPL Gas Utilities Corporation

R-00061398
R-00061398C0001
R-00061398C0002
R-00061398C0003
R-00061398C0004

OPINION AND ORDER

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BY THE COMMISSION:

Before the Commission for consideration and disposition is the Recommended Decision of Administrative Law Judge (ALJ) Angela T. Jones issued on December 8, 2006, in the above captioned general rate increase proceeding involving the PPL Gas Utilities Corporation (PPL Gas or the Company). Also before the Commission are the Exceptions and Reply Exceptions filed thereto.

Exceptions to the Recommended Decision were filed on January 3, 2007, by the following Parties: PPL Gas, the Office of Consumer Advocate (OCA), the Office of Trial Staff (OTS) and the Commission on Economic Opportunity (CEO).

The following Parties filed Reply Exceptions on January 12, 2007: PPL Gas, the OCA, the OTS, the Office of Small Business Advocate (OSBA), CEO and the PPL Gas Large Users Group (PGLUG).

I. HISTORY OF THE PROCEEDING

On April 27, 2006, PPL Gas filed Supplement No. 11 to Tariff – Gas Pa. P.U.C. No. 3 (Supplement No. 11) with the Pennsylvania Public Utility Commission (Commission) to become effective July 1, 2006. Through Supplement No. 11, PPL Gas proposed increases in rates calculated to produce $12,813,000 (6.2%) in additional annual revenues. PPL Gas provided twelve volumes of supporting data including eight statements of witnesses' testimony to comply with the Commission's rate case filing requirements by natural gas public utility companies.

By Order entered June 22, 2006, the Commission instituted an investigation into the lawfulness, justness and reasonableness of the proposed rate increase. Pursuant to Section 1308(d) of the Public Utility Code (Code), 66 Pa. C.S. § 1308(d), Supplement

No. 11 was suspended by operation of law until February 1, 2007, unless otherwise permitted by Commission Order to become effective at an earlier date. In addition, the Commission ordered that the investigation include consideration of the lawfulness, justness and reasonableness of the Company's existing rates. The matter was assigned to the Office of Administrative Law Judge (OALJ) for hearings to culminate in the issuance of a Recommended Decision. In accordance with the Commission's Order, the matter was assigned to ALJ Angela T. Jones.

The following entities and individuals filed Formal Complaints: the OSBA, the OCA, Ms. Mary Kay Gummo,[1] and Mr. Michael Blake.[2] PPL Gas timely answered all Complaints.

The following entities filed Petitions to Intervene which were granted: the CEO, Transcontinental Gas Pipe Line (Transco), the Hess Corporation (Hess), and PGLUG. PPL Gas objected to the CEO's Petition to Intervene; however, the ALJ overruled the objection finding CEO's interest germane to the proceeding to further the public interest. On July 13, 2006, the OTS filed its Notice of Appearance.

A Notice dated June 29, 2006, scheduled an initial telephonic Prehearing Conference for July 18, 2006. By Order issued July 5, 2006, the ALJ set forth requirements for participating in the Prehearing Conference which, among other things, included submitting a prehearing memorandum proposing a procedural schedule. Prior to convening the Prehearing Conference, prehearing memoranda were submitted by the Company, the OSBA, the OCA, Hess, Transco, the CEO, and PGLUG.

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[1] Although Ms. Gummo filed a Formal Complaint, she did not participate in any stage of the proceeding.

[2] Mr. Blake complained that the rates charged by PPL Gas are higher than the current wholesale price of natural gas. On October 17, 2006, PPL Gas filed an Answer to the Complaint requesting that the Complaint be denied because the purchased gas costs are recovered pursuant to Section 1307(f) of the Code, 66 Pa. C.S. § 1307(f), in a separate proceeding.

A telephonic Prehearing Conference was held as scheduled on July 18, 2006. The following entities participated: the Company, Hess, Transco, the OTS, the OCA, the OSBA, PGLUG, and the CEO. During the Prehearing Conference, the OCA's modifications to discovery rules were granted. The Parties agreed to one public input hearing and an evidentiary hearing schedule. All of the substantive actions and agreements at the Prehearing Conference were confirmed through the Procedural Scheduling Order issued on July 19, 2006. On July 21, 2006, the ALJ issued special instructions to the Parties regarding Briefs and Exceptions in major rate proceedings.

A public input hearing was held in the Potter County Courthouse in Coudersport, Pennsylvania on August 16, 2006. Approximately forty persons attended, and seven witnesses presented sworn testimony.

Evidentiary hearings were held in this matter in Harrisburg on September 25, and 29, 2006, with PPL Gas, the OTS, the OCA, the OSBA, PGLUG and Transco participating.[3] PPL Gas, the OTS, the OCA and the OSBA, presented witnesses and exhibits. On September 29, 2006, the evidentiary record to the proceeding was closed.

PPL Gas, the OCA, the OTS, the OSBA, PGLUG and Transco filed Main Briefs. Reply Briefs were filed by all of the aforementioned parties except Transco. Both Main and Reply Briefs were filed in accordance with the established schedule.

By Recommended Decision issued December 8, 2006, ALJ Jones rejected the Company's Supplement No. 11 finding it to be unjust and unreasonable and recommended that PPL Gas file tariffs which produce revenues not in excess of $7,678,000. The ALJ also dismissed the Complaints filed by Ms. Mary Kay Gummo and Mr. Michael Blake.

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[3] Due to agreements between the Parties, the evidentiary hearing scheduled for September 28, 2006 was canceled.

On December 13, 2006, PPL Gas filed Supplement No 18 to Tariff-Gas Pa. P.U.C. No. 3, to voluntarily postpone the effective date of Supplement No. 11 from February 1, 2007, until February 9, 2007.

Exceptions and Reply Exceptions were filed as noted above.

II. DISCUSSION

A. General Principles for a 1308 General Rate Increase

In deciding this, or any other, general rate increase case brought under Section 1308(d) of the Code, 66 Pa. C.S. § 101 *et seq.*, certain general principles always apply.

A public utility is entitled to an opportunity to earn a fair rate of return on the value of the property dedicated to public service. *Pennsylvania Gas and Water Co. v. Pa. PUC*, 341 A.2d 239 (Pa. Cmwlth. 1975). In determining a fair rate of return the Commission is guided by the criteria provided by the United States Supreme Court in the landmark cases of *Bluefield Water Works and Improvement Co. v. Public Service Comm'n of West Virginia*, 262 U.S. 679 (1923) and *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944). In *Bluefield*, the Court stated:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or

> anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.

The burden of proof to establish the justness and reasonableness of every element of a public utility's rate increase request rests solely upon the public utility in all proceedings filed under Section 1308(d) of the Code. The standard to be met by the public utility is set forth at Section 315(a) of the Code, 66 Pa. C.S. § 315(a):

> **Reasonableness of rates.** –In any proceeding upon the motion of the Commission, involving any proposed or existing rate of any public utility, or in any proceeding upon complaint involving any proposed increase in rates, the burden of proof to show that the rate involved is just and reasonable shall be upon the public utility.

The Pennsylvania Commonwealth Court, in reviewing Section 315(a) of the Code, interpreted the utility's burden of proof in a rate proceeding as follows:

> Section 315(a) of the Public Utility Code, 66 Pa. C.S. § 315(a), places the burden of proving the justness and reasonableness of a proposed rate hike squarely on the public utility. *It is well-established that the evidence adduced by a utility to meet this burden must be substantial.*

Lower Frederick Twp. Water Co. v. Pa. PUC, 48 Pa. Cmwlth. 222, 226-227, 409 A.2d 505, 507 (1980) (emphasis added). See also, *Brockway Glass Co. v. Pa. PUC*, 63 Pa. Cmwlth. 238, 437 A.2d 1067 (1981).

In general rate increase proceedings, it is well established that the burden of proof does not shift to parties challenging a requested rate increase. Rather, the utility's burden of establishing the justness and reasonableness of every component of its rate request is an affirmative one and that burden remains with the public utility throughout the course of the rate proceeding. It has been held that there is no similar burden placed on other parties to justify a proposed adjustment to the Company's filing. The Pennsylvania Supreme Court has held:

> [T]he appellants did not have the burden of proving that the plant additions were improper, unnecessary or too costly; on the contrary, that burden is, by statute, on the utility to demonstrate the reasonable necessity and cost of the installations, and that is the burden which the utility patently failed to carry.

Berner v. Pa. PUC, 382 Pa. 622, 631, 116 A.2d 738, 744 (1955).

This does not mean, however, that in proving that its proposed rates are just and reasonable, a public utility must affirmatively defend every claim it has made in its filing, even those which no other party has questioned. As the Pennsylvania Commonwealth Court has held:

> While it is axiomatic that a utility has the burden of proving the justness and reasonableness of its proposed rates, it cannot be called upon to account for every action absent prior notice that such action is to be challenged.

Allegheny Center Assocs. v. Pa. PUC, 570 A.2d 149, 153 (Pa. Cmwlth. 1990) (citation omitted). See also, *Pa. PUC v. Equitable Gas Co.*, 73 Pa. P.U.C. 310, 359 – 360 (1990).

Additionally, the provisions of 66 Pa. C.S. § 315(a) cannot reasonably be read to place the burden of proof on the utility with respect to an issue the utility did not include in its general rate case filing and which, frequently, the utility would oppose. Inasmuch as the Legislature is not presumed to intend an absurd result in interpretation of its enactments,[4] the burden of proof must be on a party to a general rate increase case who proposes a rate increase beyond that sought by the utility.

The mere rejection of evidence contrary to that adduced by the public utility is not an impermissible shifting of the evidentiary burden. *United States Steel Corp. v. Pa. PUC*, 72 Pa. Cmwlth. 171, 456 A.2d 686 (1983).

In analyzing a proposed general rate increase, the Commission determines a rate of return to be applied to a rate base measured by the aggregate value of all the utility's property used and useful in the public service. The Commission determines a proper rate of return by calculating the utility's capital structure and the cost of the different types of capital during the period in issue. The Commission is granted wide discretion, because of its administrative expertise, in determining the cost of capital. *Equitable Gas Co. v. Pa. PUC*, 45 Pa. Cmwlth. 610, 405 A.2d 1055 (1979) (determination of cost of capital is basically a matter of judgment which should be left to the regulatory agency and not disturbed absent an abuse of discretion).

Any issue or Exception that we do not specifically address has been duly considered and will be denied without further discussion. It is well settled that we are not required to consider, expressly or at length, each contention or argument raised by the Parties. *Consolidated Rail Corporation v. Pennsylvania Public Utility Commission*, 625 A.2d 741 (Pa. Cmwlth. 1993); *see also*, *University of Pennsylvania v. Pennsylvania Public Utility Commission*, 485 A.2d 1217 (Pa. Cmwlth. 1984). "A voluminous record does not create, by its bulk alone, a multitude of real issues demanding individual attention . . . ." *Application of Midwestern Fidelity Corp.*, 26 Pa. Cmwlth. 211, 230 fn.6, 363 A.2d 892, 902, n. 6 (1976). With the foregoing principles in mind, we turn to the rate issues before us.

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[4] 1 Pa. C.S. § 1922(1), *PA Financial Responsibility Assigned Claims Plan v. English*, 541 Pa. 424, 64 A.2d 84 (1995).

B. Rate Base

1. Fair Value

a. Positions of the Parties

PPL Gas' 2006 test year forecasted natural gas inventory claimed amount is $13,912,000 while PPL Gas forecasted natural gas inventory of $11,258,000. ($11,258,000 -13,912,000 = -$2,654,000). PPL Gas has accepted the OCA's valuation of the Company's natural gas inventory in storage of $11,194,000. The portion of the claim attributed to the Pennsylvania service territory of PPL Gas is 99.42% (-$2,654,000 x 0.9942 = -$2,638,607 or round to -$2,639,000), thereby reducing the Company's claim by $2,639,000. (Tr. 129-30; OCA St. 1S. Sch. B-1; R.D. at 8). PPL Gas agreed to this adjustment and it is incorporated in PPL Gas' calculation of rate base for future test year ending December 31, 2006. (R.D. at 8).

b. Disposition

There were no exceptions filed to the ALJ's recommendation in regard to this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted. Accordingly, we agree with the OCA's position, and PPL Gas' concomitant reduction to rate base of $2,639,000.

2. Plant in Service

a. Positions of the Parties

PPL Gas inadvertently included in its original cost of plant in service $1,862,000 of assets used in non-regulated businesses. The OCA drew this to the attention of PPL Gas and PPL Gas agreed that this amount should be removed from rate base yielding a net reduction as of December 31, 2006 of $1,067,000. ($1,862,000 plant in service - $795,000 depreciation reserve). (PPL Sch. C-2 to Exhibit Future 1-Revised; R.D. at 8 - 9).

b. Disposition

There were no exceptions filed to the ALJ's recommendation in regard to this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted. Accordingly, we agree with the OCA's position, and PPL Gas' concomitant reduction to rate base of $1,067,000.

3. Net Lag Days

a. Position of the Parties

The OTS updated the net lag days for both revenue and expenses from historic to future test year the result of which increased the net lag days from 8.6 days to 10.29 days resulting in an $832,000 increase in PPL Gas' cash working capital requirement for operation and maintenance expenses from $4,344,000 to $5,176,000. PPL Gas has incorporated this change in its cash working capital (CWC) requirement for operation and maintenance expenses to the future test year level. (PPL Gas Exhibit Future 1-Revised, Sch. C-5, p. 2; R.D. at 9).

b. Disposition

There were no exceptions filed to the ALJ's recommendation in regard to this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted. Accordingly, we agree with the OTS's position, and PPL Gas' concomitant increase to CWC of $832,000.

4. Unamortized Balance of Environmental Clean Up

a. Position of the Parties

The OCA alleged that as of December 31, 2006, PPL Gas will have recovered from insurers and ratepayers $12.917 million more for environmental remediation than it will have spent for environmental remediation. Since the $12.917 million is an over-recovery of ratepayer funds, according to the OCA, it should be adjusted to net out the income taxes of $5.360 million, resulting in an adjustment of $7.558 ($12.917-$5.360 = $7.557) million to rate base.[5] (OCA St. 1, Sch. B-3; R.D. at 9).

PPL Gas opposed the adjustment alleging it is inappropriate because balances that are amortized for ratemaking purposes may not be included in rate base. When an expense is amortized in rates it is improper to reflect the unamortized balance of that expense in rate base. The rationale against including the unamortized expense within rate base is that a utility cannot earn a return on and also receive a return of an expense item. To do so would provide the utility with a double recovery of that expense. The distinguishing factor presented in this proceeding is that instead of unamortized expenses, unamortized revenues, or ratepayer funds collected but not yet spent, are at issue.

PPL Gas asserted that the Pennsylvania appellate courts have held that utilities may not include unamortized balances of expenses in rate base. Therefore, on the same basis, unamortized revenues should not be deducted from rate base. (PPL Gas MB at 11). Said differently, the distinction of expense versus revenue is of no consequence. (R.D. at 10).

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[5] Actual figures rounded result in $7.558 million.

b. ALJ's Recommendation

The ALJ found that PPL Gas has shown that the adjustment recommended by the OCA regarding unamortized revenues is not warranted because revenue cannot be simultaneously capitalized in rate base and obtained from ratepayers. Consequently, the ALJ recommended that the OCA's adjustment regarding the unamortized balance (of ratepayer provided revenues not yet spent) for environmental clean up be rejected. (R.D. at 10).

c. Exceptions

In its Exceptions the OCA states that the ALJ erred in identifying the OCA proposed deduction to rate base as "unamortized revenues." (OCA Exc. at 3; R.D. at 9-10). For the following reasons, the OCA believes that the ALJ erred in accepting the Company's position.

When a utility incurs an expense and is permitted recovery through an amortization, customers are repaying the utility for an expense incurred in the past. The environmental remediation funds at issue here, however, are not repayment for a past expense. Rather, these represent a prepayment of expenses anticipated under the Consent Agreement. PPL Gas has collected $12.9 million from ratepayers, in addition to recoveries from insurers, in advance of Company expenditures to remediate contaminated sites. (OCA MB at 13-17; OCA RB at 5-6; see OCA St. 1 at 10-12). These ratepayer-supplied funds are being held by PPL Gas just like customer deposits or customer advances. Just as customer deposits or customer advances are deducted from rate base, so too must the pre-collected ratepayer provided environmental remediation expense be deducted from rate base. (OCA St. 1 at 11-12; OCA MB at 14-16); see *Pa. PUC v. West Penn Power Co.*, 53 Pa. PUC 410, 429 (1979)(Customer deposits); *Pa. PUC v. Philadelphia Suburban Water Co.*, 75 Pa. PUC 391, 402 (1991)(Unexpended customer advances treated as an offset to rate base); *Pa. PUC v. Pennsylvania-American Water Co.*, 71 Pa. PUC 210, 241-43 (1989)(Customer advances); see also *Pittsburgh v. Pa. Pub. Util. Comm'n*, 370 Pa. 305, 88 A.2d 59 (1952) (Pittsburgh) (Customer-supplied funds treated as an offset in cash working capital determination). (OCA Exc. at 4; OCA MB at 15-16).

The OCA states that its recommended adjustment is to prevent the Company from receiving a windfall from the use of customer-supplied funds. (OCA MB at 14-15). The OCA asserts that the ALJ's recommendation is contrary to the record evidence and sound ratemaking principles recognized by the courts and Commission. Accordingly, the OCA believes that the Company's rate base should be reduced by $7,558,000, as calculated at OCA Statement No. 1, Schedule B-3. (OCA Exc. at 4).

In reply PPL Gas states that the only difference between this case and those cited by the OCA in its Exceptions is that those prior cases involved expenses, and in this case, the issue relates to recoveries from ratepayers. PPL Gas believes that the Commission should apply the same ratemaking principle to pre-paid revenue supplied by ratepayers as it has applied to pre-paid expenses. (PPL Gas R.Exc. at 9).

d. Disposition

The distinguishing factor presented in this proceeding is that instead of unamortized expenses, unamortized revenues, or ratepayer funds, collected but not yet spent, are at issue. PPL Gas asserted that the Pennsylvania appellate courts have held that utilities may not include unamortized balances of expenses in rate base. Therefore, on the same basis, it argues that unamortized revenues should not be deducted from rate base. (PPL Gas MB at 11). Said differently, the distinction of expense versus revenue is of no consequence. (R.D. at 10). Based upon prior Commission decisions, the ALJ recommended rejection of the OCA's adjustment. We agree, finding the ALJ's recommendation to be reasonable, appropriate, and in accordance with the record evidence and prior Commission decisions. Our review of the record supports the finding of the ALJ. Accordingly, we shall adopt the ALJ's recommendation and reject the OCA's Exceptions.

In conjunction with our allowance of the Company's claim, we shall direct the Bureau of Audits to review the activity within this account during the Company's next Purchased Gas Cost Rate Audit. Specifically, we direct the Bureau of Audits to review the Company's accounting for the funds collected through rates and those recovered through insurance, that are to be used for environmental clean-up as well as all previous and planned expenditures associated with all projects included within this activity. The findings of the Bureau of Audits shall be included within the Company's next base rate case filing.

5. Adjustment to Depreciation Reserve for Account 330

a. Positions of the Parties

The OTS advocated that Account 330, Producing Gas Wells – Well Construction, should be reduced by $397,348 to $270,582 since the net salvage is not being depreciated. The OTS asserted that this adjustment is necessary because the account is fully accrued and there is no annual 2006 accrual. If the adjustment is not made, the OTS stated that the future accrual will be in rate base indefinitely with no offsetting annual accrual. (OTS MB at 12, 15).

PPL Gas contended that the OTS adjustment is not warranted because future amortization of negative net salvage will reduce future accruals to zero at the end of the five-year amortization period. PPL Gas stated further that the OTS' adjustment is inconsistent with the Uniform System of Accounts and Pennsylvania precedent regarding ratemaking treatment amortizing negative net salvage as established in *Penn Sheraton*

Hotel v. Pa. P.U.C., 198 Pa. Super. 618, 184 A.2d 324 (1962). (PPL Gas MB at 12). Lastly, PPL Gas asserted that the OTS proposed adjustment unduly harms the Company. (PPL Gas RB at 6-7; R.D. at 11).

The OTS believes that the Company failed to explain the applicability of *Penn Sheraton* for this account since there are no annual accruals associated with the account and thus, Account 330 is not a typical account being depreciated. Furthermore, according to the OTS, the Company's assertion that it has followed the Uniform System of Accounts and the requirements under *Penn Sheraton* since 1999, and this past treatment would somehow preclude the Commission from correcting improper treatment once detected is not valid. As OTS states, "all aspects of the Company's filing are subject to review by the parties and ultimately by the Commission in . . . any . . . rate case." (OTS RB at 8).

b. ALJ's Recommendation

The ALJ found that the record evidence demonstrated that Account 330 is unique in that it has no annual accruals to depreciate, it has fully accrued; that the Company has failed to substantiate its claim regarding Account 330 and the applicability of *Penn Sheraton* to an account that has fully accrued. However, according to the ALJ, the OTS has reasonably substantiated why an adjustment should be made to Account 330, and believes that the adjustment advocated by OTS to Account 330 reducing the future accrual claim is warranted and reasonable. (OTS St. 3 at 12, OTS St. 3-SR at 4-5, and OTS Exh. 3-SR, Sch. 1, line 12). The adjustment to Account 330 suggested by OTS was adopted by the ALJ. (R.D. at 10).

c. Exceptions

PPL Gas excepted to the ALJ's recommendation as being erroneous for two principal reasons. First, her concern that PPL Gas would be allowed to earn a return on a negative depreciation reserve of $397,348 in perpetuity is factually unfounded. Second, in any event, the recovery by PPL Gas of its capital investment in plant through depreciation accruals and amortizations of net salvage is under continual review by the Commission, and PPL Gas has done nothing improper to give rise to the substantial rate base disallowance. (PPL Exc. at 11 – 12).

PPL Gas states that it is undisputed that PPL Gas has followed the Uniform System of Accounts and the rules for recovery of net salvage established in *Penn Sheraton*. (Tr. 185; PPL Gas St. 7-R, at 1-3; PPL Exc. at 12). Contrary to the ALJ's concern, the amortization of net salvage will fully recover and, thereby, eliminate all actually incurred salvage costs over five-year periods following the year that each salvage cost is actually incurred. (PPL Exc. at 12).

The ALJ adopted the adjustment to rate base recommended by OTS based on her conclusion that, absent the adjustment, the negative reserve will exist in perpetuity. Such conclusion misunderstands the nature of the accounting of net salvage under *Penn Sheraton*. The ALJ states that the negative depreciation reserved for Account 330 will remain, because there are no future accruals to reduce it. (R.D. at 12; PPL Exc. at 15).

Although it is correct that, absent future investments in plant under Account 330, there are no future accruals (PPL Gas Exh. JJS-2, p. III-155), that does not mean that the negative reserve will remain indefinitely. Instead, under *Penn Sheraton*, net salvage is amortized (not accrued) over five years commencing with the year after the net salvage was incurred. The fact that no accruals remain does not mean that the balance of net salvage will not be eliminated over a five-year period. (PPL Exc. at 15).

PPL Gas has consistently distinguished between accruals and amortization. (*See, e.g.,* OTS Exh. 3, Sch. 4). PPL Gas has explained, as set forth above, that the net salvage balance will be eliminated through amortization, regardless of whether any future accruals remain. (PPL Exc. at 15).

PPL Gas, and its predecessor, North Penn Gas Company, have made Annual Depreciation Reports required by Chapter 73 of the Commission's regulations. Tr. 187-88. Account 330 has had a substantial negative reserve since at least 1999. Nevertheless, OTS has not challenged any of the entries to that account in any of the Annual Depreciation Reports. (Tr. at 188; PPL Exc. at 14).

The filing by PPL Gas and its predecessors of Annual Depreciation Reports has special significance under the Commission's regulations, which provide:

> "In subsequent ratemaking proceedings, the most recent annual depreciation report or service life study approved or deemed approved for accounting purposes only under this chapter, constitutes a rebuttable presumption as to the reasonableness of the accrued depreciation claimed for ratemaking purposes, and the burden of proving the unreasonableness of the accrued depreciation shall be on the challenging party."

52 Pa. Code § 73.9(c). For the reasons stated above, the adjustment to the depreciation reserve for Account 330 proposed in this proceeding is erroneous. (PPL Exc. at 14 – 15).

Alternatively, if the Commission seeks to make certain that the balance of negative net salvage will be eliminated over five years, as contemplated by the Superior Court in *Penn Sheraton*, the Commission could simply order PPL Gas to amortize all amounts in the depreciation reserve as of December 31, 2006, excluding the portion of the reserve equal to the original cost of plant in service, so that such amounts will be eliminated by the end of 2011. Such an order would not harm PPL Gas, because such amortization would occur in any event. The order, however, would provide assurance to the Commission, the ALJ and the OTS that the negative depreciation reserve, in fact, will be eliminated, as contemplated under *Penn Sheraton*, by the end of 2011. (PPL Exc. at 17).

In reply, the OTS first asserts that the Company missed the point of the adjustment and again failed to explain how the claimed $667,930 of Future Accruals for Account 330 will be reduced if there is no annual accrual associated with this account. (OTS R. Exc. at 7).

To defend the level of its original claim, the Company puts forth the argument in its Exception that it followed the "Uniform System of Account" and did "nothing wrong" regarding the account. The OTS believes that the Company failed to point to any provision in the Uniform System of Accounts that allows "Future Accruals" to exist in perpetuity and have no annual accrual. Such failure is due to the fact that no such provision exists. (OTS R.Exc. at 7 – 8).

d. Disposition

We find the Company's explanation of this issue to be persuasive. Accordingly, we shall grant PPL Gas' Exceptions and reverse the ALJ's recommendation, thereby adopting the Company's claim. As contemplated by the Superior Court in *Penn Sheraton*, we will order PPL Gas to amortize all amounts in the depreciation reserve as of December 31, 2006, excluding the portion of the reserve equal to the original cost of plant in service, so that such amounts will be eliminated by the end of 2011.

In conjunction with our allowance of the Company's claim, we shall direct the Bureau of Audits to review the activity within this account. This review shall be conducted during the Bureau's next Purchased Gas Cost Rate Audit. The findings of the Bureau of Audits shall be included within the Company's next base rate case filing.

6. Cash Working Capital Requirement Regarding Payments of Interest

a. Positions of the Parties

PPL Gas included within its calculation of cash working capital ("CWC") a claim regarding payments of interest. (PPL Gas Exh. Future 1, Sch. C-5 at 5; R.D. at 12). The Company claimed a net lag for interest payments of 7.5 days resulting in an adjustment of $114,000.[6] The OTS proposed disallowance of this portion of the Company's CWC claim stating that the payments of interest are "below the line" and are not to be considered when establishing rates. Additionally, the OTS stated, "the return dollars provided to utilities in rates compensates them for all debt and related costs [and] the Commission has never allowed a positive interest payment component to CWC." (OTS MB at 16). Subsequently, the OTS admitted that the Commission has reflected positive interest payments in CWC calculations. (PPL Gas MB at 17-18 citing, OTS St. 2-SR at 18-19 and PPL Gas RB 5).

PPL Gas stated "below the line" items are those revenues, expenses and investments that are not subject to Commission jurisdiction and consequently are excluded from consideration in establishing rates. (PPL Gas MB at 17 citing *Edison Electric Institute, Glossary of Electric Industry Terms*, at 12 (April 2005)). PPL Gas asserted that interest paid to finance rate base is subject to Commission regulation and is therefore considered in setting rates. PPL Gas stated that it produced an example through PPL Electric Utilities Corp where the CWC calculation for preferred stock produced a positive CWC balance and suggested that the interest payments were not incorrectly calculated or differentiated from the preferred stock. (R.D. at 13).

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[6] The components of this adjustment are the measure of value at December 31, 2006; the Company's claimed debt ratio of 44.32% which is comprised of short-term and long-term debt; the Company's claimed embedded cost of debt of 6.35%. (PPL Exh. Future 1 Sch. B7, B8 and C5).

b. ALJ's Recommendation

The ALJ found that even if the PPL Electric Utilities Corp. CWC treatment for preferred stock produced a negative CWC balance, it is not logical to treat an item differently based on whether it is a negative or positive quantity. The rationale for the treatment of the item remains regardless of whether it is positive or negative. Accordingly, the ALJ rejected the OTS' adjustment. (R.D. at 13).

c. Exceptions

With respect, the OTS contends that the ALJ's decision is based on a misunderstanding of the history of this adjustment, a lack of understanding of the adjustment, a misinterpretation of the OTS testimony and a misplaced sense of fairness brought about by fundamental misrepresentations put forth by the Company. In fact, Commission acceptance of the ALJ's recommendation would improperly overturn thirty years of clear-cut precedent regarding this issue.

To understand the error in the ALJ's reasoning, it is important to reiterate why there is an interest "offset" to a cash working capital claim in the first place. As stated in OTS Direct Testimony, it is inappropriate to include such an interest payments claim as part of an allowable CWC because the return dollars provided to utilities in rates already compensate them for all debt and related costs. As such, any monies needed for interest payments would be subsumed in the return allowance and should not be part of a CWC allowance. (OTS St. 2, p. 37~~.~~; OTS MB at 16). Stated another way, the rates paid by customers already include a revenue allowance to service debt and preferred obligations. These rates are collected on a continuous basis throughout the year. Debt interest may be paid on a quarterly or semi-annual basis. If revenue collected from ratepayers, but not yet paid to bond holders and preferred stock holders, is not recognized as a source of working capital contributed by the rate payers and correspondingly offset against the CWC allowance, then PPL Gas' common equity holders will receive a return on capital not supplied by them and will thus receive an inappropriate supplemental return not authorized by any traditional ratemaking standard. The crux of this issue is that such an interest "offset" has no corresponding equitable "flip side" that requires any addition to the CWC calculation as argued by the Company. (OTS Exc. at 4 – 5).

Turning to the Company's claim, the OTS argues that since the interest payment lag is less than the CWC revenue lag, an additional component to the CWC calculation is thereby created that must be reflected in the calculation. This argument improperly seeks to make the inclusion of interest a necessary part of a lead/lag study when it constitutes nothing more than a potential offset to the results of a lead/lag study. (OTS Exc. at 6).

In response, the OTS asserts that it is well established in prior Commission and Commonwealth Court decisions that the timing and payment of interest may create an offset to the CWC claim, but is not part of the actual CWC calculation. (OTS Exc. at 6 – 7).

The OTS states that the timing of revenue receipts and interest payments has long been recognized as an appropriate "offset" to the CWC requirement. In fact, Webster's Dictionary defines offset as "to place over against something or to serve as a counterbalance for." The point being that interest has long been recognized as an offset and that an offset by definition works in the opposite direction of the claim. An offset by regulatory practice or by definition has not constituted, nor should it constitute, an increase or enhancement to the Company's claim. (OTS Exc. at 7).

However, at page 13 of the Recommended Decision, the ALJ states that:

> Even if the PPL Electric CWC treatment for preferred stock produces a negative CWC balance, it is not logical to treat an item differently based on whether it is a negative or positive quantity. The rationale for the treatment of the item remains regardless if it is positive or negative.

(R.D. at 13).

The Company's Main Brief at page 18 cites a Commonwealth Court decision for People's Natural Gas wherein People's challenged a $550,000 offset reduction based on the fact that revenue lagged the actual payment of interest. The Court agreed and rejected the offset. *Peoples Natural Gas Co. v. Pennsylvania Public Utility Commission*, 52 Pa. Cmwlth. 201, 205-206, 415 A.2d 937, 939 (1980). However, the Company's Main Brief fails to point out that a full reading of the Court's opinion discloses that the offset was reduced to zero. The facts in that case are identical to the instant situation, yet the Court did not recognize or authorize a negative offset even though interest payments occurred prior to receipt of revenue. (OTS Exc. at 8).

Again at page 13 of the Recommended Decision, the ALJ states:

> Additionally, PPL Gas points to clarification made by OTS to admit that the Commission has reflected positive interest payments in CWC calculations. (PPL Gas MB at 17-18 citing, OTS St. 2-SR at 18-19 and PPL Gas RB at 5).

(R.D. at 13; OTS Exc. at 8).

Simply put, the ALJ has misinterpreted the OTS testimony. The OTS reference was to the fact that the Commission has always required an offset to the CWC and should not be construed to mean that the Commission recognized a negative offset. The Commission either reflected a positive offset or reflected zero, nothing else.

Also at page 13 of the Recommended Decision, the ALJ provides that:

> PPL Gas states that it produced for the record an example through PPL Electric Utilities where CWC calculation for preferred stock produced a positive CWC balance.

(R.D. at 13).

Here, the ALJ has relied upon an incorrect Company representation. The offset to CWC is for interest and preferred dividends. The net of the two is what is reflected as the offset. They do not stand alone. In the cited PPL Electric case, the interest offset was negative by an amount greater than the positive claim for preferred dividends. The net of the two was an offset reduction to CWC. The OTS asserts that the Company is simply incorrect when it claims the Commission has previously accepted positive balance for preferred dividends. (OTS Exc. at 9).

Finally, the fundamental point to consider is that CWC measures the amount of cash outlay that the Company must have available to cover expenses from the rendition of service to payment for these services. The expenses reflected in a lead/lag study are those above-the-line cost of service O&M expenses. As pointed out above, the Company already recovers its interest cost through the return component of rates. It is therefore no more appropriate to include interest in the CWC calculation than it is to reflect a return component in a CWC calculation. (OTS Exc. at 9).

For the foregoing reasons, the OTS believes that the Commission should reject the ALJ's recommendation and adopt the OTS-recommended reduction of $114,000 to the Company's CWC claim to properly exclude interest payments. (OTS Exc. at 10).

In reply the Company describes the OTS' proposal as a "one-way" calculation in that the OTS contends that interest payments cannot increase CWC 'because return dollars provided to utilities in rates already compensate them for all debt and related costs.' (PPL R. Exc. at 10). The Company also states that the OTS' reliance upon *Pa. PUC v. West Penn Power Co.,* 1981 WL 178838 and *Peoples Natural Gas Co., Pa. PUC,* 52 Pa. Cmwlth. 201, 415 A.2d. 937 (1980), is misplaced. PPL states that these cases do not address the issue of whether interest payments could increase the CWC requirement, because the issue was not presented. (PPL R.Exc. at 11).

d. Disposition

We agree with the ALJ, it is not logical to treat an item differently based on whether it is a negative or positive quantity. The rationale for the treatment of the item remains regardless of whether it is positive or negative. Accordingly, we shall adopt the Company's position on this issue and deny the Exceptions of the OTS. We do not find the OTS' reasoning to be persuasive.

7. Accumulated Deferred Income Taxes Related to Contributions in Aid of Construction

a. Positions of the Parties

The balance of accumulated deferred income taxes ("ADIT") consists of two components: 1) deferred taxes related to accelerated depreciation on plant in service; and 2) deferred taxes related to contributions in aid of construction ("CIAC"). The CIAC portion is a debit balance that reduces the balance of ADIT deducted from plant in service. (OCA M.B. at 10 – 11). More simply stated, plant in service is increased by number one above and reduced by number two, above. Thus, if the amount of ADIT on

CIAC, number 2 above, is reduced, the plant in service is lower and fewer return dollars are allowed.

PPL Gas recorded ADIT on CIAC in compliance with Commission procedures and the Tax Reform Act of 1986. Under that Act, CIAC are treated as taxable income. The Commission allows jurisdictional utilities to select a method for treatment of income taxes on those contributions. *See, Re Contribution in Aid of Construction and Customer Advances,* 70 Pa. PUC 44 (1989). PPL Gas opted to pay income taxes on CIAC which results in a reduction to deferred taxes. (PPL Gas MB at 20).

PPL Gas projected $5,909,000 of ADIT on CIAC for the future test year. (PPL Gas Exh. Future 1, Sch. C-1). The OCA stated that the Company's proposed future test year claim for ADIT on CIAC is a 31% increase from the historic test year level[7] and recommended that the future test year balance be reduced by $1,294,000[8] to a projected balance of $4,615,000. (OCA MB at 11). The OCA stated that while ADIT on CIAC for 2004 and 2005 was roughly the magnitude of that forecasted by the Company for 2006, the ADIT on CIAC averaged only $70,000 per year for 2001 through 2003. The OCA looked at the Company's actual experience for the five months of the future test year ending May 2006 and found that the CIAC growth rate was closer to that in the years 2001 – 2003. (OCA M.B. at 11). During this period the average monthly growth in CIAC was $9,000. This is the monthly, annual growth allowed by the OCA in its proposed future test year CIAC of $4,615,000. (OCA St. 1S, Schedule B-2).

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[7] For the historic test year the calculated balance of ADIT ~~for~~ on CIAC was $4,507,000. (($5,909,000 - $4,507,000 = $1,402,000) / $4,507,000 = 31.1%) (PPL Gas Exh. Historic 1, Sch. C-6).

[8] PPL Gas has a portion of service territory in Maryland which is outside of the jurisdiction of the Commission. Acknowledging this portion outside of the jurisdiction of the Commission, the OCA reduces its adjustment to $1,286,000 in proportion to that portion of the Company's service territory that is within the Commonwealth of Pennsylvania.

According to the Company, the OCA's proposal does not consider that the increases in ADIT on CIAC do not occur uniformly throughout the year. For example, for the five-month period ending December 2005, the balance in accumulated deferred income taxes increased by over $1 million. (PPL M.B. at 21). The OCA admits that the magnitude of the 2004 and 2005 ADIT on CIAC is the approximately same of that being forecasted by the Company for 2006 confirming that the more recent level of CIAC is significantly higher than that acquired in 2001 through 2003. Further, according to PPL, the facts confirm that the actual ADIT for CIAC are not uniform per month through the year and thus, the level collected in the first five to seven months of 2006, cannot be concluded to be at the same level of CIAC as assumed for the latter portion of the year. (R.D. at 14 – 15).

b. ALJ's Recommendation

The ALJ found that evidence supports the projection of ADIT on CIAC proposed by PPL Gas. PPL Gas substantiated its proposal for ADIT on CIAC based on the facts presented and its $5,909,000 figure for ADIT on CIAC shall be implemented in full. The OCA's proposed reduction of $1,294,000 ($1,286,000 jurisdictional) to the future test year ADIT on CIAC figure is not supported by the facts on the record and thus, the ALJ deemed the OCA adjustment to be unwarranted. (R.D. at 15).

c. Exceptions

In its Exceptions, the OCA stated that the ALJ's recommendation is contrary to the record evidence in this proceeding. Also, the OCA contends that its recommended end of future test year ADIT on CIAC balance of $4,615,000 should be adopted. Additionally, in support of its adjustment, the OCA points out that the balance of ADIT on CIAC at August 2006 was $4,551,000 or $64,000 below the future test year claim. Accordingly, the OCA believes the Company's claim is overstated and speculative. (OCA Exc. at 5).

In reply, PPL Gas states that the actual balance at August 2006, is insignificant and that the allowance in this proceeding should be based upon the most recent experience from 2004 and 2005. (PPL R.Exc. at 12).

d. Disposition

Based upon our review of the record evidence, as well as the post record submissions of the Parties, we agree with the ALJ on this matter. We agree with PPL Gas in that the additions to CIAC do not occur ratably during the year and therefore, the OCA's use of a six-month average to represent an annual growth rate CIAC is unrealistic. Additionally, we find that the more recent years' experience to be germane to this account as being more reflective of current economic activity within the PPL Gas service territory. Accordingly, we shall adopt the recommendation of the ALJ and deny the Exceptions of the OCA in this matter.

C. Revenues

1. Off-System Sales

a. Positions of the Parties

PPL Gas proposed an adjustment removing $150,000 in net margins from off-system sales in the future test year revenues. This adjustment would have the effect of removing off-system sales revenues as an item in this base rate proceeding. PPL Gas explained that it retains a portion of the net revenues from off-system sales as an incentive to encourage the Company to obtain as much off-system sales as practical. The remaining portion of net revenues is then flowed through to ratepayers in annual Section

1307(f), 66 Pa. C.S. § 1307(f), proceedings. PPL Gas averred that because these revenues result from a sharing program implemented through annual Section 1307(f) proceedings, it would be inappropriate to reflect these revenues in this proceeding for determining rates as it would defeat the purpose of the sharing mechanism. (PPL Gas MB at 22, PPL Gas St. 4-R at 6-7, PPL Gas Exh. Future 1-Revised, Sch. D-2 Rev. 9-1-06).

This adjustment was unopposed by any of the Parties. (R.D. at 16).

b. ALJ's Recommendation

The ALJ recommended that the Company's adjustment removing $150,000 in net margins from off-system sales be approved. (R.D. at 16).

c. Disposition

No Party excepts to the ALJ's recommendation in regard to this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

2. Storage Service Contracts

a. Positions of the Parties

The OCA recommended using more updated information regarding the storage service contracts. Specifically, the OCA recommended that three cost of service allocators be modified to reflect increased contracted storage service capacity and storage service maximum daily demand. (OCA MB at 22-23; OCA St. 3 at 4).

PPL Gas agreed that more updated information for storage service contracts should be used and added that the revenue from storage customers should also reflect a change in volume. The end result was a proposed increase of $169,000 to the Company's initial claim for storage service revenue of $7,209,172. The Company acknowledged that this adjustment was appropriate. (PPL Gas St. 8-R at 6, PPL Gas MB at 22, Tr. 213-16).

b. ALJ's Recommendation

The ALJ recommended that the Company's adjustment, which increased the claim for storage service revenue to $7,378,172, be approved. (R.D. at 16; PPL Gas Exh. PRH-1R, Sch. A and A1).

c. Disposition

No Party excepts to the ALJ's recommendation in regard to this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

3. Weather Normalization Adjustment

a. Positions of the Parties

PPL Gas adjusted actual test year revenue levels to reflect "normal" weather conditions based upon degree day data obtained from the National Oceanic and Atmospheric Association. PPL Gas performed four calculations: (1) for residential customers in the southern region (old PFG); (2) for the residential customers in the northern region (old NPG); (3) for commercial customers in the northern region; and (4) for the commercial customers in the southern region. PPL Gas used calendar month degree days and revenue month revenues where the revenue months are based upon revenues billed on a billing cycle basis throughout a month. Revenues during a revenue month can be related to a customer usage during the prior calendar month. (PPL Gas MB at 23; R.D. at 17).

The OCA found anomalies based on the methods used by PPL Gas in making calculations. The OCA stated the primary factor for the anomalies is due to the Company's calculation on a month by month basis which caused an extra element of randomness to the calculation; that is, the billed sales for a month included bills sent out the prior calendar month while degree days were recorded on a calendar month. Furthermore, the OCA criticized the Company's methodology because there may be differences in the weather as a whole for the year that is not apparent when comparing weather on a month-to-month basis or *vice-versa*. (OCA MB at 19-20; R.D. at 17).

The OCA proposed an alternative method, using the heat-sensitive load per degree day for the entire year rather than for each individual month to mitigate the randomness and the effect of mismatch between calendar month and revenue month. The OCA further refined its alternative by weighting the sales adjustment on the distribution of sales in February 2005, the month of sales most heavily weighted toward the tail block evidencing high volume of usage. The result yields an adjustment increase of $401,245 to the Company's *pro forma* test year revenues under present rates. (OCA MB at 21-22, OCA Sch. C-1 Revised Appendix A; R.D. at 17).

b. ALJ's Recommendation

The ALJ stated that this adjustment is founded upon the use of different weather normalization methodology. She found it disconcerting that under PPL Gas' method of weather normalization, a colder than normal month in a warmer than normal year, would result in a reduction to *pro forma* sales. (OCA MB at 20). However, the

ALJ noted that the Company explained that this result happens in the non-heating months which do not substantially effect the weather normalization calculation. Furthermore, according to the ALJ, the OCA does not refute the Company's criticism that the OCA's methodology assumes usage per degree day is uniform throughout the year. The ALJ concluded that OCA Cross Exam. Exh. No. 8 shows that usage per degree day increases exponentially in proportion to colder weather. (R.D. at 18).

The ALJ concluded that the methodology employed by the Company, while not perfect, is substantiated by the record and is reasonable. She found the OCA alternative method to be flawed and not reasonable. The ALJ recommended that the adjustment proposed by the OCA for weather normalization should be rejected. (R.D. at 18).

c. Exceptions

In its Exceptions, the OCA states that the ALJ erred in adopting the weather normalization presented by the Company even though the calculation used a mismatch of billing revenue to monthly degree day data. The OCA also states that the Company's method did not produce reasonable, normalized results. (OCA Exc. at 8).

The Company supports the ALJ's recommendation adopting its weather normalization calculation. PPL Gas states that its methodology is superior to that of the OCA for two principal reasons. First, its method demonstrates that usage per degree day increases exponentially as heating degree days increase and second, that the OCA's conversion of usage to revenue, as originally proposed and as revised, is computed incorrectly. (PPL R.Exc. at 13).

d. Disposition

We agree with the ALJ's finding on this issue. While the Company's weather normalization computation is not perfect, it is supported by record evidence and is reasonable. The adjustment proposed by the OCA and its revised calculation, are not reasonable and are substantially flawed. Accordingly, we shall deny the Exceptions of the OCA and adopt the recommendation of the ALJ.

D. Expenses

1. Undisputed Expense Adjustments

PPL Gas' *pro forma* annual operations and maintenance (O&M) expense claim for the future test year ended December 31, 2006, is $186,926,000.[9] During the course of this proceeding, PPL Gas accepted, in whole or in part, certain adjustments proposed by other parties. These uncontested adjustments are described briefly in this section.

a. Company-use Gas

PPL Gas' O&M expense claim included $1,289,000 for the costs of gas used by the Company. The OTS originally proposed to eliminate the recovery of the costs of all company-use gas from base rates, based on its concern that PPL Gas was recovering these costs entirely through rates for recovery of purchased gas costs ("PGC") established under Section 1307(f) of the Pennsylvania Public Utility Code, 66 Pa. C.S. § 1307(f).

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[9] The Company's final claim of $186,926,000 reflects the three uncontested adjustments discussed in this section. The Company's revised claim on rebuttal of $186,952,000 did not include the $26,000 adjustment for lobbying expenses, *infra.* (PPL Gas. Exh. Future 1 – Revised, Sch. D-1).

Upon review, PPL Gas determined that, of the total amount of company-use gas of $1,289,000, it does recover $618,000 through PGC rates. The remaining $671,000 of gas is used to operate storage facilities. The cost of gas used to operate storage facilities traditionally has been recovered through base rates because PPL Gas has storage customers who do not pay PGC rates. PPL Gas reasoned that it is proper to recover the cost of gas used to operate storage facilities through base rates so that storage customers would pay their fair share of the costs. (PPL Gas MB at 27, PPL Gas St. 4-R at 1-3).

The OTS accepted the reduced adjustment in the amount of $618,000 for company-use gas. (OTS MB at 30-31; OTS St. 2-SR at 7-8), and the ALJ's Recommended Decision incorporated this adjustment. (R.D. at 18).[10] No Exceptions were filed to the ALJ's recommendation on this issue, which we will adopt.

b. Universal Services Hardship Company Matching Funds

PPL Gas' O&M expense claim included $50,000 for the Universal Services Hardship Fund (Fund). The OTS asserted that the claim should be denied because the Fund is financed by voluntary contributions from the Company's customers, whose contributions are matched by the Company's shareholders. The OTS contended that it would be inappropriate to recover the shareholders' matching funds from ratepayers, but agreed that the Company should be entitled to recover the portion of the expenses used to administer the Fund. (OTS St. 2 at 15-16).

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[10] PPL Gas St. 4-R at 2 indicates that $618,000 is reflected as a cost of purchased gas and recovered through the PGC filing. PPL Gas Exh. Future 1 - Revised at Sch. D-2, however, reflects a larger reduction of $854,000 in company-use gas, which in turn is reflected in the total O&M claim of $186,926,000. The discrepancy of $236,000 is not explained. Because all Parties and the ALJ accepted the Company's adjustment, we will assume that it is correct.

On rebuttal, PPL Gas stated that ten percent, or $5,000, of the Fund's expense was used for administration and accepted an adjustment of $45,000. (PPL Gas St. 1-R at 9). The OTS accepted the modified adjustment of $45,000. (OTS MB at 29-30; OTS St. 2-SR at 6-7).

The Company's revised O&M claim reflects the reduction of $45,000. (PPL Gas Exh. Future 1- Revised, Sch. D-2.) The ALJ's Recommended Decision incorporated this adjustment. (R.D. at 19). No Exceptions were filed to the ALJ's recommendation on this issue, which we will adopt.

c. Lobbying Expense

PPL Gas' O&M expense claim included $89,000 for "governmental relations and lobbying service and various Corporate Communications activities," which the OCA initially proposed to eliminate in its entirety. (OCA St. 1 at 26). PPL Gas acknowledged that $26,000 of the $89,000 expense claim related to lobbying activities. (PPL Gas St. 2R at 4-5). The OCA subsequently amended its adjustment to eliminate only the portion of the expense related to lobbying expenses. (OCA St. 1S at 4).

PPL Gas agreed to the $26,000 expense adjustment, which the ALJ's Recommended Decision incorporated. (PPL Gas MB at 28; PPL MB Table II, line 3; R.D. at 19-20, Table I). No Exceptions were filed to the ALJ's recommendation on this issue, which we will adopt.

2. Variable Pay Expense

a. Positions of the Parties

PPL Gas' O&M expense claim included a variable pay expense claim of $279,085 for the future test year. Both the OTS and the OCA advocated that a portion of the variable pay expense claim be disallowed. The OTS proposed to disallow fifty percent of the variable pay claim; the OCA proposed to disallow thirty percent of the claim.

PPL Gas' compensation package for all non-union employees includes a market-based salary with two components – base pay and variable pay. The base pay component compensates an employee for the accountabilities and competencies related to the position. The variable pay component compensates an employee for achievements related to various financial, operational and safety-related objectives. (PPL Gas MB at 28, PPL Gas St. 5-R at 5). Under this salary structure, ten percent of a non-union employee's compensation is placed at risk based on the achievements of the established objectives. (PPL Gas RB at 11).

The OTS argued that fifty percent of the variable pay expense, or $139,543, should be disallowed, based on the rationale that both shareholders and ratepayers benefit from the variable pay award program and should share the costs. (OTS St. 2 at 2, 21). The OTS argued that, through division earnings targets, the variable pay award emphasizes the financial performance of the Company. The OTS stated that shareholders benefit from the Company's improved financial performance through increased dividends and/or stock prices, and ratepayers may benefit from improved financial performance if rates are maintained at existing levels or future rate increase are minimized. (OTS St. 2 at 22). The OTS reasoned that, since both shareholders and ratepayers benefit from the variable pay program, both should share in the expense. (OTS MB at 32). In surrebuttal, the OTS raised an additional issue, arguing that to the extent that the goals are not achieved and employees do not receive variable compensation, ratepayers will be paying more than PPL Gas' actual expenses. (OTS St. 2-SR at 3).

The OCA contended that thirty percent of the variable pay program expense, or $83,000, should be disallowed as related to the achievement of the

Company's financial goals. Specifically, ten percent of the program expense is related to net income goals set by the Company, and twenty percent is related to the achievement of rate case goals. The OCA characterized the claim as requiring ratepayers to reward management for getting them to pay higher rates. (OCA St. 1 at 18-19). The OCA argued that ratepayers should not be required to pay for that portion of the incentive compensation related to the achievement of financial or profitability goals, citing *Pa. PUC v. Roaring Creek Water Co.*, 81 Pa. PUC 285, 299 (1994); *Pa. PUC v. UGI Utilities – Electric Div.*, 82 Pa. PUC 488, 508 (1994). (OCA St. 2 at 19; OCA MB at 26-27).

PPL Gas argued that the adjustment advocated by the OTS was contrary to the law; that the adjustment advocated by the OCA was contrary to the facts; and that both adjustments therefore should be rejected.

PPL Gas stated that the OTS adjustment was flawed because the concept of sharing expenses between ratepayers and shareholders on the theory that the expenses are incurred for the mutual benefit of both has been rejected by Pennsylvania's appellate courts. In *Butler Township Water Co. v. Pa. PUC*, 473 A.2d 219 (Pa. Cmwlth. 1984), the Commonwealth Court reversed the Commission's disallowance of one-half of a rate case expense claim based on the shared benefit theory. The Court held that a utility generally is entitled to recover expenses reasonably necessary to provide service, and that operating expenses include prudently incurred rate case expenses. The Court held that there must be evidence in the record that a rate case expense is unreasonable, imprudently incurred or excessive to support its disallowance. PPL Gas stated that the Court's rationale is equally applicable to variable pay expense, and that the OTS made no claim that the variable pay expense was unreasonable, imprudent or excessive. Further, the arbitrary disallowance proposed by the OTS would reduce incentives to achieve goals that are beneficial to ratepayers. (PPL Gas MB at 29-31).

With regard to the issue that the OTS raised on surrebuttal, PPL Gas stated that the OTS misunderstood the mechanics of the variable pay program; that when certain employees do not receive all of their variable pay, such funds are available to compensate other employees who receive more than 100 percent of their variable pay budget; and that in the last four years, variable pay expenses exceeded the variable pay budget in all but one year, and that shareholders bore such amounts in excess of budget. (PPL Gas MB at 32).

PPL Gas stated that the adjustment proposed by the OCA also was flawed, but for different reasons. PPL Gas acknowledged that a portion of variable pay is tied to financial goals, but argued that PPL Gas must operate its system efficiently to achieve these goals; that operational efficiency leads to lower rates; and that rewarding employees for efficient operation of the system therefore is beneficial to ratepayers. PPL Gas also acknowledged that twenty percent of the total variable pay expense, or $55,817, was related to this rate case, but argued that the rate case goals also were in the interest of ratepayers. The Company's rate case goals are to achieve a quality and user-friendly filing, and to restore the Company's financial health through the recovery of prudently incurred costs. PPL Gas asserted that achieving these goals will allow it to continue to provide safe, adequate, reasonable and reliable service to customers. (PPL Gas MB at 31).

The OTS argued in reply that the *Butler* case cited by the Company was limited to necessary expenses, such as rate case expense, but that its holding did not extend to the variable pay program expense. The OTS also disagreed with the Company's assertion that the OTS had not claimed that the expense was unreasonable, imprudent or excessive. The OTS argued that recovering the full amount of the claim from ratepayers would be unreasonable and excessive in this or any other case. The OTS also asserted that, since the record supports a conclusion that the program is not necessary to providing service, the entire program expense could be disallowed, rather than half of the expense proposed by the OTS as a compromise position.

The OCA argued in reply that rate case expense and incentive compensation are not analogous. According to the OCA, rate case expense is reasonably necessary to provide service and, therefore, recoverable from ratepayers, unlike incentive pay tied to net income and rate case goals. The OCA concluded that the holding of the Commonwealth Court in *Butler* does not apply.

PPL Gas argued in reply that its variable pay program is distinguishable from the programs at issue in *Roaring Creek* and *UGI*, *supra.*, cited by the OCA. In both of these cases, the programs focused on the utility's parent company. The Commission stated in *UGI* that, at a minimum, the utility must show that the program has a "direct bearing on cost reduction and rate control efforts." PPL Gas argued that its program is not based on holding company performance; that its program has balanced objectives that promote efficient operations; and that even its rate case objectives promote the interests of customers.

b. ALJ's Recommendation

The ALJ recommended that the OTS adjustment be adopted and that half of the variable pay expense claim, or $139,543, be disallowed. (R.D. at 22). The ALJ reasoned that the variable pay expense is not analogous to rate case expense as argued by PPL Gas, since rates and rate cases are necessary to provide service. Incentive pay to reward employees for meeting shareholders' net income goals and rate case goals are not reasonably necessary expenses related to service to customers.

The ALJ found that the Company's reliance on *Butler* was misplaced, and that the Commission has held that ratepayers have no duty to pay for incentive compensation related to achievement of financial or profitability goals, citing *Roaring Creek*. The ALJ found that "[b]ecause it is determined that the Company is incorrect on the applicable law, PPL Gas' rebuttal to the adjustment proposed by OTS must fail. PPL has not sustained its burden to show the full claimed variable pay expense of $279,085 is reasonable." (R.D. at 22). The ALJ concluded that the OTS adjustment appropriately models the shared benefit of the expense by ratepayers and shareholders.

c. Exceptions

PPL Gas excepts to the ALJ's recommendation. PPL Gas states that the sum of base pay and variable pay equals the market rate for each position; that its program is *not* a bonus program; and that the program permits employees to earn the market compensation rate for their position only if they achieve various objectives. PPL Gas states that the ALJ factually was mistaken that variable pay expenses are not necessary. "As explained previously, the sum of base pay and variable pay equals the market-based compensation rate for particular positions. It is necessary for PPL Gas to compensate employees at market rates." (PPL Gas Exc. at 20). PPL Gas distinguishes *Roaring Creek* as a case that addressed a bonus program tied to the financial goals of the corporate parent. PPL Gas reiterates that the goals of its program are balanced and unrelated to the financial performance of any corporate affiliate. PPL Gas also repeats its argument that the rate case goals in its program, achieving a quality filing and achieving the best possible outcome for the Company, are beneficial to ratepayers. PPL Gas states that it is in the best interests of ratepayers for there to be as few rate cases as practical, since rate cases are expensive and inefficient. "Achieving a good result in a rate case will permit PPL Gas to file fewer rate cases in the future, thereby, controlling rate case expense, which is properly borne by customers." (PPL Gas Exc. at 22-23).

PPL Gas also reiterates its position that the rationale for disallowing one-half of the variable pay expense is contrary to law. "Indeed, it cannot be the law that ratepayers and shareholders should share expenses that are for their mutual benefit, because the result could be a financial disaster for utilities." (PPL Gas Exc. at 18-19). PPL Gas points out that many expenses could be said to benefit both ratepayers and shareholders, such as purchasing gas supplies. PPL Gas, citing *Butler*, states that a public utility is entitled to recover fully its reasonable expenses incurred in providing service, and that there is no basis in the record for a finding that any portion of the variable pay expense is unreasonable, imprudent or excessive.

The OTS' Reply Exceptions state that the Company has not responded to the possibility that ratepayers could pay more than the Company's actual variable pay expenses if employees do not achieve program goals and receive payments. The OTS also argues that the Company's reliance on *Butler* as controlling precedent is misplaced, since unlike rate case expense, variable pay expense is discretionary. (OTS R.Exc. at 11-13).

The OCA's Reply Exceptions state that, while the OCA continues to support its recommendation for a disallowance of thirty percent based on the percentage of variable pay tied to the Company's net income and rate case goals, the fifty percent disallowance recommended by the ALJ is supported by the record and consistent with Commission precedent. (OCA R.Exc. at 11). The OCA responds to PPL Gas' argument that its variable pay program is not a bonus program as ignoring the fact that variable pay is "at risk" and is the very type of bonus or incentive program that was the subject of prior Commission disallowances. Second, the OCA responds to PPL Gas' argument concerning the 50/50 sharing reversed by the Commonwealth Court in *Butler* as involving rate case expense, which factually is distinguishable from the variable pay expense at issue here. As the ALJ explained, rate case expense is non-discretionary, whereas the Company has discretion when establishing goals for the variable pay component of employee compensation.

d. Disposition

On review, we will grant the Company's Exception. Although we do not agree with the Company that the adjustment urged by the OTS would be prohibited as a matter of law under *Butler*, we find that, under the facts of this case, the Company has demonstrated that its variable expense claim is reasonable and should be approved.

Several considerations lead us to this conclusion. First, the compensation program's variable component is tied to balanced operational and financial objectives. Only thirty percent of variable compensation is related to net income and rate case goals while fully seventy percent is related to operational and safety goals. Second, only ten percent of an employee's salary is categorized as variable, or at-risk. Base pay constitutes ninety percent of compensation. Third, the program extends to *all* non-union employees, as opposed to a bonus program that is limited to the very top echelon of management. Fourth, variable pay is unrelated to the performance of a PPL Gas holding company or affiliate. All of these factors support a determination that the Company's broad-based compensation program provides for market-based compensation rates for its non-union employees. Since we conclude that the Company's compensation program provides for market-based rates for its non-union employees, we conclude that both its fixed and variable components are reasonable and hence recoverable in rates.

The Company's variable pay component of its employee compensation program does not constitute a bonus program of the type disallowed in *Roaring Creek* and *UGI*. In *Roaring Creek*, we disallowed a claim for a bonus program that was limited to management employees, where fully one-third of the program expense was earmarked for one employee. In addition, the bonus program was tied largely to income and earnings targets for the parent company, which were unrelated to improvements in service to ratepayers. We disallowed the claim because the bonus program was not aimed at enhancing the productivity and efficiency of the utility. In *UGI*, we disallowed a claim for a bonus plan and a stock option plan where most of the eligible persons were holding company employees and the plans again were aimed at the parent company's financial performance. We stated that "[i]ncentive compensation plans are a good idea and they should be utilized to stimulate innovative operational improvements to create a better performing company. In order to be passed on to ratepayers, however, there must be an adequate factual basis for the Commission to conclude that the Company seeks to maximize more than just shareholder value. Even if no specific cost savings can be shown to result from the incentive compensation plan, at a minimum the plan must be shown to have a direct bearing on cost reduction and rate control efforts." 82 Pa. PUC at 508. In the instant case, PPL Gas has demonstrated that the variable pay component of its compensation program is related to the Company's operational performance and efficiency objectives.

We reject the argument of the OTS that its proposed disallowance is supported by the fact that there is a possibility that the Company's actual variable pay expense could be less than its ratemaking allowance if employees do not achieve program goals and receive all of their variable pay. The Company stated that, in three of the last four years, actual variable pay expense exceeded its variable pay budget, and that shareholders bore the amounts in excess of budget. In addition, a similar argument could be made concerning nearly all expense items. Expenses that are allowed for ratemaking purposes nearly always will be either greater or lesser than actual expenses incurred when the rates are in effect. Such is the inherent nature of budgets and projections used in establishing rates.

3. Affiliates Charges

a. Positions of the Parties

Within the PPL corporate system, certain services are provided to all members from a common pool of resources. When the user of services can be identified specifically, expenses are charged directly to that user. General administrative support costs are allocated among the member companies. In this case, PPL Gas claimed total charges of $9,453,000 from several affiliates for the future test year. Included in this amount was $8,705,000 in charges from PPL Services Corporation (PPL Services). (PPL St. 2-R at 3).

PPL Gas stated that indirect costs are allocated among the members of the PPL corporate system based on a three-factor formula that was recommended in a Commission-sponsored management audit. The three factors include a payroll factor, an investment factor, and an O&M expense factor.

The OTS proposed an adjustment to total direct and indirect charges based on a four-year (2003-2006) average of charges from affiliates. The OTS proposed an adjustment of $844,000. (OTS MB at 28-29; OTS St. 2; OTS Exh. 2, Sch. 6).

The OCA proposed an adjustment of $238,000, which would disallow the increase in indirect support expenses over the level of such expenses in 2005.[11] The OCA noted that PPL Gas had forecast an increase of approximately seven percent in its indirect support expense, from actual 2005 expense of $3,386,000, to projected 2006 expense of $3,624,000. The OCA argued that, when asked to explain this increase, PPL Gas cited two factors: (1) a "modest" increase in the percentage of total indirect support provided by PPL Services; and (2) a "minor" increase in the costs being allocated. (OCA MB at 37; OCA St. 1 at 27). The OCA submitted that this explanation does not demonstrate how these factors translate into an increase of seven percent. Because the increase had not been adequately justified, the OCA recommended that the forecasted increase of $238,000 be disallowed. (OCA St. 1 at 28, Sch. C-2).

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[11] As noted, the OCA also proposed an adjustment to eliminate $26,000 in lobbying expenses, which PPL Gas accepted. *See* Section D(1)(c) of this Opinion and Order.

PPL Gas argued that the increases in costs from support groups within the PPL corporate system are reasonable. PPL Gas noted that its total support charges between 2003 and 2006 increased only five percent annually on average. Charges to PPL Gas for direct and indirect support services increased by $672,000 and $238,000, respectively, from 2005 to 2006. Over the four-year period, indirect support charges increased by approximately eight percent annually, while direct support charges increased by approximately 3.1 percent annually. PPL Gas argued that, through the first six months of 2006, PPL Gas was charged an annualized amount of $8,738,000 for direct and indirect costs, which was slightly more than its budget of $8,705,000, the basis for the claimed affiliate charge expense in this proceeding. The fact that PPL Gas actually is incurring the claimed level of expenses demonstrates the reasonableness of its claim. (PPL Gas MB at 35, PPL Gas St. 2-R at 3).

In reply, the OCA stated that the fact that the Company's claim for indirect service charges resulted from allocation factors recommended in a Commission management audit does not relieve the Company from its burden of proof. The OCA argued that its adjustment of $238,000 should be adopted because PPL Gas did not meet this burden of proof. (OCA RB at 17).

In reply, PPL Gas contended that both the OTS and the OCA seek to arbitrarily limit expenses to historic levels based only on their subjective feelings that the increases to the charges are too great. PPL Gas stated that neither party was clear on the basis for its proposed adjustment. Presumably the basis for the proposed adjustments was that PPL Gas' projections either were not accurate or were excessive. PPL Gas reiterated that its actual charges for the first six months of 2006 demonstrate that its projections are reasonably accurate and, indeed, slightly conservative. PPL Gas also reiterated that the increase in affiliate charges is justified by the increased level of services provided by affiliates, citing the cost to comply with increased regulatory requirements imposed following the collapse of Enron in 2001. Finally, PPL Gas stated that the OTS adjustment particularly is unreasonable because it would allow only an annual increase of 1.5 percent over the four-year period from 2003-2006. (PPL Gas RB at 12-14).

b. ALJ's Recommendation

The ALJ recommended that both the OTS and the OCA adjustments be rejected, and found that PPL Gas had substantiated its affiliated expense claim. The ALJ stated that "[t]he arguments relayed by OCA and OTS fail to show that the magnitude of the increase in the 2006 future year expense claim is unreasonable, inappropriate, inaccurate or unsupported. The claimed 2006 affiliated expense of PPL Gas at $8,705,000 in charges from PPL Services Corporation should be approved." (R.D. at 24).

c. Disposition

Neither the OTS nor the OCA excepted to the ALJ's recommendation on this issue. Based on our review of the record, we shall adopt the recommendation of the ALJ and allow the Company's claim for $9,453,000 in charges from several affiliates, including $8,705,000 in charges from PPL Services Corporation. The record demonstrates that, through the first six months of 2006, PPL Gas was charged an annualized amount greater than its budget, and that its budget was reasonably accurate. We also accept PPL Gas' contention that the increased regulatory requirements imposed on publicly-held companies following the collapse of Enron, including the Sarbanes-Oxley Act of 2002, reasonably explains and justifies the increased level of expense.

4. Environmental Remediation Expenses

a. Positions of the Parties

PPL Gas' claim for environmental remediation expense of $987,000 is based on the methodology previously accepted by the Commission through the approval of the settlement of PPL Gas' prior base rate case at Docket No. R-00005277. (PPL Gas Exh. Future 1 - Revised, Sch. D-2 at 1, PPL Gas MB at 36). The Company first forecast spending on environmental remediation projects in excess of insurance recoveries through the end of 2011. The Company then determined that this amount exceeds the environmental remediation expenses recovered in rates through December 31, 2006, by $4,935,000. The Company then normalized this difference over the five-year period 2007-2011, resulting in the *pro forma* annual expense claim of $987,000. (OCA MB at 38).

The OTS proposed two adjustments that together would reduce the Company's claim by $882,000 and provide an annual allowance of $105,000: (1) the elimination of the three percent (3.0 %) annual escalation used by the Company to project environmental remediation expenses after 2006; and (2) the elimination of remediation expenses at sites that the Company has not yet identified. The OTS then netted the total amount of expected costs through 2011 against the amount already recovered. (OTS St. 3 at 9-12; OTS MB at 24-27). First, the OTS argued that the three percent escalation factor is not supported historically. (OTS St. 2 at 11). Second, the OTS proposed to eliminate $510,299 in remediation expenses attributable to "Unknown Utility MGP [Manufactured Gas Plant] & Mercury Sites." (OTS St. 2 at 10; OTS Exh. 2, Sch. 4 at 2). The OTS opined that test year expenses claimed for ratemaking purposes must be known and measurable, and that remediation expenses for unknown sites were neither. The revenue impact of the two adjustments recommended by the OTS is a reduction of $882,000 to the annual environmental remediation expense claimed by the Company of $987,000. (OTS St. 2 at 11-12; OTS MB at 24-27).

PPL Gas argued that a modest allowance for inflation for the five year period ending December 31, 2011, would be appropriate. The remediation of MGP sites and mercury is labor-intensive, and costs are escalating as the price for labor, equipment rentals, fuel costs, disposal costs and property acquisitions continue to rise. The OTS adjustment to disallow inflation is contrary to the experience of PPL Gas and without foundation. (PPL Gas St. 3-R at 11; PPL Gas MB at 38-39).

PPL Gas also argued that it was appropriate to include remediation costs for unknown MGP and mercury sites, as the prospect of having to remediate presently unknown sites is a serious concern. PPL Gas currently is remediating and/or monitoring four previously unidentified MGP sites. PPL Gas stated that its inclusion of $3,061,794 for unknown sites through 2011 is reasonable, given the fact that the average cost of fully remediating an MGP site is about $2 million. (PPL Gas St. 3-R at 11; PPL Gas MB at 38).

The OTS replied that the Company's general arguments are not sufficient to deviate from the standard ratemaking requirement that expenses be known and measurable as a prerequisite to being recoverable. (OTS RB at 13).

The OCA proposed that the Company's expense claim be rejected in its entirety and set at zero until its next base rate case. The OCA objected to the Company's forecasting its expense level through 2011 on the basis of its estimate of remediation expenses of $2,879,000 in 2006. Through the first five months of 2006, the Company has spent only $329,000, an annualized expenditure of only $790,000. (OCA St. 1 at 23; OCA MB at 39). In the three-year period 2003 through 2005, the highest annual expenditure by the Company was only $1,507,000, not much more than half of the forecasted 2006 level of $2,879,000 used to determine the expense claim in this proceeding. The OCA stated that the Company already has recovered $12,621,000 more than its actual expenditures through the rate recovery mechanism approved by the Commission. If this over-recovered amount were used to fund expenditures between now and the end of 2011, the Company would have $2,524,000 available each year for environmental expenditures. Between 1989 and 2005, the Company never has reached a spending level of $2,524.000. (OCA St. 1 at 23-24; OCA MB at 39).

PPL Gas stated that the OCA's adjustment would decrease the Company's 2006 test year environmental remediation expense by $2,089,000, to $790,000, and require that all projected expenses be charged against amounts previously recovered from ratepayers and insurance companies. PPL Gas argued that the "OCA ignores the fact that environmental remediation expenses are expected to increase during the later years of the DEP [Department of Environmental Protection] Consent Order, when remediation expenditures typically reach their highest levels." (PPL Gas MB at 39). PPL Gas contended that it would be inappropriate to eliminate recovery of environmental remediation costs when they are expected to escalate. (PPL MB at 39, PPL Gas St. 3-R at 12).

The OCA replied that the Company had not rebutted the OCA's calculation of a future test year level of expense of only $790,000, or otherwise provided updated information to support the Company's 2006 expense claim of $2,879,000:

> Thus, Mr. Kleha's "first step" of calculating expenditures and recoveries through the end of the future test year, which PPL Gas relies upon in its Main Brief, is not supported by record evidence. Further, OCA witness Effron found the Company's forecast annual environmental remediation expenditures of $2,879,000 overstated, compared to the Company's future test year level of spending and historic levels. The Company's theory of a net deficiency at the end of 2011 of $4.935 million is based on supposition and assumptions which are without support in the record.

(OCA MB at 10 (citations omitted)). The OCA argued that the Company's theory that the OCA would not provide the Company with funds to pay for environmental remediation expenses was incorrect and ignored the OCA's testimony that the Company already has $12,621,000 on hand, the amount of the net over-recovery through the end of the historic test year. This amount is sufficient to provide an annual expenditure of $2,524,000 for 2007 through 2011, a level in excess of historic levels. (OCA RB at 10).

b. ALJ's Recommendation

The ALJ recommended that the OTS adjustment of $882,000 to the Company claim of $987,000 for annual environmental remediation expense be granted.[12] (R.D. at 28).

With respect to the $510,000 adjustment for unknown sites, the ALJ found that the Company had not refuted the OTS assertion that test year expenses should be known and measurable, and had affirmed that the MGP and mercury sites are unknown. (R.D. at 27).

With respect to the adjustment to eliminate the three percent escalation factor, the ALJ found that nothing in the record demonstrates that inflation will reach levels of three percent per year over the next five years, and that PPL Gas simply had not supported through record evidence an inflation factor of that magnitude. (R.D. at 28).

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[12] The text of the ALJ's Recommended Decision reversed the OTS recommended allowance of $105,000, and the OTS recommended downward adjustment of $882,000. (R.D. at 27). Table II to the Recommended Decision, however, correctly reflects a downward adjustment of $882,000.

The ALJ concluded that the OCA adjustment to disallow all projected environmental remediation expenses was over zealous, drastic and unreasonable, and should be rejected on that basis.

c. Exceptions

The Company's Exceptions to the ALJ's recommendation argue that the inclusion of projected expenses for unknown sites is appropriate, given that it currently is in the process of remediating four MGP sites that were unidentified when it entered into the Consent Order with DEP. The Company contends that it is reasonable to expect that additional sites will be identified during the remaining five years of the Consent Agreement and that its projected costs of approximately $3 million for these unknown sites is reasonable. With respect to the elimination of its 3.0 percent inflation factor, the Company concedes that it did not specifically introduce evidence of inflation for environmental remediation costs, but states that there is evidence in the record regarding prospective inflation. The Company refers to evidence introduced by the OTS that inflation for the period 2007 through 2011 is expected to range between 2.4 and 2.8 percent (OTS Exh. 1, Sch. 3), and states that its projection of 3.0 percent is consistent therewith, rounded to the nearest whole number. (PPL Gas Exc. at 23-26). PPL Gas concludes that it would be inappropriate for the Commission to reduce recovery of environmental remediation expenses at the time when they are expected to increase, and that the elimination of expenses for unknown sites would be inconsistent with the "matching" principles established in the settlement of PPL Gas' last base rate case.

The OTS' Reply Exceptions state that the Company simply had not met its burden of proving the legitimacy of its claim and that the ALJ properly applied the reasonable, known and measurable standard set forth at *Pa. PUC v. West Penn Power*, 73 Pa. PUC 454 (1990). (OTS R.Exc. at 14).

The OCA's Reply Exceptions state that, while it had recommended that the Company's entire expense claim be eliminated because the Company was not spending on a pace that would utilize the $12.6 million it previously collected by the end of 2011, the adjustments proposed by the OTS are well supported and necessary. The OCA states that, insofar as the Company's claim is related to unknown sites, it does not meet the requirement that expenses allowed in a rate case must be reasonable, known and measurable, citing *West Penn*. The OCA also states that the ALJ correctly found that the Company had not supported its three percent allowance for inflation to environmental remediation expenses. Contrary to the Company's argument that the ALJ's recommendation denies the Company any financial resources, the OCA submits that it simply provides for the recovery of a reasonable level of expenses from ratepayers based on the record in this case. (OCA R.Exc. at 12-14).

d. Disposition

We will adopt the recommendation of the ALJ regarding disallowance of the expenses associated with unknown sites, and will deny the Company's Exceptions on this point. We will, however, grant, in part, the Company's Exceptions regarding an inflation factor. However, rather than an inflation factor of 3.0 percent sought by the Company, we will utilize an inflation factor of 2.4 percent to calculate the Company's annual expense allowance.

The Company's claim for expenses associated with the remediation of unknown sites is speculative, and fails the basic ratemaking tenet that expenses must be known and measurable in order to be recoverable. PPL Gas' argument that expenses to remediate sites that it has not yet discovered should be recoverable from ratepayers is based solely on the fact that it discovered four sites since its consent order with DEP was signed. It essentially then extrapolates this information as proof that additional sites will be discovered in the future. Without additional support and explanation, the Company's claim for expenses to remediate undiscovered sites must be denied.

The Company's claim for a 3.0 percent inflation factor similarly is not supported on the record. The Company did not provide any evidentiary support for its claim that environmental remediation expenses will increase by 3.0 percent per year. In lieu of providing evidence of its own, the Company relied on evidence introduced by the OTS' witness on rate of return regarding forecasted changes to the general rate of inflation, specifically the Consumer Price Index (CPI). The OTS witness forecast increases to the CPI ranging from 2.4 percent to 2.8 percent for the years 2007 through 2011. (OTS St. 1 at 14; OTS Exh. 1, Sch. 3). As a matter of common sense, PPL Gas' argument that environmental expenses will be subject to inflation is convincing. PPL Gas argued that the remediation of MGP sites and mercury is labor-intensive, and costs are escalating as the price for labor, equipment rentals, fuel costs, disposal costs and property acquisitions continue to rise. However, because there is no evidence on the record to support the Company's claimed inflation rate of 3.0 percent, we will utilize an inflation rate of 2.4 percent, the low end of the range of forecasted increases to the CPI introduced into the record by the OTS.

The disallowance of the claimed expenses for unknown sites, and the inclusion of an inflation factor of 2.4 percent, results in an adjustment of $705,000 to the Company's claim, as opposed to the adjustment of $882,000 as recommended by the ALJ. *See* Table VII attached to this Opinion and Order.

5. Rate Case Expense

a. Positions of the Parties

PPL Gas proposed to normalize its rate case expense claim of $1,125,000 over two years, resulting in an annualized claim of $563,000. (PPL Gas Exh. Future 1, Sch. D-5). No Party disputed the total amount of the rate case expense, but both the OTS and the OCA recommended that, based on the past ten-year history of PPL Gas' base rate case filings, the expense should be normalized over five years. (OTS St. 2 at 2-6; OTS MB at 18-21; OCA St. 1 at 16-17; OCA MB at 25-26).

PPL Gas argued that both Parties failed to recognize that events that precluded more frequent filings in the past are not expected to recur in the future. These events include the acquisition of Penn Fuel Gas, Inc. (Penn Fuel) by the PPL corporate system in 1998, and the required applications of Penn Fuel's regulated subsidiaries for approval of their restructuring plans under the Natural Gas Choice and Competition Act, 66 Pa. C.S. §§ 2201 *et seq*. (Competition Act). PPL Gas averred that potential rate cases were disrupted by rate caps under the Competition Act, and that base rate increases generally were banned for eighteen months, from July 1, 1999, until January 1, 2001. Both Penn Fuel subsidiaries underwent a detailed review of their existing rates and a rate cap period during the last ten years, which is not consistent with future circumstances.

PPL Gas further argued that it is experiencing reductions in the average annual usage of natural gas by residential customers, which declined almost nine percent between 2000 and 2005. In addition, PPL Gas averred that there are increasingly stringent requirements for replacement of aging infrastructure and safety regulations, which will require an increased level of pipeline replacements and other maintenance, and that all of the related changes will increase expenses. (PPL MB at 40-42). PPL Gas implies that all of these pressures will lead to more frequent rate case filings in the future.

The OTS argued that the normalization period should be determined based on a utility's actual, historical rate filings, not upon the utility's intentions, citing *Popowsky v. Pa. PUC*, 674 A.2d 1149, 1154 (Pa. Cmwlth. 1996). The OTS recommended that the Company's rate case expense be normalized over five years, which would result in an annual allowance of $225,000 and a reduction in rate case expense of $338,000. The sixty-month normalization period recommended by the OTS is the average interval between the 1996 and 2000 filings, and the 2000 and 2006 filings. (OTS St. 2 at 2-6; OTS MB at 18-21). The OTS further argued that the Company's assertions of future events lacked documentation and specificity. (OTS RB at 11-12).

The OCA recommended the same normalization period of five years for the same reasons as the OTS. In addition, the OCA responded to the Company's argument concerning changed circumstances, and argued that requirements such as those cited by the Company have existed for many years. "These requirements have certainly existed at least since the time of the Company's last two rate cases, which were in 1996 and 2000." (OCA St. 1-S at 5; OCA MB at 25-26).

In reply, the Company argued that "if OTS and OCA were simply to acknowledge that the restructuring proceeding is the equivalent of a full investigation of rates and the fact that PPL Gas (and its predecessors) were barred from increasing rates for the eighteen-month rate cap period, their adjustments would be reduced substantially." (PPL Gas RB at 16). The Company argued that, by subtracting the eighteen-month rate cap period, and recognizing the restructuring proceeding as a rate case, the resulting interval was 34.7 months, less than three years, and far less than the five years proposed by the OTS and the OCA. PPL Gas then argued that its two-year normalization period should be adopted, but that in no event should the rate case normalization period exceed three years. (PPL Gas RB at 17).

b. ALJ's Recommendation

The ALJ recommended that rate case expense be normalized over a three-year period, based on the Company's argument in its Reply Brief that the restructuring period should be considered as the equivalent of a base rate case, and that the eighteen-month rate cap period should be subtracted from the calculation. Normalizing the rate expense claim of $1,125,000 over three years results in an annual rate case allowance of $375,000 ($1,125,000/3 = $375,000), thereby reducing PPL Gas' claim by $188,000. (R.D. at 29).

c. Exceptions

The OCA argues that the ALJ erred by adopting the alternative normalization period of three years that was proposed for the first time in the Company's Reply Brief. The OCA argues that no Company witness testified in support of a three-year normalization period or the specific calculation made by the Company in its Reply Brief. The OCA argues that deducting the eighteen-month rate cap period is without merit, noting that the Company was allowed to increase its base rates when the rate cap period expired on January 1, 2001, and filed a base rate case in June 2000 to accomplish this. The OCA states that the five-year normalization period is less than the 72-month interval between the June 2000 filing and the April 2006 filing in the present case. The OCA further argues that the inclusion of a "non-Section 1308(d) regulatory filing in the calculation of historic interval between base rate cases is unprecedented and unrelated to the normalization of base rate expense to be recovered in base rates." (OCA Exc. at 11).

The OTS did not file a specific Exception to the ALJ's recommendation on this issue. The OTS, however, reaffirms its support for all of the OTS recommendations in this proceeding, and requests that the Commission review and adopt each OTS recommendation rejected by the ALJ, whether or not OTS filed a specific Exception. The OTS cited rate case expense as an example of a recommendation that it is not withdrawing by virtue of not filing a specific Exception on the issue. (OTS Exc. at 2).

The Company's Reply Exceptions state that the OCA's criticism of its proposed compromise of a three-year normalization is unwarranted, and that looking at the average span between rate cases over the last ten years simplistically ignores many factors that influence past and future filings. Following a recital of several of these factors, the Company states that its proposal for a three-year amortization of rate case expense is reasonable. (PPL Gas R.Exc. at 14-16).

d. Disposition

We shall adopt the ALJ's recommendation on this issue and adopt a three-year normalization period, which reduces the Company's initial rate case expense claim by $188,000. (R.D. at 28-29, Table II). Although we agree with the OTS and the OCA that a normalization period for rate case expense should be based on a utility's actual, historic rate filings, the OTS and the OCA have taken an overly prescriptive view of the Company's filing history. The Company's calculation of an interval of 34.7 months between cases, after recognizing the restructuring proceedings of its subsidiaries as equivalent to rate cases and subtracting the eighteen-month rate cap period, is persuasive. Similar to base rate cases, the Company's restructuring proceedings entailed the equivalent of a full investigation of existing rates. It would be unrealistic to disregard these restructuring proceedings when determining a reasonable rate case normalization period simply because the cases were not filed under a particular section of the Public Utility Code. We also agree with the Company that subtracting the eighteen-month rate cap period is reasonable when assessing the frequency with which the Company likely will file base rate cases in the future.

We accordingly deny the Exception of the OCA on this issue. Although it is correct that the Company did not propose a three-year normalization period until the filing of its Reply Brief, its calculation of a 34.7 month interval was simply an arithmetic result based on evidence already in the record. The three-year normalization period was proposed by the Company as a compromise between its proposed two-year and the OTS/OCA proposed five-year normalization periods. Compromise proposals generally are welcome, and should be encouraged. We conclude that the three-year period is reasonable, and that it is supported by the Company's filing history, including its restructuring proceedings and rate cap periods.

6. Payroll Expense and Appropriate Budgeted Employee Complement

a. Positions of the Parties

PPL Gas' annual payroll expense claim of $12,633,000 is based on a complement of 321 employees. (PPL Gas Exh. Future 1, Sch. D-6). Both the OTS and the OCA proposed adjustments based on a lower complement of employees. The OTS recommended an adjustment of $274,176 based on seven unfilled positions as of August, 2006, and an employee complement of 314. (OTS St. 2 at 12; OTS errata sheet). The OCA proposed an adjustment of $316,000 based on an employee complement of 315. (OCA St. 1 at 17-18).

The Company argued that its detailed information comparing budgeted employee complement with the actual number of employees over a three-year period showed that its employee complement has been very close to its budgeted complement. The Company asserted that, on average, its employee complement was seven thirty-sixths (less than 1/5) of one position below budget over the three-year period. (PPL Gas MB at 43; PPL Gas RB at 17). The Company also asserted that it was in the process of hiring four new employees in September 2006 alone, and that only three additional employees would restore the employee complement to the full budget level. (PPL Gas RB at 17-18).

The OTS argued that the Company's claim was based on a complement of 321 employees at the end of 2006, but as of August, 2006, seven positions remained unfilled. The OTS noted that there were no guarantees that the positions ever would be filled, and recommended an adjustment of $274,176 based on the Company's average wages for seven positions. (OTS St. 2 at 12-13; OTS MB at 27-28).

The OCA argued that the last time that the Company had 321 employees was in March 2004; that the increase to 321 employees in July 2006 was due to the summer hiring of temporary employees; and that by August 2006 the number of employees had dropped again to 314. The OCA therefore recommended an adjustment of $316,000 based on a total complement of 315 permanent employees (314 permanent employees plus two temporary employees equivalent to one permanent employee). (OCA St. 1 at 17-18; OCA St. 1S at 3-4; OCA MB at 34-35).

b. ALJ's Recommendation

The ALJ recommended that the Company's claim of $12,633,000 in annual payroll expense based on a complement of 321 employees be approved, finding that it was reasonable and supported by record evidence. The ALJ found that over a three-year period, the average employee complement has been less than one-fifth of one position below the budgeted amount, and that at times the Company's complement of employees has been greater than budgeted. (R.D. at 30-31).

The ALJ found that the adjustments proposed by the OCA and the OTS were based on employee complement numbers that were not supported by historic data, and that it would be inappropriate and inaccurate to establish an employee complement based upon one month in time. (R.D. at 30).

c. Exceptions

The OCA's Exceptions contend that the ALJ erred when the record clearly demonstrates that the number of Company employees consistently ranged between 313 and 315. The OCA argues that the Company based its claim on the peak number of employees that was achieved in only two months, March 2004 and July 2006. The OCA notes that the July 2006 complement of 321 employees included six temporary employees.

The Company's Reply Exceptions state that its number of employees compared to budget varies over time, and that on average its actual employee complement is less than one-fifth of one position below budget. The Company argues that the OCA did not specifically address its contentions, and that the OCA focused on the employee complement from December 31, 2005 through August 2006, rather than considering the relationship of employee complement to budget over time. (PPL Gas R.Exc. at 16-17).

d. Disposition

We will adopt the ALJ's recommendation on this issue. We agree that the Company adequately demonstrated that its budgeted employee complement is reasonably accurate and supported by historic data. As demonstrated, its actual employee complement was less than one-fifth of one position below budget over a three-year period. Although in the one-month snapshot taken in August 2006 there were seven unfilled positions, over time the difference between employee complement and budget has been insignificant. The relative insignificance of the employee complement in one individual month is confirmed by the Company's averment that in the next month it was in the process of hiring four additional employees. The OCA's Exception on this issue is denied.

7. Amortization of Storage Field Gas Losses

a. Positions of the Parties

PPL Gas claimed $282,000 for gas losses from two storage fields, based on a total loss of 482,336 Dth valued at $2,820,000, from 2002 through 2005, and a proposal to amortize this amount over ten years. (PPL Gas St. 3-R at 19). The OCA proposed to eliminate the claim entirely on the basis that its approval would constitute retroactive ratemaking.

PPL Gas argued that the OCA's proposal should be rejected because its method of recovering storage field gas losses has been approved by the Commission in prior rate proceedings over the OCA's objections. PPL Gas averred that its long-standing practice has been to determine periodically the amount of lost gas during a prior period from the Meeker and Tioga storage fields, and then to amortize the losses for ratemaking purposes. *Pa. PUC v. North Penn Gas Co.*, 65 Pa. PUC 215 (1987). PPL Gas stated that the OCA ignored the ratemaking treatment history of this issue and that its proposal should be rejected on this basis. (PPL Gas MB at 43-45).

The OCA characterized the Company's claim as a request for the recovery of past losses in future rates, or retroactive ratemaking. (OCA St. 1 at 20, OCA MB at 28). The OCA disputed the ratemaking history relied upon by the Company, noting that the last base rate case was resolved through a settlement and cannot be relied upon as precedent. Additionally, in this case PPL Gas proposed a change in practice. To comply with new accounting practices under the Sarbanes-Oxley Act of 2002, the Company now is expensing the cost of gas lost from storage when it occurs. To match the timing of revenue and expense, the Company proposed an annual expense for future gas losses of $507,420, which the OCA has not opposed. The OCA is opposed, however, to the recovery of gas lost from storage from 2002 through 2005, and argued that prior expenses cannot be recovered unless the expense is unanticipated, extraordinary and non-recurring. *Philadelphia Electric v. Pa. PUC*, 502 A.2d 722, 728 (Pa. Cmwlth. 1985). According to the OCA, PPL Gas did not allege that the lost gas expense fits within these exceptions to the rule against retroactive ratemaking. The OCA pointed to a Commission decision that denied a claim for recovery of past sludge removal expense, but allowed the recovery on a going-forward basis. The Commission found that "[t]he existence of the unchallenged ongoing expense, however, is proof positive that the cost for removal of the sludge ... is not extraordinary, non-recurring expense which should be amortized in current rates." *Pa. PUC v. Mechanicsburg Water Co.*, 80 Pa. PUC 212, 232 (1993). The OCA concluded that its proposal to deny the claim for recovery of past storage losses was supported by the record and by the law.

PPL Gas replied that it properly referenced the inclusion of storage field gas losses in the settlement of its 2000 rate case, because the purpose of the reference was to establish the fact of an existing practice, as opposed to legal precedent. More importantly, the Commission approved the recovery of storage field gas losses in the Company's litigated proceeding in the 1987 *North Penn* case. PPL Gas argued that these two cases demonstrate that the Commission in the past allowed the Company to amortize past storage field gas losses, and that the OCA's proposal is inconsistent with prior Commission orders.

b. ALJ's Recommendation

The ALJ recommended that PPL Gas' annual expense claim of $282,000 for amortization of storage field gas losses be approved. The ALJ concluded that the OCA failed to show how the 1987 Commission decision in *North Penn* does not apply in this proceeding. (R.D. at 32).

c. Exceptions

The OCA's Exceptions argue that the ALJ's finding that it had not distinguished this case from the 1987 *North Penn* case is erroneous. The OCA states that the Company itself departed from past practice by claiming an expense for current storage field gas losses, which the OCA did not oppose. In the past, the Company deferred the recovery of losses, but the Company has since changed its accounting practices to comply with the Sarbanes-Oxley Act of 2002. Since the Company now expenses gas losses, the OCA argues that it no longer can defer such amounts for future recovery. The OCA argues that the Company no longer uses the accounting practices upon which the *North Penn* decision was based, and that the recovery of gas lost between 2002 and 2005 would be improperly retroactive where the Company also has proposed to recover lost gas expense on a normalized, recurring basis.

The Company's Reply Exceptions argue that the OCA proposes to depart from well-established practice and allow PPL Gas to recover losses only prospectively. The Company states that, while it is willing to recover losses on a current basis prospectively, as part of a transition to current recovery it is necessary to recover losses for the period 2002 through 2005. The Company distinguishes its claim from the disallowed sludge removal expenses at issue in *Mechanicsburg Water*. According to the Company, in *Mechanicsburg Water* there had been no prior approval of amortization of past expenses, and the Commission found that the expenses were routine, normal and ongoing and did not qualify for amortization. In contrast, in this case the Commission previously concluded that the Company's storage field losses qualify for amortization. Here, one last amortization is necessary to complete the transition from amortization of past expenses to current recovery of such expenses. (PPL Gas R.Exc. at 17-19).

d. Disposition

We shall adopt the ALJ's recommendation and deny the OCA's Exception on this issue. While it is true that the Company now is expensing its storage field gas losses on a current basis, it would be unfair to depart abruptly from past practice and prevent the Company from recovering the losses it incurred from 2002 through 2005. It is important to note that the gas losses from 2002 through 2005 will not be expensed on a going-forward basis, and that there is no double recovery issue, as the OCA's Exceptions seem to imply. We agree with the Company that one last amortization is necessary to complete the transition from amortization of past expenses to current recovery of expenses going forward.

8. Right-of-Way Maintenance Expense

a. Positions of the Parties

PPL Gas claimed an expense of $678,000 for its right-of-way (ROW) maintenance program. (PPL Exh. Future 1 – Revised, Sch. B-4 at 3). PPL Gas also provided testimony that its projected ROW maintenance expense for the 2006 future test year was $765,000. (PPL Gas St. 1-R at 10). PPL Gas and the OCA describe this issue in terms of a claimed expense of $765,000; the OTS and the ALJ describe the issue in terms of a claimed expense of $678,000. The discrepancy between the two amounts is not explained.

PPL Gas averred that the increase over prior years' expense results from changes in legal requirements. Specifically, the ROW maintenance program has expanded to accommodate testing under the Company's Integrity Management Plan, which is a result of the Company's response to federal regulations. The ROW maintenance program now must incorporate a wider clear path over and along the Company's pipelines, and an open tree canopy above the pipelines, to accommodate global positioning system (GPS) tools. PPL Gas further argued that it now expects that its actual expense in 2006 will be approximately $855,000, significantly more than its 2006 budget of $765,000. (Tr. at 121-23). PPL Gas argued that the Commission should encourage natural gas distribution companies to maintain their system in a safe and adequate manner, in compliance with all legal requirements.

The OTS argued that the Company's claim of $678,000 should be adjusted downward by $202,000 to $476,000, which is the Company's projected average expense level for the five-year period 2006 - 2010. (OTS St. 2 at 20; OTS Exh. 2, Sch. 12). [13]

The OCA argued that the Company's claim of $765,000 represents a significant increase to actual ROW expenditures in recent years, and should be adjusted downward by $440,000 to $325,000, the Company's actual expense in 2005. The OCA noted that, from 2001 through 2004, the annual ROW program costs never exceeded $284,000. (OCA MB at 30). The OCA also noted that the Company recorded $120,000 in payments for work performed in late 2005 as 2006 expenses. The OCA argued that, while some level of increased expense would be reasonable, the Company's claim was abnormally high and inconsistent with the Company's recent experience. The OCA stated that, given the Company's projected average expense of $476,000 for 2006 through 2010, even the Company does not consider its claim for $765,000 to be normal. In addition, the OCA argued that the Company's spending in 2006 was not on pace to support its claim, and that exclusive of the payment of $120,000 for work performed in 2005, the actual expenses during the first six months of 2006 were only $82,000.

Based on the Company's actual costs and its own projected level of on-going expense, the OCA recommended that the claim be adjusted downward by $440,000 to reflect an annual expense allowance of $325,000, equal to the Company's actual expenditure in 2005 of $205,000, adjusted upward for the $120,000 for work performed in 2005 but recorded in 2006. (OCA St. 1S, Sch. C-2 Revised; OCA MB, Table II). This would represent an increase of 75 percent over 2004 costs and 146 percent over 2003 costs.

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[13] To add further confusion, the Company stated that the OTS proposed an adjustment of $289,000 to the Company's ROW "program cost" of $765,000, and an allowance of $476,000. (PPL Gas MB at 45).

PPL Gas replied that the OCA's proposed adjustment should be rejected because it is based on 2005 expenditures and does not provide for any expense increase. PPL Gas averred that it provided unrebutted evidence that 2006 expenses will be $855,148, an amount that exceeds the budgeted expense. PPL Gas claimed that the OCA ignored its explanation of the increased work that was required to meet the requirements of federal regulations, and that even the OCA admitted that it was reasonable to expect some level of increased expense. PPL Gas' Reply Brief did not address the OTS' proposed adjustment.

The OTS replied that the Company's argument seems to be that expense levels from previous years should be ignored in favor of the disproportionately higher level of expense in 2006, the future test year. The OTS rejected the Company's argument that changes in legal requirements will cause expenses to increase as too vague, stating that the Company failed to quantify any such alleged increase or address such legal requirements with sufficient specificity to render the increase known and measurable for ratemaking purposes. The OTS also stated that the Company presented no evidence that its increased 2006 expenditures were not scheduled to coincide with the future test year and will be typical for the post-2006 years that these rates will be in effect. The OTS argued that the sharp escalation in the 2006 expense level justifies the reliance on the Company's own projection of an annual normalized expense level of $476,000 as a better representative of the normal level of expense. (OTS RB at 19-21).

The OCA replied that PPL Gas improperly mixed the question of how much the Company will spend in 2006 with the question of a reasonable, normal level of ROW expense for the purpose of establishing just and reasonable rates. The OCA stated that, even if the Company spends $765,000 in 2006, there is nothing in the record that supports this amount as a normal level of expense, noting that the average of the Company's own forecasted expense for the five years 2006 through 2011 was less than the Company's rate case claim. The OCA also noted that, as of the close of the record in September 2006, the Company incurred only $239,318 in ROW expense.

b. ALJ's Recommendation

The ALJ recommended that PPL Gas' claim be approved. The ALJ found that the Company's claim was supported by the record; that PPL Gas presented evidence that the actual cost of the ROW maintenance will exceed the amount budgeted for the 2006 test year; and that this supportive evidence was not refuted by either the OTS or the OCA. The ALJ concluded that the arguments presented by the OTS and the OCA and OTS were not persuasive. (R.D. at 32-34).

c. Exceptions

The OCA argues in its Exceptions that the ALJ erred in concluding that the record evidence supports the Company's budgeted claim for ROW clearing costs of $678,000.[14] The Company's actual expenditures for the first six months of 2006 were only $82,000; the actual expenditures at the end of August 2006 were only $119,000; and the record does not support a conclusion that the Company will spend the budgeted amount of $765,000, either in 2006 or in the future. "Based on the Company's actual expenditures and the Company's own expectations of a normal level of on-going ROW maintenance expense, the ALJ erred in accepting the Company's abnormally high ROW program expense claim in this case." (OCA Exc. at 16). The OCA submits that the Commission should adopt *either* the OCA's proposed allowance of $325,000 based on 2005 expenses, *or* the OTS proposed allowance of $476,000 based on the Company's forecasted expenses from 2006 through 2010.

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[14] The OCA also states that its adjustment is directed at the Company's "broader claim for ROW related expenses of $765,000." (OCA Exc. at 15).

The Company's Reply Exceptions state that, contrary to the OCA's argument that the Company did not prove its claimed level of expense in the future test year, the Company demonstrated that the increased level of expense results from changes in legal requirements, and that its actual costs for ROW maintenance will exceed its 2006 budget. (PPL Gas R.Exc. at 19-20).

d. Disposition

We will adopt the ALJ's recommendation on this issue. The Company has demonstrated that its ROW maintenance program is expanding significantly to accommodate GPS tools and testing required by the Company's Integrity Management Plan. Although the Company's claim is based on its 2006 budget of $765,000, it presented testimony that its actual expense in 2006 will be approximately $855,000. The OTS and the OCA adjustments both are based on the Company's past level of expenditures, and make no allowance for higher costs from the increased maintenance required to maintain a wider clear path and open tree canopy along the Company's pipeline ROWs. The OCA's Exception is denied.

9. Customer Records Expense

a. Positions of the Parties

PPL Gas claimed $2,284,000 in customer records expense for the future test year. The Company's expense in the historic test year was $1,774,000. (PPL Gas Exh. Historic 1, Sch. B-4 at 4; PPL Gas Exh. Future 1, Sch. B-4 at 4). The OCA proposed an adjustment of $100,000 based on the expenditure for a new telephone system, which the OCA maintained was a non-recurring expense.

The Company argued that, while viewed in isolation the installation of a new telephone system, appears to be a non-recurring charge, similar projects are done routinely every year. Similar projects in recent years included radio coverage studies and enhancements, electronic dispatching equipment set-up, consultant support for enhancements to software, and distribution system alarm programming. (PPL Gas MB at 47-48).

The OCA argued that the inclusion of the one-time cost of installing the new telephone system would mean that ratepayers would be charged for this cost every year. The OCA submitted that the Company did not meet its burden of proof that the customer records expense claim should include $100,000 for the new telephone system, noting that the Company's claim increased from $1,774,000 in the historic test year to $2,284,000 in the future test year. (OCA St. 1 at 29; OCA Sch. C-2 Revised; OCA MB at 35-36).

The OCA argued in reply that the Company attempted to shift the burden of proof and has asked the Commission to accept that the Company will spend $100,000 per year for different projects chargeable to different accounts. Such expenditures imply a deduction to customer records expense and a corresponding increase to some other account. However, the Company's claims in rebuttal can not substitute for the substantial evidence that is required to support its claim. (OCA RB at 18).

b. ALJ's Recommendation

The ALJ recommended that the OCA's proposed adjustment be adopted, finding that PPL Gas failed to meet is burden of proof on its inclusion of the expense for the new telephone system. "PPL Gas attacks the logic of the OCA's reasoning stating that the conclusion is flawed because the expenditure is viewed in isolation. However, PPL Gas does not present any credible rationale for why the expenses should be viewed as recurring annually and thus, justifiably applied to rates for recovery each year the rates are in effect." (R.D. at 34). The ALJ recommended that the jurisdictional expense of

$99,000 for the new telephone system should be rejected, and that the OCA's adjustment should be adopted.[15] (R.D. at 34-35).

c. Disposition

No party filed an Exception to the ALJ's recommendation on this issue. On review, we agree with the ALJ's reasoning and will adjust the Company's claim downward by $99,000 on a jurisdictional basis. The Company claimed that the expenditure for the new telephone system was representative of a recurring expense, but did not present adequate evidence to support its claim.

10. Uncollectible Accounts Expense

a. Positions of the Parties

PPL Gas claimed $2,916,000 in uncollectible accounts expense, which it calculated by multiplying a projected uncollectible accounts of 1.5 percent by the budgeted future test year revenues, then adding $200,000 for anticipated arrearage forgiveness under its Customer Assistance Program (CAP). The OTS and the OCA proposed adjustments of $179,621 and $343,000, respectively.

PPL Gas argued that its uncollectible accounts of 1.5 percent is based on judgment and historical experience. Excluding CAP arrearage forgiveness, over the last four years uncollectible accounts expense ranged from 1.07 percent in 200,5 to 1.41 percent in 2002.[16] PPL Gas submitted that the lower percentage in 2005 was due to unusual circumstances, including the publicity surrounding the implementation of Chapter 14, increased LIHEAP funding, the Governor's *Stay Warm Pennsylvania* initiative and the increase in the Company's CAP enrollment. More significantly, gas cost increases in the latter part of 2005 increased 2005 revenues significantly without affecting uncollectible accounts expense for that year. Uncollectible accounts expense related to the higher level of purchased gas costs will not materialize until several months after the service is provided. (PPL Gas St. 1-R at 5). PPL Gas submitted that the combination of suppressed uncollectible accounts expense and increased revenues in 2005 produced an extraordinarily low ratio of expense to revenue. PPL Gas selected 1.5 percent as the ratio for its filing because certain of the 2005 factors will have no effect in 2006, and others will have the opposite effect and increase uncollectible accounts expense. Most importantly, the continuation of high purchased gas costs will result in an increased number of customers being unable to pay their bills.

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[15] The OCA's proposed adjustment deducted $100,000 from O&M Expense before applying a jurisdictional allocation factor of 99.41 percent. (OCA St. 1, Sch. C-2).

[16] The actual percentages from 2002 through 2005 were 1.41, 1.32, 1.32, and 1.07 percent, respectively. (PPL Gas MB at 48).

PPL Gas' inclusion of an additional $200,000 to reflect arrearage forgiveness under its CAP reflects the expansion of its CAP and the historically increasing trend of CAP arrearage forgiveness, which steadily has increased from $73,091 in 2002 to $164,463 in 2005. (PPL Gas St. 1 at 12). PPL Gas stated that it had completed the expansion of its CAP from 2,200 to 2,500 customers, and that no further increase in the CAP population is anticipated. (PPL Gas RB at 22). PPL Gas criticized the adjustments proposed by the OTS and the OCA, both of which were based on an average of multiple years' write-offs, as failing to recognize that changes have occurred and that historical experience is not a reliable indicator of uncollectible accounts expense in 2006 and beyond.

The OTS proposed an adjustment based on the write-off ratio over four years, which would lower the 1.5 percent ratio proposed by the Company to 1.27 percent. The OTS also opposed the inclusion of an additional $200,000 in CAP arrearage forgiveness in the calculation of the Company's claim. The OTS methodology excluded arrearage forgiveness write-offs from net write-offs in its calculation, and then added back the Company's projected CAP arrearage of $200,000 to the uncollectible allowance.

The calculation produced an OTS-recommended adjustment of $179,621. The OTS argued that the Company improperly included CAP arrearages in the development of its proposed write-off ratio because these amounts are fixed and do not vary with revenue. According to the OTS, the Company improperly included CAP arrearage amounts twice in its calculation – first as part of the calculation of the ratio, and second as an add-on to arrive at the Company's total claim. The OTS criticized the Company's methodology as "double dipping." (OTS MB at 21-24).

PPL Gas argued that the OTS failed to recognize that there is an annual thirty percent turnover among CAP customers, and that the CAP population is increasing, both of which will increase the level of CAP arrearage forgiveness. In reply, PPL Gas also contested the OTS' argument that PPL Gas included the CAP arrearage forgiveness amount twice in its calculation, and flatly asserted that arrearage forgiveness amounts were not included in the 1.5 percent ratio used to calculate uncollectible accounts expense. PPL Gas pointed out that the OTS witness on this issue made no such criticism of PPL Gas' calculation, and the OTS provided no record citation in support of its argument. PPL Gas reiterated that the only difference between its and the OTS' methodology was that the OTS used a write-off ratio of 1.27 percent based on an average of historical write-offs, while PPL Gas used a judgmental ratio of 1.5 percent.

The OCA recommended three adjustments to the Company's calculation: (1) a reduction in the write-off ratio from 1.5 percent to 1.33 percent based on the Company's actual experience from 2001 through 2005; (2) a weather normalization adjustment; and (3) an update to reflect the recent settlement of the Company's Section 1307(f) case under which the purchased gas cost rate is $12.4738 per Mcf. The OCA observed that its recommended write-off ratio of 1.33 percent, which was based on the five-year period 2001 through 2005, was not materially different than the 1.35 percent average for the three-year period 2002 through 2004. The total adjustment recommended by the OCA was $343,000. (OCA MB at 32-33).

PPL Gas criticized the OCA's use of a lower level of revenues to calculate the expense. PPL Gas states that changes in purchased gas cost rates that took effect on December 31, 2006, will not affect uncollectible account expense until late in 2007, and argues that the OCA should not be allowed to reach beyond the future test year to reduce uncollectible accounts expense. Further, PPL Gas argued that, because purchased gas cost rates are adjusted quarterly, there is no reason to believe that the rates established by the settlement of its Section 1307(f) proceeding will be maintained on an ongoing basis. Finally, PPL Gas averred that its uncollectible accounts expense clearly is on the rise, and that as of July 31, 2006, it had 410 more accounts shut off for nonpayment than at the same time in 2005, an increase of thirty-six percent, and that the amounts owed by customers terminated for nonpayment was ninety-five percent higher. (PPL Gas MB at 48-52).

In reply, the OCA argued that the Company's write-off ratio of 1.5 percent is in excess of any level experienced in the last five years, and that the Company's claim that 2005 was atypical was addressed by the OCA's use of a five-year average. Second, the OCA applied its recommended ratio of 1.33 percent to the Company's *pro forma* future test year revenues, updated to reflect known and measurable rates, while the Company did not offer a substitute or better rate. Third, the OCA stated that its recommended expense level included an allowance of $196,000 for CAP arrearage forgiveness. (OCA RB at 15-16).

b. ALJ's Recommendation

The ALJ recommended that the Company's uncollectible accounts expense claim be adjusted to reflect the OCA's recommended write-off percentage of 1.33 percent. The ALJ recommended, however, that the OCA's recommended adjustment to revenues be rejected. The ALJ recommended that the uncollectible accounts expense claim be adjusted to $2,861,609, a reduction of $54,391 to the Company's claim.[17] (R.D. at 36-37).

The ALJ found that a write-off ratio of 1.33 percent was supported by record evidence, and that the Company's argument that 2005 data should be disregarded as abnormal was unconvincing. The ALJ concluded that the use of an average ameliorates variations in the magnitudes of uncollectibles. "Simply put, PPL Gas' assertion that the historical experience cannot be relied upon to provide an accurate estimate of uncollectible accounts for the future is not persuasive since PPL Gas to some extent reflects historical experience in its presentation of the proposed claim." (R.D. at 36-37).

The ALJ rejected the OCA's recommended adjustment to revenues to reflect rates established by the settlement of the Company's Section 1307(f) proceeding because these rates are subject to quarterly adjustment and will not remain constant on a going forward basis. (R.D. at 37).

c. Exceptions

The OCA's Exceptions argue that, while the ALJ correctly adopted a write-off ratio of 1.33 percent, she applied the ratio to the wrong revenue amount when calculating uncollectible accounts expense. The OCA avers that the ALJ applied the write-off ratio to a revenue amount of $200,121,000, whereas the Company used $181,321,000 to calculate its uncollectible accounts expense. The OCA suggests that the ALJ erroneously used a revenue figure from OTS Exhibit No. 2, Schedule 2, which included transportation revenues that should not be included in the calculation of uncollectible accounts expense. The OCA submits that the ALJ's recommendation should be corrected to reflect a *pro forma* uncollectible accounts expense of $2,612,000.[18] (OCA Exc. at 16-17).

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[17] $200,121,000 (future test year billed revenues) x 0.0133 = $2,661,609 + $200,000 (CAP arrearage forgiveness) = $2,861,609. $2,916,000 (PPL Gas expense claim) - $2,861,609 = $54,391.

The Company's Reply Exceptions state that the OCA's criticism of the ALJ's calculation is erroneous because the ALJ's use of future test year billed revenues, as proposed by the OTS, was not criticized in the record, is supported by substantial evidence in the testimony of the OTS, and is consistent with past Commission practice. The Company cites *Pa. PUC v. National Fuel Gas Distribution Corp.*, Docket No. R-901670, p. 5 (December 24, 1990) and *Pa. PUC v. National Fuel Gas Distribution Corp.*, Docket No. R-891218 (December 29, 1989). As to the OCA's contention that the ALJ did not intend to use the level of revenues proposed by the OTS, the Company states that there is no such indication in the Recommended Decision. Finally, the Company disputes the OCA's contention that it is improper to include transportation revenues in the calculation because a portion of transportation revenues become uncollectible. (PPL Gas R.Exc. at 20-21).

The Company did not except to the ALJ's determination that a write-off ratio of 1.33 percent as proposed by the OCA is appropriate.

d. Disposition

No party excepted to the ALJ's recommendation to adopt the OCA's proposed write-off ratio of 1.33 percent, which we shall adopt. This ratio comports with the Company's actual experience for the five-year period from 2001 through 2005. It also is not materially different than the Company's 1.35 percent average for the three-year period 2002 through 2004, which excludes the year 2005 that the Company claims was abnormal.

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[18] ($181,321,000 x 1.33 percent) + $200,000 = $2,611,569, rounded up to $2,612,000. (OCA St. 1, Sch. C-2.2).

With regard to the level of revenues against which the write-off ratio will be applied to determine the Company's uncollectible accounts expense, we agree with the OCA's argument that the most recent purchased gas cost rate should be used to calculate the Company's revenues. Although, as the Company points out, the rate is subject to quarterly adjustment going forward, the more recent rate is a more reliable indicator of the Company's future revenues than is a rate that already has been rescinded. The Company's argument against using the more recent rate because it may change really is an argument against using any rate at all. We know for a fact that the rate preferred by the Company is no longer operative; we can only assume that the current rate will not be in effect for the duration of the base rates established in this proceeding. Such is the nature of the rate setting process. In order to calculate a revenue amount against which the write-off ratio will be applied, we must select a rate certain, knowing in advance that the rate is subject to change. We believe that the more recent rate is a better predictor of future revenue than is a past rate no longer in effect. Accordingly, we adopt the OCA's revised adjustment in this regard. After multiplying the adjusted present rate revenue by the write-off ratio of 1.33 percent, we will add $200,000 for CAP arrearage forgiveness to determine the total uncollectible accounts expense allowance. This results in an uncollectible accounts expense of $2,695,615, and a downward adjustment of $220,385 to the Company's claim.[19]

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[19] $187,672,000 (Rate Revenue) + $12,449,000 (Transportation Revenue) - $13,070,750 (GCR Reduction) = $187,050,250 x 1.33% = $2,495,615 + $200,000 = $2,965,615 - $2,916,000 (Company Claim) = ($220,385).

11. LIURP Initiative

a. Positions of the Parties

The issue in this proceeding is whether or not the Company should be required to implement a low income usage reduction program (LIURP). The settlement of the Company's restructuring proceeding in 2000 at Docket No. R-00994788 provided that the Company would not be required to implement a LIURP through the end of its four-year ramp up of its CAP. After this four-year period, any party was free to recommend that a LIURP be implemented. In this proceeding, the Commission on Economic Opportunity (CEO) has advocated that the Company be required to implement a LIURP. The CEO is a non-profit corporation whose clients are the low-income population in Luzerne County. (CEO MB at 1).

The CEO averred that it has a particular expertise in weatherization programs, having weatherized more than 25,000 homes under the U.S. Department of Energy Weatherization Assistance Program. The CEO serves as a subcontractor for the LIURPs operated by PPL Electric, UGI Gas, and PG Energy. The CEO argued that PPL Gas should be required to establish a LIURP because the Commission found that LIURPs have been one of the most successful programs for assisting low-income customers. The CEO also argued that PPL Gas is required by law to implement a LIURP with minimum annual funding equal to 0.2 percent of jurisdictional revenues, citing 52 Pa. Code § 58.4. The CEO argued that, while 52 Pa. Code § 58.18 authorizes exemptions from the requirement for special circumstances, a covered utility is required to petition the Commission for an exemption. PPL Gas did not file such a petition; rather, it simply has operated without a LIURP. Finally, the CEO argued that the Competition Act requires that the Commission ensure that universal service programs are available and appropriately funded; that universal service programs include LIURPs; and, therefore, that the Act mandates that PPL Gas have a LIURP. (CEO MB at 3).

The CEO proposed that PPL Gas be directed to establish a LIURP at the regulatory minimum level of 0.2 percent of jurisdictional revenues, or $300,000. The CEO averred that this funding level would provide services to 107 customers per year, out of the total 66,000 plus residential customers served by PPL Gas. (CEO MB at 4-5).

PPL Gas argued that there are valid reasons why it is inappropriate for PPL Gas to implement a LIURP. First, PPL Gas argued that a LIURP would not be practical because it is a small gas distribution company with a service territory geographically disbursed throughout the Commonwealth. As of December 31, 2005, PPL Gas served 66,537 residential customers in thirty-four different counties. PPL Gas' service territory extends from the New York state line to northern Maryland, and from the Delaware River to forty-five miles from the Ohio state line. (PPL RB at 23). To implement a LIURP to serve thirty-four counties, PPL Gas would be required to use services from eighteen different community-based organizations (CBOs).

PPL Gas argued that the fifteen percent regulatory cap on administrative costs at 52 Pa. Code § 58.5 would not be feasible, given the large number of CBOs with which it would be required to work. All of the reporting and monetary requirements would be the same as those for large utilities, and PPL Gas would be required to obtain and consolidate required information from each of the eighteen CBOs that would be involved. The fifteen percent cap on administrative costs would equate to $45,000, which would not be sufficient to pay the wages and benefits of even one full-time employee, or the other requisite costs such as travel, office space and computer systems. (PPL MB at 53). PPL Gas argued that, if it were required to implement a LIURP, it would need relief from the cap on administrative expenses. (PPL Gas RB at 24).

PPL Gas further argued that, even assuming none of the LIURP costs of $300,000 were used for administration, only 107 residences could be weatherized per year, on average only three customers per county. Each CBO would be able to weatherize only six residences per year. A CBO could not be expected to maintain a program under which only one residence could be weatherized every two months. PPL Gas noted that these already low numbers would be reduced to even lower levels to accommodate administrative costs. PPL Gas argued that the CEO simply ignores the practical difficulties in implementing a LIURP in PPL Gas' service territory, and that it would not be in the best interests of customers to implement such an inefficient program.

PPL Gas also contested the CEO's interpretation of the Commission's regulatory requirements. The Commission's LIURP regulations took effect on January 16, 1993, and therefore were in effect in 2000 when PPL Gas specifically was exempted from the requirement to implement a LIURP. (PPL Gas MB at 54).

Although PPL Gas argued that it would not be appropriate for the Commission to require it to implement a LIURP, it stated that is willing to develop a program tailored to its specific circumstances, which would provide less aggressive usage reduction measures to more customers. Such an alternative program would have significantly reduced analysis and reporting requirements so that the administrative costs would not be disproportionate to the program's costs. PPL Gas stated that it would be willing to work with the CEO and other CBOs to develop such a program, and noted that the program's size would be commensurate with the revenue allowance, if any, approved by the Commission. (PPL Gas MB 52-55).

In reply, the CEO argued that, although PPL Gas should be compelled to implement a LIURP, at a minimum it should be directed to implement its alternative proposal. The CEO argued that, regardless of whether a traditional LIURP or an alternative program is established, the funding level should be $300,000 annually.

b. ALJ's Recommendation

The ALJ concluded that PPL Gas should not be required to implement a traditional LIURP, and that the Commission had provided a specific exemption from the regulatory LIURP requirement to PPL Gas. The ALJ concluded that the fact that the Commission provided this exemption after Chapter 58 of the Commission regulations became effective in January 1993 was compelling. (R.D. at 39).

The ALJ determined that an alternative program as suggested by PPL Gas would satisfy 66 Pa. C.S. § 2203(8), and recommended that: (1) PPL Gas be required to file a program proposal within a time certain; (2) PPL Gas be directed to work with the CEO in implementing its program; (3) PPL Gas and the CEO be required to propose analysis and reporting requirements to the Commission's Bureau of Consumer Services at least three months prior to implementation of the program similar to the provision in the settlement at Docket No. R-00991488; and (4) PPL Gas should not commence the program without Commission approval. (R.D. at 39).

c. Exceptions

PPL Gas' Exceptions object to the ALJ's failure to include any rate recovery provision for the costs of an alternative program. Although PPL Gas does not object to undertaking a design of a scaled-back usage reduction program, it strongly objects to any requirement to implement such a program without a cost recovery provision. In order to address this problem, PPL Gas states that it is willing to submit to the Commission a program that would address funding in addition to program design. In the alternative, PPL is willing to propose a program in conjunction with its next base rate case, when funding could be addressed. (PPL Exc. at 26-27).

The CEO's Exceptions object to the ALJ's failure to require that the funding for the Company's program be established at $300,000 annually. Although the CEO does not object to the type of program recommended by the ALJ, it objects to the lack of a required funding level of $300,000 for the program.

PPL Gas' Reply Exceptions do not respond to the CEO's Exceptions on a specific funding level. The CEO's Reply Exceptions, however, object to the alternative proposed by the Company of waiting until its next base rate case to address the design and funding of a program. The CEO submits that, because the Company's low income residential customers have been without a LIURP for years, funding should be established as part of the current rate case. The CEO points out that the Company did not argue that program funding should be scaled back, but rather that the usage reduction measures provided to customers be less than those in a traditional LIURP so that more customers could be reached in the Company's dispersed service territory. Although the CEO has no objection to scaled-back program measures and reporting requirements if it means more customers would be served, the CEO does object to funding at less than $300,000 annually. The CEO requests that funding be established at $300,000 and that this amount be recoverable through rates.

The OCA's Reply Exceptions state that funding should be addressed in conjunction with a filing by the Company on program design. The OCA refers to the Commission's recent Order regarding CAPs where the Commission expressed its intent to more closely link the review of CAP program design and funding. *Customer Assistance Programs: Funding Levels and Cost Recovery Mechanisms*, Docket No. M-00051923 (December 18, 2006). The OCA states that the same approach for a scaled-back low income weatherization program is appropriate.

d. Disposition

We agree with and will adopt the ALJ's recommendation that the Company be required to implement an alternative to a traditional LIURP program. The ALJ recommended that the Company be required to file a proposed program with the Commission for approval within a date certain. We shall require that the Company file a program proposal within six months of the date of this Order, or with the filing of its next base rate proceeding, whichever comes first.

With regard to the Exceptions filed by the Company and by the CEO, we believe that the Company should propose a funding level and a funding mechanism at the time that it files its program proposal. Establishing a funding level in advance for a program that has not been proposed or approved seems to us to be ill advised. Waiting to establish a funding level will enable the Company to tailor its requested funding level to the program that it develops and proposes. If the proposed program measures are revised in the forthcoming Commission proceeding, the funding level can be adjusted accordingly. If, however, we were to establish a fixed and immutable funding level in a vacuum, the Company would have to design its program to fit the funding, rather than the other way around.

We also do not believe that the funding level for the Company's program is or should be dictated by our regulation at 52 Pa. Code § 58.4. First, the funding level of 0.2 percent of jurisdictional revenues is described as a general guideline subject to revision when the Commission reviews the need for program services and addresses the recovery of program costs in utility rates. Program services and program costs will be reviewed in the Company's filing that we are requiring in this Order. Second, the Commission previously has exempted the Company from the requirement that it establish a low income usage reduction program. Today we are requiring that the Company begin the process of establishing such a program and file a proposal within six months. We will establish the appropriate funding level in that proceeding. Until that time, the Company's current exemption shall continue in effect.

E. Taxes

1. Federal Income Tax & Consolidated Tax Savings

a. Positions of the Parties

PPL Gas originally filed a calculated federal income tax liability on a stand-alone, separate company basis although the Company filed with the Internal Revenue Service as part of a consolidated group under parent corporation PPL Corporation. (PPL Gas Exh. 1-A at 66). Although PPL Gas asserted that it is inappropriate to adjust the federal income tax expense to reflect its participation as a member of the PPL Corporate System in a consolidated tax return, the Company acknowledged that the Commission makes adjustments in rate cases where a utility participates in a consolidated federal income tax return and unregulated affiliates experience losses for the purposes of calculating federal income taxes. Consequently, PPL Gas concurred with the methodology regarding federal income tax advocated by the OTS in using three years of data for computing an adjustment reflecting consolidated savings. (PPL Gas MB at 56-57). In addition, PPL Gas also suggested removal of certain non-recurring items: non-recurring bonus tax depreciation which expired at the end of 2004; one-time losses associated with sale of specific assets or business units; losses from discontinued operations and now divested assets; and losses from Synfuel operations as the operations are being shut-down and thus will not recur. (PPL Gas MB at 57, PPL St. 3-R at 15-16). The result of these adjustments yields a reduction to income tax expense of $59,715. (See PPL Exh. JMK-2 Sch. 2, PPL Gas Exh. Future-1 Revised Sch. D-12). The OTS accepted this adjustment. (OTS MB at 40).

The OCA recommended a reduction of $411,000 (on a jurisdictional basis) to the federal income tax expense claim. (OCA MB at 42, Appendix A Sch. C-4 and

C-4.1 corrected 9/22/06). The difference between the Company's claim and the position of the OCA hinges upon the use or disregard of a three-year average of taxable income for PPL Gas. The OCA did not use a three-year average of PPL Gas' taxable income but used the *pro forma* federal taxable income under present rates. (See PPL Gas Exh. Future-1 Revised Sch. D-12). The OCA essentially contended that, because of the quantities of the historic three years, two years with zero amounts and one with a positive amount, it is unsound to base consolidated tax savings on these data. The OCA chose instead to base its recommendation on the best available record data, the Company's normalized three-year average of affiliates' tax losses. (OCA RB at 20).

PPL Gas refuted the OCA's assertion that using the three-year average of taxable income for PPL Gas is unsound. According to PPL Gas, the OCA's calculations contain several inconsistencies because of mismatched data. PPL Gas noted that the OCA mismatched data from different time periods, 2003 – 2005 for affiliates, and 2006 for PPL Gas, and mismatched per books federal taxable income for the affiliates with normalized future test year federal taxable income, as adjusted for ratemaking purposes, for PPL Gas. PPL Gas asserted that this mismatching is inconsistent and inappropriate. Additionally, PPL Gas asserted that the OCA's method is inconsistent with Commission practice of using the Modified Effective Tax Rate method. PPL Gas cited *Pa. PUC v. Pa. American Water Co.*, 2002 Pa. PUC LEXIS 1, 93 for the contention that the Commission's practice is to use multiple year averages to smooth out year-to-year fluctuations in taxable income. (PPL Gas RB at 24-27).

b. ALJ's Recommendation

The ALJ concluded that the adjustment presented by the OCA was unreasonable and not objective and should be rejected. Conversely, the ALJ recommended that the adjustment as presented by PPL Gas in its Main Brief, yielding a

$59,175 reduction in its income tax expense claim consistent with PPL Gas Future-1 Revised Sch. D-12, was reasonable and should be accepted. (R.D. at 41).

c. Exceptions

In its Exceptions, the OCA submits that the ALJ erred in accepting the Company's adjustment rather than its recommended adjustment for consolidated tax savings. The OCA avers that the Company's adjustment understates the consolidated tax savings due to its selective "normalization" adjustments and should not be used in this proceeding. The OCA notes that the ALJ appeared to suggest that the OCA disregarded unfavorable data in its calculations but opines that the Company's method does exactly what the ALJ finds to be unreasonable. The OCA avers that the Company does not take the data as it exists but makes numerous "normalization" adjustments to the taxable income of the tax loss affiliates, but makes no such normalization adjustment to the taxable income of PPL Gas. According to the OCA, the Company's selective adjustments to the data had the effect of reducing the magnitude of the consolidated tax savings adjustment. (OCA Exc. at 17-18).

In reply, PPL Gas reiterates its position that the OCA's calculation is replete with inconsistencies, and is contrary to the Commission's Modified Effective Tax Rate method. PPL Gas rejoins that its consolidated federal income tax savings calculation is consistent with the calculation presented by the OTS, which was based on three years of data, from 2003 to 2005, for the PPL Corporate System. PPL Gas avers that the only difference between the OTS calculation and its calculation is that PPL Gas made certain adjustments to remove the effects of non-recurring items from the calculation. PPL Gas cites to *Pa. PUC v. Pennsylvania Water Co. – Sayre Division,* Docket No. R-00891473, at 6-8, 70-71 (Aug. 31, 1990) and to *Pa. PUC v. Philadelphia Suburban Water Co.,* 75 Pa. PUC 391, 420 – 424 (Oct. 18, 1991) as support for its position that the elimination of non-recurring items has been consistently approved by the

Commission. PPL Gas also notes that the OTS did not object to its consolidated tax calculations. (PPL Gas R.Exc. at 21-22).

d. Disposition

The OTS has employed the Modified Effective Tax Rate method utilizing a three-year average of the most recent available tax years to compute its consolidated tax adjustment. Upon review of the OTS calculation, PPL Gas concurred with this methodology, but recalculated the proposed consolidated income tax savings by excluding certain non-recurring items. Both the OTS and the ALJ accepted the PPL Gas recommended $59,715 amount as the appropriate adjustment to the Company's federal income tax liability in this proceeding. Based on the evidence of record, we are in agreement with the ALJ and find the OCA's arguments against the removal of non-recurring items to be unreasonable and inconsistent with Commission precedent.

Accordingly, we deny the Exceptions of the OCA and shall adopt the recommendation of the ALJ.

2. Payroll Taxes

a. Positions of the Parties

The OCA advocated that the payroll tax should be adjusted commensurate with the appropriate complement of employees on payroll. (OCA MB at 40).

b. ALJ's Recommendation

The ALJ did not recommend adjusting the Company's claim for payroll expense and complement of employees. (R.D. at 30-31). Consequently, the ALJ did not recommend adjusting payroll taxes corresponding to the payroll expense position of the OCA. (R.D. at 41).

c. Disposition

In its Exceptions filed in regard to PPL Gas' annual payroll expense, the OCA noted that a corresponding adjustment to payroll taxes also should be adopted. (OCA Exc. at 13). Consistent with our discussion on the Company's payroll expense claim, we shall deny the OCA's Exception.

3. Capital Stock Taxes ("CST")

a. Positions of the Parties

PPL Gas calculated a CST of $382,000. (PPL Gas Exh. Future 1 Sch. D-11 at 2). PPL Gas used a 4.99 mills tax rate because it was currently in effect. The OTS opposed the use of the 4.99 mills and advocated use of 3.99 mills which becomes effective January 1, 2007, and will be in effect on the proposed effective date of the rate change from this proceeding, February 1, 2007.[20] The change in the tax rate advocated by the OTS yields a reduction in the capital stock tax claim of $76,000. The OTS also recommended disallowance of the Company's attempt to iterate the CST under proposed rates as inappropriate and unnecessary. (OTS MB at 35).

b. ALJ's Recommendation

The ALJ concluded that PPL Gas' use of the 4.99 mills tax rate instead of the 3.99 mills tax rate that will be in effect when this rate change takes place was not reasonable. The ALJ found that the adjustment to the capital stock tax of $76,000 reflecting the appropriate tax rate in 2007 is appropriate and supported by record evidence. The ALJ recommended the adjustment of $76,000 to the capital stock tax be approved as recommended by the OTS. Furthermore, the ALJ recommended that PPL Gas be required to make a second STAS filing on February 1, 2007, that will increase the Company's STAS charge because the CST rate will have decreased from that effective January 1, 2007. (R.D. at 42).

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[20] Note that the effective date was voluntarily extended by the Company until February 9, 2007.

The ALJ also noted that the Commission rejected the CST iteration claimed by PPL Electric Utilities Corporation in *Pa. PUC v. PPL Electric Utilities Corporation*, Docket No. R-00049255 (December 22, 2004). The ALJ concluded that PPL Gas did not provide any persuasive record evidence to distinguish this case from Commission precedent. Therefore, in addition to the OTS adjustment of $76,000 to reduce the Company's claim for Capital Stock Tax, the ALJ recommended that the Company's claim for an additional $37,000 in CST based on PPL Gas' requested increase should be rejected. (R.D. at 42).

c. Exceptions

In its Exceptions, PPL Gas first notes that it is not excepting to the ALJ's first recommendation concerning capital stock tax, which adopted the OTS position to use a tax rate of 3.99 mills. PPL Gas avers that the difference between the tax rate effective in 2006 and the rate effective in 2007 can be addressed through proper use of the State Tax Adjustment Surcharge.

However, PPL Gas does except to the ALJ's recommendation that the value of the capital stock of PPL Gas be based upon historical data instead of net income calculated on a *pro forma* basis, at rates established by the Commission in this proceeding. PPL Gas opines that the OTS' characterization of the valuation of PPL Gas for tax purposes is correct, but it is not appropriate for ratemaking purposes. PPL Gas notes that the OTS valuation assumes that the capital stock tax for ratemaking purposes will be an exact repetition of historical net income for the five-year period from 2002 through 2006, during which time the rates of PPL Gas were deficient. PPL Gas avers that instead, capital stock tax, like all other taxes for ratemaking purposes, should be calculated based upon the level of net income allowed by the Commission in the Final Order. PPL Gas acknowledges that the Commission, in *PPL Electric,* accepted the approach of the OTS, but requests the Commission reconsider that conclusion and reject the OTS' proposed adjustment. (PPL Gas Exc. at 27-28).

In reply, the OTS reiterates its position that capital stock tax should be excluded from the iteration process because it does not increase in direct proportion with an increase in revenues as does gross receipts tax and federal and state income taxes. The OTS responds that the Company is correct that the Commission has rejected the same CST iteration claimed By PPL Electric Utilities Corporation in *PPL Electric* and claims there is nothing in the instant record to successfully distinguish this present claim from the Commission's determination there. The OTS requests that the Commission follow its own precedent and disallow the iteration of the claim and adopt the additional $37,000 recommended reduction to PPL Gas' CST claim. (OTS R.Exc. at 15-16).

d. Disposition

We are in agreement with the OTS that PPL Gas has failed to distinguish its CST claim in this proceeding from our determination in *PPL Electric.* Consistent with this precedent, we adopt the OTS recommendation to disallow the iteration claimed by the Company because capital stock tax does not increase in direct proportion with an increase in revenues.

Accordingly, we shall adopt the recommendation of the ALJ and deny PPL Gas' Exception concerning this matter.

F. Rate of Return

The following table summarizes the Company's position as to its required fair rate of return in this proceeding. The capital structure ratios and cost of long-term debt are the estimated levels at December 31, 2006, the end of the future test year in this case. PPL Gas' claimed cost of common equity is 11.75 percent.

Rate of Return[21]

Capital	**Capital Structure Ratio**	**Cost Rate**	**Weighted Cost**
Long-Term Debt	26.90%	6.30%	1.69%
Short-Term Debt	17.42%	6.44%	1.12%
Common Equity	55.68%	11.75%	6.54%
Overall Rate	100%		9.35%

Both the OCA and the OTS challenged the capital structure proposed by the Company. The capital structures proposed by the OCA and the OTS are hypothetical capital structures. The capital structures and cost rates proposed by the OCA and the OTS are shown in the table below:

	OCA[22]			**OTS**[23]		
Capital	Capital Ratio	Cost Rate	Weighted Cost	Capital Ratio	Cost Rate	Weighted Cost
Long-Term Debt	55%	6.35%	3.49%	37.16%	6.30%	2.34%
Short-Term Debt				17.42%	6.44%	1.12%
Common Equity	45%	9.625%	4.33%	45.42%	9.00%	4.09%
Total	100%		7.82%	100%		7.55%

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[21] PPL Gas Exh. PRM-1 Schs. 1, 5 and 6.

[22] OCA St. 2 at 3, Exh. DCP-1 Sch. 11.

[23] OTS St. 1 at 9, Exh. 1 Sch. 1.

1. Capital Structure (Actual vs. Hypothetical)

a. Positions of the Parties

PPL Gas proposed an actual capital structure of 55.68 percent common equity and 44.32 percent debt. This capital structure proposed by PPL Gas was based upon the actual capital to be employed at December 31, 2006, with a 13-month average of short-term debt to reflect the variations in the amount of stored gas to be financed during different months of the year. (PPL Gas St. 6 at 17-20). PPL Gas asserted that it has no plans to issue additional debt or equity in 2006. (PPL Gas MB at 68, note 8 citing PPL Gas St. 6 at 17).

PPL Gas stated that in reviewing the barometer gas group common equity ratios based upon permanent capital for 2004, the average was 53.2 percent with that average reduced to 47.2 percent if short-term debt is included. PPL Gas averred that it is only about 1/10th the size of the average barometer group company and investors view small size as creating greater risk for the investor. PPL Gas reasoned that, because of its smaller size, investors would expect to be compensated for greater risk with a higher equity ratio. Furthermore, PPL Gas cited Commission decisions where common equity ratios greater than 55 percent were adopted. *Pa. PUC v. Peoples Natural Gas Co.*, 63 Pa. PUC 6, 28-31 (1986) (61.2%); *Pa. PUC v. Peoples Natural Gas Co.*, 69 Pa. PUC 138, 164 (1989) (59.5%). (PPL Gas MB at 68).

The OTS rejected the Company's capital structure and instead recommended a hypothetical capital structure of 37.16 percent long-term debt, 17.42 percent short-term debt, and 45.42 percent common equity. The OTS posited that the Company's proposed permanent capital structure, that does not include short-term debt, is not representative of the industry norm. The OTS asserted that the projected actual equity ratio for PPL Gas is 67.43 percent compared to the nine gas distribution companies making up the gas barometer group's average equity ratio of 54.47 percent.[24] Based on these industry averages, the OTS proposed a hypothetical capital structure based upon permanent capital of fifty-five percent (55%) equity and forty-five percent (45%) long-term debt. (OTS MB at 43-44).

The OTS then made a further adjustment to its recommended capital structure due to the inclusion of PPL Gas' gas storage in its rate base. The OTS opined that since gas storage is included in rate base and is financed by short-term debt, it is appropriate to include short-term debt in the company's capital structure for ratemaking purposes. The OTS calculated the short-term debt using PPL Gas' thirteen month average for the future test year of $38,819,000 as appropriate, and arrived at the same figure advocated by PPL Gas at 17.42 percent for short-term debt. Using this short-term debt quantity, the OTS hypothetical capital structure was recalculated to 37.16 percent long-term debt, 17.42 percent short-term debt and 45.42 percent equity. (OTS MB at 44).

The OCA also opposed the Company's proposed capital structure and recommended a hypothetical capital structure of 55 percent debt and 45 percent equity. The OCA found PPL Gas' proposed capital structure problematic because the amount of equity is excessive and inappropriate for ratemaking and inconsistent with the common equity ratios of other gas distribution companies and PPL Gas' sister company, PPL Electric, and its parent PPL Corporation. (OCA MB at 49, OCA St. 2 at 3). The OCA found PPL Gas' level of short-term debt "unusually high" compared with the capital structure of PPL Corporation. The OCA found that PPL Corporation maintained more consistent and lower common equity ratios of 43.3 percent, including short-term debt, and 44.1 percent, excluding short-term debt, in the parent capital structure. (OCA MB at 47-49).

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[24] The OTS accepted PPL Gas' barometer group of nine gas distribution companies.

PPL Gas criticized the capital structure presented by the OTS as flawed because it calculated short-term debt by including $25.8 million which financed non-storage gas. Therefore, according to PPL Gas, the short-term debt was overstated by the OTS and should be reduced to $13 million.[25] PPL Gas averred that the correction to the calculations presented by the OTS using the $13 million for short-term debt yields a common equity ratio of 51.79 percent and total debt of 48.21 percent. (PPL Gas RB at 29-30, PPL Gas MB at 69, PPL Gas St. 6R at 9). The OTS did not dispute the rationale for executing this correction to its calculation of common equity. (OTS RB at 28).

b. ALJ's Recommendation

The ALJ concluded that the OTS presentation, with the Company's correction to short-term debt, was supported by the record evidence. Therefore, the ALJ recommended that a common equity ratio of 51.79 percent and a total debt ratio of 48.21 percent be used to adjust PPL Gas' capital structure. According to the ALJ, both the OTS and the OCA, by implication, found the actual capital structure unreasonable. The ALJ concluded that the record evidence supported the conclusion that the actual capital structure proposed by PPL Gas was unreasonable. (R.D. at 50).

c. Exceptions

In its Exceptions, PPL Gas opines that its higher equity ratio is reasonable given that PPL Gas is much smaller than the average barometer group company and, therefore, faces greater risk, but does not except to the ALJ's capital structure recommendation. However, PPL Gas noted that it does except to the ALJ's failure to reflect its greater risk in the determination of the cost of equity. (PPL Gas Exc. at 4).

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[25] $38.8 million (short-term debt) - $25.8 million = $13 million.

The OCA states in its Exceptions that the ALJ erred in rejecting the OCA recommended hypothetical capital structure of 55 percent debt and 45 percent equity. The OCA avers that, while the ALJ correctly recognized that the Company's actual capital structure was unreasonable, the capital structure recommended by the ALJ of 48.21 percent debt and 51.79 percent equity should not be adopted for determining a fair rate of return in this proceeding. The OCA opines that this capital structure is still out of line with the industry average, whether compared to the 47.2 percent common equity ratio for PPL Gas' proxy group in 2004 or the 45 percent common equity ratio supported by capital structures of the Value Line companies examined by the OCA. The OCA maintains that adoption of the ALJ recommended capital structure will impose unfair costs on ratepayers through use of an atypical capital structure. The OCA requests that the Commission adopt a capital structure comprised of 55 percent debt and 45 percent equity. (OCA Exc. at 19-20).

In reply, PPL Gas explains that the capital structure recommended by the ALJ aligns the hypothetical long-term debt and common equity used on average by the much larger barometer group with the short-term debt used to finance stored gas employed by the Company. PPL Gas avers that the OCA's calculations do not properly reflect PPL Gas' short-term debt. PPL Gas maintains that the ALJ properly adopted the hypothetical capital structure ratios developed by the OTS after consideration of all of the evidence. (PPL Gas R.Exc. at 1-2).

d. Disposition

Our review of the record evidence leads us to adopt the hypothetical capital structure recommended by the OTS, as adjusted by PPL Gas to correct the short-term debt amount. We do not find the arguments of the OCA convincing or persuasive, and agree with PPL Gas that this calculation aligns the hypothetical long-term debt and common equity used on average by the larger barometer group with the short-term debt used to finance stored gas employed by PPL Gas. The OCA's calculations do not properly reflect this short-term debt. Therefore, we shall adopt the recommendation of the ALJ that a common equity ratio of 51.79 percent and a total debt ratio of 48.21 percent are reasonable and should reflect the capital structure of PPL Gas in this proceeding.

Accordingly, the Exceptions of the OCA are denied.

2. Cost of Debt

a. Positions of the Parties

Both the OCA and the OTS accepted PPL Gas' cost of debt in determining a reasonable rate of return. (OCA St. 2 at 14; OTS St. 1 at 9). PPL Gas proposed a 6.35 percent overall embedded cost of debt for rate of return purposes. The Company's 6.35 percent future test year cost of debt was based on the Company's long-term debt (6.30 percent) and its short-term debt (6.44 percent) cost rates. (PPL Gas Exh. PRM-1 Sch. 1 and Sch. 6 at 2). However, PPL Gas stated that the cost of debt should be adjusted if either the proposals of the OTS or the OCA for capital structure were adopted. (PPL Gas St. 6R at 6). PPL Gas asserted that the ratio of debt and the cost of debt would be mismatched if this adjustment were not made. (PPL Gas St. 6R at 1). Additionally, PPL Gas argued that an adjustment should be made because the Company's capital structure was actual and the OCA's and the OTS' capital structures were hypothetical. Consequently, according to the Company, the actual cost of debt would be mismatched with a hypothetical capital structure. (R.D. at 50).

The OCA disagreed that PPL Gas' adjustment was necessary because it concluded that the cost of debt was supported by the record and is reasonable. According to the OCA, the Company valued the short-term debt based on three months of actual interest rates and nine months of projected London Interbank Offered Rates (LIBOR) interest, adjusted to reflect PPL Gas' short-term borrowing rate. (PPL Gas St. 6 at 21). The OCA cited precedent where a hypothetical capital structure has been used by the Commission. (*Pa. PUC v. Citizens Utilities Water Co. of Pa.*, 86 Pa. PUC 51 (1996) (where the Commission approved a hypothetical capital structure but found it inappropriate to adjust the cost of debt absent strong, specific evidence to do so). The OCA averred that PPL Gas failed to distinguish this proceeding from *Citizens.* (OCA MB at 53-55).

b. ALJ's Recommendation

The ALJ concluded that the record lacked strong, specific evidence to adjust the cost of debt. The ALJ stated that Commission precedent requires strong, specific evidence to make such an adjustment and found that the Company's request to adjust the cost of debt if a hypothetical capital structure is adopted was without merit. The ALJ recommended that the Commission use 6.35 percent as the overall cost of debt as proposed by PPL Gas and as agreed to by the OTS and the OCA. (R.D. at 51).

c. Disposition

No Party filed Exceptions to the ALJ's recommendation on this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

3. Cost of Equity

Although there are various models used to estimate the cost of equity, the Commission favors the Discounted Cash Flow (DCF) Model. The DCF analysis theory is based upon finding the present value of an expected future stream of net cash flows during the investment holding period discounted at the cost of capital or capitalization rate. The capitalization rate is the total return rate anticipated and commonly is expressed in terms of the sum of a representative dividend yield plus a growth rate to capture investors' expectations of future increases in cash dividends.

The following table summarizes the cost of equity claims made, and methodologies used, by the Parties in this proceeding.

Methodology	**PPL Gas (1) (%)**	**OCA (2) (%)**	**OTS (3) (%)**
DCF	10.4 (4)	9.0-9.5	9.0
CAPM	12.49	10.25	n/a
CE	14.45	10.00	n/a
RP	11.5	n/a	n/a
Range Recommendation	11.25 to 11.75	9.0 to 10.25	8.75 to 9.25
Point Recommendation	11.75	9.625	9.0

(1) PPL Gas St. 6 at 1,5.

(2) OCA St. 2 at 4.

(3) OTS St. 1 at 21.

(4) This includes a 0.70% leverage adjustment and a 0.31% size adjustment.

a. Positions of the Parties

PPL Gas employed four separate methodologies to determine the range of the cost of equity: DCF, Risk Premium (RP), Capital Asset Pricing Model (CAPM) and Comparable Earnings (CE). PPL Gas averred that it is appropriate to use multiple methods because investors use multiple methods and because each method has deficiencies. (PPL Gas MB at 71). The Company stated that its adjusted DCF cost of equity result was 10.4 percent. The remaining methods used by PPL Gas resulted in costs of equity of 11.5 percent for RP, 11.54 percent for CAPM and 14.45 percent for CE. From these results, PPL Gas selected a cost rate range of 11.25 percent to 11.75 percent. PPL Gas requested that the Commission select the high end of the range, or

11.75 percent, based upon the Company's exemplary management performance.[26] (PPL Gas MB at 82).

PPL Gas relied on analysts' projections of growth rates in the DCF analysis because analysts consider all historical and projected information, and analyst projections affect the price used in the dividend yield component in the DCF analysis. PPL Gas used a DCF growth rate of 5.0 percent, although its updated growth rates supported a growth rate of 4.9 percent. (PPL Gas St. 6R at 22) (PPL Gas MB at 73).

Within PPL Gas' DCF analysis, the Company included a 70 basis point leverage adjustment designed to reflect the fact that the DCF cost of equity reflects the investor expected return on market price. PPL Gas claimed that because the DCF cost rate reflects the percentage of debt based on capital structure including equity at market prices, the cost rate understates the cost of equity based upon capital structure calculated with book value. PPL Gas averred that the Commission repeatedly has approved and accepted this financial risk adjustment, citing *Pa. PUC v. Aqua Pennsylvania, Inc.*, 99 Pa. PUC 204, 234 (2004) and *Pa. PUC v. PPL Electric Utilities Corp.*, 99 Pa. PUC 389, 426 (2004). (PPL Gas MB at 74).

PPL Gas also made an adjustment of 31 basis points to its DCF analysis to reflect the greater risk it faces, relative to the barometer group, because it is a much smaller company. PPL Gas stated that a smaller company faces greater risk and that the size adjustment is calculated based upon the difference in bond yields between A-rated and Baa-rated debt to estimate the increased risk to the investor in equity due to increased risk. According to the Company, the barometer group cost rate does not account for risk associated with a smaller company. (PPL Gas MB at 76).

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[26] PPL Gas used the midpoint of the range, or 11.50%, plus 25 basis points for management performance to equal 11.75%. (PPL Gas St. 6 at 2).

The following table summarizes PPL Gas' DCF results.

Dividend Yield	Growth Rate	Leverage Adjustment	Size Adjustment	DCF Cost Rate
4.39	5.00	.70	.31	10.4

In addition to the DCF analysis, PPL Gas performed a CAPM analysis. According to PPL Gas, the CAPM identifies a risk free rate and an equity premium in excess of the risk free rate that is proportional to the systematic risk of a stock or portfolio of stocks. PPL Gas stated that the risk premium of the market is adjusted by the "beta" of the barometer group to reflect differences in risk. (PPL Gas MB at 78).

PPL Gas used a risk free rate of 5.5 percent, based upon the prospective yield on U.S. Treasury Bonds. (PPL Gas St. 6 at 47). The Company determined the market premium by averaging the historic market performance of Treasury Bonds (6.5 percent) and the projected market performance of Treasury Bonds (5.95 percent) which resulted in a premium of 6.23 percent. PPL Gas used adjusted betas to reflect the leverage adjustment. The Company's CAPM analysis produced a CAPM result of 11.54 percent. PPL Gas noted that financial literature also supports an additional adjustment for the size of the average gas group relative to the average size of the companies in the general market. The size adjustment would require an additional 0.95 percent. With the size adjustment, the final result of PPL Gas' CAPM analysis is 12.49 percent. (PPL Gas MB at 78-79).

PPL Gas also performed a CE analysis. According to PPL Gas, the CE method reviews the earnings of non-regulated, similar risk entities to determine cost of capital. Critical to the CE analysis is the choice of those entities identified with similar risk. PPL Gas selected companies from the Value Line Index to reflect the overall investment risk of the gas group. PPL Gas asserted that non-regulated companies generally have higher business risk but generally have less debt, thereby producing similar total investment risk. PPL Gas determined the cost of equity of 14.45 percent based upon an average of the historical returns in equity of comparable group (14.40 percent) and the projected return (14.50 percent) on book equity. (PPL Gas MB at 80-81).

Additionally, PPL Gas performed a RP analysis. According to the Company, the RP analysis is based upon the conclusion that equity investors require a premium over the expected cost of debt to provide equity capital because investors do not receive any return until debt holders receive their full return. PPL Gas explained that RP is the sum of a prospective bond yield and the premium of the bond yield expected by investors. PPL Gas concluded that the RP cost rate was the sum of 6.50 percent (expected yield) plus 5.00 percent (premium yield) or 11.50 percent. PPL Gas contended this result is likely understated because PPL Gas would not have an A bond rating (the 6.50 percent is based on A-rate utility bonds), and thus that percentage would be higher reflecting the lower bond rating and higher risk of PPL Gas. (PPL Gas MB at 77-78).

The OCA utilized the DCF, CAPM and CE methods. The OCA submitted that the Company's request for an 11.75 percent cost of equity is excessive, unjust and unreasonable. The OCA position is that, due to low capital costs, stable economic factors and the Company's lower risk profile, a cost of common equity of 9.625 percent is just and reasonable. The OCA developed this market-based cost of common equity recommendation using the DCF model, claiming that this is the method relied upon by the Commission. (OCA MB at 55-56).

The OCA applied the DCF methodology to two proxy groups of natural gas utilities: (1) a group of fifteen gas distribution companies followed by Value Line, excluding those that did not pay cash dividends; and (2) a group of nine distribution utilities used by PPL Gas in its analysis. (OCA St. 2 at 15, Exh. DCP-1 Sch. 5). This DCF analysis of the two proxy groups showed a DCF indicated range of 9.0 percent to

9.5 percent. The OCA also conducted a cost of equity analysis using the CAPM, which found a cost of equity of 10.25 percent, and using a CE approach, resulting in a cost of equity of 10.0 percent. As a result, the OCA recommended a range of 9.0 percent to 10.25 percent for cost of equity and selected the midpoint, 9.625 percent, as the cost of equity for PPL Gas, giving more weight to results of the DCF method and recognition of the slightly higher cost of equity indicated by the other two methodologies. (OCA MB at 58, 61).

In its CAPM analysis, the OCA stated that U.S. Treasury securities customarily are used to represent a risk-free investment rate as they are guaranteed by the government and are default free. The OCA used the three month average yield (April – June 2006) for 20 year U.S. Treasury bonds, with an average yield of 5.29%. In calculating the measure of risk or beta, Mr. Parcell used the Value Line betas for each company in his Value Line Group and the Company's Group. Based on these inputs, the OCA concluded that the CAPM cost of equity for the proxy groups was 10.25 percent. (OCA MB at 66).

The OCA stated that the CE analysis is viewed more or less as a reasonableness check on the result of the DCF analysis citing, *Aqua Pennsylvania.* The OCA claimed that it examined realized equity returns and evaluated investors' acceptance of those returns for several groups of companies and used market data as part of its CE analysis. The OCA used equity returns of several groups of companies covering the period of 1992 through 2005 and a risk comparison of utilities versus unregulated entities. The OCA used its Value Line Gas group, PPL Gas' nine company barometer group and the S&P 500 Composite group for the level of return to be expected and realized in the regulated and competitive sectors of the economy. (OCA St. 2 at 25). The OCA concluded, after comparing risk levels, that the S&P 500 group is more risky than the Value Line proxy group and PPL Gas' nine company barometer group. The

OCA concluded that the CE method of the two groups yielded a result of no more than 10 percent for the cost of equity. (OCA MB at 67-68).

The OCA opposed the Company's 70 basis point leverage adjustment, the Company's 31 basis point adjustment for size and the Company's request for a higher cost of equity in recognition of management performance. (OCA MB at 74, 77-79).

The OTS employed a DCF analysis to determine its recommended cost of equity for PPL Gas. The OTS submitted that the 11.75 percent return on common equity recommended by PPL Gas is excessive. The OTS used the DCF method applied to the Company's barometer group of nine gas companies to determine its recommended 9.00 percent cost rate of common equity. Based on the DCF results for the nine company barometer group, the OTS concluded that the appropriate cost rate of common equity for the LDC industry on average is in the range of 8.75 percent to 9.25 percent. The OTS recommended 9.00 percent as the common equity rate for PPL Gas, finding that this figure is supported by its analysis. Additionally, the OTS pointed out that, since the hypothetical capital structure for ratemaking purposes was based on the barometer group average, a financial risk adjustment is not necessary and that the selection of a cost rate of common equity at the midpoint of its range is appropriate. (OTS MB at 45-52).

b. ALJ's Recommendation

Based on her review, evaluation and analysis of the evidentiary record, the ALJ recommended adoption of a cost of equity rate of 10.26 percent as reasonable and adequately supported. The ALJ noted that in this proceeding she considered the DCF analysis and considered the analysis and critiques of the other methods for checking the reasonableness of the results of the DCF analysis. The ALJ based her recommendation on the DCF analysis of PPL Gas including the 31 basis point size adjustment, but only a 56 basis point leverage adjustment. The ALJ found the 70 basis point leverage adjustment proposed by the Company to be excessive and concluded that 56 basis points equated to a more reasonable adjustment. The ALJ concluded that the analysis of the record supports a DCF cost of equity of 10.26 percent (4.39 percent + 5.00 percent + 0.56 percent = 9.95 percent + 0.31 percent (size adjustment) = 10.26 percent). (R.D. at 61-65).

The ALJ stated that the OTS and the OCA are correct that the Commission favors the DCF method to determine the cost of equity. However, the ALJ concluded, based on recent precedent, that the Commission consistently has adopted a leverage adjustment to compensate for the difference between market prices and book value (used in ratemaking). (See, *Aqua Pennsylvania*, 204, 234 (2004); *Pa. PUC v. PPL Electric Utilities Corp.*, Docket No. R-00049255, at 70-71 (2004); *Pa. PUC v. Pennsylvania American Water Co.*, 2002 Pa. PUC LEXIS 1; *Pa. PUC v. Phila. Suburban Water Co.*, 219 PUR 4th 272 (2002); *Pa. PUC v. Pennsylvania American Water Co.*, 231 PUR 4th 277 (2004)). According to the ALJ, these cases are persuasive that a leverage adjustment should be employed with the DCF analysis. (R.D. at 62-63).

Additionally, the ALJ concluded that the argument to increase the equity return in recognition of management performance as presented by PPL Gas is without merit. The ALJ noted that noticeably absent in PPL Gas' presentation is any precedent for this adjustment. The ALJ recommended that the adjustment advocated by PPL Gas to recognize its management performance should be rejected. (R.D. at 65).

Based upon the testimony and evidence of record, the ALJ recommended the following overall rate of return for PPL Gas based upon her conclusions regarding the capital structure ratio and the cost rate for the debt and common equity capital:

Capital	**Capital Structure Ratio**	**Cost Rate**	**Weighted Cost**
Debt	48.21%	6.35%	3.06%
Common Equity	51.79%	10.26%	5.31%
Overall Rate	100%		8.37%

(R.D. at 65-66).

c. Exceptions

PPL Gas excepts to the ALJ's recommendation because she: (1) improperly adjusted the DCF analysis by reducing PPL Gas' leverage adjustment from 70 to 56 basis points; (2) did not give any weight to the other equity cost rate methods; and (3) incorrectly rejected consideration of management performance. First, PPL Gas notes that the ALJ accepted PPL Gas' DCF analysis, except that she reduced its leverage adjustment from 0.70 percent to 0.56 percent. PPL Gas maintains that this is incorrect because the ALJ calculated the adjustment based on PPL Gas' actual debt ratio instead of the hypothetical ratio she recommended. The Company maintains that, if the leverage adjustment is to be modified, it should be synchronized with the hypothetical capital structure and would result in a 0.80 percent leverage adjustment. According to PPL Gas, this would result in a DCF cost rate of 10.5 percent. (PPL Gas Exc. at 4-7).

Next, PPL Gas contends that the ALJ erred in not giving any weight to other equity cost rate models. PPL Gas noted that in reviewing the other methods, the ALJ criticized the CAPM analysis performed by the Company for its use of adjusted betas and for employing an adjustment for PPL Gas' size relative to the barometer group. The Company notes that the ALJ arrived at a CAPM result of 10.61 percent using unadjusted beta and no size adjustment, yet she gives absolutely no weight to this revised CAPM by simply adopting her DCF result of 10.26 percent. PPL Gas then points out that the ALJ rejected its RP and CE analysis because they are market-based and yield results that are questionable due to more risk being included than what exists in regulated industry. PPL Gas avers that the reasons offered by the ALJ provide no basis for rejection of the Company's RP analysis because it was based on public utility bond yields and returns. (PPL Gas Exc. at 8-10).

Finally, PPL Gas complains that the ALJ incorrectly rejected consideration of management performance because it did not cite authority for this adjustment. The Company states that it cited *Pa. PUC v. West Penn Power Co.,* 83 Pa. PUC 628, 675 (1994) and *Pa. PUC v. Aqua Pennsylvania Inc.,* 263 PUR 4th 218, 247 (2004), both of which affirmed the authority and policy of the Commission to exercise its discretion in selecting a cost of equity within the range of reasonableness to reward or penalize a company based on the quality of its service. PPL Gas requests the Commission to consider management performance and adopt an equity cost rate at the high end of the equity cost rate range. (PPL Gas Exc. at 10-11).

In its Exceptions, the OCA avers that the ALJ erred in recommending adjustments for leverage and size to the DCF-based cost of equity. The OCA notes that if these adjustments are eliminated, the ALJ's DCF analysis results in a 9.39 percent cost of equity which is within the range the OCA recommended as appropriate. The OCA notes that, while it recognizes that the Commission has made leverage adjustments in other cases, it is within the Commission's discretion whether to make such an adjustment or not. The OCA opines that use of the higher end of the DCF-only results would adequately account for the effect of current financial conditions on the DCF calculation. Additionally, the OCA submits that the 31 basis point adjustment for size is unwarranted as PPL Gas' source of capital comes from PPL Corporation and affiliates, not from the much smaller gas subsidiary. The OCA reiterates its position that a cost of common equity for PPL Gas of no more than 9.625 percent should be adopted by the Commission. (OCA Exc. at 20-24).

The OTS also excepted to the ALJ's recommended adoption of a 10.26 percent return on equity for several reasons. First, the OTS states that the ALJ mistakenly rejected the OTS' dividend yield of 4.26 percent in favor of the Company's 4.39 percent dividend yield. The OTS opines that the Company's claim contains a 13 basis point adjustment for an ex-dividend adjustment to dividend yields that should not be adopted by the Commission. Next, the OTS states that the ALJ erroneously used PPL Gas' 5.0 percent growth rate and provided no rationale for disregarding the OTS recommended growth rate of 4.65 percent. Additionally, the OTS excepts to any leverage adjustment. The OTS opines that the leverage adjustment is unsupported and inconsistent with the proper determination of an appropriate rate of return for PPL Gas or any other public utility. (OTS Exc. at 12-16).

In reply, PPL Gas avers that the Exceptions of the OCA and the OTS do not comport with prior Commission decisions or investor expectations. PPL Gas states that the OCA and the OTS arguments against the leverage adjustment specifically were rejected in *PPL Electric* and both argue incorrectly that the leverage adjustment maintains a certain market price to book value ratio. PPL Gas notes, as the Commission has recognized, that the leverage adjustment reflects the greater risk caused by the greater level of debt as a percentage of total capital with equity and debt at book value when compared to the percentage of debt of total capital with equity at market prices. Because the DCF estimates the investor-required return at market prices, an adjustment is necessary to determine the investor-required return on equity at book value, according to PPL Gas. (PPL Gas R. Exc. at 4-5).

Concerning the OCA's Exception on the size adjustment, PPL Gas notes that the OCA did not dispute that size affects risk, but contends size should not be considered here because PPL Gas is a subsidiary of the much larger PPL Corporation. PPL Gas rejoins that the Commission is determining the cost of equity for PPL Gas, not PPL Corporation. PPL Gas maintains that the Commission has concluded that cost of equity is to be determined based upon the risks of the operating utility. *Pa. PUC v. West Penn Power Co.*, 1993 LEXIS 62, 172-173 (1993). The Company requests that the Commission reaffirm that the cost of equity is to be determined for the utility, particularly in the post-restructuring environment. (PPL Gas R.Exc. at 5-7).

Concerning the OTS' Exceptions regarding the dividend yield, PPL Gas avers its adjustment is appropriate because the stock prices change on the ex-dividend dates and that such data are widely reported and understood by investors. In regard to the OTS exception on PPL Gas' growth rate, the Company notes that several analysts' growth rates reported by the OTS resulted from a double count of the same analyst's estimate. PPL Gas avers that the ALJ properly rejected the OTS' dividend yield and growth rate. (PPL Gas R.Exc. at 7).

In its reply to PPL Gas' Exceptions, the OCA rejoins that the Company's position that an 80 basis point adjustment is appropriate to "synchronize" the equity return in its leverage adjustment calculation with the capital structure equity ratio recommended by the ALJ is flawed and without support. The OCA points out that no Company witness testified in support of an 80 basis point adjustment and did not propose a leverage adjustment based upon the Company's actual, less leveraged, capital structure. The OCA opines that under the Company's scenario the savings to customers that would result from adoption of a hypothetical capital structure with less equity should be offset by an increase to the common equity cost for increased financial risk. The OCA maintains that the ALJ correctly rejected the Company's proposal to increase the cost of debt for ratemaking if a hypothetical capital structure were adopted. The OCA reiterates its position that no leverage adjustment should be adopted in this case. (OCA R.Exc. at 2-4).

Next, the OCA rejoins that the ALJ did not err in rejecting the Company's 11.75 percent cost of equity claim, which was based heavily on the results of the

Company's non-DCF costing methods. The OCA opines that the ALJ properly rejected PPL Gas' RP analysis and CE analysis as conceptually flawed and not persuasive, and properly relied on the DCF methodology and informed judgment, as supported by Commission precedent. (OCA R.Exc. at 6-8).

Concerning PPL Gas' Exception regarding a cost of equity adjustment for management performance, the OCA submits that the ALJ correctly determined that the Company's request unreasonably would require ratepayers to pay twice, once through operating and maintenance expense and again through rate of return. The OCA avers that management performance adjustments requested by the utilities in *PPL Electric* and *Pa. PUC v. Pennsylvania-American Water Co.*, 99 Pa. PUC 4, 40, 43 (2004) were not granted. (OCA R.Exc. at 8).

In its reply to PPL Gas' Exceptions, the OTS contends that the issue of the proper calculation of any leverage adjustment is immaterial because, in its opinion, no such adjustment should be applied in the first place. The OTS next avers that the credibility of the CAPM model is questionable, while the CE and RP methods should not be given equal weight with the DCF method. None of these methods should be considered by the Commission for ratemaking purposes, in the opinion of the OTS. Concerning the size adjustment, the OTS points out that the Company failed to note any prior ruling by this Commission where a specific adjustment to the allowed rate of return was made due to the size of the utility. In regard to the management performance adjustment, the OTS maintains that the Company did not provide any conclusive evidence to support its position that PPL Gas is more efficiently and economically operated in comparison to the companies in PPL Gas' barometer group and, absent such evidence, any claimed adjustment must be rejected. (OTS R. Exc. at 3-7).

d. Disposition

As noted previously, we have relied primarily upon the DCF methodology in arriving at our determination of the proper cost of common equity. However, we agree with the ALJ's statement that other methodologies can be used as a check on the reasonableness of the results of the DCF method, tempered by informed judgment. We note that both PPL Gas and the OCA have done so in the instant proceeding. We also will use the results of the CAPM, CE and RP methodologies as a check of the reasonableness of our DCF-derived equity return calculation.

Based upon our analysis and review of the record evidence, the Recommended Decision and the Exceptions and Replies thereto, we reject the ALJ's recommendation to adopt 10.26 percent as the appropriate cost of equity in this proceeding. We note that the ALJ recommended the adoption of PPL Gas' DCF calculations, except for the reflection of a lower leverage adjustment, 56 basis points in lieu of 70 basis points. We agree with the ALJ that PPL Gas' unadjusted DCF proposal of 9.39 percent is reasonable in comparison to the results of the OCA (range of 9.0 to 9.5 percent) and the OTS (9.0 percent). We further agree with the ALJ that the 11.75 percent request of PPL Gas is excessive and unreasonable.

We note that the Company has proposed the addition of three separate adjustments in determining the allowable return on equity in this proceeding. PPL Gas has requested the adoption of a 70 basis point leverage adjustment, a 31 basis point size adjustment and a 25 basis point management performance adjustment. We are in agreement with the ALJ that the size adjustment is appropriate and that the additional adjustment for management performance is unsupported and should be denied. In regard to the ALJ's recommended reduction of the leverage adjustment, we find that the Company's original requested 70 basis point adjustment is reasonable and should be adopted. We are persuaded by the Company's argument that the ALJ was incorrect because she calculated the adjustment based on PPL Gas' actual debt ratio instead of the hypothetical ratio she recommended and we have accepted. Therefore, the ALJ's recommended reduction to the leverage adjustment requested by PPL Gas is rejected.

Based upon these findings, we are of the opinion that an equity return of 10.4 percent is reasonable and will be adopted. This amount is comprised of the PPL Gas DCF result of 9.39 percent, a 0.70 percent adjustment for leverage and a 0.31 percent size adjustment. Accordingly, the Exceptions of PPL Gas are granted in part and denied in part to the extent consistent with the foregoing discussion. The Exceptions of the OCA and the OTS are denied.

The following table summarizes our determination concerning the Company's capital structure, cost of debt and cost of common equity, as well as the resulting weighted costs and overall rate of return:

Capital Structure	**Ratio (%)**	**Cost Rate (%)**	**Weighted Cost (%)**
Debt	48.21	6.35	3.06
Common Equity	51.79	10.40	5.39
Overall Rate	100.00		8.45

G. Rate Structure and Rate Design

1. Cost of Service

PPL Gas submitted a fully allocated cost of service study (COSS) to determine the cost of providing gas service to each rate class based on the future test year ending December 31, 2006. (PPL Gas Exh. PRH-1 at I-2). The study also determined the customer cost per month by service allocation. (PPL Gas Exh. PRH-1R, Sch. J). PPL Gas used the Average and Extra Demand Method for allocating costs to each class. (PPL Gas MB at 84). The three basic cost responsibility categories in the allocation study are:

(1) commodity; (2) capacity; and, (3) customer. (Id.). In the Average and Extra Demand Method of allocation, capacity costs are allocated among service classes based on average use and use above average at periods of peak demand. (PPL Gas Exh. PRH-1 at I-2 to I-3). PPL Gas accepted some of the modifications proposed by opposing Parties and submitted Exh. PRH-1R as its revised COSS. (PPL Gas MB at 85).

a. Modifications to COSS Accepted by PPL Gas

The OSBA proposed that uncollectible accounts expense and forfeited discounts be allocated based upon the actual experience of PPL Gas for each rate class. (OSBA St. 1 at 21-23). The OCA also proposed that the uncollectible accounts expense be based upon actual experienced write-offs over the last two years. (OCA St. 3 at 8). PPL Gas accepted this modification and incorporated it in its revised allocation. (PPL Gas MB at 86, 88; PPL Gas Exh. PRH-1R).

The OCA proposed an adjustment to update certain allocation factors to reflect more recent information concerning storage service. (OCA St. 3 at 4). PPL Gas accepted this adjustment and reflected the update corresponding to storage service in its revised allocation. (PPL Gas MB at 87, PPL Gas Exh. PRH-1R). The OCA further proposed amending the allocation of taxable income to reflect additional deductions from income. (OCA St. 3 at 4). Noting the small effect upon the returns of each class, PPL Gas agreed to change the allocation as suggested by the OCA. (PPL Gas MB at 87, PPL Gas St. 8-R at 6).

b. Modification to Allocation of Cash Working Capital

1. Positions of Parties

The OSBA advocated allocating 100% of the Company's cash working capital requirement to the residential class. According to the OSBA, working capital costs are incurred because PPL Gas must pay its bills before its supplier bills before it gets paid by its ratepayers. (OSBA MB at 10). However, the OSBA opined that business customers do not contribute to the need for working cash because the revenue lag for all business customers is less than the cost payment lag. (*Id.*). In contrast, the OSBA stated that residential customers' revenue lag is greater than the cost payment lag; resulting in the Company's working cash cost. (OSBA St. 1 at 22, Tr. at 254-55).

PPL Gas stated that cash working capital requirement is determined on a total company basis rather than by rate class. (PPL Gas MB at 86, PPL Gas St. 8R at 5). PPL Gas opined that an allocation exclusively to the residential class would be inappropriate. (R.D. at 68).

2. ALJ's Recommendation

The ALJ recommended that the OSBA's modification to the cash working capital allocation should be rejected as unreasonable and inappropriate. (R.D. at 68). The ALJ found that the OSBA did not demonstrate that business customer revenues for gas services routinely come to the Company before the Company's payments to suppliers are due. The ALJ found PPL Gas' statement that cash working capital is determined on a total company basis, implying that all customers contribute to the Company's need for cash working capital, to be reasonable. As such, the ALJ recommended that PPL Gas' allocation for cash working capital should be accepted. (*Id.*).

3. Disposition

No exceptions have been filed to this determination. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

c. Modification to Allocation of Distribution Mains Costs on Minimum or Zero-Intercept System

1. Positions of Parties

The OSBA's witness, Mr. Knecht, recommended that the distribution mains be classified on a minimum or zero-intercept system as 28% customer-related and 72% demand-related since the mains are built to connect customers and sized to meet peak demands. (OSBA MB at 7-8, OSBA St. 1 at 13-17). The OSBA posited that it is more costly to construct gas distribution networks to serve many smaller customers than to install capacity for a few larger customers. The OSBA stated that because PPL Gas' COSS fails to reflect this fact, it, "over-assigns mains costs to business customers and under-assigns mains costs to residential customers." (OSBA MB at 8, OSBA St. 1 at 4).

PPL Gas classified the distribution mains cost as 100% demand costs based on growth in demand. (R.D. at 69). PPL Gas argued that the OSBA proposal to modify the allocation based on 28% customer-related and 72% demand-related be rejected. According to PPL Gas, quantifying the cost of the minimum or zero-intercept system is extremely difficult and imprecise. (PPL Gas M.B. at 85; PPL Gas St. 8-R at 2-3).

The OCA argued that the Commission has in the past rejected the zero-intercept and minimum system methods as inconsistent with cost causation. (OCA MB at 105, OCA St. 3R at 4). According to OCA witness, Mr. Watkins, the OSBA's method of determining the demand/customer related allocation ignores the fact that while peak demands are a major design consideration for main extension or construction, the fact remains that mains are joint costs serving many groups of customers throughout the year. (OCA M.B. at 104; OCA St. 3R at 2). Mr. Watkins also found that the OSBA's zero-intercept analysis violates statistical foundations and principles which render the linear regression analysis, the technique used in the zero-intercept method, an invalid model and its results illogical. (OCA MB at 105, OCA St. 3R at 5).

2. ALJ's Recommendation

The ALJ recommended that the modification to allocate the mains distribution costs on a 28% customer-related and 72% demand-related basis should be rejected and that the allocation based on 100% demand should be approved. (R.D. at 71). ALJ Jones noted that the Commission has rejected minimum and zero-intercept system methods as inconsistent with causation. (*Id.*). The ALJ noted that while the concept of main costs derived from both distance and capacity factors is persuasive, the model and calculations provided present misgivings to implement the concept as proposed. (*Id.*). As such, the ALJ rejected the OSBA's alternative allocation.

3. Disposition

No exceptions have been filed to this determination. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

d. Modification to Allocation of Demand Costs

1. Positions of the Parties

PPL Gas used and average and excess (A&E) method to allocate demand costs. The Company allocated 40% of demand costs based upon commodity usage and 60% based on excess demand (demand in excess of average demand). (PPL Gas MB at 85). PPL Gas stated that the 40% for commodity was based upon system average load factors for 2004 and 2005 of 39.1% and 39.8% respectively. (PPL Gas St. 8-R at 4). The excess demand was allocated using non-coincidental peak factors for each classification. (PPL Gas MB at 86). The factors were based upon the experienced class factors over the last three years. (*Id.*).

The OSBA argued that the demand related costs should be allocated in proportion to each class' share of peak demand rather than the A&E allocator used by PPL Gas. (OSBA MB at 8-9). According to the OSBA, while the A&E allocator would produce the same results as a peak demand allocator, the Company's COSS incorrectly calculates the A&E allocator, and, therefore, incorrectly assigns more costs to higher load customers and less to lower load customers. (OSBA MB at 8). The OSBA opined that because peak day demands for PPL Gas' smaller customers are not directly metered, the Company had to estimate when developing the demand allocators. (OSBA MB at 9, OSBA St. 1 at 17-20).

The OCA identified three areas of concern with regard to the OSBA's demand allocator: (1) The OSBA's method has a timing mismatch in that it considers each class' total monthly booked consumption with calendar monthly heating degree days as a means of measuring weather sensitivity. Meanwhile, the Company has twenty different billing cycles and consumption measured over the course of the cycle often includes usage registered in two different calendar months. (OCA St. 3R at 7); (2) the OSBA's monthly analysis was done on a total class basis rather than a per customer basis and failed to consider either customer growth/attrition or declining usage per customer over a six-year period in which gas prices increased dramatically. (OCA St. 3R at 8); and, (3) the OSBA's method for estimating class peak demands did not employ any statistical analyses to estimate or test the reasonableness of results. (*Id.*).

2. ALJ's Recommendation

The ALJ found that the OSBA never corrected or provided guidance as to what corrections need to be made to the A&E allocator. (R.D. at 72; OSBA RB at 7). The ALJ determined that the record does not demonstrate that the A&E allocator as calculated by PPL Gas is incorrect and that the OSBA failed to support its conclusion by explaining or demonstrating how the definition of the A&E methodology used by the Company is wrong. Finding that the A&E allocator is supported by the evidence, and that the OSBA modification to replace the A&E allocator with a peak demand allocator is not supported by the evidence, the ALJ recommended approval of the Company's A&E allocator. (R.D. at 72).

3. Disposition

No exceptions have been filed to this determination. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

e. Modification to Allocate CAP Costs Among All Rate Classes

The OCA proposed allocating CAP costs among all non-storage customer classes instead of assigning 100% of the CAP costs to the residential customer class. (OCA St. 3 at 5). The OCA excluded the storage class because that class' service is not natural gas delivery service. (OCA MB at 89, n. 16). The OCA argued that CAP is a social program that benefits all ratepayers in that "low income [CAP customers] have virtually zero propensity to save. Therefore, the additional income available to CAP participants [as a result of lower natural gas bills] is spent in the local economy and benefits local businesses." (R.D. at 73; OCA MB at 90; OCA St. 3 at 5-6).

The OSBA, PPL Gas, and PGLUG opposed the OCA's proposed amendment to allocate CAP costs to all customer classes. (OSBA MB at 11-12; PPL Gas MB at 87; PGLUG MB at 8-10).

1. ALJ's Recommendation

The ALJ noted that CAPs are narrowly tailored to the residential class and determined that overwhelming Commission precedent supported 100% allocation of CAP costs to the residential customer class. (R.D. at 74-75). Finding that the OCA presented no persuasive argument to change this Commission policy, the ALJ recommended that the OCA's proposed modification to allocate CAP costs to all non-storage customers be denied. (*Id.*).

2. Exceptions

The OCA submits that the Commission's policy of allocating CAP costs only to residential customers does not properly reflect the recent decision in *Lloyd v. Pa.* PUC, 904 A.2d 1010 (Pa. Cmwlth. Ct. 2006) which found that Section 2804(9) of the Code regarding certain conservation programs – according to the OCA, a parallel provision to Section 2203(6) at issue here – did not require that a customer class receive a direct benefit as a condition of accepting cost responsibility for the program. (OCA Exc. at 31). OCA witness Watkins opined that CAP programs do provide benefits to all customer classes, both as social benefits accruing to society as a whole, and as direct benefit to PPL Gas' local economy. (OCA Exc. at 32; OCA St. 3 at 5-6).

PPL Gas rejoins that even if *Lloyd* were interpreted to permit the PUC to allocate CAP costs to all rate classes, it does not mandate that result. (PPL Gas R. Exc. at 23). PPL Gas continues that the Commission was well aware of *Lloyd* when it entered its Order in Customer Assistance Programs: Funding Levels and Cost Recovery Mechanisms, Docket No. M-00051932 (December 18, 2006), where it rejected the OCA's contention again. (Id.).

The OSBA replied that the ALJ was correct when she concluded that the overwhelming Commission precedent, which requires 100% allocation of CAP costs to the residential class, is consistent with sound regulatory practice and that the OCA's proposed modification should be rejected. (OSBA R. Exc. at 7).

3. Disposition

The ALJ properly denied the OCA's proposal to amend the Company's COSS to allocate CAP costs to all customer classes with the exception of the storage class. Contrary to the OCA's reading, the Commonwealth Court in *Lloyd* did not address how universal service costs were to be allocated, it simply rejected PPLICA's argument that conservation program funding should come (if at all) through generation rates and not through distribution rates. Therefore, *Lloyd* is not precedent for the OCA's argument that universal service costs are to be allocated to all customer classes. We concur with the ALJ who correctly limited recovery of the CAP costs to residential customers. This recommendation is consistent with cost causation and the Commission's Order on Customer Assistance Programs: Funding Levels and Cost Recovery Mechanisms, Docket No. M-00051923 (December 18, 2006). As such, the OCA's Exception on this issue is denied.

f. Modification to Allocation of Off System Sales

1. Positions of the Parties

PPL Gas explained that Off Systems Sales were reflected in the COSS as the result of an oversight. (PPL RB at 43). PPL stated that these sales are a "below the line" revenue stream because they are the subject of a sharing mechanism established in the Company's annual Section 1307(f) proceedings. (*Id.*). To include these proceeds in base rates would flow the revenues through to customers disregarding PPL Gas' sharing mechanism where parties agreed PPL Gas is entitled to some proceeds as an incentives to obtain sales. (PPL Gas RB at 43; PPL Gas St. 4R at 6-7).

The OCA proposed assigning Off System Sales margin revenue on retail sales volumes. The OCA opined that Off System Sales margins "represent opportunity sales of gas obtained and reserved for PPL [Gas'] retail gas sales customers. As such, it is inappropriate to provide Off System Sales credit to transportation and storage classes." (R.D. at 75; OCA St. 3 at 7).

2. ALJ's Recommendation

The ALJ determined that the record evidence does not support the OCA's proposal. The ALJ stated that the OCA ignored the nuance of the sharing mechanism developed in the Company's Section 1307(f) proceedings which established the sharing mechanism to provide the Company an incentive to achieve large volumes in these sales. (R.D. at 75-76). As such, the ALJ recommended denial of the OCA's modification on Off Systems Sales. (R.D. at 76).

3. Exceptions

The OCA excepts to the ALJ's determination arguing that the sharing mechanism addresses only the amount of off-system sales revenue that is flowed back to customers and has no impact on how the revenues are derived or how the revenues are reflected in rates. (OCA Exc. at 26). The OCA argues that the fact that the revenues are used to reduce the total cost of service does not reflect the reason that the off-system revenue exists. (OCA Exc. at 26-27). According to the OCA, its allocation properly matches these revenues to the class of customers providing the benefit, the NGDC sales customers, for cost of service purposes. (OCA Exc. at 27; OCA St. 3S at 3).

PPL Gas rejoins that the OCA is erroneous in its claim that the sharing mechanism addresses only the amount of off-system sales to be flowed back to customers and that the mechanism has no impact on how revenues are derived or how revenues are reflected in rates. (PPL Gas R. Exc. at 23). The Company states that the sharing mechanism specifically contains a formula for determining the amount of revenues from off-system sales to be flowed back to customers, and the mechanism requires that such revenues be reflected as a reduction to purchased gas costs. (*Id.*; PPL Gas Exh. CPW-1 at 8.1).

4. Disposition

Based on our review of the record evidence, we will deny the OCA's Exception on this issue. The sharing mechanism has no impact on distribution rates and as such, should not be reflected in a distribution rate COSS.

g. Modification to Allocation of Timber Sales Based on Land and Land Rights

1. Positions of the Parties

PPL Gas provided that Timber Sales offset the need to recover revenues from all rate classes. As such, PPL Gas stated that it is appropriate to allocate Timber Sales among the rate classes proportionately based on the total cost of service allocated to each rate class. (PPL Gas MB at 87-88, PPL Gas St. 8R at 7).

The OCA opined that since Timber Sales are a function of PPL Gas' land, the sales should be allocated based on Land and Land Rights. (OCA MB at 94, OCA St. 3 at 7).

2. ALJ's Recommendation

The ALJ found that the rationale offered to support the OCA's modification for allocation of Timber Sales was not persuasive and the method of allocation for Timber Sales provided by PPL Gas was reasonable and supported by the evidence. (R.D. at 75).

3. Exceptions

The OCA submits that as with off-system sales revenue, the allocation should reflect the reasons for the sales, in this instance the land and land rights of PPL Gas. (PPL Exc. at 27). The OCA argues that the ALJ erred in rejecting the OCA's modification to allocate these revenues on the same basis as Land and Land Rights are allocated in the COSS. (*Id.*).

4. Disposition

Based on our review of the record evidence, we will deny the OCA's Exception on this issue. The OCA has not persuaded us that its modification is in the public interest. Furthermore, the OCA failed to rebut the Company's evidence that timber sales offset the need to recover revenues from all rate classes. As such, we agree with the Company that it is appropriate to allocate timber sales among the rate classes proportionately based upon the total cost of service allocated to each rate class.

h. Modification to Allocation of Outside Service Based on Rate Base

1. Positions of Parties

PPL Gas would allocate Outside Service Expenses (Account 923) based upon rate base. (PPL Gas MB at 88). PPL Gas claimed that the expenses for this account represent administrative and general functions not performed by PPL Gas employees. The Company stated that because these expenses are typical administrative and general expenses they should be allocated using the factor for allocating other administrative and general costs. (PPL Gas MB at 88, PPL Gas St. 8R at 7).

The OCA opined that because over 90% of the outside services costs are from affiliates to provide a wide range of service to support PPL Gas operations, it is more appropriate to allocate this account in rate base. (OCA St. 3S at 2).

2. ALJ's Recommendation

ALJ Jones determined that the OCA's proposal was not supported by the record evidence and recommended denial of the OCA's modification to allocate the Outside Service Expenses based on rate base. (R.D. at 77).

3. Exceptions

The OCA argues that since 90% of these expenses are attributable to affiliate transactions to provide a wide range of services to support all of PPL Gas operations, OCA witness Watkins proposed to allocate this account based on the Company's investment in rate base was more reasonable. (OCA Exc. at 28; OCA St. 3 at 7-8; OCA St. 3S at 2). The OCA contends that given the wide range of services included in the expenses recorded in Account 923, its proposed allocation more properly reflects cost causation. (OCA Exc. at 28).

OSBA witness Knecht rejoined that absent a detailed study of the individual components of outside services costs, "it is not unreasonable to assume that these services are related to either overall O&M costs or to PPL's direct labor-related costs. As the labor allocator is much more similar to PPL's proposed O&M allocator than to Mr. Watkins' rate base allocator, I see no reason to change PPL's proposed approach." (OSBA St. 2 at 13; OSBA R.Exc. at 10).

4. Disposition

The OCA failed to prove that Account 923 Outside Service Expenses are any different from the general administrative functions. As such, we will deny the OCA's Exception on this issue.

i. Modification to Allocation of General Plant

1. Positions of Parties

The Company proposed allocating General Plant based on O&M expense (excluding administrative and general expense, credit for gas used for other utility operations, storage gas losses, and compressor station fuel expense). PPL Gas stated that general plant includes office buildings, office furniture, office equipment, *etc.*, all of which are used to provide administrative and general services. (PPL Gas MB at 88). According to PPL Gas witness, Mr. Herbert, "the general plant and the associated maintenance and depreciation [accounts], support the employees who work primarily in the administrative, customer accounting and distribution functions." (OCA MB at 96 quoting PPL St. 8R at 7-8).

The OCA proposed allocating General Plant based production, transmission and distribution plant in service and claimed that this allocation is the preferred industry method. (OCA St. 3S at 2).

The OSBA opined that there is no reason to change the Company's approach without a thorough study of cost causation factors. (OSBA St. 2 at 14).

2. ALJ's Recommendation

The ALJ was not persuaded by the OCA's argument to modify the allocation of general plant and recommended denial of the modification. The ALJ noted that the OCA did not claim that the Company's position was either incorrect or unreasonable, only that it was not the typical method used in the industry. (R.D. at 78).

3. Exceptions

The OCA argues that while not totally unreasonable, PPL's method still does not accurately reflect cost causation, as generally accepted in the industry. (OCA Exc. at 28; OCA St. 3S at 5). The OCA contends that it is important that the most accurate allocation be used for cost of service study purposes, particularly as the ALJ recommends an allocation of the revenue requirement in this case based largely on the results of the cost of service study. (OCA Exc. at 28).

OSBA witness Knecht testified that General Plant rate base is comprised primarily of buildings, garages, shops, and tools, and that such facilities are more related to providing support for both the O&M and A&G activities of the Company than they are to distribution rate base. (OSBA R.Exc. at 8-9). The OSBA cautioned against rejecting the Company's judgment and substituting some other arbitrary allocation method for General Plant. (OSBA R.Exc. at 9).

4. Disposition

We note that the OCA conceded that PPL's methodology is not unreasonable. Moreover, the OCA has not presented evidence to demonstrate that its methodology is more consistent with cost causation. The allocation of general plant based on administrative and general expenses as presented by PPL Gas is supported by the evidence. As such, the OCA's Exception on this issue is denied.

j. Modification to Allocation of Costs Record in Account 903, Customer Records & Collections

1. Positions of Parties

OCA proposed allocation of the Customer Records & Collections based on a 50/50 split between throughput and the quantity of customers. (OCA M.B. at 99; OCA St. 3 at 9). OCA's Mr. Watkins explained that small volume customers require no contracts and are billed monthly based on a single meter read. In contrast, storage and transportation customers require written contracts, daily usage metering, balancing and more complex billing information. (*Id.*). The OCA posited that because large customers impose higher record and collection cost, customer size should be considered in the allocation. (OCA MB at 99).

The result of the allocation proposed by OCA yields 35 percent of the costs to 1½ percent of the customers and 65 percent of the costs to 99.45 percent of the customers. (PPL Gas MB at 88-89). Both the OSBA and PPL Gas disagreed with the OCA's proposed 50/50 split based allocation because the result of the allocation is not supported by the record evidence as reasonable or appropriate or sound. (PPL Gas MB at 89). PPL Gas stated that in recognition of the cost differential between the small and large customers, it used a factor number 10 to allocate expenses in Account 903. (PPL Gas MB at 89; PPL Gas Exh. PRH-1R). The Company explained that this factor is based on the "number [of] meters measuring and regulation equipment for each rate class weighted by equivalent factors and therefore it recognizes a higher weighting for larger customers." (PPL Gas MB at 89; PPL Gas St. 8-R at 8-9). The Company stated that the OCA's argument is flawed in that the employees that carry out daily nominations, usage metering, daily balancing, etc., for large customers are the same ones that provide balancing for the entire system. (PPL Gas RB at 44). PPL Gas claimed that such expenses are charged to Account 851, not to account 903. (PPL Gas RB at 44-45).

2. ALJ's Recommendation

The ALJ found that the record does not support the OCA's allocation for the Customer Records and Collections expenses and recommended that the Commission reject the modification. The ALJ further found PPL Gas' proposal to be reasonable noting that it incorporates the contrasts in customer size that the OCA emphasized. (R.D. at 80).

3. Exceptions

The OCA submits that its allocation is far more reasonable that the Company's allocation on the basis of the number of customers which significantly understates the cost responsibility of the large volume users. (OCA Exc. at 29). According to the OCA, this account includes significant expense associated with services provided to large volume users, including the costs of customer applications, contracts and credit investigations. (OCA Exc. at 29-30). The OCA opines posits that since the costs are incurred in support of services provided to a particular class, the cost of service study should reflect this fact. (OCA Exc. at 30).

The OSBA rejoins that the OCA did not offer any explanation or basis for why the allocation factor should be based 50 percent on throughput. (OSBA R.Exc. at 9). The OSBA argues that the OCA methodology erroneously implies that records and collections costs are 58 percent higher per GS-Small customer than per Residential customer. (*Id.*). The OSBA counters that both of those classes include only sales customers for whom PPL faces the same billing arrangements and the collections costs for GS-Small customers are likely to be lower than those for residential customers. (*Id.*; OSBA St. No. 2 at 14).

4. Disposition

We agree with the ALJ's determination that the OCA did not prove that its modification to the allocation of Customer Records and Collections expenses is reasonable or in the public interest. As noted by the ALJ, PPL Gas' proposal is reasonable and took into consideration the contrasts in customer size that the OCA emphasized. We will, therefore, deny the OCA's Exception.

k. Modification to LVS Class' Rate Discountts

1. Positions of the Parties

PPL Gas offers a discounted rate to some LVS (large volume service) customers as a result of negotiated contracts between the Company and the customer. The contracts have at least one of the following characteristics: (1) high energy consumption with alternate fuels as a threat; (2) usage levels such that bypassing the local distribution company is advantageous; (3) significant impact on the local economy; and (4) multiple locations to vie competitive service providers. (R.D. at 80; PPL St. 5R at 3). These factors and the potential loss of any one customer leaving large fixed costs to be distributed to the remaining customer base results in PPL Gas offering discount rates for the customer's remaining with PPL Gas. (R.D. at 80). PPL Gas reflected the difference between the actual revenues from Rate L (rate for LVS customers) and the revenue required to produce the system average rate of return. The purpose is to allocate among the other rate classes the discounted revenue received by the Company that is less than the system average rate of return. (PPL Gas RB at 45). The Company, the OSBA, and the OCA agree that under-recovery of costs that results from the rate discounts provided to Rate LVS customers should be shared among the customer classes. However, the OCA disagrees with PPL and the OSBA on the amount to be re-allocated to the classes other than LVS.

For COSS purposes, OCA witness Watkins proposed that the cost of the rate discounts provided to Rate LVS customers should be shared equitably among the customer classes since all ratepayers are better off with some revenue contribution to fixed costs by these customers. (OCA St. 3 at 10). This amount is proposed to be allocated across all customer classes, except storage, on the basis of class throughput. The OCA proposed to quantify rate discounts allocated among the rate classes based upon the difference between the discounted rates and the revenue produced from full tariff rates for the large volume class. Mr. Watkins determined that the cost of the Rate L discount is $5.6 million. (OCA St. 3S at 5).

PGLUG interpreted the OCA's proposal as effectively abolishing the negotiated contracts between the Rate L customers and the Company and requiring those customers to pay full tariff rates. (PGLUG RB at 2, PGLUG MB at 2-5). PGLUG opined that the result would be to nullify the benefits of keeping these targeted characteristic Rate L customers in that remaining customers will be saddled with a greater share of fixed cost when the customer ceases to be a PPL Gas customer. (PGLUG RB at 2).

2. ALJ's Recommendation

The ALJ determined that to propose allocation based on a rate that is beyond what the utility is entitled would necessarily overstate the cost of retaining these identified customers. (R.D. at 81). The OCA's proposal would unnecessarily overstate the cost of retaining the discount Rate L customers and should be rejected. (R.D. at 81).

3. Exceptions

The OCA argues that while the Company may only be entitled to rates to produce the system average rate of return on an overall basis, the rate of return by class will vary. (OCA Exc. at 30). At full tariff rates, the Rate LVS class produces a greater than system average rate of return, but without a discount, it is the full tariff rate that would be paid, not a lower rate based on the system average rate of return. As such, the OCA opines that the amount of Rate LVS discount allocated to other customer classes should be the $5.6 million. (OCA Exc. at 31).

PPLUG responds that the OCA's approach would overstate the cost of retaining the discounted Rate L customers because the full tariff rate is significantly above the system average rate of return. (PPLUG R.Exc. at 3). According to PPLUG, acceptance of the OCA's proposal would improperly base the calculation on a rate in excess of what the utility is permitted to recover and must be rejected. (*Id.*).

The OSBA rejoins that since the LVS class is over-recovering its costs at present rates, the cost of the discounts to be re-allocated to the other classes are significantly less than the $5.6 million recommended by the OCA. (OSBA R.Exc at 8).

4. Disposition

PPL Gas' allocation reasonably and appropriately calculates the difference between the system average rate and the amount of discounted revenues. ALJ Jones correctly concluded that, "[t]o propose allocation based on a rate that is beyond what the utility is entitled to would necessarily overstate the cost of retaining these identified customers. The OCA's proposal would thus, unnecessarily overstate the cost of retaining the discount Rate L customers which is not appropriate." (R.D. at 81-82). The OCA's Exception on this issue is denied.

I. Modification to Reflect Uncollectible Accounts Expense as a Volumetric Cost Instead of a Customer Cost

1. Positions of the Parties

PPL Gas allocated 100 percent of the uncollectible accounts expense claim to the customer cost function stating that the expense is more closely related to the number of customers rather than the volume of sales. (See PPL Gas Exh. PRH-1 Sch. E at II-8).

The OTS proposed that the uncollectible accounts expense be allocated as a commodity cost based on the volume of sales rather than a customer cost. (OTS St. 3 at 2-6; OTS MB at 55-59; OTS RB at 40-42). The OTS posited that because the Company receives over 91 percent of its revenue from volumetric sales, it is appropriate to allocate over 91 percent of the uncollectible accounts expense to the volumetric cost function. (*Id.*).

2. ALJ's Recommendation

The ALJ found PPL Gas' argument supporting the allocation of 100 percent of the uncollectible accounts expense claim to the customer cost function to be reasonable. (R.D. at 82-83). The ALJ determined that the OTS' modification to amend the uncollectible accounts expense to a volumetric cost to be unreasonable and recommended that it be denied.

3. Exceptions

The OTS excepts to the ALJ's recommendation and argues that its proposal addresses the proper allocation of the expense within a class rather than between transportation and usage customers. (OTS Exc. at 11). According to the OTS, the ALJ erroneously accepted the Company's mischaracterization of the issue as a comparison of received revenues between transportation and sales customers. (*Id.*). The OTS states that the adjustment is not dependent upon whether the customer is a sales or transportation customer, it simply allocates uncollectible expense to the function or "cause" of the uncollectible expense. (*Id.*).

PPL Gas rejoins that there is no direct relationship between volumes and uncollectible accounts. (PPL Gas R.Exc. at 24). The Company argues that a volumetric allocation ignores the fact that there are different levels of revenues for different classes of service. For example, revenues from a sales customer for 100 Dth of natural gas are much greater than revenues from a transportation customer for 100 Dth of gas, because a transportation customer is not paying for the cost of gas purchased by PPL Gas to meet its customers' requirements. (PPL R.Exc. at 24; OSBA St. 1 at 21). The Company acknowledges that uncollectible accounts, clearly, are affected by customer failures to pay their bills and notes that it modified its COSS in a manner that treats a portion of the expense as volumetric in nature. (PPL Gas R.Exc. at 24; PPL Gas St. 8-R at 5).

4. Disposition

We are persuaded by the Company's argument that there is not a direct relationship between sales volumes and uncollectible accounts being cognizant of the different revenue levels earned from different customer classes. The OTS, in arriving at its proposal that uncollectible accounts expense should be allocated to the volumetric cost function failed to provide evidence of record showing that it considered and applied factors such as differing class revenue levels to arrive at its 91 percent figure. We will, therefore, deny the OTS' Exception on this issue.

2. Allocation of Revenue Requirement

The tables presented below summarize PPL Gas' present and proposed rates. (PPL Gas Exh. PRH-1R Schs. B (present rates) & C (proposed rates)).[27]

Present Rates

Rate	System	Res.	GS-S	GS-L	LVS	Storage
Actual	5.63%	4.03%	8.09%	5.85%	6.23%	6.57%
Relative	100%	72%	144%	104%	111%	117%

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[27] Under PPL Gas' proposed rates allocation the only class that has not moved closer to the system average is LVS because that class is subject to competitive restraints. (PPL Gas MB at 91).

Proposed Rates

Rate	System	Res.	GS-S	GS-L	LVS	Storage
Actual	9.35%	9.33%	11.85%	8.47%	7.76%	9.06%
Relative	100%	99%	125%	90%	82%	96%

As discussed in our COSS discussion above, the OCA and the OSBA each proffered their own COSS alternatives and allocation modifications which we have denied as being unreasonable and not in the public interest. The revenue requirement allocations presented by PPL Gas are based upon its COSS which we shall approve as being reasonable and appropriate. The relative return for the proposed rates comports with the Commission's policy of gradualism and provides the magnitude of change in the correct direction for the appropriate rate classes. (R.D. at 85). The margins between the proposed rate of return for each rate class relative to the system average proposed by PPL Gas are getting smaller; thus showing that all rate classes are approaching the system average rate of return. (*Id.*).

The discussion below considers the proposals by the OSBA and the OTS if the Company's COSS is recommended. These proposals are based on the potential of rejecting the full increase proposed by PPL Gas in additional annual revenues.[28]

a. OSBA's Proposed First Dollar Relief for Small Business Customers

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[28] The proposed revenue allocations of the OCA and of the OSBA are rejected because they are based on the modifications to the Company's COSS advocated by these Parties which we have denied. The alternative revenue requirement allocation proposed by the OTS providing the first $882,415 be used to reduce usage rates for the GS-S customer class, where that class includes Resale customers is contingent upon a grant of the full rate increase requested and, therefore, is rejected.

1. Positions of the Parties

Premised upon the approval of PPL Gas' COSS, the OSBA proposed that a first-dollar relief (FDR) approach be used to reduce the subsidy provided by the GS-S class. OSBA explained how it formulated its FDR proposal:

> Mr. Knecht calculated the first dollar relief for the GSSmall class so that the subsidy provided by that class is reduced and the class is on a par with the other classes. Specifically, Mr. Knecht reduced the subsidy from the GS-Small class to the level of the subsidy provided to the class with the second highest revenue cost ratio under PPL proposed rates. In this case, that class is the residential class. To bring the GS-Small class in line with the residential class requires assigning the first $1.49 million which the Commission trims from PPL's proposed rate increase as an offset to PPL's proposed increase to the GS-Small class.

(OSBA MB at 23; Exh. RDK-R1; OSBA St. 2 at 4; Exh. RDK-R1).

The OTS also proposed using the FDR method for allocating revenue. The OTS recommended that the first $882,415 of any Commission decrease from the full requested amount be used to reduce the three Small Service – General Service, and Resale class usage rates and that any further required scale back be in proportion to the ratios in the Company's filing. (OTS RB at 36; OTS MB at 54; OTS St. 3 at 12-13). OTS opined that its recommendation is a more balanced approach to moving the rate of return for the GS class closer, but not immediately, to the system average rate of return under PPL Gas' COSS. (OTS RB at 38-39).

2. ALJ's Recommendation

The ALJ determined that PPL Gas' revenue requirement allocation is unreasonable because it results in discriminatory rates. The ALJ rejected the Company's argument that the allocation was justified by the principle of gradualism. (R.D. at 88). The ALJ further determined that neither the OTS' proposed allocation for revenue requirement if the revenue increase is less than $11.9 million, nor PPL Gas' allocation of revenue requirement comply with the mandates directed by the Commonwealth Court in *Lloyd*. The ALJ found that the sole proposed revenue requirement allocation supported by the record and conforming to the applicable case law is the FDR of $1.49 million proposed by the OSBA. (*Id.*).

3. Exceptions

The OCA submits that the ALJ erred in concluding that *Lloyd* dictates that gradualism cannot be considered in establishing rates. (OCA Exc. at 34). The OCA argues the Commonwealth Court decision in *Lloyd* does not require that rates be set precisely so that all customer classes provide the system average rate of return as shown by one cost of service study. (*Id.*). The OCA further argues that a proportional scale back is a more reasonable method to reflect any reduction in the claimed revenue requirement and it ensures that all customer classes are provided some relief from the Company's full request if the Commission determines that less than the full request should be awarded. (OCA Exc. at 35).[29]

PPLUG approves of the ALJ's adoption of the Company's COSS but argues that Commission precedent supports the proportional scale back methodology proposed by the OCA. (PPLUG R.Exc. at 6).

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[29] The OCA states that the ALJ appears to have adopted the Company's allocation at the full rate increase amount since it forms the basis of the OSBA FDR proposal. (OCA Exc. at 36). The ALJ clearly states that it does not adopt the full increase as proposed by PPL Gas. (R.D. at 85).

The OSBA replies that the OCA fails to recognize that, at present rates, the GS-Small class exhibits the highest rate of return of any rate class, meaning that the GS-Small class is subsidizing the other rate classes. (OSBA R.Exc. at 13). The OSBA posits that, here, as in *Lloyd*, it is wrong to assert that assigning an above average increase to a rate class that is already a net provider of a subsidy will achieve cost-based rates. *(Id.*).

PPL Gas submits that by adopting the OSBA's proposal for the First Dollar Relief method of allocating PPL Gas' overall revenue requirement, the ALJ moved all rate classes, particularly the General Service – Small class, toward their cost of service provided. (PPL Gas R.Exc at 25). The Company opines that the ALJ properly recognized the cost of providing service, in a manner consistent with *Lloyd*. (*Id.*; OSBA Exh. RDK-R1; OSBA St. 2 at 2-8).

4. Disposition

With regard to the OCA's claim that the ALJ concluded that *Lloyd* dictates that gradualism cannot be considered in establishing rates, we must clarify that the ALJ did not make this statement. The ALJ stated that, "[t]he contentions presented by OSBA to reject the Company's rationale of gradualism as progress toward the cost of service relative to the GS-S class are inconsistent with the holding in *Lloyd,* violates the Commission statute in discriminatory rates because the Company gives no other justification for the difference in rates." (R.D. at 88). This statement is in accord with the Commonwealth Court's holding that the cost of providing service is the polestar of ratemaking which trumps other concerns such as gradualism or rate shock. *Lloyd v. Pa. PUC*, 904 A.2d 1010, 1020.

We disagree with the OCA's argument that there is no sound basis to deviate from a proportional scale back if the rate increase is less than the Company has requested. GS-Small is the only class with a rate of return above the system average at both present and proposed rates. A straight scale back, as proposed by the OCA, would perpetuate the problem of over-recovery from GS-Small customers and would actually move the GS-Small class farther away from its cost of service, since that was the result of PPL's original proposal. It is important to note that application of the FDR does not mean that GS-Small will avoid a rate increase entirely. GS-Small will still experience an increase; however, it will concurrently move closer to its cost of service. It is also important to note that the FDR method cannot cause rates for any customer class to be higher than those proposed by the utility. (R.D. at 86-87; OSBA St. 2 at 3). We find that the FDR proposed by the OSBA is supported by the record evidence and is a reasonable method of progressing toward cost-based rates. Accordingly, the OCA's Exception on this issue is denied.

3. Residential Customer Charge

a. Positions of the Parties

PPL Gas proposed a 23.8% increase in its residential customer charge from the current $10.50 per month to $13.00 per month. (PPL Gas Exh. CPW-4 at 3). The Company provides a calculation demonstrating the residential customer costs to provide service is $19.73 per month, more than the $13.00 requested. (PPL Gas Exh. PRH-1R, Sch. J).

The OCA argued that the Commission precedent has stated that the residential customer charge is to be limited to those costs which directly relate to the meter and service drop and customer service expenses associated with meter reading and billing. (OCA MB at 120). The OCA argued for a customer charge of $12.00, based on the customer cost analysis performed by its witness Mr. Watkins, which was based on direct customer costs, i.e., those that vary directly with customer connections. (OCA MB at 121-122; OCA RB at 48). The OCA stated that if the Company receives a revenue increase less than its full claim, the customer charge increase should be scaled back proportionately. (OCA RB at 50).

b. ALJ's Recommendation

The ALJ determined that the evidence presented by the OCA was persuasive and recommended approval of the OCA's modification to implement a residential customer charge of $12.00. (R.D. at 91).

c. Exceptions

PPL Gas states that its proposal is based upon an analysis of customer cost which is consistent with recent prior orders of the Commission and that residential customer costs per month are $19.73. (PPL Gas Exc. at 30). The Company argues that its proposal that the residential customer charge be increased to $13.00 per month encompasses the principle of gradualism, while also recognizing the cost of service. (*Id.*). PPL Gas claims that the OCA attempted to justify its residential customer cost analysis based upon Commission precedent that is outdated. (PPL Gas Exc. at 29).

The OCA submits that the $12.00 customer charge it has proposed serves the interests of both energy conservation and gradualism, as well as being cost based. (OCA R.Exc. at 15-19). The OCA opined that that a smaller increase in the current customer charge is appropriate because high fixed monthly charges such as the Customer Charge are inconsistent with the Commission's general goal of fostering energy conservation in that the more money collected in high fixed charges, the lower the volumetric (per ccf or mcf) charge, thus affecting the conservation decision. (OCA R.Exc. at 19).

PPL Gas rejoins that the OCA is erroneous in its claim that the sharing mechanism addresses only the amount of off-system sales to be flowed back to customers and that the mechanism has no impact on how revenues are derived or how revenues are reflected in rates. (PPL Gas R. Exc. at 23). The Company states that the sharing mechanism specifically contains a formula for determining the amount of revenues from off-system sales to be flowed back to customers, and the mechanism requires that such revenues be reflected as a reduction to purchased gas costs. (*Id.*; PPL Gas Exh. CPW-1 at 8.1).

d. Disposition

OCA witness, Mr. Watkins, performed a residential customer cost analysis based only on direct customer costs (those costs that vary directly with customer connections). Based on his analysis, Mr. Watkins determined that the direct customer cost revenue requirement is $12.12 per month. (OCA MB at 121; OCA St. 3 at 21; Sch. GAW-7). After conducting his analysis, Mr. Watkins recommended a customer charge increase from $10.50 to $12.00. (OCA St. 3 at 22). We find that the OCA's proposal is supported by record evidence, supports the public policy of gradualism, and is less likely to erode conservation by customers. As such, we will deny PPL Gas' Exception on this issue.

4. Declining Rate Blocks for Residential Service

a. Positions of the Parties

The structure of the distribution charge for Residential customers of PPL Gas is a declining rate block structure (the first block applying to the first 5 Dth of gas use and the second block applying to greater than 5 Dth of gas use). (R.D. at 91; PPL Gas Exh. CPW-2 at 17). PPL Gas proposed increasing the commodity charges in each block by 25.2%. (PPL Gas Exh. CPW-4 at 3).

The OCA proposed narrowing the differential in this declining block structure over time contending: "(1) the rate structure shifts an appropriate level of risk to ratepayers and away from shareholders, as the majority of residential revenue is collected in the customer charges and [the] first usage block; (2) the rate structure promotes additional consumption of gas and is at odds with conservation efforts; and (3) PPL [Gas'] declining block distribution usage charge is at odds with cost causation and sends a price signal to consumers to use more gas at all times, including peak periods." (R.D. at 91; OCA MB at 122 citing OCA St. 3 at 22-23).

The OCA recommended starting a transition to gradually reduce the differential in the declining block beginning with this proceeding. (R.D. at 91). The OCA specifically recommended that the difference between the first and second usage rate blocks should be reduced from 40 percent to 25 percent with further reductions made in PPL Gas' next base rate case. (OCA MB at 122; OCA St. 3 at 24). Stated differently, the first 5 Dth usage rate would be increased to just 10.8 percent while the usage rate for greater than 5 Dth (the second usage rate block) would be increased to 38.8 percent. (OCA RB at 50-51). The non-uniformity in the rate increases proposed by the OCA reduces the difference in the usage rates of the two rate blocks from 40 percent to 25 percent. This alters the Company's proposal which was to increase both blocks uniformly by 25.2 percent. (R.D. at 92).

b. ALJ's Recommendation

The ALJ recommended that OCA's rate design regarding the declining rate blocks for customer usage of gas should be rejected as unreasonable. ALJ Jones stated that the reasons provided by the OCA for changing PPL Gas' proposed 25.2 percent increase for each rate block were based in conservation. (R.D. at 92). The ALJ accepted PPL Gas' argument that costs are to be the basis of rate design not conservation. (*Id.*).

The ALJ determined that PPL Gas' suggestion that conservation of the gas commodity procedures can be evaluated at a 66 Pa. C.S. § 1307(f) proceeding was reasonable. As such, the ALJ found that PPL Gas' proposal of a 25.5 percent increase uniformly to both rate blocks for customer usage is supported by the evidence and reasonable. (R.D. at 93).

c. Disposition

No exceptions have been filed to this determination. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

H. Miscellaneous

1. PPL Gas Changes to Tariff

a. Positions of the Parties

PPL Gas proposed several changes to the rules and regulations sections of its tariff, and their witness, Mr. Charles P. Weekes, summarized these changes as follows:

> The proposed changes [to the Description of the Company's Territory] were made to correct spelling mistakes and to remove "Unincorporated Communities" that are not defined political boundaries. Townships and Boroughs were not changed and those designations fully define the Company's territory. These changes in the Description of Territory did not affect, in any way, the territory actually served by the Company.
>
> Rule 2.6 was changed to include Rate Schedules CAP 1 and CAP 2.
>
> Rule 2.9 was changed to include Rate Schedules CAP 1 and CAP 2.

> Rule 3.8 was changed to remove the paragraph that defines how deposit interest is calculated for residential customers. Chapter 14 of the Public Utility Code now mandates the method of calculating deposit interest for residential customers. In addition, deposits by non-residential customers was changed from "customers" to "accounts" because a single customer may have multiple accounts that could have different refund dates established for a refund of their deposit and deposit interest.
>
> Rule 4.2 was changed to clarify the wording of the Rule. Specifically, the word "put in" was replaced with "installed" regarding the reference to installation of meter connections.
>
> Rule 4.3 was changed to clarify that a customer may not install barriers that inhibit access to Company equipment.
>
> Rule 9.1 was changed to state that billing will begin once the meter is set.
>
> Rule 9.3 was changed to differentiate the calculation for a single residential construction from the calculation for a residential development. Also, a change was made in the calculation of the Company's funding for new facilities in residential developments and for non-residential customers.
>
> Rule 9.6 was changed to clarify when a customer may receive a refund for all or a portion of an advance for construction. Also, the refund period was changed from 5 years to 3 years.
>
> Rule 11.1 was changed to include the use of procedures set forth in Chapter 14 of the Public Utility Code when pursuing collections of outstanding residential delinquent accounts.
>
> Rule 15.1 was changed to add "Chapter 14" to the list of Common Natural Gas Competition Terms.

(Citing PPL Gas St. 4 at 10-13; PPL Gas Exhs. CPW-1 and CPW-2).

No Party opposed or disputed these tariff changes as unreasonable or inappropriate. (R.D. at 93).

b. ALJ's Recommendation

The ALJ recommended that the Commission approve the proposed changes to the PPL Gas tariff rules and regulations section as they were uncontested by any of the Parties in this proceeding. (R.D. at 93).

c. Disposition

No Party excepts to the ALJ's recommendation in regard to this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

2. OCA Proposed Maintenance of Records for Discounted Rates

a. Positions of the Parties

PPL Gas provides discounted rates to LVS customers based on the customer's (1) potential to bypass; (2) threat of switching to an alternative supplier; (3) significance to the local economy; and (4) multiple sites to vie for competitive suppliers. (PPL Gas St. 5R at 3). During this proceeding, it was revealed that the Company could not provide documentation to support the discounted rates it had awarded. The OCA's witness, Mr. Watkins, contended that without supportive documentation for the discounts it is impossible to analyze and evaluate whether the discounts are appropriate and effective at the levels awarded to retain customer or whether the levels can be adjusted. (OCA St. 3 at 14-15). As such, the OCA submitted that the following recommendation by Mr. Watkins be adopted:

> PPL [Gas] should be required to maintain current records supporting any discounted rate. Moreover, these records should include a detailed analysis of not only alternative burner tip fuel prices but any storage capacity, or emissions

> constraints imposed on the customer. For those customers that claim to have the ability to bypass the PPL [Gas] system a cost analysis supporting this claim should be required. Finally, PPL [Gas] should be required to update these studies and records at least annually.

(OCA MB at 124 citing OCA St. 3 at 17).

The OCA reasoned that the recommendation provides the Company and the Commission with the appropriate documentation to affirm and ensure the rates and discounts for LVS customers are reasonable. (OCA MB at 124).

No Party opposed or disputed the OCA recommendation regarding documenting LVS customer discounts. (R.D. at 94).

b. ALJ's Recommendation

The ALJ found the OCA's recommendation regarding maintenance of records documenting support for LVS customer discounts to be reasonable. Noting that it was uncontested by any Party, the ALJ recommended that the Commission direct PPL Gas to keep and maintain records supporting the discounts to LVS customers, consistent with the OCA's recommendation, and that the records associated with the documentation be updated on an annual basis. (R.D. at 94).

c. Disposition

No Party excepts to the ALJ's recommendation in regard to this issue. Finding the ALJ's recommendation to be reasonable, appropriate and in accordance with the record evidence, it is adopted.

III. CONCLUSION

For the reasons discussed above, we will adopt the Recommended Decision of Administrative Law Judge Angela T. Jones as modified by, and consistent with the foregoing Opinion and Order; **THEREFORE,**

IT IS ORDERED:

1. That the Exceptions of the Parties are granted or denied, consistent with this Opinion and Order.

2. That PPL Gas Utilities Corporation shall not place into effect the rates contained in Supplement No. 11 to Tariff – Gas Pa. P.U.C. No. 3, which have been found to be unjust and unreasonable and therefore, unlawful.

3. That PPL Gas Utilities Corporation is hereby authorized to file tariffs, tariff supplements, or tariff revisions containing proposed rates, rules and regulations, consistent with the findings herein, to produce revenues not in excess of $8,142,000.

4. That PPL Gas Utilities Corporation's tariffs, tariff supplements, or tariff revisions described in Ordering Paragraph No. 3 may be filed upon less than statutory notice, pursuant to the provisions of 52 Pa. Code §§ 53.31 and 53.101, and may be filed to be effective for service rendered on and after the date of entry of this Opinion and Order.

5. That PPL Gas Utilities Corporation shall file detailed calculations with its compliance filings, which shall demonstrate to this Commission's satisfaction that the filed tariffs and adjustments comply with the provisions of this Opinion and Order. The filing shall include a redlined version of the tariff indicating where changes have been made.

6. That PPL Gas Utilities Corporation shall allocate the authorized increase in operating revenues to each customer class and rate schedule within each class pursuant to and in the manner set forth in this Opinion and Order.

7. That the Commission's Bureau of Audits is directed to review, in conjunction with PPL Gas' next Purchased Gas Cost Rate audit, PPL Gas' accounting for the funds collected through rates and those recovered through insurance, that are to be used for environmental clean-up as well as all previous and planned expenditures associated with all projects included within this activity. The findings of the Bureau of Audits shall be included within PPL Gas' next base rate case filing.

8. That the Commission's Bureau of Audits is directed to review, in conjunction with PPL Gas' next Purchased Gas Cost Rate audit, the activity within Account 330, Producing Gas Wells – Well Construction. The findings of the Bureau of Audits shall be included within PPL Gas' next base rate case filing.

9. That within 6 months from the entry date of this Opinion and Order, or with the filing of its next base rate proceeding, whichever occurs first, PPL Gas Utilities Corporation shall file a proposed low income usage reduction program, including a mechanism for funding, with the Commission for review and approval, and shall serve a copy of the filing upon the Parties to this proceeding.

10. That upon entry of this Opinion and Order, PPL Gas Utilities Corporation is directed to keep and maintain records supporting the discounted rates to Rate LVS customers consistent with the recommendation of the Office of Consumer Advocate and to update any studies and records associated with this documentation on an annual basis.

11. That PPL Gas Utilities Corporation shall comply with all directives, conclusions and recommendations contained in the body of this Opinion and Order, which are not the subject of any individual directive in these ordering paragraphs, as fully as if they were the subject of a specific ordering paragraph.

12. That the formal Complaints filed by Ms. Mary Gummo at Docket No. R-00061398C0003 and Mr. Michael Blake at Docket No. R-00061398C0004 are dismissed consistent with this Opinion and Order.

13. That the Complaints filed by the Office of Small Business Advocate at Docket No. R-00061398C0001 and the Office of Consumer Advocate at Docket No. R-00061398C0002 are sustained in part and dismissed in part, consistent with this Opinion and Order.

14. That after acceptance and approval by the Commission of the tariff revisions filed by PPL Gas Utilities Corporation, the investigation at Docket No. R-00061398 shall be terminated and the record shall be marked closed.

BY THE COMMISSION,

James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: February 8, 2007

ORDER ENTERED: February 8, 2007

TABLES

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 210:

With reference to page 37, line 11 to page 38, line 13, and Appendix E, please: (1) provide copies of the pages from Modigliani and Miller's original published research that support the formulation used to adjust the DCF equity cost rate; and (2) indicate exactly (by page and line numbers) where in these publications these authors prescribe this leverage adjustment for rate of return and rate making purposes.

Response:

(1) & (2) There is no reference to the DCF cost rate in those articles that are attached in Attachment A to the response. The Miller and Modigliani articles indicate that increases in the level of a firm's debt capital increases its financial risk, necessitating an increase in the cost of equity. Mr. Moul has applied that basic theory to properly account for the fact that the capital structure used for rate setting purposes has a higher percentage of debt than does the market capitalization of the companies he used to develop his recommended return on equity. It is the variation between the book value and market capitalizations that is important to the cost of capital issue in this case. Hence, the variation in the financial risk associated with alternative capital structures is the issue that was addressed by Mr. Moul. For example, the change in the cost of equity can be calculated with alternative capital structures associated with the market capitalization, without regard to book value. Similarly, if the market capitalization changed in such a way that its capitalization aligned with the book value, then the capital costs could be calculated at various degrees of financial risk associated with the market capitalization. In the circumstances presented in this case, however, the proportion of book value versus market capitalization, and corresponding impact on return can and should be made for the same reasons.

Further, this is a three step process, the first and third steps having multiple parts. In step one, the DCF cost of equity is calculated using the market price of stock and the capital structure ratios are computed from the market capitalization of both the debt and equity of a firm. In step two, a completely unlevered cost of equity is calculated, as if the firm were 100% equity financed. In the third step, a relevered cost of equity is calculated with the capital structure determined from the book value capitalization. Indeed, after the cost of equity has been unlevered so that the cost of equity relates to a firm with 100% equity; it can be relevered with any proportions of debt and equity in the capital structure.

In summary, Mr. Moul employed the theories employed by Miller and Modigliani in the context of substituting book value capitalization (the basis of rate setting) for the market capitalization, which necessitates an increase in the cost of equity to account for the associated increase in financial risk.

The Cost of Capital, Corporation Finance and the Theory of Investment

Franco Modigliani; Merton H. Miller

The American Economic Review, Vol. 48, No. 3. (Jun., 1958), pp. 261-297.

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THE COST OF CAPITAL, CORPORATION FINANCE AND THE THEORY OF INVESTMENT

By FRANCO MODIGLIANI AND MERTON H. MILLER*

What is the "cost of capital" to a firm in a world in which funds are used to acquire assets whose yields are uncertain; and in which capital can be obtained by many different media, ranging from pure debt instruments, representing money-fixed claims, to pure equity issues, giving holders only the right to a pro-rata share in the uncertain venture? This question has vexed at least three classes of economists: (1) the corporation finance specialist concerned with the techniques of financing firms so as to ensure their survival and growth; (2) the managerial economist concerned with capital budgeting; and (3) the economic theorist concerned with explaining investment behavior at both the micro and macro levels.[1]

In much of his formal analysis, the economic theorist at least has tended to side-step the essence of this cost-of-capital problem by proceeding as though physical assets—like bonds—could be regarded as yielding known, sure streams. Given this assumption, the theorist has concluded that the cost of capital to the owners of a firm is simply the rate of interest on bonds; and has derived the familiar proposition that the firm, acting rationally, will tend to push investment to the point

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* The authors are, respectively, professor and associate professor of economics in the Graduate School of Industrial Administration, Carnegie Institute of Technology. This article is a revised version of a paper delivered at the annual meeting of the Econometric Society, December 1956. The authors express thanks for the comments and suggestions made at that time by the discussants of the paper, Evsey Domar, Robert Eisner and John Lintner, and subsequently by James Duesenberry. They are also greatly indebted to many of their present and former colleagues and students at Carnegie Tech who served so often and with such remarkable patience as a critical forum for the ideas here presented.

[1] The literature bearing on the cost-of-capital problem is far too extensive for listing here. Numerous references to it will be found throughout the paper though we make no claim to completeness. One phase of the problem which we do not consider explicitly, but which has a considerable literature of its own is the relation between the cost of capital and public utility rates. For a recent summary of the "cost-of-capital theory" of rate regulation and a brief discussion of some of its implications, the reader may refer to H. M. Somers [20].

where the marginal yield on physical assets is equal to the market rate of interest.[2] This proposition can be shown to follow from either of two criteria of rational decision-making which are equivalent under certainty, namely (1) the maximization of profits and (2) the maximization of market value.

According to the first criterion, a physical asset is worth acquiring if it will increase the net profit of the owners of the firm. But net profit will increase only if the expected rate of return, or yield, of the asset exceeds the rate of interest. According to the second criterion, an asset is worth acquiring if it increases the value of the owners' equity, *i.e.*, if it adds more to the market value of the firm than the costs of acquisition. But what the asset adds is given by capitalizing the stream it generates at the market rate of interest, and this capitalized value will exceed its cost if and only if the yield of the asset exceeds the rate of interest. Note that, under either formulation, the cost of capital is equal to the rate of interest on bonds, regardless of whether the funds are acquired through debt instruments or through new issues of common stock. Indeed, in a world of sure returns, the distinction between debt and equity funds reduces largely to one of terminology.

It must be acknowledged that some attempt is usually made in this type of analysis to allow for the existence of uncertainty. This attempt typically takes the form of superimposing on the results of the certainty analysis the notion of a "risk discount" to be subtracted from the expected yield (or a "risk premium" to be added to the market rate of interest). Investment decisions are then supposed to be based on a comparison of this "risk adjusted" or "certainty equivalent" yield with the market rate of interest.[3] No satisfactory explanation has yet been provided, however, as to what determines the size of the risk discount and how it varies in response to changes in other variables.

Considered as a convenient approximation, the model of the firm constructed via this certainty—or certainty-equivalent—approach has admittedly been useful in dealing with some of the grosser aspects of the processes of capital accumulation and economic fluctuations. Such a model underlies, for example, the familiar Keynesian aggregate investment function in which aggregate investment is written as a function of the rate of interest—the same riskless rate of interest which appears later in the system in the liquidity-preference equation. Yet few would maintain that this approximation is adequate. At the macroeconomic level there are ample grounds for doubting that the rate of interest has

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[2] Or, more accurately, to the marginal cost of borrowed funds since it is customary, at least in advanced analysis, to draw the supply curve of borrowed funds to the firm as a rising one. For an advanced treatment of the certainty case, see F. and V. Lutz [13].

[3] The classic examples of the certainty-equivalent approach are found in J. R. Hicks [8] and O. Lange [11].

as large and as direct an influence on the rate of investment as this analysis would lead us to believe. At the microeconomic level the certainty model has little descriptive value and provides no real guidance to the finance specialist or managerial economist whose main problems cannot be treated in a framework which deals so cavalierly with uncertainty and ignores all forms of financing other than debt issues.[4]

Only recently have economists begun to face up seriously to the problem of the cost of capital *cum* risk. In the process they have found their interests and endeavors merging with those of the finance specialist and the managerial economist who have lived with the problem longer and more intimately. In this joint search to establish the principles which govern rational investment and financial policy in a world of uncertainty two main lines of attack can be discerned. These lines represent, in effect, attempts to extrapolate to the world of uncertainty each of the two criteria—profit maximization and market value maximization—which were seen to have equivalent implications in the special case of certainty. With the recognition of uncertainty this equivalence vanishes. In fact, the profit maximization criterion is no longer even well defined. Under uncertainty there corresponds to each decision of the firm not a unique profit outcome, but a plurality of mutually exclusive outcomes which can at best be described by a subjective probability distribution. The profit outcome, in short, has become a random variable and as such its maximization no longer has an operational meaning. Nor can this difficulty generally be disposed of by using the mathematical expectation of profits as the variable to be maximized. For decisions which affect the expected value will also tend to affect the dispersion and other characteristics of the distribution of outcomes. In particular, the use of debt rather than equity funds to finance a given venture may well increase the expected return to the owners, but only at the cost of increased dispersion of the outcomes.

Under these conditions the profit outcomes of alternative investment and financing decisions can be compared and ranked only in terms of a *subjective* "utility function" of the owners which weighs the expected yield against other characteristics of the distribution. Accordingly, the extrapolation of the profit maximization criterion of the certainty model has tended to evolve into utility maximization, sometimes explicitly, more frequently in a qualitative and heuristic form.[5]

The utility approach undoubtedly represents an advance over the certainty or certainty-equivalent approach. It does at least permit us

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[4] Those who have taken a "case-method" course in finance in recent years will recall in this connection the famous Liquigas case of Hunt and Williams, [9, pp. 193–96] a case which is often used to introduce the student to the cost-of-capital problem and to poke a bit of fun at the economist's certainty-model.

[5] For an attempt at a rigorous explicit development of this line of attack, see F. Modigliani and M. Zeman [14].

to explore (within limits) some of the implications of different financing arrangements, and it does give some meaning to the "cost" of different types of funds. However, because the cost of capital has become an essentially subjective concept, the utility approach has serious drawbacks for normative as well as analytical purposes. How, for example, is management to ascertain the risk preferences of its stockholders and to compromise among their tastes? And how can the economist build a meaningful investment function in the face of the fact that any given investment opportunity might or might not be worth exploiting depending on precisely who happen to be the owners of the firm at the moment?

Fortunately, these questions do not have to be answered; for the alternative approach, based on market value maximization, can provide the basis for an operational definition of the cost of capital and a workable theory of investment. Under this approach any investment project and its concomitant financing plan must pass only the following test: Will the project, as financed, raise the market value of the firm's shares? If so, it is worth undertaking; if not, its return is less than the marginal cost of capital to the firm. Note that such a test is entirely independent of the tastes of the current owners, since market prices will reflect not only their preferences but those of all potential owners as well. If any current stockholder disagrees with management and the market over the valuation of the project, he is free to sell out and reinvest elsewhere, but will still benefit from the capital appreciation resulting from management's decision.

The potential advantages of the market-value approach have long been appreciated; yet analytical results have been meager. What appears to be keeping this line of development from achieving its promise is largely the lack of an adequate theory of the effect of financial structure on market valuations, and of how these effects can be inferred from objective market data. It is with the development of such a theory and of its implications for the cost-of-capital problem that we shall be concerned in this paper.

Our procedure will be to develop in Section I the basic theory itself and to give some brief account of its empirical relevance. In Section II, we show how the theory can be used to answer the cost-of-capital question and how it permits us to develop a theory of investment of the firm under conditions of uncertainty. Throughout these sections the approach is essentially a partial-equilibrium one focusing on the firm and "industry." Accordingly, the "prices" of certain income streams will be treated as constant and given from outside the model, just as in the standard Marshallian analysis of the firm and industry the prices of all inputs and of all other products are taken as given. We have chosen to focus at this level rather than on the economy as a whole because it

is at the level of the firm and the industry that the interests of the various specialists concerned with the cost-of-capital problem come most closely together. Although the emphasis has thus been placed on partial-equilibrium analysis, the results obtained also provide the essential building blocks for a general equilibrium model which shows how those prices which are here taken as given, are themselves determined. For reasons of space, however, and because the material is of interest in its own right, the presentation of the general equilibrium model which rounds out the analysis must be deferred to a subsequent paper.

I. *The Valuation of Securities, Leverage, and the Cost of Capital*

A. *The Capitalization Rate for Uncertain Streams*

As a starting point, consider an economy in which all physical assets are owned by corporations. For the moment, assume that these corporations can finance their assets by issuing common stock only; the introduction of bond issues, or their equivalent, as a source of corporate funds is postponed until the next part of this section.

The physical assets held by each firm will yield to the owners of the firm—its stockholders—a stream of "profits" over time; but the elements of this series need not be constant and in any event are uncertain. This stream of income, and hence the stream accruing to any share of common stock, will be regarded as extending indefinitely into the future. We assume, however, that the mean value of the stream over time, or average profit per unit of time, is finite and represents a random variable subject to a (subjective) probability distribution. We shall refer to the average value over time of the stream accruing to a given share as the return of that share; and to the mathematical expectation of this average as the expected return of the share.[6] Although individual investors may have different views as to the shape of the probability distri-

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[6] These propositions can be restated analytically as follows: The assets of the ith firm generate a stream:

$$X_i(1),\ X_i(2)\ \cdots\ X_i(T)$$

whose elements are random variables subject to the joint probability distribution:

$$\chi_i[X_i(1),\ X_i(2)\ \cdots\ X_i(t)].$$

The return to the ith firm is defined as:

$$X_i = \lim_{T\to\infty} \frac{1}{T} \sum_{t=1}^{T} X_i(t).$$

X_i is itself a random variable with a probability distribution $\Phi_i(X_i)$ whose form is determined uniquely by χ_i. The expected return $\bar{X}_i$ is defined as $\bar{X}_i = E(X_i) = \int_{X_i} X_i \Phi_i(X_i) dX_i$. If N_i is the number of shares outstanding, the return of the ith share is $x_i = (1/N)X_i$ with probability distribution $\phi_i(x_i)dx_i = \Phi_i(Nx_i)d(Nx_i)$ and expected value $\bar{x}_i = (1/N)\bar{X}_i$.

bution of the return of any share, we shall assume for simplicity that they are at least in agreement as to the expected return.[7]

This way of characterizing uncertain streams merits brief comment. Notice first that the stream is a stream of profits, not dividends. As will become clear later, as long as management is presumed to be acting in the best interests of the stockholders, retained earnings can be regarded as equivalent to a fully subscribed, pre-emptive issue of common stock. Hence, for present purposes, the division of the stream between cash dividends and retained earnings in any period is a mere detail. Notice also that the uncertainty attaches to the mean value over time of the stream of profits and should not be confused with variability over time of the successive elements of the stream. That variability and uncertainty are two totally different concepts should be clear from the fact that the elements of a stream can be variable even though known with certainty. It can be shown, furthermore, that whether the elements of a stream are sure or uncertain, the effect of variability per se on the valuation of the stream is at best a second-order one which can safely be neglected for our purposes (and indeed most others too).[8]

The next assumption plays a strategic role in the rest of the analysis. We shall assume that firms can be divided into "equivalent return" classes such that the return on the shares issued by any firm in any given class is proportional to (and hence perfectly correlated with) the return on the shares issued by any other firm in the same class. This assumption implies that the various shares within the same class differ, at most, by a "scale factor." Accordingly, if we adjust for the difference in scale, by taking the *ratio* of the return to the expected return, the probability distribution of that ratio is identical for all shares in the class. It follows that all relevant properties of a share are uniquely characterized by specifying (1) the class to which it belongs and (2) its expected return.

The significance of this assumption is that it permits us to classify firms into groups within which the shares of different firms are "homogeneous," that is, perfect substitutes for one another. We have, thus, an analogue to the familiar concept of the industry in which it is the commodity produced by the firms that is taken as homogeneous. To complete this analogy with Marshallian price theory, we shall assume in the

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[7] To deal adequately with refinements such as differences among investors in estimates of expected returns would require extensive discussion of the theory of portfolio selection. Brief references to these and related topics will be made in the succeeding article on the general equilibrium model.

[8] The reader may convince himself of this by asking how much he would be willing to rebate to his employer for the privilege of receiving his annual salary in equal monthly installments rather than in irregular amounts over the year. See also J. M. Keynes [10, esp. pp. 53–54].

analysis to follow that the shares concerned are traded in perfect markets under conditions of atomistic competition.[9]

From our definition of homogeneous classes of stock it follows that in equilibrium in a perfect capital market the price per dollar's worth of expected return must be the same for all shares of any given class. Or, equivalently, in any given class the price of every share must be proportional to its expected return. Let us denote this factor of proportionality for any class, say the *k*th class, by $1/\rho_k$. Then if p_j denotes the price and $\bar{x}_j$ is the expected return per share of the *j*th firm in class *k*, we must have:

$$p_j = \frac{1}{\rho_k}\bar{x}_j; \tag{1}$$

or, equivalently,

$$\frac{\bar{x}_j}{p_j} = \rho_k \text{ a constant for all firms } j \text{ in class } k. \tag{2}$$

The constants ρ_k (one for each of the *k* classes) can be given several economic interpretations: (a) From (2) we see that each ρ_k is the expected rate of return of any share in class *k*. (b) From (1) $1/\rho_k$ is the price which an investor has to pay for a dollar's worth of expected return in the class *k*. (c) Again from (1), by analogy with the terminology for perpetual bonds, ρ_k can be regarded as the market rate of capitalization for the expected value of the uncertain streams of the kind generated by the *k*th class of firms.[10]

B. *Debt Financing and Its Effects on Security Prices*

Having developed an apparatus for dealing with uncertain streams we can now approach the heart of the cost-of-capital problem by dropping the assumption that firms cannot issue bonds. The introduction of debt-financing changes the market for shares in a very fundamental way. Because firms may have different proportions of debt in their capi-

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[9] Just what our classes of stocks contain and how the different classes can be identified by outside observers are empirical questions to which we shall return later. For the present, it is sufficient to observe: (1) Our concept of a class, while not identical to that of the industry is at least closely related to it. Certainly the basic characteristics of the probability distributions of the returns on assets will depend to a significant extent on the product sold and the technology used. (2) What are the appropriate class boundaries will depend on the particular problem being studied. An economist concerned with general tendencies in the market, for example, might well be prepared to work with far wider classes than would be appropriate for an investor planning his portfolio, or a firm planning its financial strategy.

[10] We cannot, on the basis of the assumptions so far, make any statements about the relationship or spread between the various ρ's or capitalization rates. Before we could do so we would have to make further specific assumptions about the way investors believe the probability distributions vary from class to class, as well as assumptions about investors' preferences as between the characteristics of different distributions.

tal structure, shares of different companies, even in the same class, can give rise to different probability distributions of returns. In the language of finance, the shares will be subject to different degrees of financial risk or "leverage" and hence they will no longer be perfect substitutes for one another.

To exhibit the mechanism determining the relative prices of shares under these conditions, we make the following two assumptions about the nature of bonds and the bond market, though they are actually stronger than is necessary and will be relaxed later: (1) All bonds (including any debts issued by households for the purpose of carrying shares) are assumed to yield a constant income per unit of time, and this income is regarded as certain by all traders regardless of the issuer. (2) Bonds, like stocks, are traded in a perfect market, where the term perfect is to be taken in its usual sense as implying that any two commodities which are perfect substitutes for each other must sell, in equilibrium, at the same price. It follows from assumption (1) that all bonds are in fact perfect substitutes up to a scale factor. It follows from assumption (2) that they must all sell at the same price per dollar's worth of return, or what amounts to the same thing must yield the same rate of return. This rate of return will be denoted by r and referred to as the rate of interest or, equivalently, as the capitalization rate for sure streams. We now can derive the following two basic propositions with respect to the valuation of securities in companies with different capital structures:

Proposition I. Consider any company j and let $\overline{X}_j$ stand as before for the expected return on the assets owned by the company (that is, its expected profit before deduction of interest). Denote by D_j the market value of the debts of the company; by S_j the market value of its common shares; and by $V_j \equiv S_j + D_j$ the market value of all its securities or, as we shall say, the market value of the firm. Then, our Proposition I asserts that we must have in equilibrium:

$$V_j \equiv (S_j + D_j) = \overline{X}_j/\rho_k, \text{ for any firm } j \text{ in class } k. \tag{3}$$

That is, the *market value of any firm is independent of its capital structure and is given by capitalizing its expected return at the rate ρ_k appropriate to its class.*

This proposition can be stated in an equivalent way in terms of the firm's "average cost of capital," $\overline{X}_j/V_j$, which is the ratio of its expected return to the market value of all its securities. Our proposition then is:

$$\frac{\overline{X}_j}{(S_j + D_j)} \equiv \frac{\overline{X}_j}{V_j} = \rho_k, \text{ for any firm } j, \text{ in class } k. \tag{4}$$

That is, *the average cost of capital to any firm is completely independent of*

its capital structure and is equal to the capitalization rate of a pure equity stream of its class.

To establish Proposition I we will show that as long as the relations (3) or (4) do not hold between any pair of firms in a class, arbitrage will take place and restore the stated equalities. We use the term arbitrage advisedly. For if Proposition I did not hold, an investor could buy and sell stocks and bonds in such a way as to exchange one income stream for another stream, identical in all relevant respects but selling at a lower price. The exchange would therefore be advantageous to the investor quite independently of his attitudes toward risk.[11] As investors exploit these arbitrage opportunities, the value of the overpriced shares will fall and that of the underpriced shares will rise, thereby tending to eliminate the discrepancy between the market values of the firms.

By way of proof, consider two firms in the same class and assume for simplicity only, that the expected return, $\bar{X}$, is the same for both firms. Let company 1 be financed entirely with common stock while company 2 has some debt in its capital structure. Suppose first the value of the levered firm, V_2, to be larger than that of the unlevered one, V_1. Consider an investor holding s_2 dollars' worth of the shares of company 2, representing a fraction α of the total outstanding stock, S_2. The return from this portfolio, denoted by Y_2, will be a fraction α of the income available for the stockholders of company 2, which is equal to the total return X_2 less the interest charge, rD_2. Since under our assumption of homogeneity, the anticipated total return of company 2, X_2, is, under all circumstances, the same as the anticipated total return to company 1, X_1, we can hereafter replace X_2 and X_1 by a common symbol X. Hence, the return from the initial portfolio can be written as:

$$Y_2 = \alpha(X - rD_2). \tag{5}$$

Now suppose the investor sold his αS_2 worth of company 2 shares and acquired instead an amount $s_1 = \alpha(S_2 + D_2)$ of the shares of company 1. He could do so by utilizing the amount αS_2 realized from the sale of his initial holding and borrowing an additional amount αD_2 on his own credit, pledging his new holdings in company 1 as a collateral. He would thus secure for himself a fraction $s_1/S_1 = \alpha(S_2 + D_2)/S_1$ of the shares and earnings of company 1. Making proper allowance for the interest payments on his personal debt αD_2, the return from the new portfolio, Y_1, is given by:

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[11] In the language of the theory of choice, the exchanges are movements from inefficient points in the interior to efficient points on the boundary of the investor's opportunity set; and not movements between efficient points along the boundary. Hence for this part of the analysis nothing is involved in the way of specific assumptions about investor attitudes or behavior other than that investors behave consistently and prefer more income to less income, *ceteris paribus*.

$$Y_1 = \frac{\alpha(S_2 + D_2)}{S_1} X - r\alpha D_2 = \alpha \frac{V_2}{V_1} X - r\alpha D_2. \tag{6}$$

Comparing (5) with (6) we see that as long as $V_2 > V_1$ we must have $Y_1 > Y_2$, so that it pays owners of company 2's shares to sell their holdings, thereby depressing S_2 and hence V_2; and to acquire shares of company 1, thereby raising S_1 and thus V_1. We conclude therefore that levered companies cannot command a premium over unlevered companies because investors have the opportunity of putting the equivalent leverage into their portfolio directly by borrowing on personal account.

Consider now the other possibility, namely that the market value of the levered company V_2 is less than V_1. Suppose an investor holds initially an amount s_1 of shares of company 1, representing a fraction α of the total outstanding stock, S_1. His return from this holding is:

$$Y_1 = \frac{s_1}{S_1} X = \alpha X.$$

Suppose he were to exchange this initial holding for another portfolio, also worth s_1, but consisting of s_2 dollars of stock of company 2 and of d dollars of bonds, where s_2 and d are given by:

$$s_2 = \frac{S_2}{V_2} s_1, \qquad d = \frac{D_2}{V_2} s_1. \tag{7}$$

In other words the new portfolio is to consist of stock of company 2 and of bonds in the proportions S_2/V_2 and D_2/V_2, respectively. The return from the stock in the new portfolio will be a fraction s_2/S_2 of the total return to stockholders of company 2, which is $(X - rD_2)$, and the return from the bonds will be rd. Making use of (7), the total return from the portfolio, Y_2, can be expressed as follows:

$$Y_2 = \frac{s_2}{S_2}(X - rD_2) + rd = \frac{s_1}{V_2}(X - rD_2) + r\frac{D_2}{V_2} s_1 = \frac{s_1}{V_2} X = \alpha \frac{S_1}{V_2} X$$

(since $s_1 = \alpha S_1$). Comparing Y_2 with Y_1 we see that, if $V_2 < S_1 \equiv V_1$, then Y_2 will exceed Y_1. Hence it pays the holders of company 1's shares to sell these holdings and replace them with a mixed portfolio containing an appropriate fraction of the shares of company 2.

The acquisition of a mixed portfolio of stock of a levered company j and of bonds in the proportion S_j/V_j and D_j/V_j respectively, may be regarded as an operation which "undoes" the leverage, giving access to an appropriate fraction of the unlevered return X_j. It is this possibility of undoing leverage which prevents the value of levered firms from being consistently less than those of unlevered firms, or more generally prevents the average cost of capital $\overline{X}_j/V_j$ from being systematically higher for levered than for nonlevered companies in the same class.

Since we have already shown that arbitrage will also prevent V_2 from being larger than V_1, we can conclude that in equilibrium we must have $V_2 = V_1$, as stated in Proposition I.

Proposition II. From Proposition I we can derive the following proposition concerning the rate of return on common stock in companies whose capital structure includes some debt: the expected rate of return or yield, i, on the stock of any company j belonging to the kth class is a linear function of leverage as follows:

$$i_j = \rho_k + (\rho_k - r)D_j/S_j. \tag{8}$$

That is, *the expected yield of a share of stock is equal to the appropriate capitalization rate ρ_k for a pure equity stream in the class, plus a premium related to financial risk equal to the debt-to-equity ratio times the spread between ρ_k and r.* Or equivalently, the market price of any share of stock is given by capitalizing its expected return at the continuously variable rate i_j of (8).[12]

A number of writers have stated close equivalents of our Proposition I although by appealing to intuition rather than by attempting a proof and only to insist immediately that the results were not applicable to the actual capital markets.[13] Proposition II, however, so far as we have been able to discover is new.[14] To establish it we first note that, by definition, the expected rate of return, i, is given by:

$$i_j \equiv \frac{\overline{X}_j - rD_j}{S_j}. \tag{9}$$

From Proposition I, equation (3), we know that:

$$\overline{X}_j = \rho_k(S_j + D_j).$$

Substituting in (9) and simplifying, we obtain equation (8).

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[12] To illustrate, suppose $\overline{X} = 1000$, $D = 4000$, $r = 5$ per cent and $\rho_k = 10$ per cent. These values imply that $V = 10{,}000$ and $S = 6000$ by virtue of Proposition I. The expected yield or rate of return per share is then:

$$i = \frac{1000 - 200}{6000} = .1 + (.1 - .05)\frac{4000}{6000} = 13\tfrac{1}{3} \text{ per cent.}$$

[13] See, for example, J. B. Williams [21, esp. pp. 72–73]; David Durand [3]; and W. A. Morton [15]. None of these writers describe in any detail the mechanism which is supposed to keep the average cost of capital constant under changes in capital structure. They seem, however, to be visualizing the equilibrating mechanism in terms of switches by investors between stocks and bonds as the yields of each get out of line with their "riskiness." This is an argument quite different from the pure arbitrage mechanism underlying our proof, and the difference is crucial. Regarding Proposition I as resting on investors' attitudes toward risk leads inevitably to a misunderstanding of many factors influencing relative yields such as, for example, limitations on the portfolio composition of financial institutions. See below, esp. Section I.D.

[14] Morton does make reference to a linear yield function but only " . . . for the sake of simplicity and because the particular function used makes no essential difference in my conclusions" [15, p. 443, note 2].

C. *Some Qualifications and Extensions of the Basic Propositions*

The methods and results developed so far can be extended in a number of useful directions, of which we shall consider here only three: (1) allowing for a corporate profits tax under which interest payments are deductible; (2) recognizing the existence of a multiplicity of bonds and interest rates; and (3) acknowledging the presence of market imperfections which might interfere with the process of arbitrage. The first two will be examined briefly in this section with some further attention given to the tax problem in Section II. Market imperfections will be discussed in Part D of this section in the course of a comparison of our results with those of received doctrines in the field of finance.

Effects of the Present Method of Taxing Corporations. The deduction of interest in computing taxable corporate profits will prevent the arbitrage process from making the value of all firms in a given class proportional to the expected returns generated by their physical assets. Instead, it can be shown (by the same type of proof used for the original version of Proposition I) that the market values of firms in each class must be proportional in equilibrium to their expected return net of taxes (that is, to the sum of the interest paid and expected net stockholder income). This means we must replace each $\overline{X}_j$ in the original versions of Propositions I and II with a new variable $\overline{X}_j^\tau$ representing the total income net of taxes generated by the firm:

$$\overline{X}_j^\tau \equiv (\overline{X}_j - rD_j)(1-\tau) + rD_j \equiv \bar{\pi}_j^\tau + rD_j, \tag{10}$$

where $\bar{\pi}_j^\tau$ represents the expected net income accruing to the common stockholders and τ stands for the average rate of corporate income tax.[15]

After making these substitutions, the propositions, when adjusted for taxes, continue to have the same form as their originals. That is, Proposition I becomes:

$$\frac{\overline{X}_j^\tau}{V_j} = \rho_k^\tau, \text{ for any firm in class } k, \tag{11}$$

and Proposition II becomes

$$i_j \equiv \frac{\bar{\pi}_j^\tau}{S_j} = \rho_j^\tau + (\rho_k^\tau - r)D_j/S_j \tag{12}$$

where ρ_k^τ is the capitalization rate for income net of taxes in class k.

Although the form of the propositions is unaffected, certain interpretations must be changed. In particular, the after-tax capitalization rate

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[15] For simplicity, we shall ignore throughout the tiny element of progression in our present corporate tax and treat τ as a constant independent of $(X_j - rD_j)$.

ρ_k^{τ} can no longer be identified with the "average cost of capital" which is $\rho_k = \bar{X}_j / V_j$. The difference between ρ_k^{τ} and the "true" average cost of capital, as we shall see, is a matter of some relevance in connection with investment planning within the firm (Section II). For the description of market behavior, however, which is our immediate concern here, the distinction is not essential. To simplify presentation, therefore, and to preserve continuity with the terminology in the standard literature we shall continue in this section to refer to ρ_k^{τ} as the average cost of capital, though strictly speaking this identification is correct only in the absence of taxes.

Effects of a Plurality of Bonds and Interest Rates. In existing capital markets we find not one, but a whole family of interest rates varying with maturity, with the technical provisions of the loan and, what is most relevant for present purposes, with the financial condition of the borrower.[16] Economic theory and market experience both suggest that the yields demanded by lenders tend to increase with the debt-equity ratio of the borrowing firm (or individual). If so, and if we can assume as a first approximation that this yield curve, $r = r\ (D/S)$, whatever its precise form, is the same for all borrowers, then we can readily extend our propositions to the case of a rising supply curve for borrowed funds.[17]

Proposition I is actually unaffected in form and interpretation by the fact that the rate of interest may rise with leverage; while the average cost of *borrowed* funds will tend to increase as debt rises, the average cost of funds from *all* sources will still be independent of leverage (apart from the tax effect). This conclusion follows directly from the ability of those who engage in arbitrage to undo the leverage in any financial structure by acquiring an appropriately mixed portfolio of bonds and stocks. Because of this ability, the ratio of earnings (*before* interest charges) to market value—*i.e.*, the average cost of capital from all

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[16] We shall not consider here the extension of the analysis to encompass the time structure of interest rates. Although some of the problems posed by the time structure can be handled within our comparative statics framework, an adequate discussion would require a separate paper.

[17] We can also develop a theory of bond valuation along lines essentially parallel to those followed for the case of shares. We conjecture that the curve of bond yields as a function of leverage will turn out to be a nonlinear one in contrast to the linear function of leverage developed for common shares. However, we would also expect that the rate of increase in the yield on new issues would not be substantial in practice. This relatively slow rise would reflect the fact that interest rate increases by themselves can never be completely satisfactory to creditors as compensation for their increased risk. Such increases may simply serve to raise r so high relative to ρ that they become self-defeating by giving rise to a situation in which even normal fluctuations in earnings may force the company into bankruptcy. The difficulty of borrowing more, therefore, tends to show up in the usual case not so much in higher rates as in the form of increasingly stringent restrictions imposed on the company's management and finances by the creditors; and ultimately in a complete inability to obtain new borrowed funds, at least from the institutional investors who normally set the standards in the market for bonds.

sources—must be the same for all firms in a given class.[18] In other words, the increased cost of borrowed funds as leverage increases will tend to be offset by a corresponding reduction in the yield of common stock. This seemingly paradoxical result will be examined more closely below in connection with Proposition II.

A significant modification of Proposition I would be required only if the yield curve $r=r(D/S)$ were different for different borrowers, as might happen if creditors had marked preferences for the securities of a particular class of debtors. If, for example, corporations as a class were able to borrow at lower rates than individuals having equivalent personal leverage, then the average cost of capital to corporations might fall slightly, as leverage increased over some range, in reflection of this differential. In evaluating this possibility, however, remember that the relevant interest rate for our arbitrage operators is the rate on brokers' loans and, historically, that rate has not been noticeably higher than representative corporate rates.[19] The operations of holding companies and investment trusts which can borrow on terms comparable to operating companies represent still another force which could be expected to wipe out any marked or prolonged advantages from holding levered stocks.[20]

Although Proposition I remains unaffected as long as the yield curve is the same for all borrowers, the relation between common stock yields and leverage will no longer be the strictly linear one given by the original Proposition II. If r increases with leverage, the yield i will still tend to

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[18] One normally minor qualification might be noted. Once we relax the assumption that all bonds have certain yields, our arbitrage operator faces the danger of something comparable to "gambler's ruin." That is, there is always the possibility that an otherwise sound concern—one whose long-run expected income is greater than its interest liability—might be forced into liquidation as a result of a run of temporary losses. Since reorganization generally involves costs, and because the operation of the firm may be hampered during the period of reorganization with lasting unfavorable effects on earnings prospects, we might perhaps expect heavily levered companies to sell at a slight discount relative to less heavily indebted companies of the same class.

[19] Under normal conditions, moreover, a substantial part of the arbitrage process could be expected to take the form, not of having the arbitrage operators go into debt on personal account to put the required leverage into their portfolios, but simply of having them reduce the amount of corporate bonds they already hold when they acquire underpriced unlevered stock. Margin requirements are also somewhat less of an obstacle to maintaining any desired degree of leverage in a portfolio than might be thought at first glance. Leverage could be largely restored in the face of higher margin requirements by switching to stocks having more leverage at the corporate level.

[20] An extreme form of inequality between borrowing and lending rates occurs, of course, in the case of preferred stocks, which can not be directly issued by individuals on personal account. Here again, however, we would expect that the operations of investment corporations plus the ability of arbitrage operators to sell off their holdings of preferred stocks would act to prevent the emergence of any substantial premiums (for this reason) on capital structures containing preferred stocks. Nor are preferred stocks so far removed from bonds as to make it impossible for arbitrage operators to approximate closely the risk and leverage of a corporate preferred stock by incurring a somewhat smaller debt on personal account.

rise as D/S increases, but at a decreasing rather than a constant rate. Beyond some high level of leverage, depending on the exact form of the interest function, the yield may even start to fall.[21] The relation between i and D/S could conceivably take the form indicated by the curve MD in Figure 2, although in practice the curvature would be much less pronounced. By contrast, with a constant rate of interest, the relation would be linear throughout as shown by line MM', Figure 2.

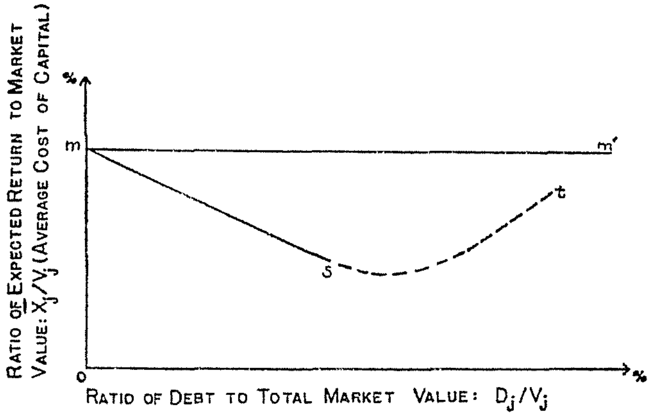

FIGURE 1

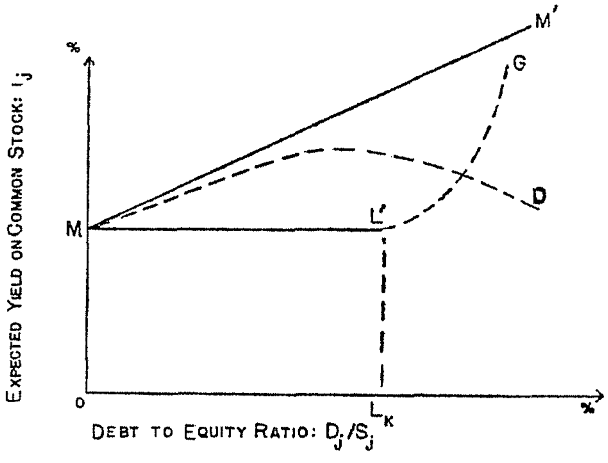

FIGURE 2

The downward sloping part of the curve MD perhaps requires some

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[21] Since new lenders are unlikely to permit this much leverage (*cf.* note 17), this range of the curve is likely to be occupied by companies whose earnings prospects have fallen substantially since the time when their debts were issued.

comment since it may be hard to imagine why investors, other than those who like lotteries, would purchase stocks in this range. Remember, however, that the yield curve of Proposition II is a consequence of the more fundamental Proposition I. Should the demand by the risk-lovers prove insufficient to keep the market to the peculiar yield-curve MD, this demand would be reinforced by the action of arbitrage operators. The latter would find it profitable to own a pro-rata share of the firm as a whole by holding its stock *and* bonds, the lower yield of the shares being thus offset by the higher return on bonds.

D. *The Relation of Propositions I and II to Current Doctrines*

The propositions we have developed with respect to the valuation of firms and shares appear to be substantially at variance with current doctrines in the field of finance. The main differences between our view and the current view are summarized graphically in Figures 1 and 2. Our Proposition I [equation (4)] asserts that the average cost of capital, $\bar{X}_j^\tau/V_j$, is a constant for all firms j in class k, independently of their financial structure. This implies that, if we were to take a sample of firms in a given class, and if for each firm we were to plot the ratio of expected return to market value against some measure of leverage or financial structure, the points would tend to fall on a horizontal straight line with intercept ρ_k^τ, like the solid line mm' in Figure 1.[22] From Proposition I we derived Proposition II [equation (8)] which, taking the simplest version with r constant, asserts that, for all firms in a class, the relation between the yield on common stock and financial structure, measured by D_j/S_j, will approximate a straight line with slope $(\rho_k^\tau - r)$ and intercept ρ_k^τ. This relationship is shown as the solid line MM' in Figure 2, to which reference has been made earlier.[23]

By contrast, the conventional view among finance specialists appears to start from the proposition that, other things equal, the earnings-price ratio (or its reciprocal, the times-earnings multiplier) of a firm's common stock will normally be only slightly affected by "moderate" amounts of debt in the firm's capital structure.[24] Translated into our no-

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[22] In Figure 1 the measure of leverage used is D_j/V_j (the ratio of debt to market value) rather than D_j/S_j (the ratio of debt to equity), the concept used in the analytical development. The D_j/V_j measure is introduced at this point because it simplifies comparison and contrast of our view with the traditional position.

[23] The line MM' in Figure 2 has been drawn with a positive slope on the assumption that $\rho_k^\tau > r$, a condition which will normally obtain. Our Proposition II as given in equation (8) would continue to be valid, of course, even in the unlikely event that $\rho_k^\tau < r$, but the slope of MM' would be negative.

[24] See, *e.g.*, Graham and Dodd [6, pp. 464–66]. Without doing violence to this position, we can bring out its implications more sharply by ignoring the qualification and treating the yield as a virtual constant over the relevant range. See in this connection the discussion in Durand [3, esp. pp. 225–37] of what he calls the "net income method" of valuation.

tation, it asserts that for any firm *j* in the class *k*,

$$\frac{\overline{X}_j^\tau - rD_j}{S_j} \equiv \frac{\bar{\pi}_j^\tau}{S_j} = i_k^*, \text{ a constant for } \frac{D_j}{S_j} \leq L_k \tag{13}$$

or, equivalently,

$$S_j = \bar{\pi}_j^\tau / i_k^*. \tag{14}$$

Here i_k^* represents the capitalization rate or earnings-price ratio on the common stock and L_k denotes some amount of leverage regarded as the maximum "reasonable" amount for firms of the class *k*. This assumed relationship between yield and leverage is the horizontal solid line ML' of Figure 2. Beyond L', the yield will presumably rise sharply as the market discounts "excessive" trading on the equity. This possibility of a rising range for high leverages is indicated by the broken-line segment $L'G$ in the figure.[25]

If the value of shares were really given by (14) then the over-all market value of the firm must be:

$$V_j \equiv S_j + D_j = \frac{\overline{X}_j^\tau - rD_j}{i_k^*} + D_j = \frac{\overline{X}_j^\tau}{i_k^*} + \frac{(i_k^* - r)D_j}{i_k^*}\,. \tag{16}$$

That is, for any given level of expected total returns after taxes ($\overline{X}_j^\tau$) and assuming, as seems natural, that $i_k^* > r$, the value of the firm must tend to *rise* with debt;[26] whereas our Proposition I asserts that the value of the firm is completely independent of the capital structure. Another way of contrasting our position with the traditional one is in terms of the cost of capital. Solving (16) for $\overline{X}_j^\tau / V_j$ yields:

$$\overline{X}_j^\tau / V_j = i_k^* - (i_k^* - r)D_j/V_j. \tag{17}$$

According to this equation, the average cost of capital is not independent of capital structure as we have argued, but should tend to *fall* with increasing leverage, at least within the relevant range of moderate debt ratios, as shown by the line *ms* in Figure 1. Or to put it in more familiar terms, debt-financing should be "cheaper" than equity-financing if not carried too far.

When we also allow for the possibility of a rising range of stock yields for large values of leverage, we obtain a U-shaped curve like *mst* in

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[25] To make it easier to see some of the implications of this hypothesis as well as to prepare the ground for later statistical testing, it will be helpful to assume that the notion of a critical limit on leverage beyond which yields rise rapidly, can be epitomized by a quadratic relation of the form:

$$\bar{\pi}_j^\tau / S_j = i_k^* + \beta(D_j/S_j) + \alpha(D_j/S_j)^2, \qquad \alpha > 0. \tag{15}$$

[26] For a typical discussion of how a promoter can, supposedly, increase the market value of a firm by recourse to debt issues, see W. J. Eiteman [4, esp. pp. 11–13].

Figure 1.[27] That a yield-curve for stocks of the form *ML'G* in Figure 2 implies a U-shaped cost-of-capital curve has, of course, been recognized by many writers. A natural further step has been to suggest that the capital structure corresponding to the trough of the U is an "optimal capital structure" towards which management ought to strive in the best interests of the stockholders.[28] According to our model, by contrast, no such optimal structure exists—all structures being equivalent from the point of view of the cost of capital.

Although the falling, or at least U-shaped, cost-of-capital function is in one form or another the dominant view in the literature, the ultimate rationale of that view is by no means clear. The crucial element in the position—that the expected earnings-price ratio of the stock is largely unaffected by leverage up to some conventional limit—is rarely even regarded as something which requires explanation. It is usually simply taken for granted or it is merely asserted that this is the way the market behaves.[29] To the extent that the constant earnings-price ratio has a rationale at all we suspect that it reflects in most cases the feeling that moderate amounts of debt in "sound" corporations do not really add very much to the "riskiness" of the stock. Since the extra risk is slight, it seems natural to suppose that firms will not have to pay noticeably higher yields in order to induce investors to hold the stock.[30]

A more sophisticated line of argument has been advanced by David Durand [3, pp. 231–33]. He suggests that because insurance companies and certain other important institutional investors are restricted to debt securities, nonfinancial corporations are able to borrow from them at interest rates which are lower than would be required to compensate

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[27] The U-shaped nature of the cost-of-capital curve can be exhibited explicitly if the yield curve for shares as a function of leverage can be approximated by equation (15) of footnote 25. From that equation, multiplying both sides by S_j we obtain: $\bar{\pi}_j^\tau = \bar{X}_j^\tau - rD_j = i_k^* S_j + \beta D_j + \alpha D_j^2 / S_j$ or, adding and subtracting $i_k^* D_k$ from the right-hand side and collecting terms,

$$\bar{X}_j^\tau = i_k^*(S_j + D_j) + (\beta + r - i_k^*)D_j + \alpha D^2{}_j / S_j. \tag{18}$$

Dividing (18) by V_j gives an expression for the cost of capital:

$$\begin{aligned} \bar{X}_j^\tau / V_j = i_k^* - (i_k^* - r - \beta)D_j/V_j + \alpha D_j^2 / S_j V_j = i_k^* - (i_k^* - r - \beta)D_j/V_j \\ + \alpha(D_j/V_j)^2/(1 - D_j/V_j) \end{aligned} \tag{19}$$

which is clearly U-shaped since α is supposed to be positive.

[28] For a typical statement see S. M. Robbins [16, p. 307]. See also Graham and Dodd [6, pp. 468–74].

[29] See *e.g.*, Graham and Dodd [6, p. 466].

[30] A typical statement is the following by Guthmann and Dougall [7, p. 245]: "Theoretically it might be argued that the increased hazard from using bonds and preferred stocks would counterbalance this additional income and so prevent the common stock from being more attractive than when it had a lower return but fewer prior obligations. In practice, the extra earnings from 'trading on the equity' are often regarded by investors as more than sufficient to serve as a 'premium for risk' when the proportions of the several securities are judiciously mixed."

creditors in a free market. Thus, while he would presumably agree with our conclusions that stockholders could not gain from leverage in an unconstrained market, he concludes that they can gain under present institutional arrangements. This gain would arise by virtue of the "safety superpremium" which lenders are willing to pay corporations for the privilege of lending.[31]

The defective link in both the traditional and the Durand version of the argument lies in the confusion between investors' subjective risk preferences and their objective market opportunities. Our Propositions I and II, as noted earlier, do not depend for their validity on any assumption about individual risk preferences. Nor do they involve any assertion as to what is an adequate compensation to investors for assuming a given degree of risk. They rely merely on the fact that a given commodity cannot consistently sell at more than one price in the market; or more precisely that the price of a commodity representing a "bundle" of two other commodities cannot be consistently different from the weighted average of the prices of the two components (the weights being equal to the proportion of the two commodities in the bundle).

An analogy may he helpful at this point. The relations between $1/\rho_k$, the price per dollar of an unlevered stream in class k; $1/r$, the price per dollar of a sure stream, and $1/i_j$, the price per dollar of a levered stream j, in the kth class, are essentially the same as those between, respectively, the price of whole milk, the price of butter fat, and the price of milk which has been thinned out by skimming off some of the butter fat. Our Proposition I states that a firm cannot reduce the cost of capital—*i.e.*, increase the market value of the stream it generates—by securing part of its capital through the sale of bonds, even though debt money appears to be cheaper. This assertion is equivalent to the proposition that, under perfect markets, a dairy farmer cannot in general earn more for the milk he produces by skimming some of the butter fat and selling it separately, even though butter fat per unit weight, sells for more than whole milk. The advantage from skimming the milk rather than selling whole milk would be purely illusory; for what would be gained from selling the high-priced butter fat would be lost in selling the low-priced residue of thinned milk. Similarly our Proposition II—that the price per dollar of a levered stream falls as leverage increases—is an ex-

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[31] Like Durand, Morton [15] contends "that the actual market deviates from [Proposition I] by giving a changing over-all cost of money at different points of the [leverage] scale" (p. 443, note 2, inserts ours), but the basis for this contention is nowhere clearly stated. Judging by the great emphasis given to the lack of mobility of investment funds between stocks and bonds and to the psychological and institutional pressures toward debt portfolios (see pp. 444–51 and especially his discussion of the optimal capital structure on p. 453) he would seem to be taking a position very similar to that of Durand above.

act analogue of the statement that the price per gallon of thinned milk falls continuously as more butter fat is skimmed off.[32]

It is clear that this last assertion is true as long as butter fat is worth more per unit weight than whole milk, and it holds even if, for many consumers, taking a little cream out of the milk (adding a little leverage to the stock) does not detract noticeably from the taste (does not add noticeably to the risk). Furthermore the argument remains valid even in the face of instituional limitations of the type envisaged by Durand. For suppose that a large fraction of the population habitually dines in restaurants which are required by law to serve only cream in lieu of milk (entrust their savings to institutional investors who can only buy bonds). To be sure the price of butter fat will then tend to be higher in relation to that of skimmed milk than in the absence such restrictions (the rate of interest will tend to be lower), and this will benefit people who eat at home and who like skim milk (who manage their own portfolio and are able and willing to take risk). But it will still be the case that a farmer cannot gain by skimming some of the butter fat and selling it separately (firm cannot reduce the cost of capital by recourse to borrowed funds).[33]

Our propositions can be regarded as the extension of the classical theory of markets to the particular case of the capital markets. Those who hold the current view—whether they realize it or not—must as-

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[32] Let M denote the quantity of whole milk, B/M the proportion of butter fat in the whole milk, and let p_M, p_B and p_α denote, respectively, the price per unit weight of whole milk, butter fat and thinned milk from which a fraction α of the butter fat has been skimmed off. We then have the fundamental perfect market relation:

$$\text{(a)} \qquad p_\alpha(M - \alpha B) + p_B \alpha B = p_M M, \qquad 0 \leq \alpha \leq 1,$$

stating that total receipts will be the same amount $p_M M$, independently of the amount αB of butter fat that may have been sold separately. Since p_M corresponds to $1/\rho$, p_B to $1/r$, p_α to $1/i$, M to $\bar{X}$ and αB to rD, (a) is equivalent to Proposition I, $S+D=\bar{X}/\rho$. From (a) we derive:

$$\text{(b)} \qquad p_\alpha = p_M \frac{M}{M - \alpha B} - p_B \frac{\alpha B}{M - \alpha B}$$

which gives the price of thinned milk as an explicit function of the proportion of butter fat skimmed off; the function decreasing as long as $p_B > p_M$. From (a) also follows:

$$\text{(c)} \qquad 1/p_\alpha = 1/p_M + (1/p_M - 1/p_B) \frac{p_B \alpha B}{p_\alpha(M - \alpha B)}$$

which is the exact analogue of Proposition II, as given by (8).

[33] The reader who likes parables will find that the analogy with interrelated commodity markets can be pushed a good deal farther than we have done in the text. For instance, the effect of changes in the market rate of interest on the over-all cost of capital is the same as the effect of a change in the price of butter on the price of whole milk. Similarly, just as the relation between the prices of skim milk and butter fat influences the kind of cows that will be reared, so the relation between i and r influences the kind of ventures that will be undertaken. If people like butter we shall have Guernseys; if they are willing to pay a high price for safety, this will encourage ventures which promise smaller but less uncertain streams per dollar of physical assets.

sume not merely that there are lags and frictions in the equilibrating process—a feeling we certainly share,[34] claiming for our propositions only that they describe the central tendency around which observations will scatter—but also that there are large and *systematic* imperfections in the market which permanently bias the outcome. This is an assumption that economists, at any rate, will instinctively eye with some skepticism.

In any event, whether such prolonged, systematic departures from equilibrium really exist or whether our propositions are better descriptions of long-run market behavior can be settled only by empirical research. Before going on to the theory of investment it may be helpful, therefore, to look at the evidence.

E. *Some Preliminary Evidence on the Basic Propositions*

Unfortunately the evidence which has been assembled so far is amazingly skimpy. Indeed, we have been able to locate only two recent studies—and these of rather limited scope—which were designed to throw light on the issue. Pending the results of more comprehensive tests which we hope will soon be available, we shall review briefly such evidence as is provided by the two studies in question: (1) an analysis of the relation between security yields and financial structure for some 43 large electric utilities by F. B. Allen [1], and (2) a parallel (unpublished) study by Robert Smith [19], for 42 oil companies designed to test whether Allen's rather striking results would be found in an industry with very different characteristics.[35] The Allen study is based on average figures for the years 1947 and 1948, while the Smith study relates to the single year 1953.

The Effect of Leverage on the Cost of Capital. According to the received view, as shown in equation (17) the average cost of capital, $\overline{X}^{\tau}/V$, should decline linearly with leverage as measured by the ratio D/V, at least through most of the relevant range.[36] According to Proposition I, the average cost of capital within a given class k should tend to have the same value ρ_k^{τ} independently of the degree of leverage. A simple test

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[34] Several specific examples of the failure of the arbitrage mechanism can be found in Graham and Dodd [6, *e.g.*, pp. 646–48]. The price discrepancy described on pp. 646–47 is particularly curious since it persists even today despite the fact that a whole generation of security analysts has been brought up on this book!

[35] We wish to express our thanks to both writers for making available to us some of their original worksheets. In addition to these recent studies there is a frequently cited (but apparently seldom read) study by the Federal Communications Commission in 1938 [22] which purports to show the existence of an optimal capital structure or range of structures (in the sense defined above) for public utilities in the 1930's. By current standards for statistical investigations, however, this study cannot be regarded as having any real evidential value for the problem at hand.

[36] We shall simplify our notation in this section by dropping the subscript j used to denote a particular firm wherever this will not lead to confusion.

of the merits of the two alternative hypotheses can thus be carried out by correlating $\bar{X}^{\tau}/V$ with D/V. If the traditional view is correct, the correlation should be significantly negative; if our view represents a better approximation to reality, then the correlation should not be significantly different from zero.

Both studies provide information about the average value of D—the market value of bonds and preferred stock—and of V—the market value of all securities.[37] From these data we can readily compute the ratio D/V and this ratio (expressed as a percentage) is represented by the symbol d in the regression equations below. The measurement of the variable $\bar{X}^{\tau}/V$, however, presents serious difficulties. Strictly speaking, the numerator should measure the expected returns net of taxes, but this is a variable on which no direct information is available. As an approximation, we have followed both authors and used (1) the average value of actual net returns in 1947 and 1948 for Allen's utilities; and (2) actual net returns in 1953 for Smith's oil companies. Net return is defined in both cases as the sum of interest, preferred dividends and stockholders' income net of corporate income taxes. Although this approximation to expected returns is undoubtedly very crude, there is no reason to believe that it will systematically bias the test in so far as the sign of the regression coefficient is concerned. The roughness of the approximation, however, will tend to make for a wide scatter. Also contributing to the scatter is the crudeness of the industrial classification, since especially within the sample of oil companies, the assumption that all the firms belong to the same class in our sense, is at best only approximately valid.

Denoting by x our approximation to $\bar{X}^{\tau}/V$ (expressed, like d, as a percentage), the results of the tests are as follows:

$$\text{Electric Utilities} \quad x = 5.3 + \underset{(\pm .008)}{.006d} \qquad r = .12$$

$$\text{Oil Companies} \quad x = 8.5 + \underset{(\pm .024)}{.006d} \qquad r = .04.$$

The data underlying these equations are also shown in scatter diagram form in Figures 3 and 4.

The results of these tests are clearly favorable to our hypothesis.

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[37] Note that for purposes of this test preferred stocks, since they represent an *expected* fixed obligation, are properly classified with bonds even though the tax status of preferred dividends is different from that of interest payments and even though preferred dividends are really fixed only as to their maximum in any year. Some difficulty of classification does arise in the case of convertible preferred stocks (and convertible bonds) selling at a substantial premium, but fortunately very few such issues were involved for the companies included in the two studies. Smith included bank loans and certain other short-term obligations (at book values) in his data on oil company debts and this treatment is perhaps open to some question. However, the amounts involved were relatively small and check computations showed that their elimination would lead to only minor differences in the test results.

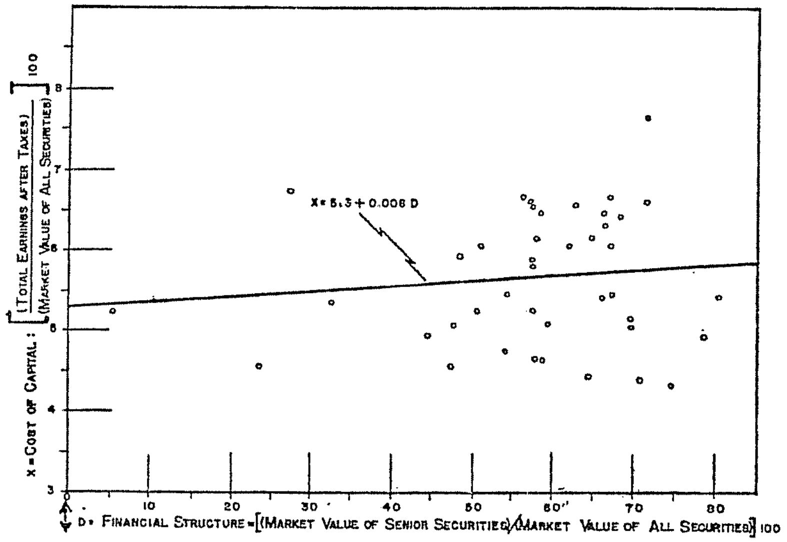

FIGURE 3. COST OF CAPITAL IN RELATION TO FINANCIAL STRUCTURE FOR 43 ELECTRIC UTILITIES, 1947–48

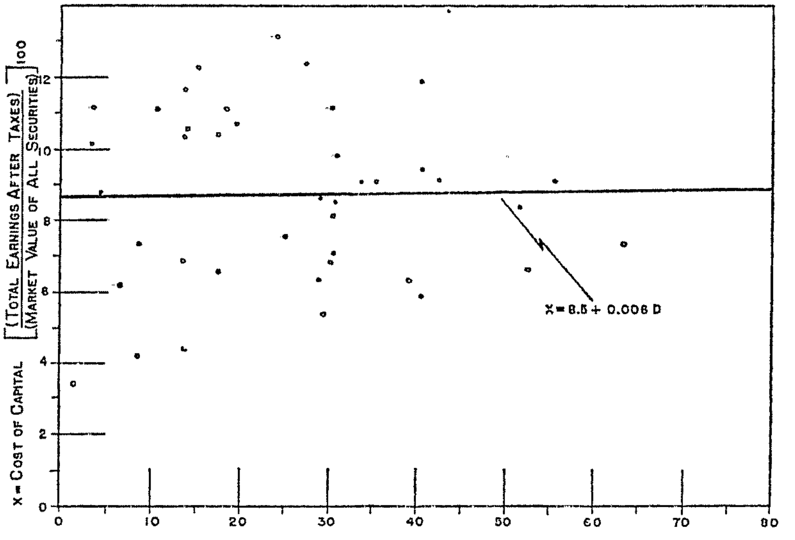

FIGURE 4. COST OF CAPITAL IN RELATION TO FINANCIAL STRUCTURE FOR 42 OIL COMPANIES, 1953

Both correlation coefficients are very close to zero and not statistically significant. Furthermore, the implications of the traditional view fail to be supported even with respect to the sign of the correlation. The data in short provide no evidence of any tendency for the cost of capital to fall as the debt ratio increases.[38]

It should also be apparent from the scatter diagrams that there is no hint of a curvilinear, U-shaped, relation of the kind which is widely believed to hold between the cost of capital and leverage. This graphical impression was confirmed by statistical tests which showed that for both industries the curvature was not significantly different from zero, its sign actually being opposite to that hypothesized.[39]

Note also that according to our model, the constant terms of the regression equations are measures of $\rho_k{}^\tau$, the capitalization rates for unlevered streams and hence the average cost of capital in the classes in question. The estimates of 8.5 per cent for the oil companies as against 5.3 per cent for electric utilities appear to accord well with a priori expectations, both in absolute value and relative spread.

The Effect of Leverage on Common Stock Yields. According to our Proposition II—see equation 12 and Figure 2—the expected yield on common stock, $\bar{\pi}^\tau/S$, in any given class, should tend to increase with leverage as measured by the ratio D/S. The relation should tend to be linear and with positive slope through most of the relevant range (as in the curve MM' of Figure 2), though it might tend to flatten out if we move

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[38] It may be argued that a test of the kind used is biased against the traditional view. The fact that both sides of the regression equation are divided by the variable V which may be subject to random variation might tend to impart a positive bias to the correlation. As a check on the results presented in the text, we have, therefore, carried out a supplementary test based on equation (16). This equation shows that, if the traditional view is correct, the market value of a company should, for given $\bar{X}^\tau$, increase with debt through most of the relevant range; according to our model the market value should be uncorrelated with D, given $\bar{X}^\tau$. Because of wide variations in the size of the firms included in our samples, all variables must be divided by a suitable scale factor in order to avoid spurious results in carrying out a test of equation (16). The factor we have used is the book value of the firm denoted by A. The hypothesis tested thus takes the specific form:

$$V/A = a + b(\bar{X}^\tau/A) + c(D/A)$$

and the numerator of the ratio X^τ/A is again approximated by actual net returns. The partial correlation between V/A and D/A should now be positive according to the traditional view and zero according to our model. Although division by A should, if anything, bias the results in *favor of the traditional* hypothesis, the partial correlation turns out to be only .03 for the oil companies and $-.28$ for the electric utilities. Neither of these coefficients is significantly different from zero and the larger one even has the wrong sign.

[39] The tests consisted of fitting to the data the equation (19) of footnote 27. As shown there, it follows from the U-shaped hypothesis that the coefficient α of the variable $(D/V)^2/(1-D/V)$, denoted hereafter by d^*, should be significant and positive. The following regression equations and partials were obtained:

$$\text{Electric Utilities} \quad x = 5.0 + .017d - .003d^*; \; r_{xd^*.d} = -.15$$

$$\text{Oil Companies} \quad x = 8.0 + .05d - .03d^*; \; r_{xd^*.d} = -.14.$$

far enough to the right (as in the curve *MD′*), to the extent that high leverage tends to drive up the cost of senior capital. According to the conventional view, the yield curve as a function of leverage should be a horizontal straight line (like *ML′*) through most of the relevant range; far enough to the right, the yield may tend to rise at an increasing rate. Here again, a straight-forward correlation—in this case between $\bar{\pi}^{\tau}/S$ and D/S—can provide a test of the two positions. If our view is correct, the correlation should be significantly positive; if the traditional view is correct, the correlation should be negligible.

Subject to the same qualifications noted above in connection with $\bar{X}^{\tau}$, we can approximate $\bar{\pi}^{\tau}$ by actual stockholder net income.[40] Letting z denote in each case the approximation to $\bar{\pi}^{\tau}/S$ (expressed as a percentage) and letting h denote the ratio D/S (also in percentage terms) the following results are obtained:

$$\text{Electric Utilities} \quad z = \underset{}{6.6} + \underset{(+.004)}{.017h} \qquad r = .53$$

$$\text{Oil Companies} \quad z = 8.9 + \underset{(\pm .012)}{.051h} \qquad r = .53.$$

These results are shown in scatter diagram form in Figures 5 and 6.

Here again the implications of our analysis seem to be borne out by the data. Both correlation coefficients are positive and highly significant when account is taken of the substantial sample size. Furthermore, the estimates of the coefficients of the equations seem to accord reasonably well with our hypothesis. According to equation (12) the constant term should be the value of ρ_k^{τ} for the given class while the slope should be $(\rho_k^{\tau} - r)$. From the test of Proposition I we have seen that for the oil companies the mean value of ρ_k^{τ} could be estimated at around 8.7. Since the average yield of senior capital during the period covered was in the order of $3\frac{1}{2}$ per cent, we should expect a constant term of about 8.7 per cent and a slope of just over 5 per cent. These values closely approximate the regression estimates of 8.9 per cent and 5.1 per cent respectively. For the electric utilities, the yield of senior capital was also on the order of $3\frac{1}{2}$ per cent during the test years, but since the estimate of the mean value of ρ_k^{τ} from the test of Proposition I was 5.6 per cent,

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[40] As indicated earlier, Smith's data were for the single year 1953. Since the use of a single year's profits as a measure of expected profits might be open to objection we collected profit data for 1952 for the same companies and based the computation of $\bar{\pi}^{\tau}/S$ on the average of the two years. The value of $\bar{\pi}^{\tau}/S$ was obtained from the formula:

$$\left(\text{net earnings in 1952} \cdot \frac{\text{assets in '53}}{\text{assets in '52}} + \text{net earnings in '1953}\right)\frac{1}{2}$$
$$\div \text{ (average market value of common stock in '53).}$$

The asset adjustment was introduced as rough allowance for the effects of possible growth in the size of the firm. It might be added that the correlation computed with $\bar{\pi}^{\tau}/S$ based on net profits in 1953 alone was found to be only slightly smaller, namely .50.

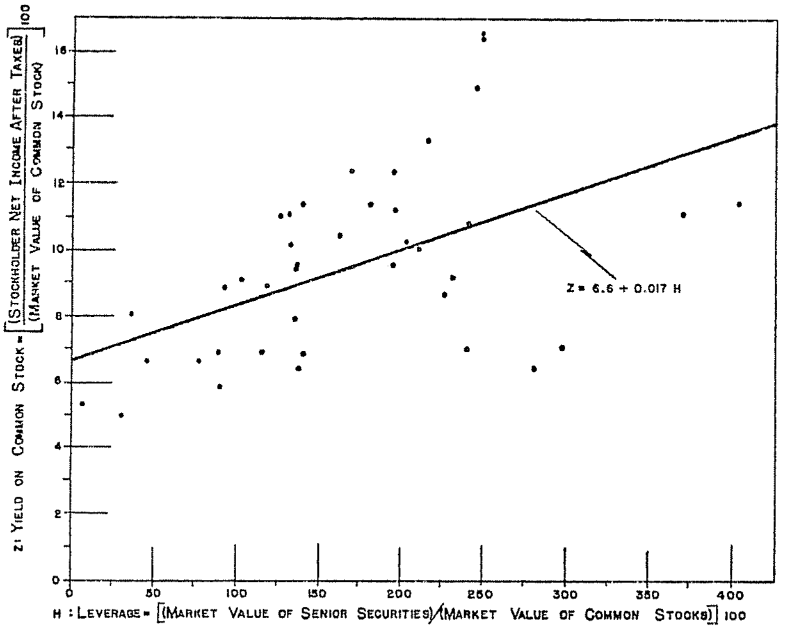

Figure 5. Yield on Common Stock in Relation to Leverage for 43 Electric Utilities, 1947–48

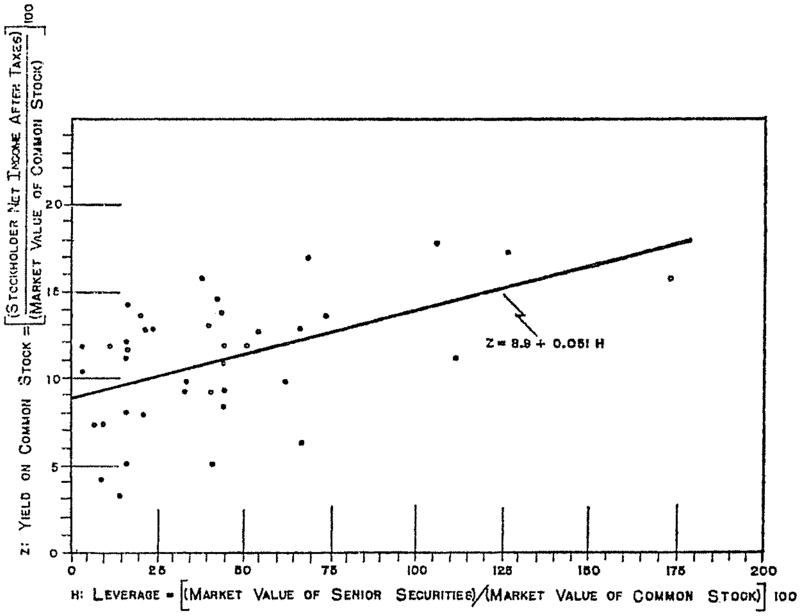

Figure 6. Yield on Common Stock in Relation to Leverage for 42 Oil Companies, 1952–53

the slope should be just above 2 per cent. The actual regression estimate for the slope of 1.7 per cent is thus somewhat low, but still within one standard error of its theoretical value. Because of this underestimate of the slope and because of the large mean value of leverage ($\bar{h}=160$ per cent) the regression estimate of the constant term, 6.6 per cent, is somewhat high, although not significantly different from the value of 5.6 per cent obtained in the test of Proposition I.

When we add a square term to the above equations to test for the presence and direction of curvature we obtain the following estimates:

$$\text{Electric Utilities} \quad z = 4.6 + .004h - .007h^2$$

$$\text{Oil Companies} \quad z = 8.5 + .072h - .016h^2.$$

For both cases the curvature is negative. In fact, for the electric utilities, where the observations cover a wider range of leverage ratios, the negative coefficient of the square term is actually significant at the 5 per cent level. Negative curvature, as we have seen, runs directly counter to the traditional hypothesis, whereas it can be readily accounted for by our model in terms of rising cost of borrowed funds.[41]

In summary, the empirical evidence we have reviewed seems to be broadly consistent with our model and largely inconsistent with traditional views. Needless to say much more extensive testing will be required before we can firmly conclude that our theory describes market behavior. Caution is indicated especially with regard to our test of Proposition II, partly because of possible statistical pitfalls[42] and partly because not all the factors that might have a systematic effect on stock yields have been considered. In particular, no attempt was made to test the possible influence of the dividend pay-out ratio whose role has tended to receive a great deal of attention in current research and thinking. There are two reasons for this omission. First, our main objective has been to assess the prima facie tenability of *our* model, and in this model, based as it is on rational behavior by investors, dividends per se play no role. Second, in a world in which the policy of dividend stabilization is widespread, there is no simple way of disentangling the true effect of dividend payments on stock prices from their apparent effect,

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[41] That the yield of senior capital tended to rise for utilities as leverage increased is clearly shown in several of the scatter diagrams presented in the published version of Allen's study. This significant negative curvature between stock yields and leverage for utilities may be partly responsible for the fact, previously noted, that the constant in the linear regression is somewhat higher and the slope somewhat lower than implied by equation (12). Note also in connection with the estimate of $\rho_k{}^\tau$ that the introduction of the quadratic term reduces the constant considerably, pushing it in fact below the a priori expectation of 5.6, though the difference is again not statistically significant.

[42] In our test, *e.g.*, the two variables z and h are both ratios with S appearing in the denominator, which may tend to impart a positive bias to the correlation (*cf.* note 38). Attempts were made to develop alternative tests, but although various possibilities were explored, we have so far been unable to find satisfactory alternatives.

the latter reflecting only the role of dividends as a proxy measure of long-term earning anticipations.[43] The difficulties just mentioned are further compounded by possible interrelations between dividend policy and leverage.[44]

II. *Implications of the Analysis for the Theory of Investment*

A. *Capital Structure and Investment Policy*

On the basis of our propositions with respect to cost of capital and financial structure (and for the moment neglecting taxes), we can derive the following simple rule for optimal investment policy by the firm:

Proposition III. If a firm in class k is acting in the best interest of the stockholders at the time of the decision, it will exploit an investment opportunity if and only if the rate of return on the investment, say ρ^*, is as large as or larger than ρ_k. That is, *the cut-off point for investment in the firm will in all cases be ρ_k and will be completely unaffected by the type of security used to finance the investment.* Equivalently, we may say that regardless of the financing used, the marginal cost of capital to a firm is equal to the average cost of capital, which is in turn equal to the capitalization rate for an unlevered stream in the class to which the firm belongs.[45]

To establish this result we will consider the three major financing alternatives open to the firm—bonds, retained earnings, and common stock issues—and show that in each case an investment is worth undertaking if, and only if, $\rho^* \geqq \rho_k$.[46]

Consider first the case of an investment financed by the sale of bonds. We know from Proposition I that the market value of the firm before the investment was undertaken was:[47]

$$V_0 = \overline{X}_0/\rho_k \tag{20}$$

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[43] We suggest that failure to appreciate this difficulty is responsible for many fallacious, or at least unwarranted, conclusions about the role of dividends.

[44] In the sample of electric utilities, there is a substantial negative correlation between yields and pay-out ratios, but also between pay-out ratios and leverage, suggesting that either the association of yields and leverage or of yields and pay-out ratios may be (at least partly) spurious. These difficulties however do not arise in the case of the oil industry sample. A preliminary analysis indicates that there is here no significant relation between leverage and pay-out ratios and also no significant correlation (either gross or partial) between yields and pay-out ratios.

[45] The analysis developed in this paper is essentially a comparative-statics, not a dynamic analysis. This note of caution applies with special force to Proposition III. Such problems as those posed by expected changes in r and in ρ_k over time will not be treated here. Although they are in principle amenable to analysis within the general framework we have laid out, such an undertaking is sufficiently complex to deserve separate treatment. *Cf.* note 17.

[46] The extension of the proof to other types of financing, such as the sale of preferred stock or the issuance of stock rights is straightforward.

[47] Since no confusion is likely to arise, we have again, for simplicity, eliminated the subscripts identifying the firm in the equations to follow. Except for ρ_k, the subscripts now refer to time periods.

and that the value of the common stock was:

$$S_0 = V_0 - D_0. \tag{21}$$

If now the firm borrows I dollars to finance an investment yielding ρ^* its market value will become:

$$V_1 = \frac{\overline{X}_0 + \rho^* I}{\rho_k} = V_0 + \frac{\rho^* I}{\rho_k} \tag{22}$$

and the value of its common stock will be:

$$S_1 = V_1 - (D_0 + I) = V_0 + \frac{\rho^* I}{\rho_k} - D_0 - I \tag{23}$$

or using equation 21,

$$S_1 = S_0 + \frac{\rho^* I}{\rho_k} - I. \tag{24}$$

Hence $S_1 \gtreqless S_0$ as $\rho^* \gtreqless \rho_k$.[48]

To illustrate, suppose the capitalization rate for uncertain streams in the *k*th class is 10 per cent and the rate of interest is 4 per cent. Then if a given company had an expected income of 1,000 and if it were financed entirely by common stock we know from Proposition I that the market value of its stock would be 10,000. Assume now that the managers of the firm discover an investment opportunity which will require an outlay of 100 and which is expected to yield 8 per cent. At first sight this might appear to be a profitable opportunity since the expected return is double the interest cost. If, however, the management borrows the necessary 100 at 4 per cent, the total expected income of the company rises to 1,008 and the market value of the firm to 10,080. But the firm now will have 100 of bonds in its capital structure so that, paradoxically, the market value of the stock must actually be reduced from 10,000 to 9,980 as a consequence of this apparently profitable investment. Or, to put it another way, the gains from being able to tap cheap, borrowed funds are more than offset for the stockholders by the market's discounting of the stock for the added leverage assumed.

Consider next the case of retained earnings. Suppose that in the course of its operations the firm acquired I dollars of cash (without impairing

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[48] In the case of bond-financing the rate of interest on bonds does not enter explicitly into the decision (assuming the firm borrows at the market rate of interest). This is true, moreover, given the conditions outlined in Section I.C, even though interest rates may be an increasing function of debt outstanding. To the extent that the firm borrowed at a rate other than the market rate the two I's in equation (24) would no longer be identical and an additional gain or loss, as the case might be, would accrue to the shareholders. It might also be noted in passing that permitting the two I's in (24) to take on different values provides a simple method for introducing underwriting expenses into the analysis.

the earning power of its assets). If the cash is distributed as a dividend to the stockholders their wealth W_0, after the distribution will be:

$$W_0 = S_0 + I = \frac{\overline{X}_0}{\rho_k} - D_0 + I \tag{25}$$

where $\overline{X}_0$ represents the expected return from the assets exclusive of the amount I in question. If however the funds are retained by the company and used to finance new assets whose expected rate of return is ρ^*, then the stockholders' wealth would become:

$$W_1 = S_1 = \frac{\overline{X}_0 + \rho^* I}{\rho_k} - D_0 = S_0 + \frac{\rho^* I}{\rho_k} \cdot \tag{26}$$

Clearly $W_1 \gtreqless W_0$ as $\rho^* \gtreqless \rho_k$ so that an investment financed by retained earnings raises the net worth of the owners if and only if $\rho^* > \rho_k$.[49]

Consider finally, the case of common-stock financing. Let P_0 denote the current market price per share of stock and assume, for simplicity, that this price reflects currently expected earnings only, that is, it does not reflect any future increase in earnings as a result of the investment under consideration.[50] Then if N is the original number of shares, the price per share is:

$$P_0 = S_0/N \tag{27}$$

and the number of new shares, M, needed to finance an investment of I dollars is given by:

$$M = \frac{I}{P_0} \cdot \tag{28}$$

As a result of the investment the market value of the stock becomes:

$$S_1 = \frac{\overline{X}_0 + \rho^* I}{\rho_k} - D_0 = S_0 + \frac{\rho^* I}{\rho_k} = NP_0 + \frac{\rho^* I}{\rho_k}$$

and the price per share:

$$P_1 = \frac{S_1}{N + M} = \frac{1}{N + M}\left[NP_0 + \frac{\rho^* I}{\rho_k}\right]. \tag{29}$$

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[49] The conclusion that ρ_k is the cut-off point for investments financed from internal funds applies not only to undistributed net profits, but to depreciation allowances (and even to the funds represented by the current sale value of any asset or collection of assets). Since the owners can earn ρ_k by investing funds elsewhere in the class, partial or total liquidating distributions should be made whenever the firm cannot achieve a marginal internal rate of return equal to ρ_k.

[50] If we assumed that the market price of the stock did reflect the expected higher future earnings (as would be the case if our original set of assumptions above were strictly followed) the analysis would differ slightly in detail, but not in essentials. The cut-off point for new investment would still be ρ_k, but where $\rho^* > \rho_k$ the gain to the original owners would be larger than if the stock price were based on the pre-investment expectations only.

Since by equation (28), $I = MP_0$, we can add MP_0 and subtract I from the quantity in bracket, obtaining:

$$\begin{aligned} P_1 &= \frac{1}{N+M}\left[(N+M)P_0 + \frac{\rho^* - \rho_k}{\rho_k} I\right] \\ &= P_0 + \frac{1}{N+M}\,\frac{\rho^* - \rho_k}{\rho_k} I > P_0 \text{ if,} \end{aligned} \tag{30}$$

and only if, $\rho^* > \rho_k$.

Thus an investment financed by common stock is advantageous to the current stockholders if and only if its yield exceeds the capitalization rate ρ_k.

Once again a numerical example may help to illustrate the result and make it clear why the relevant cut-off rate is ρ_k and not the current yield on common stock, i. Suppose that ρ_k is 10 per cent, r is 4 per cent, that the original expected income of our company is 1,000 and that management has the opportunity of investing 100 having an expected yield of 12 per cent. If the original capital structure is 50 per cent debt and 50 per cent equity, and 1,000 shares of stock are initially outstanding, then, by Proposition I, the market value of the common stock must be 5,000 or 5 per share. Furthermore, since the interest bill is $.04 \times 5{,}000 = 200$, the yield on common stock is $800/5{,}000 = 16$ per cent. It may then appear that financing the additional investment of 100 by issuing 20 shares to outsiders at 5 per share would dilute the equity of the original owners since the 100 promises to yield 12 per cent whereas the common stock is currently yielding 16 per cent. Actually, however, the income of the company would rise to 1,012; the value of the firm to 10,120; and the value of the common stock to 5,120. Since there are now 1,020 shares, each would be worth 5.02 and the wealth of the original stockholders would thus have been increased. What has happened is that the dilution in expected earnings per share (from .80 to .796) has been more than offset, in its effect upon the market price of the shares, by the decrease in leverage.

Our conclusion is, once again, at variance with conventional views,[51] so much so as to be easily misinterpreted. Read hastily, Proposition III seems to imply that the capital structure of a firm is a matter of indifference; and that, consequently, one of the core problems of corporate finance—the problem of the optimal capital structure for a firm—is no problem at all. It may be helpful, therefore, to clear up such possible misundertandings.

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[51] In the matter of investment policy under uncertainty there is no single position which represents "accepted" doctrine. For a sample of current formulations, all very different from ours, see Joel Dean [2, esp. Ch. 3], M. Gordon and E. Shapiro [5], and Harry Roberts [17].

B. *Proposition III and Financial Planning by Firms*

Misinterpretation of the scope of Proposition III can be avoided by remembering that this Proposition tells us only that the type of instrument used to finance an investment is irrelevant to the question of whether or not the investment is worth while. This does not mean that the owners (or the managers) have no grounds whatever for preferring one financing plan to another; or that there are no other policy or technical issues in finance at the level of the firm.

That grounds for preferring one type of financial structure to another will still exist within the framework of our model can readily be seen for the case of common-stock financing. In general, except for something like a widely publicized oil-strike, we would expect the market to place very heavy weight on current and recent past earnings in forming expectations as to future returns. Hence, if the owners of a firm discovered a major investment opportunity which they felt would yield much more than ρ_k, they might well prefer not to finance it via common stock at the then ruling price, because this price may fail to capitalize the new venture. A better course would be a pre-emptive issue of stock (and in this connection it should be remembered that stockholders are free to borrow and buy). Another possibility would be to finance the project initially with debt. Once the project had reflected itself in increased actual earnings, the debt could be retired either with an equity issue at much better prices or through retained earnings. Still another possibility along the same lines might be to combine the two steps by means of a convertible debenture or preferred stock, perhaps with a progressively declining conversion rate. Even such a double-stage financing plan may possibly be regarded as yielding too large a share to outsiders since the new stockholders are, in effect, being given an interest in any similar opportunities the firm may discover in the future. If there is a reasonable prospect that even larger opportunities may arise in the near future and if there is some danger that borrowing now would preclude more borrowing later, the owners might find their interests best protected by splitting off the current opportunity into a separate subsidiary with independent financing. Clearly the problems involved in making the crucial estimates and in planning the optimal financial strategy are by no means trivial, even though they should have no bearing on the basic decision to invest (as long as $\rho^* \geqq \rho_k$).[52]

Another reason why the alternatives in financial plans may not be a matter of indifference arises from the fact that managers are concerned

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[52] Nor can we rule out the possibility that the existing owners, if unable to use a financing plan which protects their interest, may actually prefer to pass up an otherwise profitable venture rather than give outsiders an "excessive" share of the business. It is presumably in situations of this kind that we could justifiably speak of a shortage of "equity capital," though this kind of market imperfection is likely to be of significance only for small or new firms.

with more than simply furthering the interest of the owners. Such other objectives of the management—which need not be necessarily in conflict with those of the owners—are much more likely to be served by some types of financing arrangements than others. In many forms of borrowing agreements, for example, creditors are able to stipulate terms which the current management may regard as infringing on its prerogatives or restricting its freedom to maneuver. The creditors might even be able to insist on having a direct voice in the formation of policy.[53] To the extent, therefore, that financial policies have these implications for the management of the firm, something like the utility approach described in the introductory section becomes relevant to financial (as opposed to investment) decision-making. It is, however, the utility functions of the managers per se and not of the owners that are now involved.[54]

In summary, many of the specific considerations which bulk so large in traditional discussions of corporate finance can readily be superimposed on our simple framework without forcing any drastic (and certainly no systematic) alteration of the conclusion which is our principal concern, namely that for investment decisions, the marginal cost of capital is ρ_k.

C. *The Effect of the Corporate Income Tax on Investment Decisions*

In Section I it was shown that when an unintegrated corporate income tax is introduced, the original version of our Proposition I,

$$\bar{X}/V = \rho_k = \text{a constant}$$

must be rewritten as:

$$\frac{(\bar{X} - rD)(1 - \tau) + rD}{V} \equiv \frac{\bar{X}^\tau}{V} = \rho_k{}^\tau = \text{a constant.} \tag{11}$$

Throughout Section I we found it convenient to refer to $\bar{X}^\tau/V$ as the cost of capital. The appropriate measure of the cost of capital relevant

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[53] Similar considerations are involved in the matter of dividend policy. Even though the stockholders may be indifferent as to payout policy as long as investment policy is optimal, the management need not be so. Retained earnings involve far fewer threats to control than any of the alternative sources of funds and, of course, involve no underwriting expense or risk. But against these advantages management must balance the fact that sharp changes in dividend rates, which heavy reliance on retained earnings might imply, may give the impression that a firm's finances are being poorly managed, with consequent threats to the control and professional standing of the management.

[54] In principle, at least, this introduction of management's risk preferences with respect to financing methods would do much to reconcile the apparent conflict between Proposition III and such empirical findings as those of Modigliani and Zeman [14] on the close relation between interest rates and the ratio of new debt to new equity issues; or of John Lintner [12] on the considerable stability in target and actual dividend-payout ratios.

to investment decisions, however, is the ratio of the expected return *before* taxes to the market value, *i.e.*, $\overline{X}/V$. From (11) above we find:

$$\frac{\overline{X}}{V} = \frac{\rho_k{}^\tau - \tau r(D/V)}{1 - \tau} = \frac{\rho_k{}^\tau}{1 - \tau}\left[1 - \frac{\tau r D}{\rho_k{}^\tau V}\right], \tag{31}$$

which shows that the cost of capital now depends on the debt ratio, decreasing, as D/V rises, at the constant rate $\tau r/(1-\tau)$.[55] Thus, with a corporate income tax under which interest is a deductible expense, gains can accrue to stockholders from having debt in the capital structure, even when capital markets are perfect. The gains however are small, as can be seen from (31), and as will be shown more explicitly below.

From (31) we can develop the tax-adjusted counterpart of Proposition III by interpreting the term D/V in that equation as the proportion of debt used in any additional financing of V dollars. For example, in the case where the financing is entirely by new common stock, $D=0$ and the required rate of return $\rho_k{}^S$ on a venture so financed becomes:

$$\rho_k{}^S = \frac{\rho_k{}^\tau}{1 - \tau}\,. \tag{32}$$

For the other extreme of pure debt financing $D=V$ and the required rate of return, $\rho_k{}^D$, becomes:

$$\rho_k{}^D = \frac{\rho_k{}^\tau}{1 - \tau}\left[1 - \tau\frac{r}{\rho_k{}^\tau}\right] = \rho_k{}^S\left[1 - \tau\frac{r}{\rho_k{}^\tau}\right] = \rho_k{}^S - \frac{\tau}{1 - \tau}r.^{56} \tag{33}$$

For investments financed out of retained earnings, the problem of defining the required rate of return is more difficult since it involves a comparison of the tax consequences to the individual stockholder of receiving a dividend versus having a capital gain. Depending on the time of realization, a capital gain produced by retained earnings may be taxed either at ordinary income tax rates, 50 per cent of these rates, 25 per

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[55] Equation (31) is amenable, in principle, to statistical tests similar to those described in Section I.E. However we have not made any systematic attempt to carry out such tests so far, because neither the Allen nor the Smith study provides the required information. Actually, Smith's data included a very crude estimate of tax liability, and, using this estimate, we did in fact obtain a negative relation between $\overline{X}/V$ and D/V. However, the correlation ($-.28$) turned out to be significant only at about the 10 per cent level. While this result is not conclusive, it should be remembered that, according to our theory, the slope of the regression equation should be in any event quite small. In fact, with a value of τ in the order of .5, and values of $\rho_k{}^\tau$ and r in the order of 8.5 and 3.5 per cent respectively (*cf.* Section I.E) an increase in D/V from 0 to 60 per cent (which is, approximately, the range of variation of this variable in the sample) should tend to reduce the average cost of capital only from about 17 to about 15 per cent.

[56] This conclusion does not extend to preferred stocks even though they have been classed with debt issues previously. Since preferred dividends except for a portion of those of public utilities are not in general deductible from the corporate tax, the cut-off point for new financing via preferred stock is exactly the same as that for common stock.

cent, or zero, if held till death. The rate on any dividends received in the event of a distribution will also be a variable depending on the amount of other income received by the stockholder, and with the added complications introduced by the current dividend-credit provisions. If we assume that the managers proceed on the basis of reasonable estimates as to the average values of the relevant tax rates for the owners, then the required return for retained earnings ρ_k^R can be shown to be:

$$\rho_k^R = \rho_k^\tau \frac{1}{1-\tau} \frac{1-\tau_d}{1-\tau_g} = \frac{1-\tau_d}{1-\tau_g} \rho_k^s \tag{34}$$

where τ_d is the assumed rate of personal income tax on dividends and τ_g is the assumed rate of tax on capital gains.

A numerical illustration may perhaps be helpful in clarifying the relationship between these required rates of return. If we take the following round numbers as representative order-of-magnitude values under present conditions: an after-tax capitalization rate ρ_k^τ of 10 per cent, a rate of interest on bonds of 4 per cent, a corporate tax rate of 50 per cent, a marginal personal income tax rate on dividends of 40 per cent (corresponding to an income of about $25,000 on a joint return), and a capital gains rate of 20 per cent (one-half the marginal rate on dividends), then the required rates of return would be: (1) 20 per cent for investments financed entirely by issuance of new common shares; (2) 16 per cent for investments financed entirely by new debt; and (3) 15 per cent for investments financed wholly from internal funds.

These results would seem to have considerable significance for current discussions of the effect of the corporate income tax on financial policy and on investment. Although we cannot explore the implications of the results in any detail here, we should at least like to call attention to the remarkably small difference between the "cost" of equity funds and debt funds. With the numerical values assumed, equity money turned out to be only 25 per cent more expensive than debt money, rather than something on the order of 5 times as expensive as is commonly supposed to be the case.[57] The reason for the wide difference is that the traditional

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[57] See *e.g.*, D. T. Smith [18]. It should also be pointed out that our tax system acts in other ways to reduce the gains from debt financing. Heavy reliance on debt in the capital structure, for example, commits a company to paying out a substantial proportion of its income in the form of interest payments taxable to the owners under the personal income tax. A debt-free company, by contrast, can reinvest in the business all of its (smaller) net income and to this extent subject the owners only to the low capital gains rate (or possibly no tax at all by virtue of the loophole at death). Thus, we should expect a high degree of leverage to be of value to the owners, even in the case of closely held corporations, primarily in cases where their firm was not expected to have much need for additional funds to expand assets and earnings in the future. To the extent that opportunities for growth were available, as they presumably would be for most successful corporations, the interest of the stockholders would tend to be better served by a structure which permitted maximum use of retained earnings.

view starts from the position that debt funds are several times cheaper than equity funds even in the absence of taxes, with taxes serving simply to magnify the cost ratio in proportion to the corporate rate. By contrast, in our model in which the repercussions of debt financing on the value of shares are taken into account, the *only* difference in cost is that due to the tax effect, and its magnitude is simply the tax on the "grossed up" interest payment. Not only is this magnitude likely to be small but our analysis yields the further paradoxical implication that the stockholders' gain from, and hence incentive to use, debt financing is actually smaller the lower the rate of interest. In the extreme case where the firm could borrow for practically nothing, the advantage of debt financing would also be practically nothing.

III. *Conclusion*

With the development of Proposition III the main objectives we outlined in our introductory discussion have been reached. We have in our Propositions I and II at least the foundations of a theory of the valuation of firms and shares in a world of uncertainty. We have shown, moreover, how this theory can lead to an operational definition of the cost of capital and how that concept can be used in turn as a basis for rational investment decision-making within the firm. Needless to say, however, much remains to be done before the cost of capital can be put away on the shelf among the solved problems. Our approach has been that of static, partial equilibrium analysis. It has assumed among other things a state of atomistic competition in the capital markets and an ease of access to those markets which only a relatively small (though important) group of firms even come close to possessing. These and other drastic simplifications have been necessary in order to come to grips with the problem at all. Having served their purpose they can now be relaxed in the direction of greater realism and relevance, a task in which we hope others interested in this area will wish to share.

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Corporate Income Taxes and the Cost of Capital: A Correction

Franco Modigliani; Merton H. Miller

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equanimity a writing-down of the value of their reserves, or unless one is prepared to forego the possibility of exchange-rate adjustment, any major extension of the gold exchange standard is dependent upon the introduction of guarantees. It is misleading to suggest that the multiple key-currency system is an alternative to a guarantee, as implied by Roosa [6, pp. 5-7 and 9-12].

IV. *Conclusion*

The most noteworthy conclusion to be drawn from this analysis is that the successful operation of a multiple key-currency system would require both exchange guarantees and continuing cooperation between central bankers of a type that would effectively limit their choice as to the form in which they hold their reserves. Yet these are two of the conditions whose undesirability has frequently been held to be an obstacle to implementation of the alternative proposal to create a world central bank. The multiple key-currency proposal represents an attempt to avoid the impracticality supposedly associated with a world central bank, but if both proposals in fact depend on the fulfillment of similar conditions, it is difficult to convince oneself that the sacrifice of the additional liquidity that an almost closed system would permit is worth while. Unless, of course, the object of the exercise is to reinforce discipline rather than to expand liquidity.

JOHN WILLIAMSON*

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* The author is instructor in economics at Princeton University. He acknowledges the helpful comments of Fritz Machlup. Views expressed are those of the author alone.

Corporate Income Taxes and the Cost of Capital: A Correction

The purpose of this communication is to correct an error in our paper "The Cost of Capital, Corporation Finance and the Theory of Investment" (this *Review*, June 1958). In our discussion of the effects of the present method of taxing corporations on the valuation of firms, we said (p. 272):

> The deduction of interest in computing taxable corporate profits will prevent the arbitrage process from making the value of all firms in a given class proportional to the expected returns generated by their

> physical assets. Instead, it can be shown (by the same type of proof used for the original version of Proposition I) that *the market values of firms in each class must be proportional in equilibrium to their expected returns net of taxes (that is, to the sum of the interest paid and expected net stockholder income)*. (Italics added.)

The statement in italics, unfortunately, is wrong. For even though one firm may have an *expected* return after taxes (our $\bar{X}^\tau$) twice that of another firm in the same risk-equivalent class, it will not be the case that the *actual* return after taxes (our X^τ) of the first firm will always be twice that of the second, if the two firms have different degrees of leverage.[1] And since the distribution of returns after taxes of the two firms will not be proportional, there can be no "arbitrage" process which forces their values to be proportional to their expected after-tax returns.[2] In fact, it can be shown—and this time it really will be shown—that "arbitrage" will make values within any class a function not only of expected after-tax returns, but of the tax rate and the degree of leverage. This means, among other things, that the tax advantages of debt financing are somewhat greater than we originally suggested and, to this extent, the quantitative difference between the valuations implied by our position and by the traditional view is narrowed. It still remains true, however, that under our analysis the tax advantages of debt are the *only* permanent advantages so that the gulf between the two views in matters of interpretation and policy is as wide as ever.

I. *Taxes, Leverage, and the Probability Distribution of After-Tax Returns*

To see how the distribution of after-tax earnings is affected by leverage, let us again denote by the random variable X the (long-run average) earnings before interest and taxes generated by the currently owned assets of a given firm in some stated risk class, k.[3] From our definition of a risk class it follows that X can be expressed in the form $\bar{X}Z$, where $\bar{X}$ is the expected value of X, and the random variable $Z = X/\bar{X}$, having the same value for all firms in class k, is a drawing from a distribution, say $f_k(Z)$. Hence the

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[1] With some exceptions, which will be noted when they occur, we shall preserve here both the notation and the terminology of the original paper. A working knowledge of both on the part of the reader will be presumed.

[2] Barring, of course, the trivial case of universal linear utility functions. Note that in deference to Professor Durand (see his Comment on our paper and our reply, this *Review*, Sept. 1959, *49*, 639–69) we here and throughout use quotation marks when referring to arbitrage.

[3] Thus our X corresponds essentially to the familiar EBIT concept of the finance literature. The use of EBIT and related "income" concepts as the basis of valuation is strictly valid only when the underlying real assets are assumed to have perpetual lives. In such a case, of course, EBIT and "cash flow" are one and the same. This was, in effect, the interpretation of X we used in the original paper and we shall retain it here both to preserve continuity and for the considerable simplification it permits in the exposition. We should point out, however, that the perpetuity interpretation is much less restrictive than might appear at first glance. Before-tax cash flow and EBIT can also safely be equated even where assets have finite lives as soon as these assets attain a steady state age distribution in which annual replacements equal annual depreciation. The subject of finite lives of assets will be further discussed in connection with the problem of the cut-off rate for investment decisions.

random variable X^τ, measuring the after-tax return, can be expressed as:

$$(1) \quad X^\tau = (1-\tau)(X-R) + R = (1-\tau)X + \tau R = (1-\tau)\overline{X}Z + \tau R$$

where τ is the marginal corporate income tax rate (assumed equal to the average), and R is the interest bill. Since $E(X^\tau) \equiv \overline{X}^\tau = (1-\tau)\overline{X} + \tau R$ we can substitute $\overline{X}^\tau - \tau R$ for $(1-\tau)\overline{X}$ in (1) to obtain:

$$(2) \qquad X^\tau = (\overline{X}^\tau - \tau R)Z + \tau R = \overline{X}^\tau\left(1 - \frac{\tau R}{\overline{X}^\tau}\right)Z + \tau R.$$

Thus, if the tax rate is other than zero, the shape of the distribution of X^τ will depend not only on the "scale" of the stream $\overline{X}^\tau$ and on the distribution of Z, but also on the tax rate and the degree of leverage (one measure of which is $R/\overline{X}^\tau$). For example, if Var $(Z) = \sigma^2$, we have:

$$\text{Var}\,(X^\tau) = \sigma^2(\overline{X}^\tau)^2\left(1 - \tau\frac{R}{\overline{X}^\tau}\right)^2$$

implying that for given $\overline{X}^\tau$ the variance of after-tax returns is smaller, the higher τ and the degree of leverage.[4]

II. *The Valuation of After-Tax Returns*

Note from equation (1) that, from the investor's point of view, the long-run average stream of after-tax returns appears as a sum of two components: (1) an uncertain stream $(1-\tau)\overline{X}Z$; and (2) a sure stream τR.[5] This suggests that the equilibrium market value of the combined stream can be found by capitalizing each component separately. More precisely, let ρ^τ be the rate at which the market capitalizes the expected returns net of tax of an unlevered company of size $\overline{X}$ in class k, i.e.,

$$\rho^\tau = \frac{(1-\tau)\overline{X}}{V_U} \quad \text{or} \quad V_U = \frac{(1-\tau)\overline{X}}{\rho^\tau};^{6}$$

---

[4] It may seem paradoxical at first to say that leverage *reduces* the variability of outcomes, but remember we are here discussing the variability of total returns, interest plus net profits. The variability of stockholder net profits will, of course, be greater in the presence than in the absence of leverage, though relatively less so than in an otherwise comparable world of no taxes. The reasons for this will become clearer after the discussion in the next section.

[5] The statement that τR—the tax saving per period on the interest payments—is a sure stream is subject to two qualifications. First, it must be the case that firms can always obtain the tax benefit of their interest deductions either by offsetting them directly against other taxable income in the year incurred; or, in the event no such income is available in any given year, by carrying them backward or forward against past or future taxable earnings; or, in the extreme case, by merger of the firm with (or its sale to) another firm that can utilize the deduction. Second, it must be assumed that the tax rate will remain the same. To the extent that neither of these conditions holds exactly then some uncertainty attaches even to the tax savings, though, of course, it is of a different kind and order from that attaching to the stream generated by the assets. For simplicity, however, we shall here ignore these possible elements of delay or of uncertainty in the tax saving; but it should be kept in mind that this neglect means that the subsequent valuation formulas overstate, if anything, the value of the tax saving for any given permanent level of debt.

[6] Note that here, as in our original paper, we neglect dividend policy and "growth" in the

and let r be the rate at which the market capitalizes the sure streams generated by debts. For simplicity, assume this rate of interest is a constant independent of the size of the debt so that

$$r = \frac{R}{D} \quad \text{or} \quad D = \frac{R}{r}.^{7}$$

Then we would expect the value of a levered firm of size $\overline{X}$, with a permanent level of debt D_L in its capital structure, to be given by:

$$V_L = \frac{(1-\tau)\overline{X}}{\rho\tau} + \frac{\tau R}{r} = V_U + \tau D_L.^{8} \tag{3}$$

In our original paper we asserted instead that, within a risk class, market value would be proportional to expected after-tax return $\overline{X}^{\tau}$ (cf. our original equation [11]), which would imply:

$$V_L = \frac{\overline{X}^{\tau}}{\rho^{\tau}} = \frac{(1-\tau)\overline{X}}{\rho^{\tau}} + \frac{\tau R}{\rho^{\tau}} = V_U + \frac{r}{\rho^{\tau}}\tau D_L. \tag{4}$$

We will now show that if (3) does not hold, investors can secure a more efficient portfolio by switching from relatively overvalued to relatively undervalued firms. Suppose first that unlevered firms are overvalued or that

$$V_L - \tau D_L < V_U.$$

An investor holding m dollars of stock in the unlevered company has a right to the fraction m/V_U of the eventual outcome, i.e., has the uncertain income

$$Y_U = \left(\frac{m}{V_U}\right)(1-\tau)\overline{X}Z.$$

Consider now an alternative portfolio obtained by investing m dollars as follows: (1) the portion,

$$m\left(\frac{S_L}{S_L + (1-\tau)D_L}\right),$$

is invested in the stock of the levered firm, S_L; and (2) the remaining portion,

$$m\left(\frac{(1-\tau)D_L}{S_L + (1-\tau)D_L}\right),$$

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sense of opportunities to invest at a rate of return greater than the market rate of return. These subjects are treated extensively in our paper, "Dividend Policy, Growth and the Valuation of Shares," *Jour. Bus.*, Univ. Chicago, Oct. 1961, 411-33.

[7] Here and throughout, the corresponding formulas when the rate of interest rises with leverage can be obtained merely by substituting $r(L)$ for r, where L is some suitable measure of leverage.

[8] The assumption that the debt is permanent is not necessary for the analysis. It is employed here both to maintain continuity with the original model and because it gives an upper bound on the value of the tax saving. See in this connection footnote 5 and footnote 9.

is invested in its bonds. The stock component entitles the holder to a fraction,

$$\frac{m}{S_L + (1 - \tau)D_L},$$

of the net profits of the levered company or

$$\left(\frac{m}{S_L + (1 - \tau)D_L}\right)[(1 - \tau)(\overline{X}Z - R_L)].$$

The holding of bonds yields

$$\left(\frac{m}{S_L + (1 - \tau)D_L}\right)[(1 - \tau)R_L].$$

Hence the total outcome is

$$Y_L = \left(\frac{m}{(S_L + (1 - \tau)D_L)}\right)[(1 - \tau)\overline{X}Z]$$

and this will dominate the uncertain income Y_U if (and only if)

$$S_L + (1 - \tau)D_L \equiv S_L + D_L - \tau D_L \equiv V_L - \tau D_L < V_U.$$

Thus, in equilibrium, V_U cannot exceed $V_L - \tau D_L$, for if it did investors would have an incentive to sell shares in the unlevered company and purchase the shares (and bonds) of the levered company.

Suppose now that $V_L - \tau D_L > V_U$. An investment of m dollars in the stock of the levered firm entitles the holder to the outcome

$$\begin{aligned} Y_L &= (m/S_L)[(1 - \tau)(\overline{X}Z - R_L)] \\ &= (m/S_L)(1 - \tau)\overline{X}Z - (m/S_L)(1 - \tau)R_L. \end{aligned}$$

Consider the following alternative portfolio: (1) borrow an amount $(m/S_L)(1 - \tau)D_L$ for which the interest cost will be $(m/S_L)(1 - \tau)R_L$ (assuming, of course, that individuals and corporations can borrow at the same rate, r); and (2) invest m plus the amount borrowed, i.e.,

$$m + \frac{m(1 - \tau)D_L}{S_L} = m\frac{S_L + (1 - \tau)D_L}{S_L} = (m/S_L)[V_L - \tau D_L]$$

in the stock of the unlevered firm. The outcome so secured will be

$$(m/S_L)\left(\frac{V_L - \tau D_L}{V_U}\right)(1 - \tau)\overline{X}Z.$$

Subtracting the interest charges on the borrowed funds leaves an income of

$$Y_U = (m/S_L)\left(\frac{V_L - \tau D_L}{V_U}\right)(1 - \tau)\overline{X}Z - (m/S_L)(1 - \tau)R_L$$

which will dominate Y_L if (and only if) $V_L - \tau D_L > V_U$. Thus, in equilibrium, both $V_L - \tau\, D_L > V_U$ and $V_L - \tau\, D_L < V_U$ are ruled out and (3) must hold.

III. *Some Implications of Formula* (3)

To see what is involved in replacing (4) with (3) as the rule of valuation, note first that both expressions make the value of the firm a function of leverage and the tax rate. The difference between them is a matter of the size and source of the tax advantages of debt financing. Under our original formulation, values within a class were strictly proportional to expected earnings after taxes. Hence the tax advantage of debt was due solely to the fact that the deductibility of interest payments implied a higher level of after-tax income for any given level of before-tax earnings (i.e., higher by the amount τR since $\overline{X}^\tau = (1-\tau)\overline{X} + \tau R$). Under the corrected rule (3), however, there is an additional gain due to the fact that the extra after-tax earnings, τR, represent a sure income in contrast to the uncertain outcome $(1-\tau)\overline{X}$. Hence τR is capitalized at the more favorable certainty rate, $1/r$, rather than at the rate for uncertain streams, $1/\rho^\tau$.[9]

Since the difference between (3) and (4) is solely a matter of the rate at which the tax savings on interest payments are capitalized, the required changes in all formulas and expressions derived from (4) are reasonably straightforward. Consider, first, the before-tax earnings yield, i.e., the ratio of expected earnings before interest and taxes to the value of the firm.[10] Dividing both sides of (3) by V and by $(1-\tau)$ and simplifying we obtain:

$$\text{(31.c)} \qquad \frac{\overline{X}}{V} = \frac{\rho^\tau}{1-\tau}\left[1 - \tau\frac{D}{V}\right]$$

which replaces our original equation (31) (p. 294). The new relation differs from the old in that the coefficient of D/V in the original (31) was smaller by a factor of r/ρ^τ.

Consider next the after-tax earnings yield, i.e., the ratio of interest payments plus profits after taxes to total market value.[11] This concept was discussed extensively in our paper because it helps to bring out more clearly the differences between our position and the traditional view, and because it facilitates the construction of empirical tests of the two hypotheses about the valuation process. To see what the new equation (3) implies for this yield we need merely substitute $\overline{X}^\tau - \tau R$ for $(1-\tau)\overline{X}$ in (3) obtaining:

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[9] Remember, however, that in one sense formula (3) gives only an upper bound on the value of the firm since $\tau R/r = \tau D$ is an exact measure of the value of the tax saving only where both the tax rate and the level of debt are assumed to be fixed forever (and where the firm is certain to be able to use its interest deduction to reduce taxable income either directly or via transfer of the loss to another firm). Alternative versions of (3) can readily be developed for cases in which the debt is not assumed to be permanent, but rather to be outstanding only for some specified finite length of time. For reasons of space, we shall not pursue this line of inquiry here beyond observing that the shorter the debt period considered, the closer does the valuation formula approach our original (4). Hence, the latter is perhaps still of some interest if only as a lower bound.

[10] Following usage common in the field of finance we referred to this yield as the "average cost of capital." We feel now, however, that the term "before-tax earnings yield" would be preferable both because it is more immediately descriptive and because it releases the term "cost of capital" for use in discussions of optimal investment policy (in accord with standard usage in the capital budgeting literature).

[11] We referred to this yield as the "after-tax cost of capital." Cf. the previous footnote.

$$V = \frac{\bar{X}^{\tau} - \tau R}{\rho^{\tau}} + \tau D = \frac{\bar{X}^{\tau}}{\rho^{\tau}} + \tau \frac{\rho^{\tau} - r}{\rho^{\tau}} D, \tag{5}$$

from which it follows that the after-tax earnings yield must be:

$$\frac{\bar{X}^{\tau}}{V} = \rho^{\tau} - \tau(\rho^{\tau} - r) D/V. \tag{11.c}$$

This replaces our original equation (11) (p. 272) in which we had simply $\bar{X}^{\tau}/V = \rho^{\tau}$. Thus, in contrast to our earlier result, the corrected version (11.c) implies that even the after-tax yield is affected by leverage. The predicted rate of decrease of $\bar{X}^{\tau}/V$ with D/V, however, is still considerably smaller than under the naive traditional view, which, as we showed, implied essentially $\bar{X}^{\tau}/V = \rho^{\tau} - (\rho^{\tau} - r)D/V$. See our equation (17) and the discussion immediately preceding it (p. 277).[12] And, of course, (11.c) implies that the effect of leverage on $\bar{X}^{\tau}/V$ is *solely* a matter of the deductibility of interest payments whereas, under the traditional view, going into debt would lower the cost of capital regardless of the method of taxing corporate earnings.

Finally, we have the matter of the after-tax yield on *equity* capital, i.e., the ratio of net profits after taxes to the value of the shares.[13] By subtracting D from both sides of (5) and breaking $\bar{X}^{\tau}$ into its two components—expected net profits after taxes, $\bar{\pi}^{\tau}$, and interest payments, $R = rD$—we obtain after simplifying:

$$S = V - D = \frac{\bar{\pi}^{\tau}}{\rho^{\tau}} - (1 - \tau)\left(\frac{\rho^{\tau} - r}{\rho^{\tau}}\right) D. \tag{6}$$

From (6) it follows that the after-tax yield on equity capital must be:

$$\frac{\bar{\pi}^{\tau}}{S} = \rho^{\tau} + (1 - \tau)[\rho^{\tau} - r] D/S \tag{12.c}$$

which replaces our original equation (12), $\bar{\pi}^{\tau}/S = \rho^{\tau} + (\rho^{\tau} - r)D/S$ (p. 272). The new (12.c) implies an increase in the after-tax yield on equity capital as leverage increases which is smaller than that of our original (12) by a factor of $(1-\tau)$. But again, the linear increasing relation of the corrected (12.c) is still fundamentally different from the naive traditional view which asserts the cost of equity capital to be completely independent of leverage (at least as long as leverage remains within "conventional" industry limits).

IV. *Taxes and the Cost of Capital*

From these corrected valuation formulas we can readily derive corrected measures of the cost of capital in the capital budgeting sense of the minimum prospective yield an investment project must offer to be just worth

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[12] The i_k^* of (17) is the same as ρ^{τ} in the present context, each measuring the ratio of net profits to the value of the shares (and hence of the whole firm) in an unlevered company of the class.

[13] We referred to this yield as the "after-tax cost of equity capital." Cf. footnote 9.

undertaking from the standpoint of the present stockholders. If we interpret earnings streams as perpetuities, as we did in the original paper, then we actually have two equally good ways of defining this minimum yield: either by the required increase in before-tax earnings, $d\bar{X}$, or by the required increase in earnings net of taxes, $d\bar{X}(1-\tau)$.[14] To conserve space, however, as well as to maintain continuity with the original paper, we shall concentrate here on the before-tax case with only brief footnote references to the net-of-tax concept.

Analytically, the derivation of the cost of capital in the above sense amounts to finding the minimum value of $d\bar{X}/dI$ for which $dV=dI$, where I denotes the level of new investment.[15] By differentiating (3) we see that:

$$\frac{dV}{dI} = \frac{1-\tau}{\rho^\tau}\,\frac{d\bar{X}}{dI} + \tau\frac{dD}{dI} \geq 1 \qquad \text{if } \frac{d\bar{X}}{dI} \geq \frac{1-\tau\dfrac{dD}{dI}}{1-\tau}\,\rho^\tau. \tag{7}$$

Hence the before tax required rate of return cannot be defined without reference to financial policy. In particular, for an investment considered as being financed entirely by new equity capital $dD/dI=0$ and the required rate of return or marginal cost of equity financing (neglecting flotation costs) would be:

$$\rho^S = \frac{\rho^\tau}{1-\tau}\,.$$

This result is the same as that in the original paper (see equation [32], p. 294) and is applicable to any other sources of financing where the remuneration to the suppliers of capital is not deductible for tax purposes. It applies, therefore, to preferred stock (except for certain partially deductible issues of public utilities) and would apply also to retained earnings were it not for the favorable tax treatment of capital gains under the personal income tax.

For investments considered as being financed entirely by new debt capital $dI=dD$ and we find from (7) that:

$$\rho^D = \rho^\tau \tag{33.c}$$

which replaces our original equation (33) in which we had:

$$\rho^D = \rho^S - \frac{\tau}{1-\tau}\,r. \tag{33}$$

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[14] Note that we use the term "earnings net of taxes" rather than "earnings after taxes." We feel that to avoid confusion the latter term should be reserved to describe what will actually appear in the firm's accounting statements, namely the net cash flow including the tax savings on the interest (our $\bar{X}^\tau$). Since financing sources cannot in general be allocated to particular investments (see below), the after-tax or accounting concept is not useful for capital budgeting purposes, although it can be extremely useful for valuation equations as we saw in the previous section.

[15] Remember that when we speak of the minimum required yield on an investment we are referring in principle only to investments which increase the *scale* of the firm. That is, the new

Thus for borrowed funds (or any other tax-deductible source of capital) the marginal cost or before-tax required rate of return is simply the market rate of capitalization for net of tax unlevered streams and is thus independent of both the tax rate and the interest rate. This required rate is lower than that implied by our original (33), but still considerably higher than that implied by the traditional view (see esp. pp. 276–77 of our paper) under which the before-tax cost of borrowed funds is simply the interest rate, r.

Having derived the above expressions for the marginal costs of debt and equity financing it may be well to warn readers at this point that these expressions represent at best only the hypothetical extremes insofar as costs are concerned and that neither is directly usable as a cut-off criterion for investment planning. In particular, care must be taken to avoid falling into the famous "Liquigas" fallacy of concluding that if a firm intends to float a bond issue in some given year then its cut-off rate should be set that year at ρ^D; while, if the next issue is to be an equity one, the cut-off is ρ^S. The point is, of course, that no investment can meaningfully be regarded as 100 per cent equity financed if the firm makes any use of debt capital—and most firms do, not only for the tax savings, but for many other reasons having nothing to do with "cost" in the present static sense (cf. our original paper pp. 292–93). And no investment can meaningfully be regarded as 100 per cent debt financed when lenders impose strict limitations on the maximum amount a firm can borrow relative to its equity (and when most firms actually plan on normally borrowing less than this external maximum so as to leave themselves with an emergency reserve of unused borrowing power). Since the firm's long-run capital structure will thus contain both debt and equity capital, investment planning must recognize that, over the long pull, *all* of the firm's assets are really financed by a mixture of debt and equity capital even though only one kind of capital may be raised in any particular year. More precisely, if L^* denotes the firm's long-run "target" debt ratio (around which its actual debt ratio will fluctuate as it "alternately" floats debt issues and retires them with internal or external equity) then the firm can assume, to a first approximation at least, that for any particular investment $dD/dI = L^*$. Hence, the relevant marginal cost of capital for investment planning, which we shall here denote by ρ^*, is:

$$\rho^* = \frac{1 - \tau_L{}^*}{1 - \tau}\rho^\tau = \rho^S - \frac{\tau}{1 - \tau}\rho^D L^* = \rho^S(1 - L^*) + \rho^D L^*.$$

That is, the appropriate cost of capital for (repetitive) investment decisions over time is, to a first approximation, a weighted average of the costs of debt and equity financing, the weights being the proportions of each in the "target" capital structure.[16]

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assets must be in the same "class" as the old. See in this connection, J. Hirshleifer, "Risk, the Discount Rate and Investment Decisions," *Am. Econ. Rev.*, May 1961, *51*, 112–20 (especially pp. 119–20). See also footnote 16.

[16] From the formulas in the text one can readily derive corresponding expressions for the required net-of-tax yield, or net-of-tax cost of capital for any given financing policy. Specifi-

V. *Some Concluding Observations*

Such, then, are the major corrections that must be made to the various formulas and valuation expressions in our earlier paper. In general, we can say that the force of these corrections has been to increase somewhat the estimate of the tax advantages of debt financing under our model and consequently to reduce somewhat the quantitative difference between the estimates of the effects of leverage under our model and under the naive traditional view. It may be useful to remind readers once again that the existence of a tax advantage for debt financing—even the larger advantage of the corrected version—does not necessarily mean that corporations should at all times seek to use the maximum possible amount of debt in their capital structures. For one thing, other forms of financing, notably retained earnings, may in some circumstances be cheaper still when the tax status of investors under the personal income tax is taken into account. More important, there are, as we pointed out, limitations imposed by lenders (see pp. 292–93), as well as many other dimensions (and kinds of costs) in real-world problems of financial strategy which are not fully comprehended within the framework of static equilibrium models, either our own or those of the traditional variety. These additional considerations, which are typically grouped under the rubric of "the need for preserving flexibility," will normally imply the maintenance by the corporation of a substantial reserve of untapped borrowing power. The tax advantage of debt may well tend to lower the optimal size of that reserve, but it is hard to believe that advantages of the size contemplated under our model could justify any substantial reduction, let alone their complete elimination. Nor do the data

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cally, let $\tilde{\rho}(L)$ denote the required net-of-tax yield for investment financed with a proportion of debt $L=dD/dI$. (More generally L denotes the proportion financed with tax deductible sources of capital.) Then from (7) we find:

$$\tilde{\rho}(L) = (1-\tau)\frac{d\bar{X}}{dI} = (1-L\tau)\rho^{\tau} \tag{8}$$

and the various costs can be found by substituting the appropriate value for L. In particular, if we substitute in this formula the "target" leverage ratio, L^*, we obtain:

$$\tilde{\rho}^* \equiv \tilde{\rho}(L^*) = (1-\tau L^*)\rho^{\tau}$$

and $\tilde{\rho}^*$ measures the average net-of-tax cost of capital in the sense described above.

Although the before-tax and the net-of-tax approaches to the cost of capital provide equally good criteria for investment decisions when assets are assumed to generate perpetual (i.e., non-depreciating) streams, such is not the case when assets are assumed to have finite lives (even when it is also assumed that the firm's assets are in a steady state age distribution so that our X or EBIT is approximately the same as the net cash flow before taxes). See footnote 3 above. In the latter event, the correct method for determining the desirability of an investment would be, in principle, to discount the net-of-tax stream at the net-of-tax cost of capital. Only under this net-of-tax approach would it be possible to take into account the deductibility of depreciation (and also to choose the most advantageous depreciation policy for tax purposes). Note that we say that the net-of-tax approach is correct "in principle" because, strictly speaking, nothing in our analysis (or anyone else's, for that matter) has yet established that it is indeed legitimate to "discount" an uncertain stream. One can hope that subsequent research will show the analogy to discounting under the certainty case is a valid one; but, at the moment, this is still only a hope.

indicate that there has in fact been a substantial increase in the use of debt (except relative to preferred stock) by the corporate sector during the recent high tax years.[17]

As to the differences between our modified model and the traditional one, we feel that they are still large in quantitative terms and still very much worth trying to detect. It is not only a matter of the two views having different implications for corporate financial policy (or even for national tax policy). But since the two positions rest on fundamentally different views about investor behavior and the functioning of the capital markets, the results of tests between them may have an important bearing on issues ranging far beyond the immediate one of the effects of leverage on the cost of capital.

FRANCO MODIGLIANI AND MERTON H. MILLER*

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[17] See, e.g., Merton H. Miller, "The Corporate Income Tax and Corporate Financial Policies," in *Staff Reports to the Commission on Money and Credit* (forthcoming).

* The authors are, respectively, professor of industrial management, School of Industrial Management, Massachusetts Institute of Technology, and professor of finance, Graduate School of Business, University of Chicago.

Consumption, Savings and Windfall Gains: Comment

In her recent article in this *Review* [3], Margaret Reid attempted to answer previous articles by Bodkin [1] and Jones [2] challenging the validity of the permanent income hypothesis. Bodkin and Jones used income and expenditure data for those consumer units who had received the soldiers' bonus (National Service Life Insurance dividends) during 1950, the year of the urban consumption survey [4]. These bonuses were regarded as windfall gains for the purposes of their analyses.

Professor Reid used data from the same survey, but her windfall gains were represented by "other money receipts." These are defined as "inheritances and occasional large gifts of money from persons outside the family . . . and net receipts from the settlement of fire and accident policies" [4, Vol. 1, p. xxix]. She assumed that the soldiers' bonus was included, and that it accounted for about one-half of other money receipts. Here she made an unfortunate mistake in interpreting the data for the main critical purpose of her article.

The soldiers' bonus is not part of "other money receipts" (O) but rather a part of "disposable money income" (Y). It is the main part of an item in the disposable money income category called "military pay, allotments, and pensions" [4, Vol. 11, p. xxix].

This would appear to alter completely the relationship of Professor Reid's main findings to the Bodkin results and to change the windfall interpretation of the O variable. Surely, fire and accident policy settlements are not windfall income, but rather a (partial) recovery of real assets previously lost. Likewise, inheritances are probably best considered as a long-anticipated increase in assets—not an increase in transitory income.

The discovery of this error probably does not affect whatever importance Professor Reid's secondary finding may have: ". . . the need, in any study of

PSC Case No. 2009-00141
AG DR Set 1-211
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 211:

With reference to Appendix E, please provide the individual company data and calculations used in developing the leverage factor. Please provide the data in hard copy and electronic formats (Microsoft Excel), with all data and equations left intact. In addition, please indicate the source of the data.

Response:

Please refer to the Excel spreadsheet that is attached in Attachment A for these data. The source of the data is the Annual Reports (or SEC Form 10-K) for each company, which can be obtained from the website of each company.

Columbia Gas of Kentucky, Inc.

Gas Group
Year End 2007

Fiscal Year	AGL Resources 12/31/07	Atmos Energy 09/30/07	New Jersey Resources 09/30/07	Northwest Natural Gas 12/31/07	Piedmont Natural Gas 10/31/07	South Jersey Industries 09/30/07	WGL Holdings 09/30/07	Average
Capitalization at Fair Values								
Debt(D)	1,710,000	2,026,600	336,200	557,916	892,506	391,000	623,800	934,003
Preferred(P)	0	0	0	0	0	0	25,400	3,629
Equity(E)	2,875,696	2,529,728	1,375,682	1,284,982	1,894,530	1,068,546	1,671,326	1,814,356
Total	4,585,696	4,556,328	1,711,882	1,842,898	2,787,036	1,459,546	2,320,526	2,751,987
Capital Structure Ratios								
Debt(D)	37.29%	44.48%	19.64%	30.27%	32.02%	26.79%	26.88%	31.05%
Preferred(P)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.09%	0.16%
Equity(E)	62.71%	55.52%	80.36%	69.73%	67.98%	73.21%	72.02%	68.79%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.99%	100.00%
Common Stock								
Issued	76,400.000	89,326.537	29,342.626	26,407.348	74,208.000	29,607.802	49,316.211	
Treasury	0.000	0.000	1,601.518	0.000	0.000	0.000	0.000	
Outstanding	76,400.000	89,326.537	27,741.108	26,407.348	74,208.000	29,607.802	49,316.211	
Year-End Price	$37.64	$28.32	$49.59	$48.66	$25.53	$36.09	$33.89	
Capitalization at Carrying Amounts								
Debt(D)	1,674,000	2,133,693	329,800	517,000	824,887	358,000	616,500	921,983
Preferred(P)	0	0	0	0	0	0	28,200	4,029
Equity(E)	1,661,000	1,965,754	644,797	594,751	878,374	481,080	980,767	1,029,503
Total	3,335,000	4,099,447	974,597	1,111,751	1,703,261	839,080	1,625,467	1,955,515
Capital Structure Ratios								
Debt(D)	50.19%	52.05%	33.84%	46.50%	48.43%	42.67%	37.93%	44.52%
Preferred(P)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.73%	0.25%
Equity(E)	49.81%	47.95%	66.16%	53.50%	51.57%	57.33%	60.34%	55.24%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Betas Value Line	0.75	0.65	0.70	0.60	0.70	0.75	0.75	0.70

Hamada	Bl	=	Bu	[1+	(1 - t)	D/E	+	P/E	]
	0.70	=	Bu	[1+	(1-0.35)	0.4514	+	0.0023	]
	0.70	=	Bu	[1+	0.65	0.4514	+	0.0023	]
	0.70	=	Bu	1.2957					
	0.54	=	Bu						

Hamada	Bl	=	0.54	[1+	(1 - t)	D/E	+	P/E	]
	Bl	=	0.54	[1+	0.65	0.8059	+	0.0045	]
	Bl	=	0.54	1.5283					
	Bl	=	0.83						

M&M	ku	=	ke	-	(((	ku	-	i	)	1-t	)	D	/ E	) - (	ku	-	d	)	P	/ E
	9.47%	=	10.26%	-	(((	9.47%	-	6.81%	)	0.65	)	31.05%	/ 68.79%	) - (	9.47%	-	6.04%	)	0.16%	/ 68.79%
	9.47%	=	10.26%	-	(((	2.66%			)	0.65	)	0.4514		) - (	3.43%			)	0.0023	
	9.47%	=	10.26%	-	((	1.73%					)	0.4514		) - (	3.43%			)	0.0023	
	9.47%	=	10.26%	-		0.78%								-	0.01%					

M&M	ke	=	ku	+	(((	ku	-	i	)	1-t	)	D	/ E	) + (	ku	-	d	)	P	/ E
	10.88%	=	9.47%	+	(((	9.47%	-	6.81%	)	0.65	)	44.52%	/ 55.24%	) + (	9.47%	-	6.04%	)	0.25%	/ 55.24%
	10.88%	=	9.47%	+	(((	2.66%			)	0.65	)	0.8059		) + (	3.43%			)	0.0045	
	10.88%	=	9.47%	+	((	1.73%					)	0.8059		) + (	3.43%			)	0.0045	
	10.88%	=	9.47%	+		1.39%								+	0.02%					

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Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 212:

With reference to Appendix F, please provide copies of the source documents, work papers, and data used to support and develop the flotation cost adjustment. Please provide the data in hard copy and electronic formats (Microsoft Excel), with all data and equations left intact. In addition, please indicate the source of the data.

Response:

An electronic copy of Attachment PRM-10 is attached in Attachment A. Also provided is a copy of the source documents in Attachment B.

Natural Gas Industry

Analysis of Public Offerings of Common Stock
Years 2003-2007

	AGL RESOURCES	SOUTHERN UNION CO.	ATMOS ENERGY	VECTREN CORP.	SEMPRA ENERGY	PIEDMONT NATURAL	UGI CORP.	NORTHWEST NATURAL	LACLEDE GROUP
Date of Offering	2/11/2003	6/5/2003	6/18/2003	8/7/2003	10/8/2003	1/20/2004	3/18/2004	3/30/2004	5/6/2004
No. of shares offered (000)	5,600	9,500	4,000	6,500	15,000	4,250	7,500	1,200	1,500
Dollar amt. of offering ($000)	$ 123,200	$ 152,000	$ 101,240	$ 148,265	$ 420,000	$ 180,625	$ 240,750	$ 37,200	$ 40,200
Price to public	$ 22.000	$ 16.000	$ 25.310	$ 22.810	$ 28.000	$ 42.500	$ 32.100	$ 31.000	$ 26.800
Underwriter's discounts and commission	$ 0.770	$ 0.560	$ 1.013	$ 0.798	$ 0.840	$ 1.490	$ 1.404	$ 1.010	$ 0.871
Gross Proceeds	$ 21.230	$ 15.440	$ 24.297	$ 22.012	$ 27.160	$ 41.010	$ 30.696	$ 29.990	$ 25.929
Estimated company issuance expenses	$ 0.045	$ 0.089	$ 0.095	$ 0.046	$ 0.033	NA	$ 0.020	$ 0.146	$ 0.067
Net proceeds to company per share	$ 21.185	$ 15.351	$ 24.202	$ 21.966	$ 27.127	$ 41.010	$ 30.676	$ 29.844	$ 25.862
Underwriter's discount as a percent of offering price	3.5%	3.5%	4.0%	3.5%	3.0%	3.5%	4.4%	3.3%	3.3%
Issuance expense as a percent of offering price	0.2%	0.6%	0.4%	0.2%	0.1%	NA	0.1%	0.5%	0.3%
Total Issuance and selling expense as as a percent of offering price	3.7%	4.1%	4.4%	3.7%	3.1%	3.5%	4.5%	3.8%	3.6%

	SOUTHERN UNION CO.	AQUILA	ATMOS ENERGY	AGL RESOURCES	SOUTHERN UNION CO.	SEMCO Energy	Chesapeake Utilities	Vectren	Average
Date of Offering	7/26/2004	8/18/2004	10/21/2004	11/19/2004	2/7/2005	8/9/2005	11/15/2006	2/22/2007	
No. of shares offered (000)	11,000	40,000	14,000	9,600	14,913	4,300	600.3	4,600	
Dollar amt. of offering ($000)	$ 206,250	$ 102,000	$ 346,500	$ 297,696	$ 342,999	$ 27,176	$ 18,069	$ 130,318	
Price to public	$ 18.750	$ 2.550	$ 24.750	$ 31.010	$ 23.000	$ 6.320	$ 30.100	$ 28.330	
Underwriter's discounts and commission	$ 0.656	$ 0.099	$ 0.990	$ 0.930	$ 0.700	$ 0.253	$ 1.125	$ 0.990	
Gross Proceeds	$ 18.094	$ 2.451	$ 23.760	$ 30.080	$ 22.300	$ 6.067	$ 28.975	$ 27.340	
Estimated company issuance expenses	$ 0.091	NA	NA	$ 0.042	$ 0.067	$ 0.070	$ 0.375	$ 0.092	
Net proceeds to company per share	$ 18.003	$ 2.451	$ 23.760	$ 30.038	$ 22.233	$ 5.997	$ 28.600	$ 27.248	
Underwriter's discount as a percent of offering price	3.5%	3.9%	4.0%	3.0%	3.0%	4.0%	3.7%	3.5%	3.6%
Issuance expense as a percent of offering price	0.5%	NA	NA	0.1%	0.3%	1.1%	1.2%	0.3%	0.4%
Total Issuance and selling expense as as a percent of offering price	4.0%	3.9%	4.0%	3.1%	3.3%	5.1%	4.9%	3.8%	4.0%

Source of Information: Public Utility Financial Tracker

AG DR Set 1-212 Attachment B

SUMMARY AND ANALYSIS OF COMMON STOCK ISSUES - PUBLIC OFFERINGS
JANUARY THROUGH DECEMBER 2003

COMPANY	TYPE OF UTILITY	DATE	COMP OR NEG	NUMBER OF SHARES	AMOUNT OFFERED	CLOSING PRICE	PRICE TO PUBLIC	UNDERWRITERS COMMISION PER SHARE	UNDERWRITERS COMMISION % OF PRICE	EARNINGS PER SHARE	BOOK VALUE PER SHARE	INDICATED ANNUAL DIVIDEND	YIELD TO PUBLIC	PRICE EARNINGS RATIO	DIVIDEND PAYOUT	ESTIMATED EXPENSES	PURPOSE NEW MONEY	PURPOSE REFUNDING
				(000)	($000)	($)	($)	($)	(%)	($)	($)	($)	(%)		(%)	($000)	($000)	($000)
		JAN																
AMEREN	ELEC	14	N	5,500	222,750	40.700	40.500	1.320	3.259	3 410	NA	2.640	6.272	11 877	74.487	400	222,750	
CINERGY	ELEC	31	N	5,700	177,270	31 920	31 100	0.250	0.804	2.750	NA	1 800	5.788	11.309	65.455	200	177,270	
		FEB																
AGL RESOURCES, INC	GAS	11	N	5,600	123,200	22.180	22.000	0.770	3.500	2.870	NA	1.080	4.909	7 668	37.631	250	123,200	
AMERICAN ELECTRIC POWER CO., INC	ELEC	27	N	50,000	1,047,500	20.950	20 950	0.629	3.000	-1.570	NA	1 400	6.683	-13.344	-89.172	550		1,047,500
		MAY																
PPL CORP	ELEC	15	N	65,000	2.486,250	38.470	38.250	1 243	3.250	1 440	NA	1.580	4.078	26.563	108.333	400		2.486,250
CONSOLIDATED EDISON INC	ELEC	19	N	87000	3,462.600	40.550	39.800	0.345	0.867	3.020	NA	2	5.628	13 179	74.172	350	3,462,600	
		JUN																
SOUTHERN UNION CO.	GAS	5	N	9500	152.000	16.160	16.000	0 500	3.500	0.350	NA	NO	0.000	45.714	0.000	850	152,000	
SOUTHERN UNION CO.	GAS	10	N	3,000	48,450	16.150	16 150	NA	NA	NA	NA	NA	NA	NA	NA	NA	48,450	
SOUTHERN UNION CO.	GAS	15	N	2500	125,000	16.150	50.000	1.500	3.000	0.690	NA	NO	0.000	72.464	0.000	1000	125,000	
ATMOS ENERGY CORP.	GAS	18	N	4000	101,240	25.310	25 310	1.013	4.001	NA	NA	1.200	4.741	NA	NA	380	101.240	
		AUG																
California Water Service Group	WATER	4	N	1.750	45,938	26.250	26.250	1.010	3.848	1.250	NA	1.125	4.286	21.000	90.000	285	45,938	
VECTREN CORPORATION	GAS	7	N	6,500	148,265	22 810	22.810	0.798	3.498	1 690	NA	1 020	4.472	13.497	60.355	300	148,265	
Philadelphia Suburban Corporation	WATER	18	N	4,000	93,600	23.800	23.400	0 819	3.500	0.970	7 760	0.560	2.393	24.124	57.732	180	93,600	
OGE Energy Corp	ELEC	21	N	4,650	100,440	21 900	21.600	0 790	3.657	1 160	NA	1 330	6.157	18.621	114.655	NA	100,440	
		SEP																
TECO ENERGY INC	ELEC	10	N	11000	129.360	12.250	11 760	NA	0.000	NA	NA	NA	0.000	NA	NA	NA	129,360	
FIRSTENERGY CORP	ELEC	12	N	28,000	840,000	31 100	30.000	0.975	3.250	1 980	NA	1 500	5.000	15.152	75.758	423	840,000	
		OCT																
PSEG	ELEC	1	N	8,250	344,438	42.130	41 750	1.253	3.000	-0 990	NA	2.160	5.174	-42.172	-218.182	350	344,438	
SEMPRA ENERGY	GAS	8	N	15000	420,000	28.450	28.000	0 840	3.000	-0.990	NA	1.000	3.571	-28.283	-101.010	500	420,000	
UNITIL	ELEC	23	N	6524	165,710	25.400	25.400	1 270	5.000	1 250	NA	1 380	5.433	NA	110.400	NA	165,710	
PUDGET ENERGY	ELEC	31	N	4,550	103,513	23.090	22.750	0 750	3.297	NA	NA	NA	NA	NA	NA	NA	103,513	
PUDGET ENERGY	ELEC	31	N	4550	100,100	22.730	22.000	NA	NA	NA	NA	NA	NA	NA	NA	NA	100,100	
		NOV																
WPS RESOURCES CORP	ELEC	19	N	3,500	150,500	43.920	43.000	0.798	1.505	3.450	NA	2 180	5.070	12.464	63.188	NA	150,500	
		DEC																
EMPIRE DISTRICT ELECTRIC CO.	ELEC	11	N	2000	42,300	21 290	21.150	0.900	4.255	1.290	NA	1 280	6.052	16.395	99.225	225	42,300	

SUMMARY AND ANALYSIS OF COMMON STOCK ISSUES - PUBLIC OFFERINGS
JANUARY THROUGH DECEMBER 2004

COMPANY	TYPE OF UTILITY	DATE	COMP OR NEG	NUMBER OF SHARES	AMOUNT OFFERED	CLOSING PRICE	PRICE TO PUBLIC	UNDERWRITERS COMMISSION		EARNINGS PER SHARE	BOOK VALUE PER SHARE	INDICATED ANNUAL DIVIDEND	YIELD TO PUBLIC	PRICE EARNINGS RATIO	DIVIDEND PAYOUT	ESTIMATED EXPENSES	PURPOSE	
								PER SHARE	% OF PRICE								NEW MONEY	REFUNDING
				(000)	($000)	($)	($)	($)	(%)	($)	($)	($)	(%)		(%)	($000)	($000)	($000)
		JAN																
PIEDMONT NATURAL GAS CO. INC	GAS	20	N	4,250	180,625	NA	42.500	1.400	3.506	1.900	NA	1.660	3.906	22.400	87.400	NA	180,625	
		MAR																
HAWAIIAN ELECTRIC INDUSTRIES INC	ELEC	10	N	2,000	103,720	51.860	51.860	2.074	4.000	3.160	NA	2.480	4.782	16.400	78.500	150		103,720
UGI CORP.	GAS	18	N	7.500	240.750	32.100	32.100	1.404	4.375	2.290	NA	1.130	3.520	14.000	49.300	NA	240,750	
NORTHWEST NATURAL GAS CO	GAS	30	N	1,200	37.200	31.250	31.000	1.010	3.258	1.770	NA	1.270	4.097	17.500	71.600	175	37.200	
		APR																
CONEDISON, INC	ELEC	11	N	14,000	528,360	37.750	37.750	1.132	3.000	2.370	NA	2.240	5.935	15.900	94.500	400	528,360	
		MAY																
MIDDLESEX WATER CO.	WATER	6	N	700	13.860	20.000	19.800	0.790	3.990	0.610	NA	0.660	3.333	32.500	108.200	375	13,860	
THE LACLEDE GROUP INC	GAS	6	N	1.500	40,200	26.850	26.800	0.871	3.250	1.820	NA	1.340	5.000	14.700	73.600	100	40,200	
		JUN																
GREAT PLAINS ENERGY CORP	ELEC	8	N	5,000	150,000	30.020	30.000	1.050	3.500	2.070	13.850	1.660	5.533	14.500	80.200	350		150,000
GREAT PLAINS ENERGY CORP	ELEC	8	N	6,000	150,000	30.020	25.000	0.750	3.000	2.070	NA	NONE	NA	10.500	NA	500	150,000	
PURE CYCLE CO.	WATER	18	N	700	6,300	9.500	9.000	0.596	6.625	-0.040	NA	9.500	105.556	-225.000	-23750.000	NA	6,300	
CALIFORNIA WATER SERVICE GROUP	WATER	23	N	1.250	34,063	27.320	27.250	1.020	3.743	1.210	NA	1.130	4.147	22.500	93.400	165	34,063	
CONSTELLATION ENERGY	ELEC	28	N	6,000	227.700	38.550	37.950	0.140	0.369	NA	NA	NONE	NA	NA	NA	250	227.700	
AMEREN	GAS	30	N	10,000	420,000	42.980	42.000	1.260	3.000	3.250	NA	2.540	6.048	12.900	78.200	400	420,000	
		JUL																
THE YORK WATER COMPANY	WATER	15	N	415	7,387	17.810	17.800	0.710	3.989	0.580	NA	0.580	3.258	30.700	100.000	246	7,387	
SOUTHERN UNION CO	GAS	28	N	11,000	206,250	19.000	18.750	0.656	3.499	1.290	NA	NONE	NA	14.500	NA	1000	206,250	
		AUG																
AQUILA(M)	GAS	18	N	40,000	102,000	2.550	2.550	0.099	3.882	-1.730	NA	NONE	0.000	-1.500	0.000	NA		102,000
		SEP																
AMERICAN STATES WATER CO.	WATER	22	N	1,400	35,364	25.800	25.260	1.010	3.996	0.780	NA	3.536	13.998	32.400	453.300	258	35,364	
CALIFORNIA WATER SERVICE CO.	WATER	22	N	550	18,356	33.375	33.375	1.450	4.345	2.660	NA	1.980	5.933	12.500	74.400	175	18,356	
		OCT																
CMS ENERGY	ELEC	7	N	28,500	259,350	9.410	9.100	0.319	3.500	0.100	NA	NONE	NA	91.000	NA	325	259,350	
ATMOS ENERGY CO.	GAS	21	N	14,000	346,500	25.200	24.750	0.990	4.000	1.650	NA	1.220	4.929	15.000	73.900	NA	346,500	
		NOV																
AQUA AMERICA, INC	WATER	9	N	1.700	38,590	22.740	22.700	0.860	3.789	NA	NA	0.520	2.291	NA	NA	NA	38,590	
AGL RESOURCES	GAS	19	N	9,600	297,696	31.010	31.010	0.930	2.990	2.010	NA	1.110	3.579	15.400	55.200	400		297,696
		DEC																
OTTERTAIL CORPORATION	ELEC	7	N	2,900	73,805	25.450	25.450	0.950	3.733	1.510	12.960	1.100	4.322	16.900	72.800	300	73,805	
IDACORP	ELEC	9	N	83,500	2,505,000	30.150	30.000	1.200	4.000	1.220	NA	1.200	4.000	24.600	98.400	300	2,505,000	
CINERGY	GAS	15	N	6,100	250,100	41.550	41.000	0.490	1.195	2.780	NA	1.880	4.585	14.700	67.600	200	250,100	

SUMMARY AND ANALYSIS OF COMMON STOCK ISSUES - PUBLIC OFFERINGS
JANUARY THROUGH DECEMBER 2005

COMPANY	TYPE OF UTILITY	OFFER DATE	DATE	COMP OR NEG	NUMBER OF SHARES	AMOUNT OFFERED	CLOSING PRICE	PRICE TO PUBLIC	UNDERWRITERS COMMISION		EARNINGS PER SHARE	BOOK VALUE PER SHARE	INDICATED ANNUAL DIVIDEND	YIELD TO PUBLIC	PRICE EARNINGS RATIO	DIVIDEND PAYOUT	ESTIMATED EXPENSES	PURPOSE	
									PER SHARE	% OF PRICE								NEW MONEY	REFUNDING
		month			(000)	($000)	($)	($)	($)	(%)	($)	($)	($)	(%)		(%)	($000)	($000)	($000)
ALASKA COMM SYSTEM	TELE	1	JAN 26	N	8,824	75,004	8.550	8.500	0.425	0.050	-0.390	NA	2.960	0.348	-21.795	-7.590	NA		75,00
CINERGY	ELEC	1	28	N	3,399	169,950	29.150	50.000	1.500	0.030	3.660	NA	1.800	0.036	13.661	0.492	750		169,95
SOUTHERN UNION CO.	GAS	2	FEB 7	N	14,913	342,999	24.150	23.000	0.700	0.030	1.300	NA	NONE	0.000	17.692	0.000	1000		342,99
VALOR COMM GROUP	TELE	2	8	N	29,375	440,625	NA	15.000	0.900	0.060	NA	22.360	1.440	0.096	NA	NA	NA		440,62
CINERGY	ELEC	2	11	N	849	42,445	29.150	50.000	1.500	0.030	3.660	NA	1.800	0.036	13.661	0.492	750		42,44
CMS	ELEC	3	MAR 30	N	20,000	245,000	12.500	12.250	0.429	0.035	0.650	NA	NA	0.000	18.846	0.000	235	245,000	
PINNACLE WEST	ELEC	4	APR 27	N	5,300	222,600	42.480	42.000	1.385	0.033	1.080	NA	1.900	0.045	38.889	1.759	250		222.6
SEMCO ENERGY	GAS	8	AUG 9	N	4,500	27 176	6.650	6.320	0.253	0.040	1.060	NA	NA	0.000	5.962	0.000	300		27.1
PUDGET ENERGY	ELEC	11	NOV 1	N	15,000	312,000	21.310	20.800	0.130	0.006	1.000	16.590	4.000	0.192	20.800	4.000	300	312,000	
WPS RESOURCE CORP	ELEC	11	27	N	1,900	102,030	53.700	53.700	1.745	0.032	3.720	NA	2.258	0.042	14.435	0.606	NA	102,030	
NORTHEAST UTILITIES	ELEC	12	DEC 12	N	20,000	381,800	19.090	19.090	0.620	0.032	0.910	19.800	0.700	0.037	20.978	0.769	340	381,800	

SUMMARY AND ANALYSIS OF COMMON STOCK ISSUES - PUBLIC OFFERINGS
JANUARY THROUGH DECEMBER 2006

COMPANY	TYPE OF UTILITY	OFFER DATE	DATE	COMP OR NEG	NUMBER OF SHARES	AMOUNT OFFERED	CLOSING PRICE	PRICE TO PUBLIC	UNDERWRITERS COMMISION		EARNINGS PER SHARE	BOOK VALUE PER SHARE	INDICATED ANNUAL DIVIDEND	YIELD TO PUBLIC	PRICE EARNINGS RATIO	DIVIDEND PAYOUT	ESTIMATED EXPENSES	PURPOSE
									PER SHARE	% OF PRICE								NEW MONEY
		month			(000)	($000)	($)	($)	($)	(%)	($)	($)	($)	(%)		(%)	($000)	($000)
NTELOS HOLDING CORP	TELE	2	FEB 8	N	14 375	172.500	12.000	12 000	0.780	6 500	NA	NA	NONE	NA	NA	NA	13.200	
ACS	TELE	3	MAR 10	N	9 549	105.039	11 150	11 000	0.250	2 273	-4 350	NA	NA	NA	NA	NA	350	105.039
ALASKA COMM SYSTEMS GROUP INC	TELE	3	10	N	9 549	105.039	11 150	11.000	0.250	2.273	-4 350	NA	NA	0.000	-2.529	0.00%	350	105.039
BASIN WATER	WATER	5	MAY 11	N	6,000	72 000	NA	12 000	0.840	7 000	0 040	4.030	NONE	0 000	300.000	0 00%	1,500	72,000
LEVEL3 COMMUNICATIONS	TELE	6	JUN 7	N	125,000	568,750	4.550	4 550	0.205	4.501	-11.000	NA	NA	NA	NA	NA	750	
EMPIRE DISTRICT ELECTRIC CO.	ELEC	6	15	N	3 200	64 800	20.770	20.250	0.860	4 247	0 920	NA	1 280	6 321	22.011	139.13%	250	64 800
ATLANTIC TELEPHONE NETWORK. INC	TELE	7	JUL 20	N	2 400	45,600	19 750	19 000	1 045	5.500	1 090	NA	0 460	2 421	17.431	42.20%	650	
CLECO CORP	ELEC	8	AUG 14	N	6,000	142.500	24.300	23 750	0.890	3.747	3.530	NA	0 900	3.789	6 728	25.50%	NA	142 500
CON ED	ELEC	9	SEP 20	N	9,715	456.216	48.320	46 960	NA	NA	NA	NA	2.300	NA	NA	NA	400	456,216
CALIFORNIA WAER SERVICE GROUP	WATER	10	OCT 6	N	2.000	73 500	37 570	36.750	1.378	3.750	NA	NA	1	3.129	NA	NA	501	73 500
MIDDLESEX WATER COMPANY	WATER	11	NOV 2	N	1,300	23.998	18 460	18 460	0.700	3.792	NA	NA	0.680	3.575	NA	NA	50	23.998
HESAPEAKE UTILITY CORP	GAS	11	15	N	600	18.060	30.250	30 100	1 125	3.738	1.790	NA	1 160	3.854	15.816	64 80%	225	18.060
E YORK WATER CO	WATER	11	30	N	645	11.546	17.900	17.900	0.716	4.000	NA	NA	0 470	2.626	NA	NA	231	11.546
AVISTA CORP	ELEC	12	DEC 12	N	2 750	68.888	25.120	25.050	0.480	1 916	0.920	NA	1	2.236	27.228	60.87%	300	68,888

AG DR Set 1-212 Attachment B

SUMMARY AND ANALYSIS OF COMMON STOCK ISSUES - PUBLIC OFFERINGS
JANUARY THROUGH DECEMBER 2007

COMPANY	TYPE OF UTILITY	DATE	COMP OR NEG	NUMBER OF SHARES	AMOUNT OFFERED	CLOSING PRICE	PRICE TO PUBLIC	UNDERWRITERS COMMISION PER SHARE	UNDERWRITERS COMMISION % OF PRICE	EARNINGS PER SHARE	BOOK VALUE PER SHARE	INDICATED ANNUAL DIVIDEND	YIELD TO PUBLIC	PRICE EARNINGS RATIO	DIVIDEND PAYOUT	ESTIMATED EXPENSES	PURPOSE NEW MONEY	PURPOSE REFUNDING
				(000)	($000)	($)	($)	($)	(%)	($)	($)	($)	(%)		(%)	($000)	($000)	($000)
VECTRON CORP	GAS	FEB 22	N	4,600	130,318	28.330	28.330	0.990	3.495	1.440	NA	1.230	4.342	8.575	0.854	NA	130,318	
ENERGY EAST CORP	ELEC	MAR 21	N	9,000	218,250	24.780	24.250	0.728	3.000	1.770	NA	1.200	4.948	4.901	0.678	185	218,250	
ARTESIAN RESOURCES	WATER	JUN 13	N	1,000,000	19,150,000	19.300	19.150	0.810	4.230	NA	NA	0.804	3.467	5.523	NA	400	19,150,000	
EMPIRE DISTR ELECTRIC COMP	ELEC	DEC 6	N	3,000	69,000	23.490	23.000	0.997	4.333	1.350	NA	1.280	5.565	4.133	0.928	250	69,000	

PSC Case No. 2009-00141
AG DR Set 1-213
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

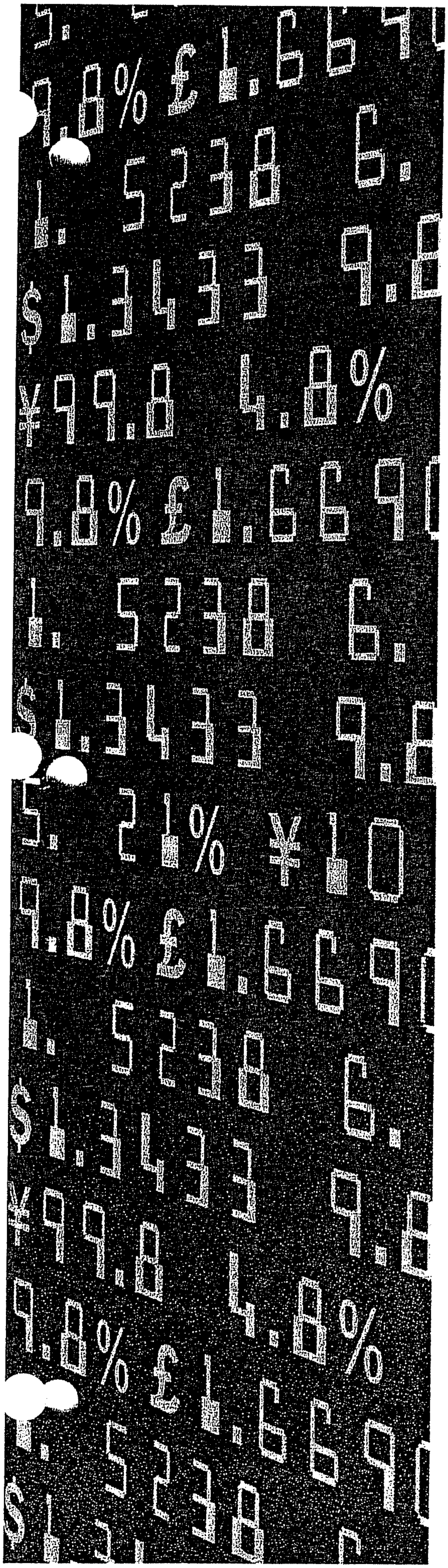
Data Request 213:

With reference to page 40, Attachment PRM-11, and Appendix G, please provide: (1) copies of the current Blue Chip Financial Forecasts; and (2) all data, work papers, and source documents used in computing a prospective bond yield of 6.50%. Please provide the data in hard copy and electronic formats (Microsoft Excel), with all data and equations left intact.

Response:

(1) A copy of the June 1, 2009 Blue Chip Financial Forecast is attached in Attachment A.

(2) The data that was used to develop the 6.50% prospective yield on A-rated public utility bonds is contained on pages 40 through 43 of Paul R. Moul's direct testimony and in Appendix G.



AG DR Set 1-213 Attachment A

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Currency Values And The
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EXECUTIVE EDITOR:
RANDELL E. MOORE
3663 Madison Ave.
Kansas City, MO 64111
Phone (816) 931-0131
Fax (816) 931-0430
E-mail: *randy.moore@wolterskluwer.com*

Publisher: Paul Gibson
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Treasuries Take A Hit On Increased Supply And Decreased Risk Aversion

Domestic Commentary Our panelists grew a bit more optimistic over the past month about the pace of U.S. economic activity in the second half of 2009 and beyond despite the recent release of a few weaker-than-expected reports. While our May 20th-21st survey revealed that the consensus continues to predict real GDP will contract at an annualized rate of 2.0% in the current quarter, the economy now is expected to post positive growth of 0.4% in Q3 and 1.7% in Q4 of this year, 0.1 of a percentage point better than forecast a month ago. That compares with annualized contractions in real GDP of 6.1% in Q1 of this year and 6.3% and 0.5%, respectively, in Q4 and Q3 of last year. The consensus forecasts real GDP will grow at a 2.2% rate in Q1 of next year, also 0.1 of a point faster than thought a month ago. Consensus estimates of real GDP growth rates in Q2 and Q3 2010 remained at 2.6% and 2.8%, respectively. Consensus forecasts of inflation this quarter and next increased a smidgen from low levels this month, most likely reflecting the rebound in gasoline prices, estimates of inflation in 2010 continued to inch lower.

Real GDP is expected to contract much less this quarter than over the past two due to diminishing drag from business inventories and residential investment, coupled with a rebound in government spending. Total private business inventory levels plunged in Q1, subtracting 2.8 percentage points from GDP's growth rate. That was the most since the Q1 2000 and rivaled the largest negative contributions from inventories since the early 1980s. With inventories now more closely aligned with demand and Institute of Supply Management survey data somewhat better order flow, inventories should exert much less if any drag on GDP in Q2 and begin contributing a bit to growth in the second half.

Residential investment fell at an annual rate of 38% in Q1, subtracting 1.4 percentage points from GDP's growth rate. Although new housing starts fell to a fresh low in April, the drop was attributable to a plunge in multi-family units. Starts of single-family homes rose and are essentially flat since the start of the year. This hints residential investment will fall by far less in Q2 than in Q1 and might begin contributing slightly to GDP growth by year's end.

Government spending fell a sharp 3.9% in Q1, the first decline since 2005 and the largest since 1995. Leading the decline was a sharp drop in federal defense spending and a contraction in spending by state and local governments as they grappled with shrinking tax revenues. Federal spending seems destined to rebound over the next couple of quarters as the effects of the federal stimulus package passed earlier this year kick in but state and local spending may contract further due to balanced budget requirements.

Real nonresidential fixed investment fell for a third consecutive quarter in Q1, plunging at an annual rate of 37.9%. With the capacity utilization rate at a record low there is little incentive for firms to invest in new equipment and software. As a result, capital spending is widely expected to continue shrinking over the next few quarters, but at a more muted pace than in Q1. The same cannot be said for real investment in business structures, where declines are expected by many to grow larger over the next few quarters.

Real personal consumption expenditures (PCE) grew at a stronger-than-expected rate of 2.2% in Q1, snapping steep back-to-back quarterly contractions in the second half of last year that were the worst in 60-plus years. However, core retail sales fell in both March and April, suggesting little if any growth in real PCE during Q2. Consumer spending is widely expected to pick up in the second half of this year, but continued job losses, rising unemployment, sluggish wage and salary gains, tight credit and a desire by households to rebuild balance sheets are expected to restrain the recovery.

Real net exports contributed nearly two percentage points to real GDP's growth rate in Q1, but only because the huge contraction in imports was even sharper than the decline in imports. A great many analysts do not believe net exports will contribute to GDP growth over the remaining quarters of this year or in 2010.

Central to the consensus assumption that the beginnings of an economic recovery will emerge this summer or early fall is continued healing in the financial markets. The stock market has bounced remarkably higher since early March as investors began to assume the worst of the downturn was behind us. Conditions in parts of the credit markets also have improved. The TED spread has plunged to near normal levels, suggesting a heart-beat has returned to the interbank lending market. Issuance of corporate bonds has improved noticeably. And, prices for below-investment grade bonds have rallied nicely over the past few months. Nonetheless, credit availability remains quite tight for many household and business borrowers and will serve to restrain economic growth for the foreseeable future.

The flip side of the improvement in the equity and credit markets has been a serious slide in Treasury prices. As investors sought out riskier, potentially more profitable investments, Treasury prices have been hard hit, with longer-term yields rebounding to their highest level since last November. The sell-off has been compounded by the growing flood of fresh supply as federal deficits balloon to record levels, and more recently, by jitters among some investors that surging federal deficits could jeopardize the U.S.'s AAA credit rating. Although most analysts tend to discount this possibility in the near-term, the recent decision by Standard & Poor's to cut its outlook on the U.K.'s AAA credit rating appeared to serve as a wake-up call for the markets.

The Federal Reserve seems unlikely to accelerate or expand its purchases of longer-dated Treasury paper unless the rise in yields threatens to halt the ongoing improvement in prices for spread product. Although minutes of the late-April FOMC meeting hinted that "some members" favored further expansion of the Fed's balance sheet through additional asset purchases, the majority may prefer to wait until more of the already announced program purchases have been undertaken. As of May 20th, the Fed had bought just 35% of the $1.75 trillion in intended purchases of agency MBS, agency coupons and Treasury debt. The Fed also continues to alter its Troubled Asset Lending Facility (TALF), most recently expanding it to include commercial MBS issued before January 1st.

The Treasury Department's Public-Private Investment Program (PPIP) is finally expected to be up and running by early-July. Designed to facilitate investor purchases of banks' toxic loans and securities, it is hoped that the program also will free up room on banks' balance sheets for new loans. Nonetheless, most analysts assume banks and other lending institutions will need to raise many tens of billions of additional capital over the next few quarters, further diluting existing shareholders' stakes.

Consensus Forecast The consensus predicts the FOMC will leave its target federal funds rate unchanged until at least Q2 2010. Increased investor demand for riskier assets and exploding supply will continue to exert upward pressure on longer-term Treasury yields higher over the forecast horizon, further steepening the yield curve. However, the consensus appears to assume the rise will be contained by low levels of inflation brought on by the recession's creation of a huge output gap. Credit spreads are expected to continue narrowing over coming quarters, but at a slower pace than seen recently. Despite its recent drubbing, the consensus does not foresee a sharp, sustained slide in the trade-weighted value of the U.S. dollar over coming quarters *(see page 2 for U.S. consensus forecasts)*.

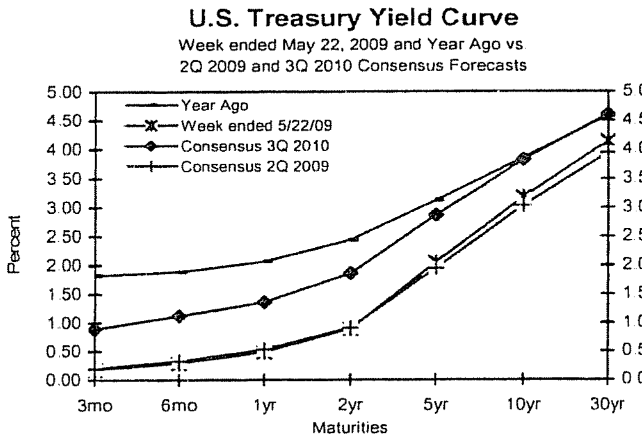
Special Questions On page 14 you will find results of our twice-yearly long-range survey with forecasts for the years 2011 through 2015 and averages for the 5-year periods 2011-2015 and 2016-2020.

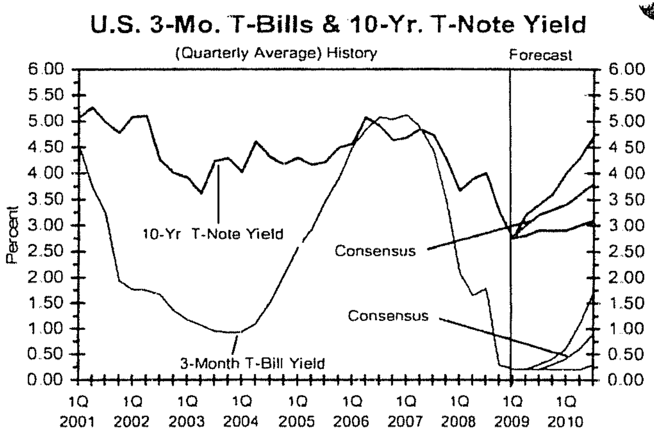
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

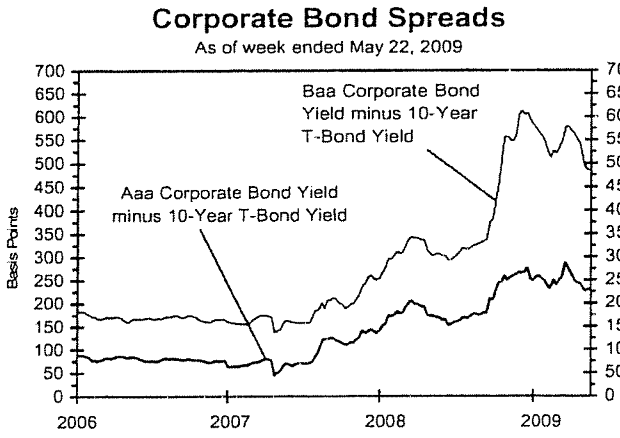
	History								Consensus Forecasts-Quarterly Avg					
	Average For Week End				Average For Month			Latest Q	2Q	3Q	4Q	1Q	2Q	3Q
Interest Rates	May 22	May 15	May 8	May 1	Apr.	Mar.	Feb.	1Q 2009	2009	2009	2009	2010	2010	2010
Federal Funds Rate	0.16	0.17	0.21	0.17	0.15	0.18	0.22	0.18	0.2	0.2	0.2	0.3	0.5	0.8
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.2	3.2	3.2	3.3	3.5	3.8
LIBOR, 3-mo.	0.79	0.94	0.98	1.04	1.12	1.26	1.24	1.25	1.0	0.9	0.9	1.0	1.2	1.5
Commercial Paper, 1-mo.	0.19	0.22	0.25	0.24	0.22	0.22	0.28	0.22	0.3	0.3	0.4	0.5	0.7	1.0
Treasury bill, 3-mo.	0.18	0.18	0.19	0.13	0.16	0.22	0.30	0.22	0.2	0.2	0.3	0.4	0.6	0.9
Treasury bill, 6-mo.	0.29	0.29	0.32	0.30	0.35	0.43	0.46	0.40	0.3	0.4	0.4	0.6	0.8	1.1
Treasury bill, 1 yr	0.48	0.52	0.53	0.50	0.55	0.64	0.62	0.57	0.5	0.6	0.7	0.8	1.1	1.4
Treasury note, 2 yr.	0.89	0.89	0.9	0.92	0.93	0.93	0.98	0.91	0.9	1.0	1.1	1.3	1.6	1.9
Treasury note, 5 yr.	2.05	2.01	2.09	1.98	1.86	1.82	1.87	1.76	2.0	2.1	2.2	2.4	2.6	2.9
Treasury note, 10 yr.	3.18	3.14	3.23	3.10	2.93	2.82	2.87	2.74	3.0	3.2	3.3	3.4	3.6	3.8
Treasury note, 30 yr.	4.14	4.12	4.15	3.99	3.76	3.64	3.59	3.45	3.9	4.1	4.1	4.3	4.4	4.6
Corporate Aaa bond	5.46	5.44	5.50	5.46	5.39	5.50	5.27	5.27	5.4	5.4	5.4	5.5	5.6	5.7
Corporate Baa bond	8.04	8.00	8.14	8.26	8.39	8.42	8.08	8.21	8.2	8.0	7.9	7.9	7.9	7.9
State & Local bonds	4.58	4.54	4.63	4.70	4.76	4.99	4.90	4.99	4.7	4.7	4.7	4.7	4.8	4.9
Home mortgage rate	4.88	4.86	4.84	4.78	4.81	5.00	5.13	5.06	4.9	4.9	5.0	5.2	5.3	5.5

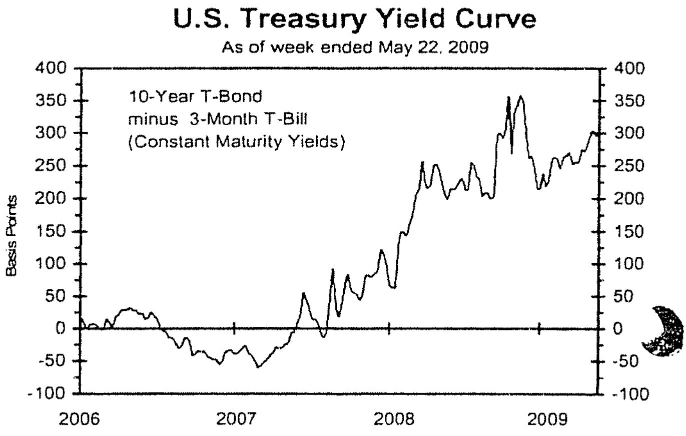
	History								Consensus Forecasts-Quarterly Avg					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Key Assumptions	2007	2007	2007	2008	2008	2008	2008	2009	2009	2009	2009	2010	2010	2010
Major Currency Index	79.3	77.0	73.3	72.0	70.9	73.5	81.3	82.7	81.1	81.2	81.5	81.6	81.3	80.9
Real GDP	4.8	4.8	-0.2	0.9	2.8	-0.5	-6.3	-6.1	-2.0	0.4	1.7	2.2	2.6	2.8
GDP Price Index	2.0	1.5	2.8	2.6	1.1	3.9	0.5	2.9	0.9	1.3	1.4	1.6	1.5	1.7
Consumer Price Index	4.2	2.4	5.8	4.5	4.5	6.2	-8.3	-2.4	0.7	1.6	1.6	1.7	1.7	2.0

Individual panel members' forecasts are on pages 4 through 9. Historical data for interest rates except LIBOR is from Federal Reserve Release (FRSR) H.15. LIBOR quotes available from *The Wall Street Journal*. Definitions reported here are same as those in FRSR H.15. Treasury yields are reported on a constant maturity basis. Historical data for the U.S. Federal Reserve Board's Major Currency Index is from FRSR H.10 and G.5. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS).









3-Month Interest Rates[1]

	History: Latest:	History: Month Ago:	History: Year Ago:	Consensus Forecasts Months From Now: 3	6	12
U.S.	1.06	1.45	2.82	0.75	0.68	0.59
Japan	0.58	0.65	1.13	0.50	0.49	0.63
U.K.	1.32	1.74	5.97	1.20	1.15	1.38
Switzerland	0.55	0.62	2.78	0.40	0.37	0.87
Canada	0.70	0.90	3.37	0.97	0.87	0.93
Australia	3.80	3.80	7.80	3.50	3.50	3.80
Eurozone	1.30	1.54	4.86	1.15	1.10	1.26

10-Yr. Government Bond Yields[1]

	History: Latest:	History: Month Ago:	History: Year Ago:	Consensus Forecasts Months From Now: 3	6	12
U.S.	3.45	2.96	3.85	3.10	3.25	3.48
Germany	3.58	3.21	4.26	3.23	3.19	3.29
Japan	1.44	1.43	1.70	1.40	1.44	1.55
U.K.	3.72	3.45	4.93	3.35	3.51	3.90
France	3.91	3.65	4.47	3.58	3.53	3.59
Italy	4.48	4.37	4.69	4.35	4.28	4.30
Switzerland	2.39	2.10	3.07	2.18	2.08	2.50
Canada	3.27	2.96	3.83	2.60	2.65	3.23
Australia	5.38	4.65	6.53	5.13	5.03	4.88
Spain	4.25	4.05	4.48	4.00	3.96	4.01
Eurozone	4.29	4.19	4.53	3.47	3.42	3.47

Foreign Exchange Rates[1]

	History: Latest:	History: Month Ago:	History: Year Ago:	Consensus Forecasts Months From Now: 3	6	12
U.S.	79.03	82.56	69.873	83.7	85.2	86.9
Japan	96.66	97.86	103.22	99.7	102.7	106.3
U.K.	1.5878	1.4623	1.9818	1.52	1.49	1.48
Switzerland	1.0872	1.1561	1.0235	1.18	1.22	1.31
Canada	1.1253	1.2274	0.9883	1.22	1.25	1.33
Australia	0.7874	0.7105	0.9608	0.75	0.75	0.74
Euro	1.3990	1.3072	1.5784	1.28	1.26	1.24

Consensus 3-Month Rates vs. U.S. Rate

	Now	In 12 Mo.
Japan	-0.48	0.04
U.K.	0.26	0.79
Switzerland	-0.51	0.28
Canada	-0.36	0.35
Australia	2.74	3.21
Eurozone	0.24	0.68

Consensus 10-Year Gov't Yields vs. U.S. Yield

	Now	In 12 Mo.
Germany	0.13	-0.19
Japan	-2.01	-1.93
U.K.	0.27	0.43
France	0.46	0.11
Italy	1.03	0.83
Switzerland	-1.06	-0.98
Canada	-0.18	-0.24
Australia	1.93	1.40
Spain	0.80	0.54
Eurozone	0.84	-0.01

Forecasts of individual panel members are on pages 10 and 11. Definitions of variables are as follows: [1]Three month currency interest rates. Short term rates are call for the US Dollar and Yen, others: two day's notice. Government bonds are yields to maturity. Foreign exchange rate forecasts for U.K., Australia and the Euro are currencies per U.S. dollar. For the U.S dollar, forecasts are of the U.S. Federal Reserve Board's Major Currency Index.

International Commentary Increasing investor appetite for riskier assets and fears of exploding supplies of government debt continued to weigh on sovereign debt markets over the past month pushing longer-term yields markedly higher. While many industrialized economies suffered staggering contractions in real GDP during Q1, on top of those registered in the second half of last year, investors are focused on tentative evidence that the free-fall in economic activity began to abate as Q2 began. Although most analysts concede global GDP may contract again this quarter, the rate of decline is expected to ease considerably amid signs that business and consumer sentiment in many nations has bottomed and that the massive liquidation of business inventories has essentially run its course. Exacerbating the sell-off in some government debt markets was the downgrading of U.K. sovereign debt and speculation that the same could happen to the U.S.

The Bank of England (BoE) left rates unchanged as expected on May 7th but announced a 50 billion pound addition to its program of asset purchases to 125 billion, just 25 billion shy of the government imposed cap. Little in the way of fresh news is expected at the BoE's June 4th meeting. Real GDP contracted by a huge 1.9% q/q in Q1, the largest decline since 1979. However, surveys of purchasing managers have bounced off their recent lows, providing some optimism that the contraction in Q2 real GDP will be substantially smaller. The manufacturing PMI indicated that activity contracted at its slowest pace in eight months during April and the April PMI for the service sector jumped the most since 1999. Unemployment is now at its highest level since 1997 and is projected by many to reach the highs set in the early 1990s, dampening consumer spending in the process.

At its early May meeting, the European Central Bank (ECB) cut its refi rate by 25 basis points to 1.0%, left the deposit rate at 0.25%, and announced it would purchase up to $80 billion in covered bonds. Real GDP in the Eurozone plunged at a breath-taking 2.5% q/q rate in Q1 as the economies of Germany and Italy contracted at respective rates of 3.8% and 2.4%. Eurozone real GDP contracted at a 1.6% rate in Q4 2008. Like in the U.K., however, purchasing manager indexes for the manufacturing and service sectors increased more than expected in April and factory orders in Germany, the region's largest economy, unexpectedly rose in March, leading many to assume the downturn in economic activity would slow markedly in the current quarter despite sharp continued increases in unemployment. Weak demand is producing a sharp retreat in inflation. The y/y change in consumer price inflation in the currency zone fell to just 0.6% in April and producer prices are contracting on a 12-month basis. Most analysts believe the ECB will be extremely reluctant to cut its refi rate any further but might employ additional unconventional measures to bolster activity if signs of economic stabilization peter out this summer.

The Bank of Japan (BoJ) left its target overnight call rate at 0.10% on May 22nd and slightly upgraded its economic assessment for the first time since July 2006, noting the economy was still deteriorating but that exports and output were leveling out. The move came against the backdrop of news that real GDP in Q1 contracted at an unprecedented rate of 4% q/q (15.2% annualized) after falling at a q/q pace of 3.8% in Q4 2008. A Q1 contraction in the domestic demand deflator and a y/y decline in consumer prices (excluding fresh food) during March, suggests the economy is again flirting with deflation. Most analysts anticipate better exports, government handouts of cash, and a stabilization of business inventories will produce slightly positive real GDP growth in Q2.

The Bank of Canada (BoC) is expected to leave its benchmark overnight rate at 0.25% on June 4th. Policymakers may recommit to leaving it there until at least Q2 of next year (conditional on the outlook for inflation) but few analysts anticipate a move toward quantitative easing despite expectations that real GDP contracted at an annualized rate of about 7% in Q1, about double the pace of decline in Q4 2008 *(see 10 and 11 for individual panel members' forecasts).*

Second Quarter 2009

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg For --Qtr--	(Q-Q % Change)		
	Short-Term							Intermediate-Term				Long-Term					(SAAR)		
	1 Federal Funds Rate	2 Prime Bank Rate	3 LIBOR Rate 3-Mo.	4 Com. Paper 1-Mo.	5 Treas Bills 3-Mo.	6 Treas Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas Notes 2-Yr	9 Treas Notes 5-Yr	10 Treas Notes 10-Yr.	11 Treas Bond 30-Yr.	12 Aaa Corp Bond	13 Baa Corp Bond	14 State & Local Bonds	15 Home Mtg Rate	A. Fed's Major Currency $ Index	B Real GDP	C. GDP Price Index	D Cons Price Index
Woodworth Holdings	0.3 H	3.3 H	1.5 H	0.6	0.2	0.3 L	0.5	0.9	2.0	2.5 L	3.5 L	5.5	8.0	4.6	4.9	80.0	-5.0 L	0.8	1.0
Swiss Re	0.3 H	3.3 H	1.1	0.9 H	0.2	0.3 L	0.5	1.0 H	1.3 L	2.9	3.8	5.5	8.4	na	5.1	na	-0.7	-0.9	-0.7
Bank of Toyko-Mitsubishi UFJ	0.3 H	3.3 H	0.5	0.3	0.2	0.3 L	0.4 L	1.0 H	2.0	3.1	4.1	5.4	7.9	4.8	4.8	79.0	0.0	2.9 H	2.2
Scotiabank	0.3 H	3.3 H	na	na	0.2	na	na	0.8	1.9	2.8	3.8	5.3	8.2	3.8 L	4.8	na	-2.5	0.5	0.6
Moody's Economy.com	0.2	3.2	1.3	0.2 L	0.2	0.4	0.5	1.0 H	2.0	2.9	3.6	5.1 L	7.8 L	na	4.6 L	na	-2.4	-1.4 L	-0.3
Stone Harbor Investment Partners	0.2	3.3 H	1.0	0.4	0.2	0.3 L	0.5	1.0 H	2.0	3.0	3.9	5.6 H	8.5	na	5.3 H	82.0	-2.0	0.5	0.8
ClearView Economics	0.2	3.3 H	1.4	0.2 L	0.2	0.3 L	0.5	0.9	2.0	3.1	4.0	5.5	8.2	4.6	4.8	81.0	-3.4	2.5	2.5
PNC Financial Services Corp	0.2	3.3 H	1.3	0.4	0.2	0.3 L	0.5	0.9	1.8	2.6	3.7	5.4	8.4	4.9	4.8	84.0	-2.0	1.3	1.7
MacroFin Analytics	0.2	3.3 H	1.0	0.3	0.2	0.3 L	0.5	0.9	2.0	3.2	4.1	5.4	8.2	5.0	4.9	81.0	-1.3	0.8	0.5
RDQ Economics	0.2	3.3 H	0.8	0.2 L	0.3 H	0.3 L	0.6	0.9	2.0	3.0	3.9	5.5	8.2	4.6	4.8	80.7	-1.5	2.1	1.2
Action Economics	0.2	3.3 H	1.1	0.3	0.2	0.3 L	0.5	0.9	2.1	3.3 H	4.1	5.6 H	8.3	4.8	5.0	80.5	-3.0	0.3	1.6
ING Investment Mgt	0.2	3.3 H	1.0	0.4	0.2	0.3 L	0.4	0.8 L	2.0	3.0	4.0	5.3	8.2	4.8	5.0	81.0	-2.0	0.5	0.2
Russell Investments	0.2	3.3 H	1.0	0.4	0.2	0.3 L	0.5	0.9	2.0	3.1	4.1	5.5	8.1	4.9	4.9	80.1	-2.4	1.8	0.5
Societe Generale	0.2	3.3 H	1.0	na	0.2	0.3 L	na	0.9	2.0	3.1	4.0	5.5	8.2	na	5.1	81.0	-1.0	1.2	1.0
Daiwa Securities America	0.2	3.3 H	1.0	0.4	0.2	0.5 H	0.7 H	1.0 H	2.0	3.2	4.1	5.4	8.2	4.5	4.9	78.0 L	-1.5	1.3	1.2
Wachovia	0.2	3.3 H	0.7	0.3	0.2	0.3 L	0.4 L	0.8 L	2.0	3.2	4.2	5.4	8.0	4.5	4.8	83.3	-2.4	-0.6	-0.4
Mesirow Financial	0.2	3.2	1.2	0.4	0.2	0.3	0.6	1.0 H	2.0	3.1	3.8	5.5	8.4	4.6	5.0	81.3	-0.4	0.2	0.6
Kellner Economic Advisers	0.2	3.2	1.2	0.5	0.3 H	0.4	0.6	0.9	1.8	2.9	3.5 L	5.3	8.2	5.0	5.0	82.0	-2.0	1.0	1.0
Cycledata Corp	0.2	3.2	0.9	0.3	0.1 L	0.3 L	0.5	0.9	1.9	3.0	4.0	5.4	8.1	4.7	4.9	82.0	-1.5	0.9	0.3
Thredgold Economic Assoc	0.2	3.2	0.9	0.4	0.2	0.3 L	0.5	0.8	1.9	3.0	4.0	5.2	7.9	4.7	4.9	81.0	-2.0	1.0	0.5
Wayne Hummer Investments	0.2	3.2	0.2 L	0.4	0.2	0.3 L	0.5	0.9	2.2 H	3.2	4.0	5.3	8.1	4.7	4.8	83.0	-1.2	1.1	0.5
Fannie Mae	0.2	3.2	na	na	0.2	na	0.5	na	na	3.2	4.0	5.4	na	na	4.9	na	-1.7	0.6	0.6
The Northern Trust Company	0.2	3.3 H	1.0	na	0.3 H	na	0.5	0.9	na	3.1	na	na	na	na	na	na	-3.6	0.5	0.7
Woodley Park Research	0.2	3.3 H	0.9	0.2 L	0.2	0.3 L	0.5	0.9	2.0	3.1	4.0	5.5	8.2	4.7	4.8	na	-1.4	-0.7	-0.4
Moody's Capital Markets	0.2	3.3 H	0.8	0.3	0.2	0.3 L	0.6	0.9	2.0	3.0	4.0	5.4	8.4	4.4	4.7	80.8	-1.1	0.9	0.7
RBS Securities	0.2	3.3 H	0.8	0.3	0.2	0.3 L	0.5	0.9	2.0	3.2	4.1	5.5	8.2	4.6	4.9	80.4	-2.3	1.2	1.3
DePrince & Assoc	0.2	3.2	1.4	0.3	0.2	0.3 L	0.6	1.0 H	2.0	3.1	4.0	5.4	8.0	4.6	4.9	79.3	-1.6	1.5	1.4
SunTrust Banks	0.2	3.2	0.8	0.3	0.2	0.3 L	0.5	0.9	2.0	3.2	4.3 H	5.5	8.8 H	4.7	4.8	80.2	-0.9	2.2	0.5
Chmura Economics & Analytics	0.2	3.3 H	1.4	0.3	0.2	0.4	0.6	1.0 H	2.0	3.1	3.9	5.5	na	na	4.9	81.9	-1.8	0.9	0.7
Goldman Sachs & Co	0.2	3.3 H	1.2	na	0.3 H	na	na	1.0 H	1.8	2.8	3.6	5.1 L	na	na	5.1	na	-3.0	0.9	-0.1
Loomis, Sayles & Company	0.2	3.3 H	1.1	0.2 L	0.2	0.4	0.6	0.9	1.9	3.0	3.9	5.5	8.4	4.9	4.9	82.9	-1.9	0.2	0.3
Nomura Securities, Inc	0.2	3.3 H	0.9	0.2 L	0.2	0.4	0.6	1.0 H	2.0	3.1	3.9	5.5	8.4	na	4.9	82.0	-1.0	0.1	0.7
Barclays Capital	0.2	3.3 H	0.9	0.3	0.2	0.3 L	0.5	0.8 L	1.8	2.9	4.2	5.4	8.2	4.9	4.8	na	-2.0	1.5	1.2
Wells Capital Management	0.1	3.3 H	0.7	0.3	0.2	0.3 L	0.6	0.9	2.0	3.1	4.0	5.4	8.1	4.8	4.9	81.3	-1.8	1.7	0.7
Standard & Poor's Corp	0.1	3.3	1.0	0.2 L	0.2	0.3 L	0.5	1.0 H	2.0	3.1	na	5.6 H	8.4	4.7	4.9	80.8	-2.5	-0.2	0.2
Banc of America-Merrill Lynch	0.1	3.3 H	1.4	na	na	na	na	1.0 H	1.9	2.8	3.7	na	na	na	na	na	-3.5	-0.2	-0.5
UBS	0.1	3.3 H	1.1	na	0.2	na	na	1.0 H	2.0	2.9	3.7	na	na	na	na	na	-2.0	1.9	0.9
BMO Capital Markets	0.1	3.3 H	1.0	0.4	0.2	0.3 L	0.5	0.9	2.0	3.1	4.0	5.4	8.0	4.6	4.8	80.5	-1.7	0.4	1.1
GLC Financial Economics	0.1	3.3 H	0.9	0.3	0.2	0.3 L	0.5	0.9	2.0	3.1	4.1	5.6 H	8.3	4.7	5.1	79.8	-2.6	1.1	-0.9 L
Comerica Bank	0.1	3.3 H	0.8	0.3	0.2	0.3 L	0.6	0.9	2.0	3.1	3.9	5.4	8.1	4.7	4.9	80.0	-3.0	1.0	0.4
J.W. Coons Advisors LLC	0.1	3.2	1.0	0.2 L	0.2	0.3 L	0.5	0.9	2.0	3.1	4.0	5.4	8.1	na	4.8	84.5 H	-2.7	1.7	3.4 H
JPMorgan Privare Wealth Mgt	0.1	3.1	1.3	0.3	0.2	0.3 L	0.5	0.9	2.1	3.3 H	4.2	5.5	8.0	5.0	4.9	79.4	-2.5	1.0	0.7
Economist Intelligence Unit	0.1	3.1	1.0	0.4	0.2	0.4	0.5	0.9	1.9	3.0	3.9	na	na	na	4.8	na	-1.8	na	0.0
J.P. Morgan Chase	0.1	na	1.0	na	0.2	na	na	0.9	1.8	2.8	3.7	na	na	na	na	na	-0.5	1.3	1.2
Nat'l Assn. of Realtors	0.1	3.3 H	1.3	0.3	0.2	0.3 L	0.5	0.9	2.0	3.1	4.2	5.5	8.1	5.1 H	4.9	na	-1.6	0.6	1.0
Georgia State University	0.1	3.2	na	na	0.2	0.4	0.6	0.9	1.9	3.0	3.8	5.5	8.5	na	4.9	na	-5.0	0.0	-0.1
Naroff Economic Advisors	0.0 L	3.3 H	1.0	0.4	0.2	0.4	0.6	0.9	2.0	3.1	4.0	5.5	8.1	4.7	4.8	80.0	0.8 H	1.1	2.0
Argus Research	0.0 L	3.0 L	1.3	0.3	0.2	0.3 L	0.5	0.9	2.0	3.1	4.0	5.4	8.3	4.6	4.8	81.3	-2.3	1.9	1.4
June Consensus	**0.2**	**3.2**	**1.0**	**0.3**	**0.2**	**0.3**	**0.5**	**0.9**	**2.0**	**3.0**	**3.9**	**5.4**	**8.2**	**4.7**	**4.9**	**81.1**	**-2.0**	**0.9**	**0.7**
Top 10 Avg	0.2	3.3	1.3	0.5	0.2	0.4	0.6	1.0	2.0	3.2	4.2	5.5	8.4	4.9	5.1	82.8	-0.6	2.0	1.9
Bottom 10 Avg	0.1	3.2	0.7	0.2	0.2	0.3	0.5	0.8	1.8	2.8	3.6	5.3	8.0	4.5	4.8	79.6	-3.5	-0.3	-0.3
May Consensus	0.2	3.2	1.2	0.4	0.2	0.4	0.6	0.9	1.8	2.8	3.6	5.3	8.2	4.8	4.9	82.3	-2.0	0.9	0.6
Number of Forecasts Changed From A Month Ago:																			
Down	7	1	35	18	20	28	31	14	4	2	2	3	18	15	9	23	14	16	17
Same	32	40	8	15	19	11	10	21	6	4	5	12	4	7	16	5	15	19	14
Up	9	5	1	6	8	2	1	12	36	42	39	28	14	7	19	5	19	12	17
Diffusion Index	52 %	54 %	11 %	35 %	37 %	18 %	14 %	48 %	85 %	92 %	90 %	79 %	44 %	36 %	61 %	23 %	55 %	46 %	50 %

Third Quarter 2009

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter Short-Term							Intermediate-Term				Long-Term				Avg For Qtr	(Q-Q % Change) (SAAR)		
	1 Federal Funds Rate	2 Prime Bank Rate	3 LIBOR Rate 3-Mo.	4 Com Paper 1-Mo.	5 Treas Bills 3-Mo.	6 Treas Bills 6-Mo.	7 Treas Bills 1-Yr.	8 Treas Notes 2-Yr.	9 Treas Notes 5-Yr.	10 Treas Notes 10-Yr.	11 Treas Bond 30-Yr.	12 Aaa Corp Bond	13 Baa Corp Bond	14 State & Local Bonds	15 Home Mtg Rate	A Fed's Major Currency $ Index	B Real GDP	C GDP Price Index	D Cons Price Index
Moody's Economy.com	0.3 H	3.3 H	1.2	0.2 L	0.3	0.4	0.5	1.1	2.1	3.0	3.7	5.3	7.7	na	4.9	na	0.6	-0.8 L	1.2
ClearView Economics	0.3 H	3.3 H	1.3 H	0.2 L	0.2	0.3 L	0.5	0.9	2.0	3.2	4.1	5.5	8.0	4.6	4.9	82.0	1.7	2.8	5.0 H
Swiss Re	0.3 H	3.3 H	1.0	0.7 H	0.2	0.3 L	0.5	1.1	1.5 L	3.1	4.0	5.5	8.2	na	5.2	na	-0.5	-0.7	-0.5 L
Woodworth Holdings	0.3 H	3.3 H	1.0	0.5	0.2	0.3 L	0.8 H	1.3 H	2.3	3.2	4.2	5.8	8.1	4.6	5.5	81.0	-1.2	1.0	1.4
Russell Investments	0.3 H	3.3 H	1.0	0.4	0.3	0.4	0.6	0.9	2.1	3.1	4.2	5.4	7.8	5.0	4.9	77.8 L	0.2	2.0	1.5
Stone Harbor Investment Partners	0.3 H	3.3 H	0.9	0.4	0.2	0.3 L	0.6	1.1	2.3	3.4	4.3	6.0 H	8.9 H	na	5.9 H	84.0	0.0	1.0	1.2
Moody's Capital Markets	0.3 H	3.3 H	0.6	0.3	0.2	0.3 L	0.6	1.0	2.1	3.2	4.1	5.4	8.1	4.5	4.7	80.9	0.6	1.2	1.6
Bank of Toyko-Mitsubishi UFJ	0.3 H	3.3 H	0.5	0.3	0.2	0.3 L	0.4 L	1.0	2.0	3.3	4.3	4.5	7.9	4.8	5.0	80.0	1.5	2.8	2.2
Scotiabank	0.3 H	3.3 H	na	na	0.3	na	na	0.9	2.0	2.9	3.9	5.2	8.1	3.9 L	4.9	na	1.0	1.0	1.3
PNC Financial Services Corp	0.2	3.3 H	1.3 H	0.4	0.3	0.4	0.6	1.0	1.9	2.7	3.8	5.4	8.4	4.9	4.8	85.0	0.0	1.6	2.1
MacroFin Analytics	0.2	3.3 H	1.1	0.3	0.3	0.4	0.7	1.0	2.0	3.3	4.2	5.3	8.1	4.9	4.8	81.5	0.5	0.7	0.4
RDQ Economics	0.2	3.3 H	0.7	0.3	0.4 H	0.4	0.7	1.0	2.2	3.3	4.3	5.7	8.3	4.9	5.1	80.7	0.3	2.3	1.8
Daiwa Securities America	0.2	3.3 H	1.1	0.6	0.4 H	0.6 H	0.8	1.3 H	2.2	3.2	4.1	5.5	8.3	4.2	4.8	78.0	0.8	1.3	1.5
ING Investment Mgt	0.2	3.3 H	1.0	0.4	0.2	0.3 L	0.5	0.8 L	2.0	3.1	4.0	5.3	8.0	4.7	5.0	81.0	-1.0	0.5	1.0
The Northern Trust Company	0.2	3.3 H	1.0	na	0.3	na	0.6	1.0	na	3.2	na	na	na	na	na	na	-1.9 L	1.8	2.0
Action Economics	0.2	3.3 H	1.0	0.3	0.3	0.5	0.5	1.1	2.3	3.5 H	4.0	5.4	7.8	4.7	4.9	81.3	1.0	2.1	2.8
Woodley Park Research	0.2	3.3 H	0.8	0.3	0.3	0.3 L	0.6	1.0	2.1	3.3	4.1	5.5	7.8	4.6	4.9	na	1.7	0.3	0.2
Wachovia	0.2	3.3 H	0.6	0.3	0.2	0.3 L	0.4 L	1.0	2.1	3.3	4.3	5.5	8.0	4.5	4.9	86.5 H	-0.2	0.3	0.5
Societe Generale	0.2	3.3 H	0.6	na	0.2	0.3 L	na	1.0	2.4 H	3.4	4.2	5.6	8.1	na	5.1	80.0	1.5	1.6	1.1
RBS Securities	0.2	3.3 H	0.5	0.3	0.3	0.5	0.7	1.1	2.1	3.5 H	4.5 H	5.6	8.3	4.6	5.0	80.0	1.1	1.8	2.5
Mesirow Financial	0.2	3.2	1.2	0.4	0.2	0.5	0.8	1.3 H	2.0	3.1	3.9	5.5	8.3	4.6	4.9	82.4	1.5	0.9	2.2
Kellner Economic Advisers	0.2	3.2	1.2	0.4	0.3	0.5	0.7	1.0	1.9	2.9	3.7	5.5	8.2	5.0	5.1	82.0	2.0	2.0	2.3
Thredgold Economic Assoc	0.2	3.2	0.9	0.4	0.2	0.3 L	0.5	0.8 L	2.0	3.0	4.0	5.2	7.9	4.7	4.9	81.0	0.4	1.2	1.3
Cycledata Corp.	0.2	3.2	0.8	0.3	0.2	0.3 L	0.5	0.9	2.1	3.3	4.3	5.5	8.3	4.8	5.0	81.0	0.2	1.3	0.6
The Hummer Investments	0.2	3.2	0.2 L	0.5	0.2	0.4	0.7	1.1	2.3	3.3	4.1	5.5	8.1	4.7	4.9	82.7	0.3	1.2	1.5
Fannie Mae	0.2	3.2	na	na	0.2	na	0.5	na	na	3.2	4.0	5.3	na	na	4.9	na	-0.6	1.1	1.4
DePrince & Associates	0.2	3.2	1.3 H	0.5	0.2	0.4	0.7	1.1	2.2	3.3	4.2	5.4	6.9 L	4.4	5.0	78.8	-0.8	1.7	1.5
SunTrust Banks	0.2	3.2	0.8	0.3	0.2	0.3 L	0.5	1.0	2.1	3.2	4.2	5.4	8.7	4.7	4.6 L	79.6	2.5 H	2.3	2.1
Chmura Economics & Analytics	0.2	3.3 H	1.1	0.4	0.2	0.4	0.7	1.0	2.0	3.1	4.0	5.5	na	na	4.9	79.5	-0.4	1.1	1.7
Barclays Capital	0.2	3.3 H	0.9	0.3	0.2	0.3 L	0.6	0.9	2.0	3.0	4.3	5.4	8.1	4.9	4.9	na	2.0	1.7	3.6
Loomis, Sayles & Company	0.2	3.3 H	0.9	0.2 L	0.2	0.4	0.6	1.0	2.1	3.1	4.1	5.4	7.9	4.7	4.9	82.7	0.5	0.9	1.6
Nomura Securities, Inc.	0.2	3.3 H	0.7	0.2 L	0.2	0.5	0.6	1.1	2.2	3.3	4.1	5.5	8.2	na	5.0	83.0	1.3	0.0	1.6
Banc of America-Merrill Lynch	0.1	3.3 H	1.1	na	na	na	na	0.9	1.8	2.6 L	3.5 L	na	na	na	na	na	0.5	0.9	1.6
Goldman Sachs & Co	0.1	3.3 H	1.1	na	0.3	na	na	1.0	1.9	2.8	3.6	3.9 L	na	na	4.8	na	1.0	0.5	1.2
Standard & Poor's Corp	0.1	3.3 H	1.0	0.3	0.2	0.3 L	0.6	1.1	2.3	3.5	na	5.9	8.7	5.0	5.2	81.0	-0.2	1.0	1.4
UBS	0.1	3.3 H	1.0	na	0.2	na	na	1.3 H	2.4 H	3.0	3.8	na	na	na	na	na	2.0	1.7	3.1
GLC Financial Economics	0.1	3.3 H	0.9	0.3	0.1 L	0.3 L	0.4 L	0.8 L	1.9	3.1	4.1	5.7	8.2	4.7	5.1	79.2	-0.4	2.1	1.4
BMO Capital Markets	0.1	3.3 H	0.8	0.3	0.2	0.3 L	0.5	0.8 L	1.9	3.0	3.9	5.3	7.9	4.5	4.7	81.0	1.3	-0.2	2.1
Comerica Bank	0.1	3.3 H	0.6	0.3	0.2	0.4	0.7	1.0	2.1	3.3	4.1	5.3	7.5	4.6	5.0	79.0	-1.0	0.9	1.0
JPMorgan Privare Wealth Mgt.	0.1	3.1	1.3 H	0.3	0.2	0.3 L	0.5	0.9	2.1	3.3	4.2	5.5	8.0	5.0	4.9	79.3	0.5	0.9	1.2
Wells Capital Management	0.1	3.1	0.9	0.4	0.4 H	0.5	0.8 H	0.9	2.1	3.3	4.2	5.3	7.8	4.4	5.0	81.8	-0.5	2.4	1.9
J W Coons Advisors LLC	0.1	3.1	0.9	0.2 L	0.2	0.3 L	0.4 L	0.8 L	1.9	3.0	4.0	5.2	7.6	na	4.8	85.9	0.4	1.9	2.7
Economist Intelligence Unit	0.1	3.1	0.8	0.3	0.2	0.3	0.5	0.9	2.0	3.2	4.1	na	na	na	4.7	na	1.1	na	0.4
J.P. Morgan Chase	0.1	na	0.8	na	0.2	na	na	0.9	1.9	3.0	3.8	na	na	na	na	na	1.0	1.1	1.3
Nat'l Assn. of Realtors	0.1	3.3 H	1.3 H	0.3	0.2	0.3 L	0.5	1.0	2.1	3.2	4.2	5.5	8.1	5.2 H	5.0	na	0.3	0.9	1.3
Georgia State University	0.1	3.2	na	na	0.2	0.4	0.6	0.9	2.0	3.1	3.9	5.5	8.5	na	5.0	na	-1.7	0.6	0.6
Naroff Economic Advisors	0.0 L	3.3 H	0.7	0.4	0.3	0.5	0.7	1.2	2.1	3.3	4.2	5.2	7.6	4.6	4.9	79.0	1.8	1.2	2.1
Argus Research	0.0 L	3.0 L	1.1	0.3	0.2	0.3	0.6	0.9	2.0	3.3	4.2	5.3	7.8	4.5	4.9	80.8	0.7	3.2 H	3.4
June Consensus	**0.2**	**3.2**	**0.9**	**0.3**	**0.2**	**0.4**	**0.6**	**1.0**	**2.1**	**3.2**	**4.1**	**5.4**	**8.0**	**4.7**	**4.9**	**81.2**	**0.4**	**1.3**	**1.6**
Top 10 Avg	0.2	3.3	1.2	0.5	0.3	0.5	0.7	1.2	2.3	3.4	4.3	5.7	8.5	5.0	5.2	83.6	1.8	2.4	3.0
Bottom 10 Avg.	0.1	3.1	0.6	0.2	0.2	0.3	0.5	0.9	1.9	2.9	3.7	5.0	7.6	4.4	4.7	79.0	-1.1	0.1	0.5
May Consensus	0.2	3.2	1.1	0.4	0.3	0.4	0.6	1.0	1.9	2.9	3.7	5.3	8.1	4.7	4.9	82.6	0.3	1.2	1.4
Number of Forecasts Changed From A Month Ago:																			
Down	3	2	33	20	22	29	23	11	6	2	1	3	16	17	6	23	9	10	10
Same	38	41	10	13	20	11	15	20	9	7	5	12	7	7	15	7	21	23	17
Up	7	3	1	6	5	1	4	16	31	39	40	28	17	9	23	3	18	14	21
Diffusion Index	54 %	51 %	14 %	32 %	32 %	16 %	27 %	55 %	77 %	89 %	92 %	79 %	51 %	38 %	69 %	20 %	59 %	54 %	61 %

AG DR Set 1-213 Attachment A

Fourth Quarter 2009

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg. For --Qtr --	(Q-Q % Change) (SAAR)		
	Short-Term							Intermediate-Term			Long-Term								
	1 Federal Funds Rate	2 Prime Bank Rate	3 LIBOR Rate 3-Mo.	4 Com Paper 1-Mo.	5 Treas Bills 3-Mo.	6 Treas Bills 6-Mo.	7 Treas Bills 1-Yr.	8 Treas Notes 2-Yr	9 Treas Notes 5-Yr.	10 Treas Notes 10-Yr.	11 Treas Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp Bond	14 State & Local Bonds	15 Home Mtg Rate	A Fed's Major Currency $ Index	B Real GDP	C GDP Price Index	D Cons Price Index
ClearView Economics	0.4 H	3.4 H	1.7	0.5	0.4	0.8 H	1.1 H	1.6 H	2.5	3.6	4.4	5.7	8.2	4.7	5.1	83.0	4.7	2.4	3.0
Kellner Economic Advisers	0.3	3.3	1.1	0.4	0.3	0.6	0.7	1.0	2.0	3.2	3.9	5.7	8.3	5.2	5.2	82.0	2.2	2.2	2.5
Wayne Hummer Investments	0.3	3.3	0.3 L	0.4	0.3	0.5	0.8	1.3	2.4	3.4	4.2	5.6	8.0	4.8	5.1	82.4	1.6	1.4	1.8
Societe Generale	0.3	3.3	0.6	na	0.3	0.4	na	1.1	2.6	3.6	4.3	5.7	8.2	na	5.3	83.0	1.8	1.4	1.1
Moody's Economy.com	0.3	3.3	1.1	0.3	0.3	0.4	0.6	1.1	2.1	3.1	3.8	5.5	7.8	na	5.0	na	0.3	1.0	1.0
Swiss Re	0.3	3.3	1.0	0.6	0.2	0.3 L	0.5	1.1	1.5 L	3.0	4.0	5.5	8.2	na	5.1	na	1.5	0.5	0.7
Russell Investments	0.3	3.3	1.0	0.4	0.3	0.4	0.6	0.9	2.1	3.1	4.2	5.4	7.8	5.0	4.9	77.8	0.2	2.0	1.5
Woodworth Holdings	0.3	3.3	0.9	0.5	0.3	0.4	0.9	1.4	2.4	3.3	4.3	5.7	7.8	4.5	5.6	83.0	-0.3	1.3	1.7
Stone Harbor Investment Partners	0.3	3.3	0.9	0.4	0.2	0.4	0.7	1.3	2.5	3.5	4.5	5.5	8.1	na	5.9 H	85.0	0.9	2.0	1.7
Moody's Capital Markets	0.3	3.3	0.6	0.3	0.2	0.3 L	0.8	1.3	2.3	3.3	4.2	5.4	8.0	4.5	4.8	80.9	1.8	1.5	1.5
Bank of Toyko-Mitsubishi UFJ	0.3	3.3	0.5	0.3	0.2	0.3 L	0.4 L	1.3	2.3	3.6	4.6	4.8	7.6	4.7	5.4	81.0	2.7	2.7	2.0
Scotiabank	0.3	3.3	na	na	0.3	na	na	1.1	2.3	3.0	4.0	5.2	7.9	4.0 L	4.9	na	1.5	1.0	1.5
DePrince & Assoc.	0.2	3.2	1.9 H	0.6	0.3	0.4	0.8	1.2	2.4	3.4	4.2	5.4	6.4 L	4.3	5.1	79.5	1.5	1.7	1.6
RBS Securities	0.2	3.3	0.6	0.3	0.4	0.6	0.9	1.3	2.4	3.8	4.9 H	5.7	8.3	4.6	5.2	82.0	2.2	1.8	1.9
PNC Financial Services Corp	0.2	3.3	1.3	0.4	0.3	0.4	0.6	1.0	1.9	2.7	3.8	5.3	8.3	4.9	4.8	87.0	1.0	1.6	2.1
MacroFin Analytics	0.2	3.3	1.2	0.4	0.3	0.5	0.9	1.2	2.1	3.3	4.2	5.2	8.0	4.9	4.7	82.0	1.0	0.6	0.4
RDQ Economics	0.2	3.3	0.7	0.3	0.5 H	0.6	0.9	1.1	2.5	3.8	4.8	6.1	8.5	5.1	5.6	80.6	1.0	2.5	2.0
Daiwa Securities America	0.2	3.3	1.1	0.7 H	0.5 H	0.7	0.9	1.6 H	2.3	3.3	4.2	5.5	8.4	4.0 L	4.8	76.0 L	2.4	1.2	1.4
ING Investment Mgt.	0.2	3.3	1.0	0.4	0.2	0.4	0.5	0.9	2.1	3.2	4.1	5.4	7.8	4.6	5.0	80.0	3.0	1.0	1.2
The Northern Trust Company	0.2	3.3	0.9	na	0.3	na	0.6	1.0	na	3.3	na	na	na	na	na	na	2.5	2.0	2.2
Action Economics	0.2	3.3	0.9	0.3	0.4	0.5	0.6	1.2	2.4	3.6	4.0	5.2	7.1	4.4	4.8	81.0	2.0	2.0	1.7
Woodley Park Research	0.2	3.3	0.8	0.4	0.4	0.4	0.7	1.2	2.1	3.2	3.9	5.4	7.6	4.5	5.0	na	2.2	0.8	1.5
Wachovia	0.2	3.3	0.5	0.3	0.3	0.4	0.5	1.2	2.3	3.4	4.3	5.6	8.1	4.5	5.0	89.0 H	1.7	0.6	1.0
Mesirow Financial	0.2	3.2	1.2	0.4	0.2	0.5	0.8	1.4	2.1	3.1	3.9	5.4	8.1	4.5	4.9	82.9	2.6	-0.1	[illegible]
J.W. Coons Advisors LLC	0.2	3.2	1.1	0.4	0.3	0.4	0.6	1.0	2.1	3.1	4.0	5.3	7.6	na	4.9	86.4	1.7	2.1	[illegible]
Thredgold Economic Assoc.	0.2	3.2	0.9	0.4	0.2	0.4	0.6	0.9	2.0	3.1	4.1	5.2	7.9	4.7	4.9	81.0	1.5	1.4	1.5
Cycledata Corp.	0.2	3.2	0.8	0.3	0.2	0.4	0.6	1.0	2.2	3.4	4.4	5.6	8.4	4.8	5.0	80.0	1.5	1.5	1.6
Fannie Mae	0.2	3.2	na	na	0.2	na	0.7	na	na	3.3	4.1	5.4	na	na	5.0	na	1.7	1.2	1.5
SunTrust Banks	0.2	3.2	0.9	0.4	0.3	0.4	0.6	1.0	2.1	3.2	4.3	5.5	8.8	4.7	4.5 L	80.5	3.0	3.3 H	2.9
Barclays Capital	0.2	3.3	1.0	0.3	0.3	0.4	0.6	1.0	2.3	3.5	4.3	5.4	8.1	5.0	5.1	na	3.0	1.8	2.1
Chmura Economics & Analytics	0.2	3.3	0.8	0.3	0.2	0.4	0.7	1.0	2.0	3.1	4.0	5.5	na	na	4.7	78.4	-0.3	0.4	1.1
Nomura Securities, Inc	0.2	3.3	0.6	0.2 L	0.3	0.5	0.6	1.2	2.3	3.4	4.2	5.5	7.9	na	5.0	83.5	1.6	0.2	1.3
Loomis, Sayles & Company	0.2	3.2	0.8	0.2 L	0.2	0.4	0.6	1.1	2.4	3.4	4.4	5.4	7.8	5.0	5.1	82.7	1.9	-0.2 L	1.6
Standard & Poor's Corp.	0.1	3.3	1.1	0.5	0.3	0.4	0.6	1.3	2.7 H	3.9 H	na	6.2 H	8.9 H	5.4 H	5.6	81.1	0.8	0.8	1.6
Banc of America-Merrill Lynch	0.1	3.3	1.1	na	na	na	na	0.8 L	1.6	2.4 L	3.3 L	na	na	na	na	na	1.5	0.0	3.1
UBS	0.1	3.3	1.0	na	0.3	na	na	1.6	2.5	3.1	3.8	na	na	na	na	na	2.5	1.2	0.3 L
Goldman Sachs & Co	0.1	3.3	1.0	na	0.4	na	na	1.0	2.0	2.9	3.7	4.0 L	na	na	4.9	na	1.0	1.5	0.6
GLC Financial Economics	0.1	3.3	0.9	0.3	0.1 L	0.3 L	0.5	0.9	1.9	3.0	4.0	5.7	8.5	4.6	4.9	79.1	2.3	1.9	2.1
BMO Capital Markets	0.1	3.3	0.7	0.3	0.2	0.5	0.8	1.1	2.1	3.0	3.9	5.3	7.8	4.5	4.7	80.0	1.7	0.8	0.9
Comerica Bank	0.1	3.3	0.6	0.3	0.3	0.4	0.8	1.2	2.2	3.4	4.1	5.2	6.9	4.4	5.1	81.0	2.0	1.0	1.1
JPMorgan Privare Wealth Mgt	0.1	3.1	1.3	0.3	0.2	0.3 L	0.5	0.9	2.1	3.3	4.2	5.5	8.1	5.0	5.0	79.2	1.5	1.2	1.4
Wells Capital Management	0.1	3.1	1.0	0.5	0.5 H	0.6	0.8	1.0	2.3	3.3	4.3	5.4	7.8	4.2	5.0	82.3	0.9	2.5	2.1
Economist Intelligence Unit	0.1	3.1	0.8	0.3	0.2	0.3 L	0.5	0.9	2.0	3.4	4.2	na	na	na	4.7	na	0.9	na	0.8
J.P. Morgan Chase	0.1	na	0.8	na	0.2	na	na	0.9	1.9	2.8	3.6	na	na	na	na	na	2.0	0.9	1.1
Nat'l Assn. of Realtors	0.1	3.3	1.3	0.3	0.2	0.4	0.7	1.2	2.2	3.2	4.2	5.5	8.0	5.2	5.0	na	0.8	1.0	1.3
Georgia State University	*0.1*	3.2	*na*	*na*	0.3	*0.4*	*0.6*	*1.0*	*2.0*	*3.2*	*4.0*	5.5	8.5	*na*	5.1	*na*	-1.0 L	0.6	0.6
Naroff Economic Advisors	0.0 L	3.3	0.8	0.6	0.4	0.6	0.9	1.4	2.2	3.5	4.3	4.7	6.6	4.5	5.0	76.5	5.8 H	1.4	2.0
Argus Research	0.0 L	3.0 L	1.2	0.4	0.3	0.4	0.7	0.9	2.1	3.5	4.4	5.2	7.6	4.5	4.9	81.0	0.9	3.1	2.8
June Consensus	**0.2**	**3.2**	**0.9**	**0.4**	**0.3**	**0.4**	**0.7**	**1.1**	**2.2**	**3.3**	**4.1**	**5.4**	**7.9**	**4.7**	**5.0**	**81.5**	**1.7**	**1.4**	**1.6**
Top 10 Avg	0.3	3.3	1.3	0.5	0.4	0.6	0.9	1.4	2.5	3.6	4.5	5.8	8.5	5.1	5.4	84.5	3.2	2.5	2.6
Bottom 10 Avg.	0.1	3.2	0.6	0.3	0.2	0.3	0.5	0.9	1.9	2.9	3.8	5.0	7.3	4.3	4.7	78.7	0.3	0.3	0.7
May Consensus	0.2	3.2	1.1	0.4	0.3	0.5	0.7	1.1	2.1	3.0	3.8	5.3	7.9	4.7	4.9	82.5	1.6	1.3	1.6
Number of Forecasts Changed From A Month Ago:																			
Down	5	3	30	18	20	25	24	14	6	1	1	10	12	12	6	21	13	9	[illegible]
Same	36	38	11	15	21	13	14	21	12	10	6	11	7	7	16	7	17	22	19
Up	7	5	3	6	6	3	4	12	28	37	39	22	21	14	22	5	18	16	15
Diffusion Index	52 %	52 %	19 %	35 %	35 %	23 %	26 %	48 %	74 %	88 %	91 %	64 %	61 %	53 %	68 %	26 %	55 %	57 %	51 %

AG DR Set 1-213 Attachment A

First Quarter 2010

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg For Qtr	(Q-Q % Change) (SAAR)		
	Short-Term							Intermediate-Term			Long-Term								
	1 Federal Funds Rate	2 Prime Bank Rate	3 LIBOR Rate 3-Mo.	4 Com Paper 1-Mo.	5 Treas Bills 3-Mo.	6 Treas Bills 6-Mo.	7 Treas Bills 1-Yr.	8 Treas Notes 2-Yr.	9 Treas Notes 5-Yr.	10 Treas Notes 10-Yr.	11 Treas Bond 30-Yr.	12 Aaa Corp Bond	13 Baa Corp Bond	14 State & Local Bonds	15 Home Mtg. Rate	A. Fed's Major Currency $ Index	B Real GDP	C GDP Price Index	D Cons Price Index
ClearView Economics	1.0 H	4.0 H	2.2 H	1.0 H	0.9 H	1.3 H	1.6 H	2.1 H	2.9	3.8	4.6	5.9	8.4	4.8	5.4	82.0	4.1 H	2.5	3.0
Argus Research	0.8	3.8	1.4	0.6	0.6	0.5	0.9	1.0	2.1	3.5	4.4	5.1	7.5	4.4	4.9	81.5	1.3	3.2	3.3
J.W. Coons Advisors LLC	0.7	3.7	1.6	0.8	0.7	0.9	1.1	1.5	2.5	3.5	4.3	5.5	7.7	na	5.2	84.7	2.7	2.0	2.9
Thredgold Economic Assoc	0.5	3.5	1.2	0.7	0.6	0.8	1.1	1.3	2.4	3.4	4.3	5.3	7.9	4.9	5.1	81.5	2.0	1.6	1.7
Daiwa Securities America	0.5	3.5	1.2	0.7	0.6	0.8	1.0	2.1 H	2.8	3.6	4.4	5.7	8.6	4.0 L	4.9	76.0	2.9	1.1	1.3
Woodworth Holdings	0.5	3.5	1.0	0.8	0.6	0.7	1.2	1.7	2.7	3.6	4.6	5.8	7.8	4.5	5.8	85.0	1.9	1.4	1.7
SunTrust Banks	0.5	3.5	1.0	0.4	0.4	0.5	0.6	1.3	2.4	3.5	4.6	5.8	9.1	5.0	4.3 L	81.0	3.5	3.4 H	4.0 H
DePrince & Assoc	0.4	3.4	1.6	0.6	0.5	0.6	1.0	1.4	2.6	3.5	4.3	5.4	6.3	4.3	5.2	80.2	2.1	1.8	1.8
Kellner Economic Advisers	0.4	3.4	1.1	0.6	0.4	0.7	0.8	1.2	2.1	3.4	4.1	5.9	8.5	5.3	5.3	82.0	2.3	2.5	2.7
Cycledata Corp	0.4	3.4	1.0	0.5	0.5	0.7	1.0	1.4	2.5	3.7	4.7	5.9	8.7	4.9	5.3	80.0	2.0	1.7	2.2
Wayne Hummer Investments	0.4	3.4	0.4 L	0.6	0.4	0.6	0.8	1.5	2.5	3.5	4.3	5.7	8.1	4.8	5.1	82.0	1.8	1.6	1.8
Societe Generale	0.3	3.3	0.5	na	0.3	0.5	na	1.1	2.9	3.6	4.3	5.8	8.2	na	5.3	87.0	2.5	1.1	1.1
Moody's Economy.com	0.3	3.3	1.1	0.4	0.2	0.6	0.7	1.6	2.1	3.7	4.4	6.0	7.9	na	5.4	na	1.5	-0.4 L	2.2
Naroff Economic Advisors	0.3	3.5	1.0	0.7	0.6	0.9	1.2	1.6	2.5	3.7	4.5	4.9	5.7 L	4.6	5.1	73.0 L	3.2	1.7	1.9
Swiss Re	0.3	3.3	0.9	0.6	0.2 L	0.3	0.5	1.1	1.6	3.1	4.0	5.4	8.1	na	5.1	na	1.6	1.1	1.1
Action Economics	0.3	3.3	0.9	0.3	0.4	0.6	1.1	1.6	2.8	3.9	4.3	5.0	6.4	4.4	4.9	81.0	2.3	2.2	1.5
RBS Securities	0.3	3.3	0.8	0.3	0.6	0.9	1.3	1.9	3.1 H	4.2	5.2	5.8	8.4	4.8	5.6	85.0	2.9	2.8	2.3
Stone Harbor Investment Partners	0.3	3.3	0.8	0.5	0.2 L	0.4	0.8	1.4	2.6	3.7	4.6	5.3	7.7	na	5.9	82.0	1.6	0.9	2.0
Moody's Capital Markets	0.3	3.3	0.7	0.3	0.2 L	0.4	0.9	1.3	2.3	3.3	4.2	5.4	7.8	4.4	4.8	81.0	2.3	1.5	2.1
Russell Investments	0.3	3.3	0.6	0.3	0.3	0.6	0.8	1.3	2.5	3.5	4.6	5.4	7.4	5.1	5.1	76.3	2.0	2.0	2.0
Bank of Toyko-Mitsubishi UFJ	0.3	3.3	0.5	0.3	0.2 L	0.3 L	0.4 L	1.7	2.7	3.8	4.7	5.0	7.3	4.6	5.6	83.0	2.9	2.8	2.3
Scotiabank	0.3	3.3	na	na	0.3	na	na	1.2	2.5	3.2	4.1	5.3	7.8	4.1	5.1	na	2.0	1.5	1.5
MacroFin Analytics	0.2	3.3	1.3	0.6	0.4	0.7	1.1	1.4	2.2	3.4	4.2	5.1	7.8	4.8	4.7	82.0	2.0	1.0	0.8
Financial Services Corp	0.2	3.3	1.3	0.4	0.3	0.4	0.6	1.0	1.9	2.7	3.9	5.2	8.1	4.9	4.8	88.0	2.0	3.0	2.2
Q Economics	0.2	3.3	0.7	0.3	0.5	0.8	1.0	1.2	2.8	4.3 H	5.3 H	6.5	8.8	5.7	6.0 H	80.1	1.1	2.6	2.2
ING Investment Mgt	0.2	3.3	1.0	0.4	0.2 L	0.4	0.6	1.2	2.3	3.2	4.2	5.4	7.8	4.7	5.5	80.0	2.0	1.0	1.5
Woodley Park Research	0.2	3.3	0.8	0.3	0.4	0.5	0.8	1.3	2.1	3.2	3.8	5.3	7.6	4.5	5.1	na	2.3	1.2	1.9
Wachovia	0.2	3.3	0.5	0.3	0.3	0.4	0.5	0.1 L	2.4	3.4	4.3	5.6	8.1	4.5	5.0	89.8 H	1.9	1.1	1.1
Mesirow Financial	0.2	3.2	1.1	0.4	0.3	0.5	0.9	1.5	2.2	3.2	4.0	5.4	8.0	4.6	4.9	82.5	3.5	0.2	-0.5 L
Fannie Mae	0.2	3.2	na	na	0.3	na	1.0	na	na	3.4	4.2	5.3	na	na	5.0	na	1.9	1.5	1.6
Barclays Capital	0.2	3.3	1.0	0.3	0.3	0.4	0.6	1.3	2.9	4.3 H	5.0	5.4	8.1	5.0	5.2	na	3.0	1.7	2.2
Chmura Economics & Analytics	0.2	3.3	0.8	0.3	0.2 L	0.4	0.8	1.0	2.1	3.1	4.0	5.5	na	na	4.6	79.2	1.7	1.8	1.5
Nomura Securities, Inc	0.2	3.3	0.6	0.2 L	0.3	0.5	0.7	1.5	2.4	3.5	4.3	5.6	7.6	na	5.1	83.0	2.1	0.9	0.6
Loomis, Sayles & Company	0.2	3.2	0.7	0.2 L	0.2 L	0.4	0.7	1.4	2.6	3.5	4.5	5.2	7.2	5.0	5.2	82.7	2.3	0.5	1.6
Wells Capital Management	0.1 L	3.2	0.9	0.6	0.6	0.6	0.8	1.1	2.4	3.5	4.4	5.5	7.8	4.2	5.2	82.4	2.0	2.3	2.1
Standard & Poor's Corp	0.1 L	3.3	1.2	0.5	0.4	0.5	0.7	1.4	3.0	4.3 H	na	6.6 H	9.3 H	5.7 H	6.0 H	81.2	1.2	0.8	1.4
Goldman Sachs & Co	0.1 L	3.3	1.0	na	0.5	na	na	1.0	2.1	3.0	3.7	4.1 L	na	na	5.0	na	1.5	1.0	0.4
UBS	0.1 L	3.3	1.0	na	0.4	na	na	2.0	2.7	3.4	4.0	na	na	na	na	na	2.6	1.6	0.9
GLC Financial Economics	0.1 L	3.3	0.9	0.4	0.2 L	0.4	0.5	0.9	1.8	2.8	3.7	5.5	8.5	4.4	4.8	79.0	1.3	1.7	3.0
Banc of America-Merrill Lynch	0.1 L	3.3	0.9	na	na	na	na	0.7 L	1.5 L	2.3 L	3.1 L	na	na	na	na	na	3.0	0.5	1.9
BMO Capital Markets	0.1 L	3.3	0.8	0.4	0.2 L	0.7	1.0	1.5	2.4	3.2	4.1	5.4	7.8	4.6	4.9	79.5	2.5	1.2	1.5
Comerica Bank	0.1 L	3.3	0.7	0.3	0.4	0.7	1.0	1.4	2.5	3.7	4.3	5.3	6.8	4.4	5.4	82.0	4.0	2.0	1.2
JPMorgan Privare Wealth Mgt.	0.1 L	3.1 L	1.3	0.3	0.2 L	0.3 L	0.5	0.9	2.1	3.3	4.2	5.5	8.1	5.0	5.0	79.0	2.0	1.2	1.7
Economist Intelligence Unit	0.1 L	3.1 L	1.1	0.4	0.2 L	0.4	0.5	1.0	2.0	3.4	4.3	na	na	na	4.9	na	1.2	na	0.8
J.P. Morgan Chase	0.1 L	na	0.8	na	0.2 L	na	na	0.9	1.9	2.9	3.7	na	na	na	na	na	3.0	0.8	0.9
Nat'l Assn. of Realtors	0.1 L	3.3	1.4	0.4	0.4	0.7	1.0	1.5	2.2	3.3	4.2	5.5	8.0	5.3	5.2	na	1.4	1.1	1.5
Georgia State University	0.1 L	3.2	na	na	0.3	0.4	0.6	1.1	2.3	3.5	4.2	5.7	8.7	na	5.3	na	-0.2 L	1.6	1.0
June Consensus	**0.3**	**3.3**	**1.0**	**0.5**	**0.4**	**0.6**	**0.8**	**1.3**	**2.4**	**3.4**	**4.3**	**5.5**	**7.9**	**4.7**	**5.2**	**81.6**	**2.2**	**1.6**	**1.7**
Top 10 Avg.	0.6	3.6	1.4	0.7	0.6	0.8	1.2	1.8	2.8	4.0	4.8	6.0	8.7	5.2	5.7	85.1	3.3	2.7	2.8
Bottom 10 Avg.	0.1	3.2	0.6	0.3	0.2	0.4	0.5	0.9	1.9	2.9	3.8	5.0	7.0	4.3	4.7	78.2	1.2	0.6	0.7
May Consensus	0.3	3.3	1.2	0.5	0.4	0.6	0.9	1.3	2.2	3.2	4.0	5.4	7.9	4.8	5.1	82.3	2.1	1.6	1.8
mber of Forecasts Changed From A Month Ago:																			
Down	9	7	29	18	20	26	24	13	5	2	2	10	16	13	7	18	14	11	20
Same	35	34	12	16	19	11	12	20	15	11	8	10	6	6	15	9	17	25	21
Up	3	4	2	5	7	4	5	13	26	34	36	23	18	14	22	6	16	10	6
Diffusion Index	44 %	47 %	19 %	33 %	36 %	23 %	27 %	50 %	73 %	84 %	87 %	65 %	53 %	52 %	67 %	32 %	52 %	49 %	35 %

Second Quarter 2010

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg. For --Qtr --	(Q-Q % Change) (SAAR)		
	Short-Term							Intermediate-Term			Long-Term								
	1 Federal Funds Rate	2 Prime Bank Rate	3 LIBOR Rate 3-Mo.	4 Com Paper 1-Mo.	5 Treas Bills 3-Mo.	6 Treas Bills 6-Mo.	7 Treas Bills 1-Yr.	8 Treas Notes 2-Yr.	9 Treas Notes 5-Yr.	10 Treas Notes 10-Yr.	11 Treas Bond 30-Yr.	12 Aaa Corp Bond	13 Baa Corp Bond	14 State & Local Bonds	15 Home Mtg. Rate	A Fed's Major Currency $ Index	B. Real GDP	C GDP Price Index	D Cons Price Index
ClearView Economics	1.3 H	4.3 H	2.6 H	1.3	1.3	1.6	1.9	2.3	3.1	4.0	4.7	6.1	8.5	4.9	5.6	80.0	4.3	2.5	3.0
Cycledata Corp.	1.3	4.3 H	1.9	1.4	1.5	1.7	2.0	2.3	3.3	4.5	5.5	6.5	9.2	5.0	6.0	80.0	2.1	2.0	2.5
Naroff Economic Advisors	1.3	4.3 H	1.9	1.7 H	1.7 H	1.9 H	2.2 H	2.6 H	3.3	4.0	4.9	5.0	5.9 L	4.7	5.6	74.5 L	2.2	2.0	2.2
J W Coons Advisors LLC	1.2	4.2	2.1	1.3	1.2	1.4	1.6	1.9	2.9	3.7	4.5	5.7	7.8	na	5.5	78.0	2.3	1.2	2.8
ING Investment Mgt	1.0	4.0	2.0	1.5	0.8	1.0	1.2	1.5	2.5	3.5	4.2	5.5	8.0	4.8	5.5	79.0	2.0	1.2	1.5
Daiwa Securities America	1.0	4.0	1.6	1.2	1.1	1.3	1.4	2.6 H	3.2	3.9	4.8	6.0	8.8	4.0 L	5.0	75.0	3.3	1.0	1.2
Argus Research	1.0	4.0	1.5	0.9	1.0	0.7	1.0	1.1	2.2	3.8	4.5	5.2	7.4	4.5	4.9	81.7	2.3	3.5 H	3.1
SunTrust Banks	1.0	4.0	1.4	0.9	0.8	0.9	1.0	1.9	3.0	4.1	5.2	6.4	9.4	5.6	4.3 L	81.6	3.5	3.5 H	4.1 H
Thredgold Economic Assoc	0.8	3.8	1.5	1.0	0.9	1.1	1.4	1.8	2.8	3.7	4.5	5.5	8.0	5.0	5.4	81.5	2.2	1.8	1.9
Bank of Toyko-Mitsubishi UFJ	0.8	3.8	1.5	0.8	0.7	0.8	0.9	1.9	2.9	4.0	4.8	5.2	7.0	4.5	5.8	85.0	2.8	2.9	2.0
Action Economics	0.8	3.8	1.3	0.8	0.9	1.1	1.5	2.0	3.1	4.1	4.5	5.1	6.3	4.5	4.9	81.0	2.8	1.9	1.5
Woodworth Holdings	0.8	3.8	1.2	1.0	0.8	0.9	1.4	1.9	2.9	3.8	4.8	5.9	7.8	4.5	6.1	87.0	3.3	1.5	1.8
Kellner Economic Advisers	0.7	3.7	1.4	0.8	0.8	0.9	1.0	1.4	2.3	3.6	4.3	6.2	8.7	5.4	5.4	82.0	2.4	2.7	2.9
DePrince & Associates	0.7	3.7	1.5	0.9	0.7	0.9	1.3	1.7	2.8	3.6	4.3	5.5	6.3	4.4	5.4	80.7	2.4	1.9	2.0
Wayne Hummer Investments	0.6	3.6	0.6	0.8	0.6	0.8	1.0	1.7	2.7	3.6	4.4	5.8	8.2	4.9	5.2	81.9	2.3	1.6	2.0
MacroFin Analytics	0.5	3.8	1.5	0.7	0.7	1.0	1.2	1.5	2.4	3.4	4.3	5.0	7.7	4.8	4.8	82.1	2.2	1.3	1.0
Nat'l Assn. of Realtors	0.5	3.5	1.5	0.7	0.9	1.1	1.3	1.8	2.3	3.3	4.3	5.6	8.0	5.4	5.3	na	2.6	1.3	1.9
Moody's Capital Markets	0.5	3.5	1.0	0.6	0.6	0.8	1.1	1.4	2.5	3.4	4.2	5.4	7.5	4.4	5.0	81.2	2.6	1.7	2.1
Stone Harbor Investment Partners	0.5	3.5	1.0	0.7	0.4	0.7	1.0	1.8	2.7	4.0	4.9	5.3	7.5	na	6.0	79.0	3.5	2.1	2.4
Comerica Bank	0.4	3.4	1.1	0.5	0.5	0.8	1.2	1.6	2.7	3.9	4.5	5.4	6.7	4.3	5.6	84.0	6.0 H	1.1	1.2
Wells Capital Management	0.4	3.4	1.1	0.9	0.9	0.9	1.1	1.4	2.7	3.8	4.7	5.8	8.0	4.4	5.4	82.6	2.5	2.6	2.3
BMO Capital Markets	0.3	3.3	0.9	0.6	0.4	1.0	1.3	1.9	2.7	3.4	4.3	5.6	7.9	4.7	5.1	79.0	2.8	1.6	2.1
UBS	0.3	3.3	1.1	na	0.6	na	na	2.5	3.1	3.6	4.2	na	na	na	na	na	2.6	1.6	0.2
Societe Generale	0.3	3.3	0.5 L	na	0.3	0.6	na	1.3	3.1	3.7	4.4	5.8	8.1	na	5.5	88.0	3.0	0.8	1[illegible]
RBS Securities	0.3	3.3	1.1	0.6	0.8	1.2	1.7	2.5	3.5 H	4.5	5.4	5.8	8.1	5.0	6.0	88.0	3.6	2.0	2[illegible]
Moody's Economy.com	0.3	3.3	1.1	0.4	0.2 L	0.5	0.7	1.8	2.6	4.3	5.0	6.3	7.9	na	6.0	na	2.4	0.7	2.3
Economist Intelligence Unit	0.3	3.3	1.4	0.6	0.4	0.6	0.8	1.3	2.3	3.6	4.4	na	na	na	4.9	na	1.4	na	0.8
Swiss Re	0.3	3.3	0.9	0.7	0.2 L	0.3 L	0.5 L	1.2	1.6	3.2	4.0	5.4	7.9	na	5.2	na	2.2	1.4	1.6
Russell Investments	0.3	3.3	0.6	0.3	0.4	0.7	0.9	1.5	2.7	3.6	4.7	5.4	7.2	5.1	5.1	75.8	2.4	2.0	2.0
Scotiabank	0.3	3.3	na	na	0.4	na	na	1.5	2.8	3.5	4.2	5.5	7.8	4.2	5.3	na	2.5	1.5	1.5
PNC Financial Services Corp	0.2	3.3	1.4	0.5	0.4	0.5	0.7	1.1	2.0	2.8	4.0	5.3	8.0	5.0	4.8	87.0	2.5	1.8	2.4
RDQ Economics	0.2	3.3	0.7	0.3	0.5	0.9	1.1	1.3	3.0	4.6 H	5.6 H	6.7	8.9	6.0 H	6.3 H	79.6	1.7	2.6	2.4
Wachovia	0.2	3.3	0.6	0.3	0.3	0.4	0.5 L	1.4	2.5	3.5	4.4	5.6	8.1	4.6	5.1	88.7 H	2.6	1.2	1.3
Mesirow Financial	0.2	3.2	1.1	0.4	0.3	0.6	1.0	1.5	2.3	3.2	4.1	5.3	7.8	4.6	4.9	81.6	3.9	-0.6 L	-0.7 L
Woodley Park Research	0.2	3.2	0.8	0.4	0.5	0.5	0.9	1.3	2.1	3.1	3.7	5.3	7.5	4.4	5.1	na	3.5	1.3	2.5
Fannie Mae	0.2	3.2	na	na	0.3	na	1.3	na	na	3.5	4.3	5.2	na	na	5.1	na	2.1	1.6	1.8
GLC Financial Economics	0.2	3.3	1.0	0.4	0.3	0.5	0.6	1.0	1.7	2.7	3.5	5.2	8.2	4.2	4.5	78.6	1.8	1.5	2.1
Barclays Capital	0.2	3.3	1.0	0.3	0.3	0.4	0.6	1.3	2.9	4.3	5.0	5.4	8.1	5.0	5.2	na	3.5	1.4	-0.3
Chmura Economics & Analytics	0.2	3.3	0.8	0.3	0.2 L	0.4	0.8	1.1	2.1	3.2	4.0	5.5	na	na	4.6	76.2	2.0	1.0	2.4
Nomura Securities, Inc	0.2	3.3	0.5 L	0.2 L	0.3	0.5	0.7	1.6	2.5	3.5	4.3	5.5	7.5	na	5.1	82.0	2.6	0.4	0.6
Loomis, Sayles & Company	0.2	3.2	0.7	0.3	0.2 L	0.4	0.8	1.5	2.8	3.5	4.6	5.0	6.7	4.6	5.2	82.7	2.5	-0.4	1.4
Standard & Poor's Corp	0.1 L	3.3	1.2	0.5	0.5	0.6	0.8	1.6	3.2	4.6 H	na	6.9 H	9.6 H	6.0 H	6.3 H	80.4	2.8	1.0	1.9
Goldman Sachs & Co.	0.1 L	3.3	1.0	na	0.5	na	na	1.1	2.2	3.0	3.7	4.1 L	na	na	5.0	na	1.5	0.2	0.2
Banc of America-Merrill Lynch	0.1 L	3.3	0.9	na	na	na	na	0.6 L	1.4 L	2.2 L	3.0 L	na	na	na	na	na	2.3	0.0	-0.1
JPMorgan Privare Wealth Mgt	0.1 L	3.1 L	1.3	0.4	0.3	0.4	0.6	1.0	2.2	3.3	4.3	5.6	8.1	5.1	5.1	78.0	2.2	1.4	1.7
Georgia State University	0.1 L	3.2	na	na	0.3	0.4	0.6	1.2	2.5	3.7	4.4	5.9	8.9	na	5.5	na	0.9 L	1.4	1.2
June Consensus	**0.5**	**3.5**	**1.2**	**0.7**	**0.6**	**0.8**	**1.1**	**1.6**	**2.6**	**3.6**	**4.4**	**5.6**	**7.9**	**4.8**	**5.3**	**81.3**	**2.6**	**1.5**	**1.7**
Top 10 Avg.	1.1	4.1	1.8	1.2	1.1	1.3	1.6	2.3	3.2	4.3	5.1	6.3	8.8	5.4	6.0	85.5	3.8	2.6	2.8
Bottom 10 Avg.	0.1	3.2	0.7	0.3	0.2	0.4	0.6	1.0	2.0	3.0	3.8	5.0	6.8	4.3	4.7	77.3	1.8	0.4	0.4
May Consensus	0.5	3.6	1.4	0.8	0.7	0.9	1.1	1.6	2.5	3.4	4.2	5.5	7.9	4.8	5.2	81.8	2.6	1.6	1.9
Number of Forecasts Changed From A Month Ago:																			
Down	13	11	22	21	18	24	23	10	5	2	4	11	16	12	8	17	13	15	2[illegible]
Same	29	30	18	12	20	11	13	22	18	15	9	14	8	8	17	8	16	19	20
Up	4	4	2	6	7	6	5	13	22	29	32	18	15	12	19	6	17	11	5
Diffusion Index	40 %	42 %	26 %	31 %	38 %	28 %	28 %	53 %	69 %	79 %	81 %	58 %	49 %	50 %	63 %	32 %	54 %	46 %	33 %

Third Quarter 2010

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term							Intermediate-Term			Long-Term					Avg For --Qtr--	(Q-Q % Change) (SAAR)		
	1 Federal Funds Rate	2 Prime Bank Rate	3 LIBOR Rate 3-Mo.	4 Com Paper 1-Mo.	5 Treas Bills 3-Mo.	6 Treas Bills 6-Mo.	7 Treas Bills 1-Yr.	8 Treas Notes 2-Yr.	9 Treas Notes 5-Yr.	10 Treas Notes 10-Yr.	11 Treas Bond 30-Yr.	12 Aaa Corp Bond	13 Baa Corp Bond	14 State & Local Bonds	15 Home Mtg Rate	A. Fed's Major Currency $ Index	B Real GDP	C GDP Price Index	D Cons Price Index
Naroff Economic Advisors	2.5 H	5.5 H	3.1	2.8 H	2.8 H	3.0 H	3.0 H	3.4 H	4.1	4.9	5.7	5.1	6.0 L	5.2	6.5	76.0	2.4	2.2	2.6
ClearView Economics	2.2	5.2	3.4 H	2.1	2.0	2.3	2.5	2.9	3.5	4.3	4.9	6.3	8.9	5.1	6.0	78.0	3.8	2.9	3.6
Cycledata Corp	2.0	5.0	2.6	2.1	2.0	2.2	2.5	2.8	3.8	5.0 H	6.0 H	7.0	9.7	5.4	6.5	79.0	2.1	2.3	2.8
SunTrust Banks	1.8	4.8	1.9	1.3	1.2	1.3	1.4	2.5	3.6	4.7	5.8	7.0	10.0 H	6.2	4.5 L	81.8	3.7	3.7 H	4.2 H
J W Coons Advisors LLC	1.7	4.7	2.6	1.7	1.6	1.8	2.0	2.4	3.3	4.0	4.7	5.9	7.9	na	5.8	76.5	2.4	2.0	2.8
Daiwa Securities America	1.5	4.5	2.0	1.6	1.6	1.8	1.9	3.1	3.6	4.3	5.2	6.3	9.0	4.1 L	5.1	74.0 L	3.3	1.0	1.2
Nat'l Assn of Realtors	1.5	4.5	1.9	1.7	1.6	1.8	1.9	2.1	2.4	3.3	4.3	5.7	8.0	5.5	5.5	na	2.5	1.8	2.3
RBS Securities	1.3	4.3	2.4	1.7	1.7	2.3	2.8	3.0	4.3 H	4.8	5.5	6.0	8.0	5.2	6.3	90.0 H	4.2 H	2.2	2.8
Bank of Toyko-Mitsubishi UFJ	1.3	4.3	1.8	1.4	1.2	1.3	1.4	2.3	3.3	3.8	4.5	5.0	6.8	4.5	5.6	82.0	2.7	2.6	2.2
Action Economics	1.3	4.3	1.6	1.3	1.2	1.5	1.8	2.3	3.3	4.3	4.6	5.2	6.4	4.6	4.9	81.0	3.2	2.0	1.6
Comerica Bank	1.1	4.1	1.6	1.1	1.1	1.5	1.8	2.2	3.1	4.2	4.7	5.6	6.9	4.5	5.9	85.0	4.0	1.2	1.4
MacroFin Analytics	1.0	4.2	1.7	1.0	1.1	1.3	1.5	1.8	2.6	3.5	4.5	5.0	7.7	4.7	4.9	82.5	2.5	1.4	1.3
ING Investment Mgt	1.0	4.0	2.0	1.5	0.8	1.0	1.2	1.5	2.5	3.5	4.3	5.6	8.0	4.8	5.5	78.0	3.0	1.2	1.8
DePrince & Assoc	1.0	4.0	1.8	1.4	1.1	1.2	1.6	2.1	3.1	3.7	4.4	5.6	6.4	4.4	5.5	81.2	2.9	2.0	2.4
Thredgold Economic Assoc	1.0	4.0	1.7	1.2	1.2	1.4	1.7	2.1	3.0	3.8	4.6	5.6	8.0	5.0	5.5	81.5	2.5	2.0	2.1
Kellner Economic Advisers	1.0	4.0	1.7	1.1	0.9	1.3	1.1	1.6	2.5	3.6	4.7	6.4	8.9	5.5	5.5	82.0	2.5	2.9	3.1
Argus Research	1.0	4.0	1.6	1.0	1.1	0.8	1.1	1.2	2.3	4.0	4.6	5.3	7.3	4.5	4.9	82.0	1.8	3.5	3.1
Stone Harbor Investment Partners	1.0	4.0	1.5	1.2	0.9	1.1	1.4	2.0	3.3	4.4	5.3	5.5	7.5	na	6.4	75.0	3.6	2.4	2.7
Woodworth Holdings	1.0	4.0	1.4	1.3	1.1	1.2	1.7	2.2	3.2	4.1	5.1	6.1	7.9	4.5	6.3	89.0	3.4	1.5	1.8
Wayne Hummer Investments	0.9	3.9	0.8	0.9	0.9	0.9	1.1	2.0	3.0	3.9	4.6	5.9	8.3	4.9	5.3	81.8	2.7	1.7	2.7
Economist Intelligence Unit	0.8	3.8	1.8	0.9	0.8	0.9	1.2	1.6	2.5	3.9	4.5	na	na	na	5.0	na	1.7	na	0.8
BMO Capital Markets	0.8	3.8	1.3	1.0	0.8	1.2	1.7	2.2	3.0	3.6	4.8	5.7	8.0	4.8	5.6	78.5	2.9	1.7	2.3
Moody's Capital Markets	0.8	3.8	1.3	0.8	0.8	1.0	1.3	1.5	2.7	3.6	4.3	5.3	7.3	4.3	5.2	81.2	2.7	1.7	2.2
PNC Financial Services Corp	0.7	3.7	1.8	0.9	0.8	0.9	1.1	1.5	2.4	3.2	4.4	5.4	8.0	5.3	5.1	85.0	3.0	1.8	2.4
[illegible]mura Economics & Analytics	0.7	3.7	1.0	0.8	0.6	0.8	1.1	1.4	2.3	3.4	4.2	5.6	na	na	5.2	76.7	2.7	1.9	1.9
UBS	0.6	3.6	1.4	na	0.9	na	na	2.8	3.3	3.8	4.4	na	na	na	na	na	2.6	1.6	1.2
Wells Capital Management	0.6	3.6	1.2	1.0	1.1	1.1	1.1	1.4	2.5	3.6	4.6	5.9	7.9	4.6	5.3	83.1	3.0	2.7	2.8
Moody's Economy.com	0.5	3.5	1.1	0.6	0.3	0.7	0.9	2.1	2.9	4.6	5.3	6.5	8.0	na	6.4	na	3.4	0.7	2.4
GLC Financial Economics	0.4	3.4	1.2	0.7	0.4	0.8	1.0	1.3	1.8	2.7	3.5	5.3	8.3	4.2	4.6	78.4	1.8	1.8	2.4
Russell Investments	0.4	3.4	0.8	0.6	0.6	1.0	1.2	1.6	2.8	3.7	4.8	5.3	7.0	5.0	5.2	75.3	3.5	2.2	2.2
Woodley Park Research	0.4	3.4	1.0	0.6	0.7	0.7	1.1	1.5	2.3	3.2	3.7	5.3	7.5	4.4	5.2	na	3.0	1.4	2.2
Swiss Re	0.4	3.4	0.8	0.8	0.3	0.5	0.6	1.3	1.8	3.3	4.1	5.4	7.7	na	5.3	na	2.1	1.7	1.9
Societe Generale	0.3	3.3	0.6	na	0.3	0.9	na	1.6	3.4	3.8	4.5	5.8	8.0	na	5.5	89.0	3.0	0.9	1.2
Scotiabank	0.3	3.3	na	na	0.7	na	na	1.9	3.2	3.8	4.3	5.6	7.9	4.3	5.5	na	3.0	2.0	1.6
RDQ Economics	0.2	3.3	0.7	0.3	0.5	0.9	1.1	1.3	3.1	4.8	5.8	6.8	8.9	6.2 H	6.5	79.1	2.2	2.7	2.8
Wachovia	0.2	3.3	0.6	0.3	0.3	0.4	0.5 L	1.5	2.6	3.6	4.5	5.7	8.1	4.6	5.2	86.7	2.6	1.4	1.5
Mesirow Financial	0.2	3.2	1.0	0.4	0.3	0.7	1.1	1.7	2.4	3.3	4.1	5.3	7.7	4.6	4.9	80.8	3.9	-0.8 L	-1.0 L
Fannie Mae	0.2	3.2	na	na	0.3	na	1.6	na	na	3.6	4.4	5.2	na	na	5.1	na	2.7	1.6	2.5
Barclays Capital	0.2	3.3	1.0	0.3	0.3	0.4 L	0.6	1.3	2.9	4.3	5.0	5.4	8.1	5.0	5.2	na	3.5	1.6	2.1
Nomura Securities, Inc	0.2	3.3	0.5 L	0.2 L	0.3	0.5	0.7	1.8	2.6	3.6	4.3	5.5	7.5	na	5.1	82.0	2.5	0.2	0.4
Loomis, Sayles & Company	0.2	3.2	0.7	0.3	0.2 L	0.4 L	0.8	1.5	3.0	3.5	4.8	4.9	6.2	4.4	5.1	82.7	2.8	-0.6	1.4
Standard & Poor's Corp	0.1	3.3	1.3	0.6	0.6	0.8	0.9	1.8	3.4	4.9	na	7.1 H	9.9	6.2 H	6.6 H	79.5	2.4	1.4	2.3
Goldman Sachs & Co	0.1	3.3	1.0	na	0.5	na	na	1.2	2.3	3.0	3.7	4.1 L	na	na	5.0	na	2.0	-0.1	-0.1
Banc of America-Merrill Lynch	0.1	3.3	0.8	na	na	na	na	0.6 L	1.3 L	2.1 L	2.8 L	na	na	na	na	na	1.3 L	-0.3	0.3
JPMorgan Privare Wealth Mgt	0.1	3.1 L	1.3	0.4	0.3	0.4 L	0.6	1.0	2.2	3.3	4.3	5.6	8.1	5.1	5.2	77.5	2.4	1.6	2.0
Georgia State University	0.0 L	3.2	na	na	0.5	0.6	0.7	1.3	2.7	3.8	4.5	6.0	9.0	na	5.6	na	1.5	1.4	1.5
June Consensus	**0.8**	**3.8**	**1.5**	**1.0**	**0.9**	**1.1**	**1.4**	**1.9**	**2.9**	**3.8**	**4.6**	**5.7**	**7.9**	**4.9**	**5.5**	**80.9**	**2.8**	**1.7**	**2.0**
Top 10 Avg.	1.7	4.7	2.4	1.8	1.7	1.9	2.2	2.7	3.6	4.7	5.5	6.5	9.1	5.6	6.3	85.5	3.7	2.8	3.1
Bottom 10 Avg.	0.1	3.2	0.7	0.4	0.3	0.5	0.7	1.2	2.1	3.1	3.9	5.0	6.8	4.4	4.9	76.5	1.9	0.3	0.7
May Consensus	0.8	3.9	1.7	1.1	0.9	1.2	1.5	1.9	2.7	3.6	4.3	5.6	7.9	4.9	5.4	81.4	2.8	1.7	2.1
Number of Forecasts Changed From A Month Ago:																			
Down	11	8	21	19	19	21	21	15	7	3	4	10	13	12	9	19	13	10	17
Same	31	33	18	12	18	13	15	20	18	18	10	15	12	8	20	8	20	24	21
Up	4	4	3	8	8	7	5	10	20	25	31	18	15	13	15	6	13	11	8
Diffusion Index	42 %	46 %	29 %	36 %	38 %	33 %	30 %	44 %	64 %	74 %	80 %	59 %	53 %	52 %	57 %	30 %	50 %	51 %	40 %

International Interest Rate And Foreign Exchange Rate Forecasts

United States

	3 Mo. Dollar Rate			10 Yr. Gov't Bond Yield %			Fed's Major Currency $ Index		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Scotiabank	0.70	0.60	0.60	2.90	3.00	3.50	na	na	na
Deutsche Bank AG	na	na	na	na	na	na	na	na	na
WestLB	0.75	0.75	0.75	3.25	3.50	3.50	80.0	80.0	80.0
ING Financial Markets	0.90	0.75	0.50	3.00	3.20	3.50	86.8	89.9	93.9
Mizuho Research Institute	0.65	0.60	0.50	3.25	3.30	3.40	84.4	85.6	86.8
June Consensus	**0.75**	**0.68**	**0.59**	**3.10**	**3.25**	**3.48**	**83.7**	**85.2**	**86.9**
High	0.90	0.75	0.75	3.25	3.50	3.50	86.8	89.9	93.9
Low	0.65	0.60	0.50	2.90	3.00	3.40	80.0	80.0	80.0
Last Months Avg	1.03	0.83	0.63	2.35	2.39	2.96	85.8	87.2	88.6

Japan

	3 Mo. Yen Rate			10 Yr. Gov't Bond Yield %			Yen/USD		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Scotiabank	0.50	0.50	0.70	1.40	1.40	1.60	na	na	na
Deutsche Bank AG	na	na	na	na	na	na	na	na	na
WestLB	0.50	0.60	0.70	1.40	1.50	1.60	98.0	100.0	105.0
ING Financial Markets	0.45	0.40	0.70	1.45	1.50	1.60	103.0	108.0	112.0
Mizuho Research Institute	0.55	0.45	0.40	1.35	1.35	1.40	98.0	100.0	102.0
June Consensus	**0.50**	**0.49**	**0.63**	**1.40**	**1.44**	**1.55**	**99.7**	**102.7**	**106.3**
High	0.55	0.60	0.70	1.45	1.50	1.60	103.0	108.0	112.0
Low	0.45	0.40	0.40	1.35	1.35	1.40	98.0	100.0	102.0
Last Months Avg.	0.59	0.58	0.61	1.31	1.28	1.35	97.8	100.0	100.8

United Kingdom

	3 Mo. Sterling Rate			10 Yr. Gilt Yields %			USD/Pound Sterling		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Scotiabank	1.30	1.20	1.50	3.30	3.50	4.00	na	na	na
Deutsche Bank AG	na	na	na	na	na	na	na	na	na
WestLB	1.20	1.20	1.30	3.50	3.75	4.00	1.55	1.50	1.50
ING Financial Markets	1.20	1.30	2.00	3.10	3.30	4.00	1.49	1.47	1.46
Mizuho Research Institute	1.10	0.90	0.70	3.50	3.50	3.60	na	na	na
June Consensus	**1.20**	**1.15**	**1.38**	**3.35**	**3.51**	**3.90**	**1.52**	**1.49**	**1.48**
High	1.30	1.30	2.00	3.50	3.75	4.00	1.55	1.50	1.50
Low	1.10	0.90	0.70	3.10	3.30	3.60	1.49	1.47	1.46
Last Months Avg.	1.51	1.35	1.33	3.18	3.18	3.45	1.43	1.45	1.51

Switzerland

	3 Mo. Franc Rate %			10 Yr. Gov't Bond Yield %			CHF/USD		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Scotiabank	0.40	0.40	0.80	2.00	1.80	2.00	na	na	na
Deutsche Bank AG	na	na	na	na	na	na	na	na	na
WestLB	0.50	0.50	0.80	2.25	2.25	2.50	1.15	1.15	1.25
ING Financial Markets	0.30	0.20	1.00	2.30	2.20	3.00	1.20	1.29	1.37
Mizuho Research Institute	na	na	na	na	na	na	na	na	na
June Consensus	**0.40**	**0.37**	**0.87**	**2.18**	**2.08**	**2.50**	**1.18**	**1.22**	**1.31**
High	0.50	0.50	1.00	2.30	2.25	3.00	1.20	1.29	1.37
Low	0.30	0.20	0.80	2.00	1.80	2.00	1.15	1.15	1.25
Last Months Avg.	0.37	0.40	0.53	1.97	1.87	2.00	1.17	1.18	1.20

Canada

	3 Mo. Dollar Rate			10 Yr. Gov't Bond Yield %			CAD/USD		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Scotiabank	0.80	0.70	0.60	2.80	2.85	3.35	na	na	na
Deutsche Bank AG	na	na	na	na	na	na	na	na	na
WestLB	0.80	1.00	1.00	3.00	3.00	3.35	1.18	1.20	1.25
ING Financial Markets	1.30	0.90	1.20	2.00	2.10	3.00	1.25	1.30	1.40
Mizuho Research Institute	na	na	na	na	na	na	na	na	na
June Consensus	**0.97**	**0.87**	**0.93**	**2.60**	**2.65**	**3.23**	**1.22**	**1.25**	**1.33**
High	1.30	1.00	1.20	3.00	3.00	3.35	1.25	1.30	1.40
Low	0.80	0.70	0.60	2.00	2.10	3.00	1.18	1.20	1.25
Last Months Avg.	0.90	0.83	0.87	2.45	2.32	2.73	1.32	1.34	1.33

International Interest Rate And Foreign Exchange Rate Forecasts

Australia

	3 Mo. Dollar Rate			10 Yr. Gov't Bond Yield %			USD/AUD		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Scotiabank	3.40	3.40	3.80	5.00	4.80	4.50	na	na	na
Deutsche Bank AG	na	na	na	na	na	na	na	na	na
WestLB	3.60	3.60	3.80	5.25	5.25	5.25	0.75	0.76	0.75
ING Financial Markets	na	na	na	na	na	na	0.74	0.73	0.73
Mizuho Research Institute	na	na	na	na	na	na	na	na	na
June Consensus	**3.50**	**3.50**	**3.80**	**5.13**	**5.03**	**4.88**	**0.75**	**0.75**	**0.74**
High	3.60	3.60	3.80	5.25	5.25	5.25	0.75	0.76	0.75
Low	3.40	3.40	3.80	5.00	4.80	4.50	0.74	0.73	0.73
Last Months Avg.	3.58	3.58	3.90	4.00	4.13	4.43	0.67	0.67	0.70

Eurozone

	3 Mo. Euro Rate			10 Yr. Euro Bond Yield %			USD/EUR		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Scotiabank	1.20	1.20	1.60	3.20	3.00	3.20	na	na	na
Deutsche Bank AG	na	na	na	na	na	na	na	na	na
WestLB	1.30	1.20	1.20	4.00	3.75	3.50	1.29	1.30	1.30
ING Financial Markets	1.10	1.30	1.60	3.20	3.50	3.70	1.27	1.22	1.17
Mizuho Research Institute	1.00	0.70	0.65	na	na	na	1.28	1.26	1.24
June Consensus	**1.15**	**1.10**	**1.26**	**3.47**	**3.42**	**3.47**	**1.28**	**1.26**	**1.24**
High	1.30	1.30	1.60	4.00	3.75	3.70	1.29	1.30	1.30
Low	1.00	0.70	0.65	3.20	3.00	3.20	1.27	1.22	1.17
Last Months Avg.	1.33	1.24	1.33	3.07	2.93	3.23	1.29	1.29	1.29

10 Yr. Gov't Bond Yields %

	Germany			France			Italy			Spain		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Scotiabank	3.00	2.70	3.00	3.50	3.20	3.50	4.40	4.20	4.50	4.00	3.90	4.20
West LB	3.60	3.50	3.25	3.60	3.50	3.25	4.50	4.25	4.00	4.25	4.00	3.75
ING Financial Markets	3.20	3.50	3.70	3.60	3.85	4.00	4.10	4.30	4.30	3.75	4.00	4.10
Mizuho Research Institute	3.10	3.05	3.20	3.60	3.55	3.60	4.40	4.35	4.40	4.00	3.95	4.00
June Consensus	**3.23**	**3.19**	**3.29**	**3.58**	**3.53**	**3.59**	**4.35**	**4.28**	**4.30**	**4.00**	**3.96**	**4.01**
High	3.60	3.50	3.70	3.60	3.85	4.00	4.50	4.35	4.50	4.25	4.00	4.20
Low	3.00	2.70	3.00	3.50	3.20	3.25	4.10	4.20	4.00	3.75	3.90	3.75
Last Months Avg.	2.88	2.76	3.03	3.36	3.25	3.45	4.38	4.21	4.40	3.98	3.89	4.05

Consensus Forecasts 10-year Bond Yields vs U.S. Yield

	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-2.01	-1.70	-1.81	-1.93
United Kingdom	0.27	0.25	0.26	0.43
Switzerland	-1.06	-0.92	-1.17	-0.98
Canada	-0.18	-0.50	-0.60	-0.24
Australia	1.93	2.03	1.78	1.40
Germany	0.13	0.13	-0.06	-0.19
France	0.46	0.48	0.28	0.11
Italy	1.03	1.25	1.03	0.83
Spain	0.80	0.90	0.71	0.54
Eurozone	0.84	0.37	0.17	-0.01

Consensus Forecasts 3 Mo. Interest Rates vs U.S. Rate

	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-0.48	-0.25	-1.16	0.04
United Kingdom	0.26	0.45	0.48	0.79
Switzerland	-0.51	-0.35	-0.31	0.28
Canada	-0.36	0.22	0.19	0.35
Australia	2.74	2.75	2.83	3.21
Eurozone	0.24	0.40	0.43	0.68

Viewpoints.

A Sampling of Views on the Economy, Financial Markets and Government Policy Excerpted from Recent Reports Issued by our Blue Chip Panel Members and Others

AAAmerica?

The possibility of the U.S. losing its coveted triple-A sovereign credit rating is no longer a back-burner issue, with S&P recently putting the U.K.'s rating under review. This year's $1.8 trillion budget deficit and surging contingent liabilities, combined with a weakened medium-term growth outlook, had already raised the prospect of a U.S. downgrade. Just last week, a former U.S. comptroller general warned the rating was *"at risk"*. Based on traditional metrics used by the ratings agencies, and a reasonable economic scenario, it appears inevitable that the creditworthiness of the U.S. will slip below AAA status in coming years. Whether that triggers an actual downgrade is open for debate, but markets will increasingly factor in the underlying reality in any event.

A sovereign credit rating is simply an assessment of the relative likelihood that a central government borrower will default on its obligations. Traditionally, the focus has been on foreign currency debts, although as investment demand has risen for bonds in a variety of currencies, local currency ratings have taken on increased importance. Generally, there is not usually a big difference between an individual country's foreign and local currency ratings, although small splits can arise. In most cases, local currency debt will be rated slightly above foreign currency debt. Even a country that can borrow readily in its own currency (such as the U.S.) could see its local debt downgraded, if there is a significant risk that it may resort to inflating its way out of large debt obligations. For example, Japan is rated below triple-A, despite formidable net external assets. S&P currently rates only 15 sovereign credits AAA on both foreign and local debt, and the U.S. is arguably now one of the weakest of the 15—at least according to the latest Country Credit Ratings by Institutional Investor. Moody's has already refined its triple-A ratings, stratifying it between "resistant" credits (Germany, France, Canada and Scandinavian countries), "resilient" (the U.S. and U.K.) and "vulnerable" (Ireland and Spain; which S&P rate below AAA).

There is little mystery behind the deterioration in the outlook for U.S. creditworthiness—the rapid run-up in the budget deficit and the prospect of a pronounced rise in the debt/GDP ratio over the medium term (*Chart 1*). The steep deterioration in the U.S. fiscal position is a by-product of the deep recession, which has hammered government finances globally, but it also reflects the heavy-duty obligations Washington has taken on to support the financial system, including Fannie Mae and Freddie Mac. Just over a year ago, S&P suggested that *"Fannie and Freddie could cause the U.S. to lose its sterling AAA rating if the government were forced to come to their rescue"*. Suffice it to say that we are already well past that eventuality, and the obligations have multiplied further: Bloomberg estimates that the U.S. government and the Federal Reserve have *"spent, lent or committed $12.8 trillion"*, or more than 90% of GDP, to ease the recession and credit crisis. Underneath this is the rising tide of social security and health care costs.

Credit ratings agencies follow a relatively similar formula for determining sovereign ratings, according to a 1996 study by the New York Federal Reserve *('Determinants and Impact of Sovereign Credit Ratings', Cantor and Parker)*. The authors boil the ratings decision down to 8 metrics, which explain the vast majority of sovereign ratings. Currently, the U.S. remains strong in the first three of the measures, is weak in the last three, so the remaining two (inflation and trend GDP growth) may determine the ultimate fate of its AAA status. Recall that Canada's credit rating was chopped on three occasions by S&P and Moody's in the early 1990s (before being fully restored to triple-A status earlier this decade). A side-by-side comparison suggests that there is little to choose from between Canada's overall financial strength in the early 1990s and the U.S. position now—the deciding factor in favour of the U.S. may be qualitative issues, and the fact that Canada was also burdened by underlying political uncertainty in the early 1990s. As well, U.S. foreign debt, while deteriorating significantly, is still well below Canada's in the 1990s.

Notably, Canada's 1990s downgrades arrived after the economy bottomed, as the full extent of the fiscal damage became clear. Thus, the U.S. could be subject to downgrade speculation long after the recovery takes hold, especially if trillion-dollar deficits persist. The good news is that Canada's ratings downgrades were largely (although not fully) priced in by markets. For instance, 10-year Canada/US spreads began a descent not long after the final downgrade by Moody's in June 1995.

By many measures, the U.S. appears just a few short steps away from losing its coveted triple-A status, unless the recovery turns out to be considerably stronger than expected and the fiscal repair is faster than commonly expected. As the Japan example clearly shows—and perhaps now Britain—a downgrade of a very large, very high income economy is quite possible, but usually the move is long since factored into financial markets. A downgrade could boost the cost of funding U.S. debt at the margin, but underlying inflation and fiscal fundamentals will ultimately be the primary driver.

Douglas Porter. BMO Capital Markets, Toronto, Canada

Threading the Needle Between Risk Aversion and Creditors' Strike

If there is anything nice that can be said about economic catastrophe it might be that it causes things to happen fast. We're now four months into a new government – the Obama Administration and the 111th Congress – and already a financial system rescue and big federal stimulus package have been put into effect. The U.S. automobile business is being rapidly restructured and reform of the health care system has powerful legislative momentum. Congress is hard at work on revisions to the regulation of banking and finance, with new rules for the credit card business an early and relatively easy accomplishment. On the diplomatic front, there appears to be a more cooperative tone among the world's leading nations, perhaps because all are suffering through the same financial crisis.

The pace of change so far in 2009, in financial and economic realms at least, has been extremely rapid, if not revolutionary, relative to late 20th century norms. We get blockbuster news almost every day and so become somewhat inured to it. I'm struck by the manner in which most of us attempt to adhere to our established modes of thought: analysts analyze, lobbyists lobby, and journalists midwife the news. While we're all more than usually aware of the larger forest, we continue to busy ourselves with our own small grove of trees.

Take, for example, the discussions lately about whether the economy is near or at a cyclical bottom, and whether recovery is at hand and if so, will it be sluggish or V-shaped. It's a myopic debate. The world of easy debt-fueled stimulus to economic activity cratered last year! We're now managing through the fallout with much better grace than would have been possible without financial rescue by Treasury, Fed, and foreign governments but it is not overly dramatic to say that our old familiar economic way of life went bankrupt. It makes little sense to downplay or ignore the implications of last year's financial collapse. V-shaped recovery is almost surely not in the cards.

Look at your brokerage statement or your credit lines. Many of us have already spent the next few years' income in the last few years. Where then is the fuel to feed the locomotive? New habits may be difficult to acquire but thrift will be thrust upon us. Pent up demand? Maybe so, but pent up *effective* demand? Not likely.

Old habits die hard, so thrifty consumers in other parts of the world will be slow to change their ways. They have already begun to miss the old profligate Americans – the German, Japanese, and Mexican economies, each tied closely to the great American *(continued on next page)*

Viewpoints

A Sampling of Views on the Economy, Financial Markets and Government Policy Excerpted from Recent Reports Issued by our Blue Chip Panel Members and Others

marketplace, shrank at double-digit annual rates in the first quarter – but they won't soon figure out how to fill in behind us.

Having said that, I'll concede that the United States may lead the global economy out of recession but as it does, the overhang of debt service will intrude. China has already expressed profound buyer's remorse for its roughly three-quarters of a trillion dollars of U.S. Treasury securities. Like other creditors it will be hugely relieved if it can get most of its bait back but, surely by now, it does not expect to get all of it. Starting from the current configuration of global finance, it is unrealistic to expect a continuation of unlimited credit lines to U.S. buyers and so it's delusional to project economic forecasts as if that were a reasonable premise.

It isn't surprising that as soon as we got evidence of less-bad conditions, markets and media would begin to extrapolate it into much better conditions ahead. Improvements in bank funding markets, some stabilization of credit conditions, and a better tone to stock market trading are welcome indicators that knee-jerk risk aversion is running its course.

But neither should it be a surprise that as soon as the mood turns a bit brighter, a bill is presented. That bill takes the form of a backup in Treasury yields and a depreciation of the U.S. dollar. These were the beneficiaries of risk aversion, after all, so it should be expected that they would retreat as the market mood advances. The more that V-shaped recovery gains credence, the more disorderly the retreat of the dollar and Treasury yields is likely to be until they reassert economic reality and exert a restraining force on intemperate animal spirits.

To the extent that the pace of economic activity – the pace of buying – is financed out of current income, it will be slower than we have become used to. To the extent that politics or policy action attempts to drive it faster – i.e., to facilitate the spending not only of current but also of future income – it is likely to encounter a creditors' strike.

Re-leveraging can't happen until de-leveraging has run its course. The debt positions of the household sector, the federal government, and the nation as a whole show that to be years away.

Jim Griffin, ING Investment Management, Hartford, CT

It Is So Over

Are the markets trying to tell us something about the second derivative story? The S&P 500 has dropped for a second consecutive week, copper prices are down $15 from the recent peak hit last April and high yield spreads have stalled out at 9.2% after staging a stunning 7 percentage point rally since last December. Could it possibly be that markets are no longer in love with a second derivative that mainly tells of less negative activity but no sign yet of an upturn in growth? In other words: are the markets 'over' the second derivative?

There was certainly no lack of fodder for the second derivative that doesn't produce a positive first derivative story in this week's batch of economic indicators. Initial jobless claims fell to 631k from an upwardly revised 643k the prior week. The numbers suggest an improvement in the May nonfarm payroll report from the -539k job loss in April, but we will still see a hefty 465k jobs lost. Moreover, it is quite likely payrolls could once again swell as more auto workers hit the unemployment ranks. The cumulative rise in continuing claims suggests the unemployment rate will rise to 9.2% in May.

The Philadelphia Fed index rose to -22.9 in May from -24.4 in April, less of a rise than markets had expected. Here again, the events in the auto sector could yet send this indicator southward. Sentiment 6-months from now saw a marked improvement, up 11.5 points to 47.5 in May, the highest read since mid-2004. However, caution on a read-through to market direction is needed here since it is most likely the equity market upturn that is behind this upturn in sentiment. We will see if this sentiment is validated; after all, there was a similar swell in sentiment in early 2002 that never translated into an economic lift-off.

The Conference Board's Index of economic leading indicators (LEI) rose by 1.0% M/M in April for the first gain in 10 months, but again investors should be very wary of a read-through to the markets. Rebounds in stock prices (up 12% M/M)band consumer expectations (+9.6% M/M) provided the largest positive contributions over the month. Indeed, the rebound in the stock market accounted for almost half of the gain in April. The coincident to lagging indicator, which tends to give better turning point signals, posted a 0.3% M/M to 89.9; 96.3 or below is still consistent with recession.

Back where it all began, in the housing market, there was still little cause for hope in this week's data. Housing starts dashed the market's sprouting hopes for a rebound, posting an unexpected drop to yet a new all-time low of 458k in April. Single-family homes did manage a 2.8% increase in the month but the eye of the housing storm seems to have shifted to the multi-family sector. Activity multi-unit sector fell 46% m/m (not annualized!) in April to just 90,000 units. Perhaps needless to say this was an all-time low. The condo industry is increasingly caught in a credit Catch-22 situation and there is still an enormous glut of product on the market to the tune of 15 months' supply.

Sheryl King, Bank of America-Merrill Lynch, New York, NY

Recessionary Forces Still With Us

There were reminders in recent data that recessionary forces are still with us. A disappointing Philadelphia Fed index and the failure of initial jobless claims to reach their previous low after being boosted by auto plant shutdowns suggested that earlier data may have overstated the improvement in labor and manufacturing conditions. Earlier in the month, an unexpected drop in retail sales interrupted a string of better readings on growth. Financial markets corrected mildly in response, though not by enough to derail our view that the economy will begin to recover later this year. The data tug-of-war will continue in the coming week, with key reports on housing and capital spending. We expect significant increases in both new- and existing-home sales. Orders for durable goods appear to have rebounded, although weakness in key capital goods categories will need to fade to inspire markets. First quarter GDP will be revised higher, while the recovery in consumer confidence measures likely paused. The U.S. dollar has been range-bound against other major currencies for the better part of 2009. Fundamental factors favoring the dollar and weakness in the external sector have offset negative effects of aggressive monetary easing and fiscal expansion in the U.S. However, a recent fall in the dollar's exchange value signals a new investor focus away from sustained global economic contraction and toward concerns about fiscal policy and inflation.

The pace of normalization in financial markets has accelerated. Improved high-frequency indicators have bolstered equity markets. Encouraged, investors have increased their appetite for risk and are discounting the subdued economic performance in the global economy. The turn away from distressed financial markets and dire economic data have facilitated a fall in the dollar. Higher Treasury yields and a weaker dollar may be a function of a growing global appetite for risk following successful policy initiatives to stem the economic crisis. But this success may come at a high price. Should the U.S. not get its fiscal house in order over the next few years, a lower standard of living, accompanied by higher interest rates and a fundamental decline in the dollar, could be the tradeoff.

Joseph Brusuelas, Aaron Smith and Ryan Sweet, Moody's Economy.com, West Chester, PA

Long Range Forecasts:

The table below contains results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom averages for each variable. Shown are estimates for the years 2011 through 2015 and averages for the five-year periods 2011-2015 and 2016-2020. Apply these projections cautiously. Few economic, demographic and political forces can be evaluated accurately over such long time spans.

		———Average For The Year———					Five-Year Averages	
Interest Rates		**2011**	**2012**	**2013**	**2014**	**2015**	**2011-2015**	**2016-2020**
1. Federal Funds Rate	CONSENSUS	**2.3**	**3.3**	**3.9**	**4.2**	**4.2**	**3.6**	**4.2**
	Top 10 Average	3.6	4.5	5.0	5.1	5.1	4.7	5.2
	Bottom 10 Average	0.9	1.9	2.6	3.1	3.1	2.3	3.3
2. Prime Rate	CONSENSUS	**5.3**	**6.2**	**6.8**	**7.1**	**7.1**	**6.5**	**7.2**
	Top 10 Average	6.6	7.5	8.0	8.1	8.1	7.7	8.2
	Bottom 10 Average	3.8	4.7	5.5	5.9	6.0	5.2	6.2
3. LIBOR, 3-Mo.	CONSENSUS	**3.0**	**3.8**	**4.4**	**4.6**	**4.6**	**4.1**	**4.6**
	Top 10 Average	4.7	5.0	5.4	5.6	5.5	5.2	5.6
	Bottom 10 Average	1.6	2.4	3.3	3.6	3.6	2.9	3.7
4. Commercial Paper, 1-Mo.	CONSENSUS	**2.5**	**3.4**	**4.0**	**4.3**	**4.3**	**3.7**	**4.3**
	Top 10 Average	3.8	4.6	5.0	5.2	5.2	4.8	5.2
	Bottom 10 Average	1.2	1.9	2.8	3.2	3.2	2.5	3.4
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	**2.3**	**3.2**	**3.8**	**4.1**	**4.1**	**3.5**	**4.1**
	Top 10 Average	3.6	4.5	4.9	5.0	5.0	4.6	5.0
	Bottom 10 Average	1.1	1.8	2.5	2.9	3.0	2.3	3.2
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	**2.5**	**3.5**	**4.0**	**4.2**	**4.2**	**3.7**	**4.3**
	Top 10 Average	3.8	4.6	5.0	5.0	5.1	4.7	5.1
	Bottom 10 Average	1.4	2.2	3.0	3.4	3.4	2.7	3.5
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	**2.8**	**3.7**	**4.2**	**4.3**	**4.4**	**3.9**	**4.5**
	Top 10 Average	4.0	4.8	5.1	5.1	5.2	4.8	5.3
	Bottom 10 Average	1.5	2.5	3.2	3.2	3.6	2.8	3.7
8. Treasury Note Yield, 2-Yr.	CONSENSUS	**3.2**	**4.0**	**4.4**	**4.7**	**4.6**	**4.2**	**4.7**
	Top 10 Average	4.3	4.9	4.0	5.4	5.4	4.8	5.5
	Bottom 10 Average	2.0	2.9	3.5	3.8	3.8	3.2	4.0
10. Treasury Note Yield, 5-Yr.	CONSENSUS	**3.8**	**4.3**	**4.7**	**4.9**	**4.9**	**4.5**	**4.9**
	Top 10 Average	4.6	5.2	5.5	5.7	5.8	5.4	5.8
	Bottom 10 Average	2.9	3.4	3.9	4.2	4.2	3.7	4.2
11. Treasury Note Yield, 10-Yr.	CONSENSUS	**4.5**	**4.9**	**5.2**	**5.3**	**5.3**	**5.0**	**5.3**
	Top 10 Average	5.2	5.7	6.0	6.0	6.1	5.8	6.1
	Bottom 10 Average	3.7	4.1	4.4	4.6	4.6	4.3	4.7
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	**4.9**	**5.3**	**5.5**	**5.6**	**5.6**	**5.4**	**5.6**
	Top 10 Average	5.7	6.0	6.2	6.4	6.4	6.1	6.4
	Bottom 10 Average	4.3	4.6	4.9	5.0	5.0	4.7	5.0
13. Corporate Aaa Bond Yield	CONSENSUS	**5.9**	**6.2**	**6.4**	**6.6**	**6.6**	**6.4**	**6.6**
	Top 10 Average	6.8	7.0	7.3	7.5	7.5	7.2	7.5
	Bottom 10 Average	5.2	5.4	5.6	5.7	5.7	5.5	5.8
13. Corporate Baa Bond Yield	CONSENSUS	**7.4**	**7.5**	**7.7**	**7.8**	**7.8**	**7.6**	**7.8**
	Top 10 Average	8.4	8.5	8.8	8.8	9.0	8.7	8.9
	Bottom 10 Average	6.5	6.7	6.8	6.8	6.7	6.7	6.9
14. State & Local Bonds Yield	CONSENSUS	**5.0**	**5.3**	**5.3**	**5.3**	**5.3**	**5.2**	**5.3**
	Top 10 Average	5.6	6.0	6.0	6.1	6.1	5.9	5.9
	Bottom 10 Average	4.3	4.5	4.6	4.6	4.5	4.5	4.6
15. Home Mortgage Rate	CONSENSUS	**5.9**	**6.3**	**6.5**	**6.7**	**6.7**	**6.4**	**6.6**
	Top 10 Average	6.6	7.1	7.3	7.5	7.5	7.2	7.5
	Bottom 10 Average	5.2	5.4	5.7	5.9	5.8	5.6	5.9
A. FRB - Major Currency Index	CONSENSUS	**80.4**	**80.7**	**81.4**	**82.0**	**82.3**	**81.4**	**82.1**
	Top 10 Average	86.0	87.0	88.5	89.6	90.2	88.2	90.6
	Bottom 10 Average	74.7	74.2	74.4	74.8	74.9	74.6	74.2
		———Year-Over-Year, % Change———					**Five-Year Averages**	
		2011	**2012**	**2013**	**2014**	**2015**	**2011-2015**	**2016-2020**
B. Real GDP	CONSENSUS	**3.1**	**3.2**	**2.9**	**2.8**	**3.0**	**3.0**	**2.6**
	Top 10 Average	4.0	4.0	3.6	3.4	4.1	3.8	3.0
	Bottom 10 Average	2.3	2.4	2.4	2.2	2.3	2.3	2.2
C. GDP Chained Price Index	CONSENSUS	**1.9**	**2.0**	**2.2**	**2.3**	**2.3**	**2.1**	**2.4**
	Top 10 Average	2.7	2.9	3.1	3.1	3.2	3.0	3.2
	Bottom 10 Average	0.8	0.9	1.1	1.4	1.5	1.1	1.7
D. Consumer Price Index	CONSENSUS	**2.1**	**2.3**	**2.5**	**2.6**	**2.6**	**2.4**	**2.6**
	Top 10 Average	3.0	3.3	3.4	3.5	3.5	3.3	3.4
	Bottom 10 Average	1.1	1.3	1.6	1.8	1.9	1.5	2.0

2009

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	1.7	0.4	-1.3	-0.4								
Auto & Light Truck Sales (b)	9.5	9.1	9.8	9.3								
Personal Income (a, current $)	0.1	-0.2	-0.3									
Personal Consumption (a, current $)	1.1	0.4	-0.2									
Consumer Credit (e)	3.3	-3.8	-5.2									
Consumer Sentiment (U. of Mich.)	61.2	56.3	57.3	65.1								
Household Employment (c)	-1239	-351	-861	120								
Non-farm Payroll Employment (c)	-741	-681	-699	-539								
Unemployment Rate (%)	7.6	8.1	8.5	8.9								
Average Hourly Earnings ('82$)	8.64	8.61	8.64									
Average Hourly Earnings (current $)	18.43	18.46	18.50	18.51								
Non-Farm Workweek (hrs.)	33.3	33.3	33.2	33.2								
Industrial Production (d)	-10.7	-11.3	-12.5	-12.5								
Capacity Utilization (%)	71.3	70.6	69.4	69.1								
ISM Manufacturing Index (g)	35.6	35.8	36.3	40.1								
ISM Non-Manufacturing Index (g)	42.9	41.6	40.8	43.7								
Housing Starts (b)	.488	.574	.525	.458								
Housing Permits (b)	.531	.550	.511	.494								
New Home Sales (1-family, c)	331	358	356									
Construction Expenditures (a)	-3.4	-1.0	0.3									
Consumer Price Index (nsa., d)	0.0	0.2	-0.4	-0.7								
CPI ex. Food and Energy (nsa., d)	1.7	1.8	1.8	1.9								
Producer Price Index (n.s.a., d)	-1.0	-1.3	-3.5	-3.7								
Durable Goods Orders (a)	-7.8	2.1	-0.8									
Leading Economic Indicators (g)	-0.2	-0.5	-0.2	1.0								
Balance of Trade & Services (f)	-36.2	-26.1	-27.0									
Federal Funds Rate (%)	0.15	0.22	0.18	0.15								
3-Mo. Treasury Bill Rate (%)	0.13	0.30	0.21	0.16								
10-Year Treasury Note Yield (%)	2.52	2.87	2.82	2.93								

2008

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	0.0	-0.8	0.5	0.0	0.2	0.2	-0.7	-0.5	-1.5	-3.1	-2.1	-3.2
Auto & Light Truck Sales (b)	15.3	15.3	15.0	14.4	14.3	13.6	12.5	13.7	12.5	10.5	10.1	10.3
Personal Income (a, current $)	0.1	0.2	0.4	0.0	1.8	0.1	-0.8	0.3	0.1	-0.1	-0.5	-0.3
Personal Consumption (a, current $)	0.4	0.0	0.6	0.3	0.7	0.5	-0.1	-0.2	-0.4	-1.2	-0.7	-1.1
Consumer Credit (e)	5.8	3.4	5.9	4.2	3.3	4.1	3.5	-3.0	3.1	-1.0	-4.2	-3.5
Consumer Sentiment (U. of Mich.)	78.4	70.8	69.0	62.6	59.8	56.4	61.2	63.0	70.3	57.6	55.3	60.1
Household Employment (c)	23	-242	-52	234	-283	-236	-142	-323	-244	-372	-513	-806
Non-Farm Payroll Employment (c)	-72	-144	-122	-160	-137	-161	-128	-175	-321	-380	-597	-681
Unemployment Rate (%)	4.9	4.8	5.1	5.0	5.5	5.6	5.8	6.2	6.2	6.6	6.8	7.2
Average Hourly Earnings ('82$)	8.27	8.29	8.30	8.30	8.26	8.18	8.14	8.19	8.21	8.34	8.54	8.65
Average Hourly Earnings (current $)	17.77	17.83	17.90	17.94	17.99	18.04	18.10	18.18	18.21	18.28	18.34	18.40
Non-farm Workweek (hrs.)	33.7	33.8	33.8	33.8	33.7	33.6	33.6	33.7	33.6	33.5	33.4	33.3
Industrial Production (d)	2.2	1.1	0.9	-0.1	-0.4	-0.7	-1.0	-2.0	-6.4	-4.7	-6.5	-8.8
Capacity Utilization (%)	80.5	80.2	79.8	79.2	78.9	78.7	78.6	77.6	74.5	75.4	74.5	72.8
ISM Manufacturing Index (g)	50.7	48.3	49.0	48.6	49.3	49.5	49.5	49.3	43.4	38.7	36.6	32.9
ISM Non-Manufacturing Index (g)	44.6	49.3	49.6	52.0	51.7	48.2	49.5	50.6	50.2	44.2	37.3	40.6
Housing Starts (b)	1.064	1.107	.988	1.004	.982	1.089	.949	.854	.824	.767	.655	.558
Housing Permits (b)	1.052	.981	.932	.982	.978	1.138	.937	.857	.805	.730	.615	.547
New Home Sales (1-family, c)	597	572	513	542	515	499	505	448	434	404	387	372
Construction Expenditures (a)	-0.4	-0.9	1.4	-0.5	0.3	-0.2	-2.4	2.4	0.3	-0.7	-3.5	-3.1
Consumer Price Index (nsa., d)	4.3	4.0	4.0	3.9	4.2	5.0	5.6	5.4	4.9	3.7	1.1	0.1
CPI ex. Food and Energy (nsa, d)	2.5	2.3	2.4	2.3	2.3	2.4	2.5	2.5	2.5	2.2	2.0	1.8
Producer Price Index (nsa., d)	7.4	6.5	6.7	6.4	7.3	9.1	9.9	9.7	8.8	5.2	0.4	-0.9
Durable Goods Orders (a)	-4.4	1.1	-0.2	-1.0	0.1	1.4	0.7	-5.5	0.0	-8.5	-3.9	-4.6
Leading Economic Indicators (g)	-0.5	-0.2	0.0	0.1	-0.1	0.1	-0.7	-0.8	0.0	-1.0	-0.6	-0.1
Balance of Trade & Services (f)	-59.2	-62.0	-57.5	-61.9	-60.5	-59.2	-61.6	-59.4	-58.1	-58.0	-42.5	-39.9
Federal Funds Rate (%)	3.94	2.98	2.60	2.28	1.98	2.00	2.01	2.00	1.81	0.97	0.99	0.16
3-Mo. Treasury Bill Rate (%)	2.75	2.12	1.34	1.29	1.73	1.86	1.63	1.72	1.13	0.67	0.19	0.03
10-Year Treasury Note Yield (%)	3.74	3.74	3.51	3.68	3.88	4.10	4.01	3.89	3.69	3.81	3.53	2.42

(a) month-over-month % change; (b) millions, saar; (c) thousands, saar; (d) year-over-year % change; (e) annualized % change; (f) $ billions; (g) level. Most series are subject to frequent government revisions. Use with care.

Calendar Of Upcoming Economic Data Releases

Monday	Tuesday	Wednesday	Thursday	Friday
25 **Memorial Day** **U.S. Markets Closed**	26 Consumer Confidence (May, Conference Board S&P/Case-Shiller home price index (Mar) ABC Consumer Comfort Index Weekly Store Sales	27 Existing Home Sales (Apr) OFHEO House Price Index (Q1) EIA Crude Oil Stocks Mortgage Applications	28 New Home Sales (Apr) Durable Goods Orders (Apr) Weekly Jobless Claims Weekly Money Supply	29 Gross Domestic Product (Q1, Preliminary) Consumer Sentiment (May, Final, University of Michigan)
June 1 Personal Income and Consumption (Apr) ISM Manufacturing Index (Apr) Construction Spending (Apr)	2 Vehicle Sales (May) Pending Home Sales (Apr) Weekly Store Sales ABC Consumer Comfort Index	3 ISM Non-Manufacturing index (May) ADP Employment Survey (May) Challenger Layoffs (May) Factory Orders (Apr) EIA Crude Oil Stocks Mortgage Applications	4 Monster Employment Index (May) Productivity and Costs (Q1, Final) Weekly Jobless Claims Weekly Money Supply	5 Employment Report (May) Consumer Credit (Apr)
8	9 Wholesale Trade (Apr) ABC Consumer Comfort Index Weekly Store Sales	10 U.S. Trade (Apr) Beige Book (for June 23-24 meeting) EIA Crude Oil Stocks Mortgage Applications	11 Retail Sales (May) Business Sales and Inventories (Apr) Flow of Funds (Q1) Weekly Jobless Claims Weekly Money Supply	12 Trade Price Indexes (May) Consumer Sentiment (June, Preliminary, University of Michigan)
15 Empire State Index (Jun) NAHB Housing Index (Jun) Treasury Int'l Capital (Apr)	16 Housing Starts (May) Industrial Production (May) Producer Price Index (May) Weekly Store Sales ABC Consumer Comfort Index	17 Consumer Price Index (May) Current Account (Q1) EIA Crude Oil Stocks Mortgage Applications	18 Philadelphia Fed Survey (Jun) Leading Indicators (May Weekly Jobless Claims Weekly Money Supply	19
22	23 **FOMC Meeting** Existing Home Sales (May) ABC Consumer Comfort Index Weekly Store Sales	24 **FOMC Meeting** New Home Sales (May) Durable Goods Orders (May) EIA Crude Oil Stocks Mortgage Applications	25 GDP (Q1, Final) Corporate Profits (Q1, Final) Weekly Jobless Claims Weekly Money Supply	26 Personal Income and Consumption (May) Consumer Sentiment (Jun, Final, University of Michigan)
29 Agricultural Prices (Jun)	30 Chicago PMI (Jun)Consumer Confidence (Jun, Conference Board S&P/Case-Shiller home price index (Apr) ABC Consumer Comfort Index Weekly Store Sales	July 1 ISM Manufacturing Index (Jun) Unit Vehicle Sales (Jun) ADP Employment Survey (Jun) Challenger Layoffs (Jun) Monster Employment Index (Jun) Construction Spending (May) Pending Home Sales (May) EIA Crude Oil Stocks Mortgage Applications	2 Employment Report (Jun) Factory Orders (May) Weekly Jobless Claims Weekly Money Supply	3 **Independence Day Observed** **U.S. Markets Closed**

BLUE CHIP FORECASTERS

CONTRIBUTORS TO DOMESTIC SURVEY

Action Economics, LLC, Boulder, CO
Dr. Michael Englund

Argus Research Corp., New York, NY
Dr. Richard A. Yamarone

Banc of America Securities-Merrill Lynch, New York, NY
David Rosenberg

Bank of Tokyo-Mitsubishi UFJ, Ltd., New York, NY
Christopher S. Rupkey

Barclays Capital, New York, NY
Dean Maki and Ethan Harris

BMO Capital Markets Economics, Toronto, Canada
Dr. Sherry Cooper and Douglas Porter

Chmura Economics & Analytics, Richmond, VA
Dr. Christine Chmura and Dr. Xiaobing Shuai

ClearView Economics, LLC, Cleveland, OH
Dr. Kenneth T. Mayland

Comerica Bank, Detroit, MI
Dana B. Johnson

Cycledata Corp., San Diego, CA
Robert S. Powers

Daiwa Securities America, New York, NY
Dr. Michael Moran

Economist Intelligence Unit, New York, NY
[illegible]eo Abruzzese and Jan Friederich

DePrince & Associates, Murfreesburo, TN
Dr. Albert E. DePrince Jr.

Fannie Mae, Washington, DC
Douglas Duncan

Georgia State University, Atlanta, GA
Dr. Rajeev Dhawan and Emin Hajiyev

GLC Financial Economics, Providence, RI
Gary L. Ciminero

Goldman, Sachs & Co., New York, NY
Jan Hatzius, Ed McKelvey, Andrew Tilton

ING Investment Management, Inc., Hartford, CT
James A. Griffin Jr.

J.P. Morgan Chase, New York, NY
Bruce Kasman and Robert Mellman

JPMorgan Private Wealth Management, New York, NY
Dr. Anthony Chan

J.W. Coons Advisors, LLC, Columbus, OH
James W. Coons

Kellner Economic Advisers, Port Washington, NY
Dr. Irwin L. Kellner

Loomis, Sayles & Company, L.P., Bloomfield, MI
Brian Horrigan and David Sowerby

MacroFin Analytics, Wayne, NJ
Dr. Parul Jain

[illegible]esirow Financial, Chicago, IL
Diane Swonk

Moody's Capital Markets, New York, NY
John Lonski

Moody's Economy.com, West Chester, PA
Dr. Mark M. Zandi

Naroff Economic Advisors, Philadelphia, PA
Dr. Joel L. Naroff

National Association of Realtors, Washington, DC
Dr. S. Lawrence Yun

Nomura Securities International, Inc., New York, NY
Dr. David H. Resler

PNC Financial Services Group, Pittsburgh, PA
Dr. Stuart G. Hoffman

RBS Greenwich Capital Economics, Greenwich, CT
Stephen Stanley and Michelle Girard

RDQ Economics, New York, NY
John Ryding and Conrad DeQuadros

RidgeWorth Capital Management, Richmond, VA
Alan Gayle

Russell Investments, Tacoma, WA
Dr. Michael Dueker

Scotiabank, Toronto, Canada
Aron Gampel and Dr. Warren Jestin

Societe Generale, NY, New York
Stephen W. Gallagher

Standard & Poor's Corp., New York, NY
Dr. David Wyss

Stone Harbor Investment Partners, LP, New York, NY
Brian Keyser

SunTrust Banks, Inc., Atlanta, GA
Gregory L. Miller

Swiss Re, New York, NY
Kurt Karl

The Northern Trust Company, Chicago, IL
Paul L. Kasriel and Asha G. Bangalore

Thredgold Economic Associates, Salt Lake City, UT
Jeff K. Thredgold

UBS Warburg, Stamford, CT
James O'Sullivan and Samuel Coffin

Wachovia, Charlotte, NC
Dr. John Silvia and Mark Vitner

Wayne Hummer Investment, LLC., Chicago, IL
William B. Hummer

Wells Capital Management, San Francisco, CA
Gary Schlossberg

Woodley Park Research, Washington, DC
Richard J. DeKaser

Woodworth Holdings, Ltd., Summit, NJ
Jay N. Woodworth

CONTRIBUTORS TO INTERNATIONAL SURVEY

Deutsche Bank AG, Frankfurt, Germany

ING Financial Markets, London, England

Mizuho Research Institute, Tokyo, Japan

Scotiabank, Toronto, Canada

WestLB AG, Dusseldorf, Germany

PSC Case No. 2009-00141
AG DR Set 1-214
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 214:

With reference to page 43, line 9 to page 46, line 5 Attachment PRM-12, and Appendix H, please provide the methodology used to construct the S&P Composite and Utility Indexes, including the following: (1) the weights applied to the stock prices of each company in arriving at the index values, (2) how adjustments are made to the Index when companies are added to or deleted from the Index, (3) how adjustments are made to the Index in the event of stock splits and stock dividends, (4) the names and number of companies in the Utility Index each year, (5) the names and number of gas companies in the S&P Utility Index each year, and (6) copies of all studies performed which compare the riskiness of the stocks in the S&P Composite Index, the S&P Utility Index, and gas companies.

Response:

(1), (2), and (3) A description of the factors considered by Standard & Poor's in the construction of its indices are provided in the publication that is attached as AG DR Set 1-214 Attachment A. It should be noted that the S&P Public Utility Index is a component of the S&P 500 Index. Therefore, the factors that guide S&P in the construction of the S&P 500 Index would also apply to the S&P Public Utility Index.

(4) The current constituents of the index are provided on the Microsoft Excel spreadsheet that is attached in Attachment B.

(5) Please refer to the list on Attachment B.

(6) Please refer to page 43 to 46 of Paul R. Moul's direct testimony and Appendix H.

AG DR Set 1-214 Attachment A

STANDARD
&POOR'S

S&P U.S. INDICES

INDEX METHODOLOGY

October 2008

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Introduction

Standard & Poor's U.S. indices are designed to reflect the U.S. equity markets and, through the markets, the U.S. economy. The S&P 500 focuses on the large-cap sector of the market; however, since it includes a significant portion of the total value of the market, it also represents the market. Companies in the S&P 500 are considered leading companies in leading industries. The S&P 500 is a member of the S&P Global 1200 family of indices. The S&P MidCap 400 represents the mid-cap range of companies, and the S&P SmallCap 600 represents small-cap companies. The three indices are combined and calculated together as the S&P Composite 1500; the S&P 500 and S&P MidCap 400 are combined to form the S&P 900; the S&P MidCap 400 and S&P SmallCap 600 are combined to form the S&P 1000. Index constituents are classified according to the Global Industry Classification Standard (GICS®).

The indices should be fair, meaning that an investor who buys all the stocks in an index with correct index weights can achieve the same performance that Standard & Poor's calculates.

Index Family

In addition to the S&P 500, S&P MidCap 400, S&P SmallCap 600 and the combined indices named above, the S&P U.S. indices include:

S&P Equal Weight Index. The S&P Equal Weight Index is comprised of the same constituents as the S&P 500, but is equal- rather than capitalization-weighted. This index was introduced in response to investor interest in an equal-weighted index that would support different investment and benchmarking approaches while still recognizing the importance of the leading companies in leading industries selected for the S&P 500. The index is rebalanced quarterly, to 0.20% weight for each company. Further information is available on the Web site at www.indices.standardandpoors.com.[1]

S&P 100. The S&P 100 consists of 100 companies selected from the S&P 500. To be included, the companies should be among the larger and more stable companies in the S&P 500, and must have listed options. Sector balance is considered in the selection of companies for the S&P 100. This index is widely used for derivatives, and is the index underlying the OEX options.

---

[1] See David M. Blitzer, Srikant Dash, "The S&P 500 Equal Weight Index: Structure and Methodology," November 20, 2004 at www.indices.standardandpoors.com.

S&P 500 O-Strip. The S&P 500 O-Strip index is an equity index comprised of those stocks of the S&P 500 that are listed on the NASDAQ. Dividends, constituent changes and share count adjustments are treated in the same manner and implemented at the same time in the S&P 500 and the S&P 500 O-Strip index.

S&P U.S. REIT Composite. The S&P U.S. REIT Composite index tracks the market performance of U.S. real estate investment trusts, known as REITs. The S&P U.S. REIT Composite consists of approximately 100 REITs chosen for their liquidity and importance in representing a diversified real estate portfolio. To be included, a REIT must meet the same liquidity guidelines used for the S&P Composite 1500, and must have at least US$100 million in unadjusted market capitalization. The S&P U.S. REIT Composite index represents a balance of property types and geographic locations. Mortgage REITs are not eligible for inclusion. REITs may also be included in the S&P 500, S&P MidCap 400 and S&P SmallCap 600 at the same time they are in the S&P U.S. REIT Composite.

S&P Total Market Index. The S&P Total Market Index includes all U.S. common equities listed on the NYSE (including NYSE Arca), the American Stock Exchange, the NASDAQ Global Select Market, the NASDAQ Select Market and the NASDAQ Capital Market.

S&P Completion Index. A sub-index of the Total Market Index is the S&P Completion Index. This index includes all stocks in the Total Market Index except those in the S&P 500.

Eligibility Criteria

Additions to the S&P 500, S&P MidCap 400 and S&P SmallCap 600

Market Capitalization. Unadjusted market capitalization of US$ 4 billion or more for the S&P 500, US$ 1 billion to US$ 4.5 billion for the S&P MidCap 400, and US$ 250 million to US$ 1.5 billion for the S&P SmallCap 600. The market cap of a potential addition to an index is looked at in the context of its short- and medium-term historical trends, as well as those of its industry. These ranges are reviewed from time to time to assure consistency with market conditions.

Liquidity. Adequate liquidity and reasonable price – the ratio of annual dollar value traded to market capitalization should be 0.3 or greater. Very low stock prices can affect a stock's liquidity.

Domicile. U.S. companies. A U.S. company, for index purposes, should have the following characteristics:

- Incorporated in the U.S.
- Financial reporting should be U.S. GAAP, in U.S. dollars, and the company should not be considered a foreign entity by the SEC
- A corporate governance structure consistent with U.S. practice
- Principal executive presence in the U.S.
- The U.S. portion of revenues, operations, fixed assets and employees should be a significant portion of the total, but need not exceed 50%
- The common stock should be listed on NYSE (including NYSE Arca), Amex, the NASDAQ Global Select Market, the NASDAQ Select Market or the NASDAQ Capital Market. (ADRs are not acceptable)
- The company should generally be considered a U.S. company by analysts and investors.

If one of these criteria is not met and there is no other major market in which a company would logically be assigned, S&P may deem it a U.S. company for index purposes.

Public Float. Public float of at least 50% of the stock.

Sector Classification. Contribution to sector balance maintenance, as measured by a comparison of each GICS sector's weight in an index with its weight in the market, in the relevant market capitalization range.

Financial Viability. Usually measured as four consecutive quarters of positive as-reported earnings. As-reported earnings are Generally Accepted Accounting Principles (GAAP) net income excluding discontinued operations and extraordinary items. For REITs, financial viability is based on both as-reported earnings and Funds From Operations (FFO). FFO is a measure commonly used in REIT analysis.

Another measure of financial viability is a company's balance sheet leverage, which should be operationally justifiable in the context of both its industry peers and its business model.

Treatment of IPOs. Initial public offerings should be seasoned for 6 to 12 months before being considered for addition to an index.

Eligible Companies. Operating company and not a closed-end fund, holding company, tracking stock, partnership, investment vehicle or royalty trust. Real estate investment trusts (excluding mortgage REITs) are eligible for inclusion in Standard & Poor's U.S. indices, as are business development companies (BDCs).

Deletions from the S&P 500, S&P MidCap 400 and S&P SmallCap 600

- Companies that are involved in mergers, acquisitions, or significant restructuring such that they no longer meet inclusion criteria.
- Companies that substantially violate one or more of the addition criteria.

Standard & Poor's believes turnover in index membership should be avoided when possible. At times a company may appear to temporarily violate one or more of the addition criteria. However, the addition criteria are for addition to an index, not for continued membership. As a result, an index constituent that appears to violate criteria for addition to that index will not be deleted unless ongoing conditions warrant an index change. When a company is removed from an index, Standard & Poor's will explain the basis for the removal.

Timing of Changes

Changes to the U.S. indices other than the S&P Total Market Index are made as needed, with no annual or semi-annual reconstitution.

The S&P Equal Weight Index is rebalanced quarterly for weights, to 0.20% for each company in the index.

Index Construction

Approaches

Standard & Poor's U.S. indices are designed to be liquid, so as to support investment products such as index mutual funds, exchange traded funds, index portfolios, index futures and options.

Index Calculations

On any given day, the index value is the quotient of the total float-adjusted market capitalization of the index's constituents and its divisor. Continuity in index values is maintained by adjusting the divisor for all changes in the constituents' share capital after the base date. This includes additions and deletions to the index, rights issues, share buybacks and issuances, and spin-offs. The divisor's time series is, in effect, a chronological summary of all changes affecting the base capital of the index. The divisor is adjusted such that the index value at an instant just prior to a change in base capital equals the index value at an instant immediately following that change.

Shares Outstanding

The shares counted for index calculation are shares outstanding, and are essentially "basic shares" as defined by The Financial Accounting Standards Board (FASB) in Generally Accepted Accounting Principles (GAAP). This count is float-adjusted to reflect only available shares.

For float adjustment methodology, please see the Appendix.

Multiple Classes of Stock

Some companies have more than one class of common stock outstanding. In Standard & Poor's U.S. indices, each company is represented only once. The stock price is based on one class, usually the most liquid class, and the share count is based on the total shares outstanding. To determine the available float for companies with multiple classes of stock, Standard & Poor's calculates the weighted average investable weight factor (IWF) for the stock using the proportion of total company market capitalization of each share class as the weights. The result is reviewed to assure that when the weighted average IWF is applied to the class included in the index, the shares to be purchased are not significantly larger than the available float for the included class.

Special Considerations for Total Market and Completion Indices

Except as noted here, the maintenance of the S&P Total Market Index (S&P TMI) and the S&P Completion Index follow the same procedures as the S&P 500, S&P MidCap 400 and S&P SmallCap 600.

The S&P TMI includes all U.S. common equities listed on the NYSE (including NYSE Arca), the American Stock Exchange, the NASDAQ Global Select Market, the NASDAQ Select Market, and the NASDAQ Capital Market. Ineligible securities include limited partnerships, master limited partnerships, OTC bulletin board issues, pink sheet-listed issues, closed-end funds, ETFs, royalty trusts, tracking stocks, ADRs, ADSs and MLP IT units. Real estate investment trusts (excluding mortgage REITs) are included in the TMI.

For inclusion in the S&P TMI, companies must be U.S. companies according to the criteria used for the S&P 500, S&P MidCap 400 and S&P SmallCap 600. For inclusion, a company must have an investable weight factor (IWF) of 10% (0.10) or more and an annual liquidity measure of 10% (0.10) or more. There is no minimum market capitalization requirement for the S&P TMI. Initial public offerings (IPOs) are included on the same basis as other companies, providing there is one month of trading data as of the last day of the month prior to rebalancing. IPOs that are added will remain in the index for a minimum of two quarters. Exclusions due to the violation of eligibility criteria will be considered thereafter. Spin-offs are normally added on the effective date.

A stock is immediately added to the S&P Completion Index if it is dropped from the S&P 500 for a reason other than acquisition, delisting from a major exchange, change in domicile or bankruptcy. Likewise, all stocks added to the S&P 500 are immediately removed from the S&P Completion Index. S&P Completion Index constituents are rebalanced quarterly. Qualifications for inclusion or exclusion are determined on the last trading day of the month prior to the rebalancing. Rebalancing coincides with expiration of U.S. index futures and options, on the third Friday of the last month of each quarter.

Share changes of 5% or more related to public offerings and private placements are implemented weekly. Share increases of 5% or more resulting from mergers in which both the target and acquirer are Completion Index constituents are implemented after the close of trading on the effective date of the deal's close; share increases of 5% or more resulting from mergers in which the acquirer is, but the target is not, a S&P Completion Index constituent are implemented weekly.

All other share changes are effective at the close of the third Friday of the last month of each quarter (March, June, September, and December).

Companies with multiple share classes follow the same rule as the S&P 500: the most liquid class is included in the index, with the aggregate count of the different share classes used for index calculation and analysis.

Companies delisted as a result of merger, acquisition or other corporate action are removed at a time announced by Standard & Poor's, normally at the close of the last day of trading or expiration of a tender offer. Constituents that are halted from trading may be kept in the index until trading resumes, at the discretion of Standard & Poor's. If a company is moved to the pink sheets or the bulletin board, the stock will be removed. An issue re-emerging from pink sheets or bulletin board status will be eligible for inclusion at the next regular rebalancing if it meets the requirements. Index changes are announced with one to five days' advance notice.

IWF changes are implemented annually in September. IWF changes greater than 10 percentage points are implemented as soon as reasonably possible if due to corporate actions (e.g., mergers, acquisitions, spin-offs).

If a company is added to the S&P 500, S&P MidCap 400 or S&P SmallCap 600, its IWF and shares outstanding are subject to review at the time of the addition to the more senior index.

Index Maintenance

Rebalancing

Changes to the U.S. indices, other than the S&P Completion Index, are made on an as-needed basis. There is no annual or semi-annual reconstitution. Rather, changes in response to corporate actions and market developments can be made at any time. Constituent changes are typically announced two to five days before they are scheduled to be implemented. Announcements are available to the public via the Web site, www.indices.standardandpoors.com, before or at the same time they are available to clients or the affected companies.

Share Updates. Changes in a company's shares outstanding of less than 5% due to its acquisition of another company in the same headline index (for example, both are in the S&P MidCap 400) are made as soon as reasonably possible.

All other changes of less than 5% are accumulated and made quarterly on the third Friday of March, June, September, and December; they are usually announced two days prior. *Such changes include share increases of less than 5% due to the merging of S&P Composite 1500 constituents that are not members of the same headline index (see above).*

5% Rule. Changes in a company's shares outstanding of 5% or more due to mergers, acquisitions, public offerings, private placements, tender offers, Dutch auctions or exchange offers are made as soon as reasonably possible. Other changes of 5% or more (due to, for example, company stock repurchases, redemptions, exercise of options, warrants, conversion of preferred stock, notes, debt, equity participations or other recapitalizations) are made weekly, and are announced on Tuesdays for implementation after the close of trading on Wednesday. In the case of certain rights issuances, in which the number of rights issued and/or terms of their exercise are deemed substantial, a price adjustment and share increase may be implemented immediately.

Corporate Actions

Corporate actions (such as stock splits, stock dividends, spin-offs and rights offerings) are applied after the close of trading on the day prior to the ex-date.

Other Adjustments

In cases where there is no achievable market price for a stock being deleted, it can be removed at a zero or minimal price at the Index Committee's discretion, in recognition of the constraints faced by investors in trading bankrupt or suspended stocks.

Investable Weight Factor (IWF)

Please refer to Appendix for details.

Base Date

Index	Base Date	Base Value
S&P 500	1941-1943	10
S&P MidCap 400	06/28/1991	100
S&P SmallCap 600	12/31/1993	100
S&P 900	12/30/1994	1000
S&P 1000	12/31/1994	1000
S&P Composite 1500	12/31/1994	100
S&P U.S. REIT Composite	12/31/1996	100
S&P Total Market Index - Price Only	09/08/2003	1039.58
S&P Total Market Index – Total Return	09/08/2003	1509.47

Index Data

Total Return and Net Return Indices

Total return index series are calculated for the U.S. indices as well as the price return series. Ordinary cash dividends are applied on the ex-date in calculating the total return series. "Special dividends" are those dividends that are outside of the normal payment pattern established historically by the issuing corporation. These may be described by the corporation as "special," "extra," "year-end," or "return of capital." Whether a dividend is funded from operating earnings or from other sources of cash does not affect the determination of whether it is ordinary or special. "Special dividends" are treated as corporate actions with offsetting price and divisor adjustments; the total return index series reflect both ordinary and special dividends.

Index Governance

Index Committee

Standard & Poor's U.S. indices are maintained by the U.S. Index Committee. There are eight members of the Index Committee; all are full-time professional members of Standard & Poor's staff. The committee meets monthly. At each meeting, the Index Committee reviews pending corporate actions that may affect index constituents, statistics comparing the composition of the indices to the market, companies that are being considered as candidates for addition to an index, and any significant market events. In addition, the Index Committee may revise index policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

Standard & Poor's considers information about changes to its U.S. indices and related matters to be potentially market moving and material. Therefore, all Index Committee discussions are confidential.

Index Policy

Announcements

Announcements of additions and deletions for the S&P 500, S&P MidCap 400, S&P SmallCap 600 and S&P U.S. REIT Composite are made at 05:15 PM Eastern Time. Press releases are posted on the Web site, www.indices.standardandpoors.com, and are released to major news services.

Index methodology is constantly under review for best practices, and any changes are announced well ahead of time via the Web site and email to all clients.

Holiday Schedule

The S&P U.S. indices are calculated when the U.S. equity markets are open.

A complete holiday schedule for the year is available on the Standard & Poor's Web site at www.indices.standardandpoors.com.

Unscheduled Market Closures

In situations where an exchange is forced to close early due to unforeseen events, such computer or electric power failures, weather conditions or other events, Standard & Poor's will calculate the closing price of the indices based on (1) the closing prices published by the exchange, or (2) if no closing price is available, the last regular trade reported for each stock before the exchange closed. In all cases, the prices will be from the primary exchange for each stock in the index. If an exchange fails to open due to unforeseen circumstances, the index will use the prior day's closing prices. If all exchanges fail to open, Standard & Poor's may determine not to publish the index for that day.

Index Dissemination

Index levels are available through Standard & Poor's Web site at www.indices.standardandpoors.com, major quote vendors (see codes below), numerous investment-oriented Web sites, and various print and electronic media. Standard & Poor's Web site also provides an archive of recent index announcements and press releases, as well as a monthly release giving total returns for Standard & Poor's headline indices.

Tickers

Index	**Bloomberg**	**Reuters**
S&P 500	SPX	.SPX
S&P MidCap 400	MID	.MID
S&P SmallCap 600	SML	.SML
S&P Composite 1500	SPR	.SPSUP
S&P 900	SPLGMID	.SPLGMID
S&P 1000	SPK	.SPMIDSM
S&P 100 (OEX)	OEX	.OEX
S&P Equal Weight Index	SPXEW	.SPXEW
S&P U.S. REIT Composite	SPREIT	.SPREITS
S&P Total Market Index	SPTMI	.SPTMI
S&P Completion Index	SPCMI	.SPCMI

Index Alert

Complete data for index replication (including share counts, tickers and data on index levels and returns) are available through Standard & Poor's fee-based service, *S&P Index Alert.*

FTP

Daily stock level and index data is available via FTP on subscription.

For further information, please refer to Standard & Poor's Web site at www.indices.standardandpoors.com.

Appendices: Float Adjustment

Goals

Under float adjustment, the share counts used in calculating the indices reflect only those shares that are available to investors, rather than all of a company's outstanding shares. Float adjustment excludes shares closely held by control groups, other publicly traded companies or government agencies.

With a float-adjusted index, the value of the index reflects the value available in the public markets. Further, reducing the relative investment index investors have in stocks with limited float – stocks that typically are less liquid – should lower the cost of index investing.

Rules

The goal is to distinguish strategic shareholders (whose holdings depend on concerns such as maintaining control rather than the economic fortunes of the company) from those holders whose investments depend on the stock's price and their evaluation of the company's future prospects. Shareholders concerned with control of a company include board members, founders and owners of large blocks of stock. Likewise, holdings of stock in one corporation by another corporation are normally for control, not investment, purposes. While government holdings are unusual in the United States, normally government holdings are not investments made because a stock is expected to appreciate or the government entity is managing its excess funds through equity investments.

Share owners acting as investors will consider changes in the stock's price, earnings or the company's operations as possible reasons to buy or sell the stock. They hold the stock because they expect it to appreciate in value and believe the stock offers better risk and return opportunities than other investments. Further, a sharp rise or fall in the stock's price could be a reason to adjust their positions. Mutual funds, pension plans and other institutional investors are usually in this category. The fact that an institutional investor has held a block of shares for several years is not evidence that the block is being held for control, rather than investment, reasons.

Standard & Poor's defines three groups of shareholders whose holdings are presumed to be for control and which are, therefore, subject to float adjustment. Within each group, the holdings are totaled. In cases where holdings in a group exceed 10% of the outstanding shares of a company, the holdings of that group are excluded from the float-adjusted count of shares used in index calculations. Calculation accuracy depends on the underlying data; however, investable weight factors are published to the nearest 1% of shares outstanding.

The three groups are:

1. Holdings by other publicly traded corporations, venture capital firms, private equity firms, strategic partners or leveraged buy-out groups.
2. Holdings by government entities, including all levels of government in the United States or foreign countries.
3. Holdings by current or former officers and directors of the company, founders of the company, or family trusts of officers, directors or founders. Second, holdings of trusts, foundations, pension funds, employee stock ownership plans or other investment vehicles associated with and controlled by the company.

It is also useful to identify some holders which are considered to be investors and not control holders. Mutual funds, investment advisory firms, pension funds or foundations not associated with the company and investment funds in insurance companies are part of the float. These holders are investors, not strategic holders. At times data will show that these investors hold positions for several years with virtually no change. This is not evidence that the holding is not for investment purposes; rather it merely suggests that the portfolio manager continues to see the stock as a good investment. Further, when the stock is held in an index fund, one would not expect to see substantial changes in the holdings.

A company's annual report, proxy or 10-K may include listings of some equity-like securities that are not included in total shares outstanding and need not be considered in calculating available float. These include treasury stock, stock options, restricted shares, equity participation units, warrants, preferred stock, convertible stock and rights.

In a few cases, a company's ultimate shareholders may be beneficiaries of a trust which holds their stock. (Examples usually include cases in which shares were distributed as part of the initial public offering.) If the trust beneficiaries can buy and sell the stock without any difficulty or significant additional expenses beyond typical brokerage fees, the shares in a trust are part of the available float. If the shares in a trust cannot be sold, the shares would not be counted as part of the available float.

Shares of a U.S. company traded in Canada as "exchangeable" shares are included in the total share count and in the float unless they fall under one of the three groups enumerated above.

If a company has more than one class of stock outstanding, shares in an unlisted or non-traded class are treated as if listed or traded if shareholders can convert the unlisted stock to the listed class without undue delay or cost.

Investable Weight Factors

For each stock an investable weight factor (IWF) is calculated:

$$\text{IWF} = (\text{available float shares})/(\text{total shares outstanding}) \qquad (1)$$

where available float shares is defined as total shares outstanding less shares held in one or more of the three groups listed above where the group holdings exceed 10% of the outstanding shares.

The float-adjusted index is calculated:

$$\text{Index} = (\Sigma_j\ (P_j S_j \text{IWF}_j))/(\text{Divisor}) \qquad (2)$$

Where P_j is the price of stock j, S_j is the total shares outstanding of stock j and IWF_j is the investable weight factor. The divisor is the index divisor.

S&P Contact Information

Index Management

David M. Blitzer, Ph.D. – Managing Director & Chairman of the Index Committee

david_blitzer@standardandpoors.com	+1.212.438.3907

James Brophy – Senior Director, U.S. Indices

james_brophy@standardandpoors.com	+1.212.438.1250

Media Relations

David Guarino – Communications

dave_guarino@standardandpoors.com	+1.212.438.1471

Index Operations & Business Development

North America

New York

David Kao	+1.212.438.3354

Toronto

Jasmit Bhandal	+1.416.507.3203

Europe

London

Susan Fagg	+44.20.7176.8888

Asia

Tokyo

Seiichiro Uchi	+813.4550.8568

Beijing

Andrew Webb	+86.10.6569.2919

Sydney

Guy Maguire	+61.2.9255.9822

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Job : 172
Date: 6/12/2009
Time: 3:12:06 PM
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Symbol	Company	Country	GICS	Sector	Price
AES	AES Corp	USA	55	Utilities	10.24
AYE	Allegheny Energy Inc	USA	55	Utilities	26.10
AEE	Ameren Corp	USA	55	Utilities	23.68
AEP	American Electric Power	USA	55	Utilities	26.37
CNP	Centerpoint Energy Inc	USA	55	Utilities	10.15
CMS	CMS Energy Corp	USA	55	Utilities	11.71
ED	Consolidated Edison Inc	USA	55	Utilities	35.81
CEG	Constellation Energy Group	USA	55	Utilities	27.23
D	Dominion Resources Inc	USA	55	Utilities	31.76
DTE	DTE Energy Co	USA	55	Utilities	31.22
DUK	Duke Energy Corp	USA	55	Utilities	14.09
DYN	Dynegy Inc A	USA	55	Utilities	2.14
EIX	Edison Intl	USA	55	Utilities	29.84
ETR	Entergy Corp	USA	55	Utilities	73.50
EQT	EQT Corporation	USA	55	Utilities	36.50
EXC	Exelon Corp	USA	55	Utilities	47.45
FE	FirstEnergy Corp	USA	55	Utilities	38.33
FPL	FPL Group Inc	USA	55	Utilities	55.37
TEG	Integrys Energy Group Inc	USA	55	Utilities	28.40
GAS	NICOR Inc	USA	55	Utilities	34.06
NI	Nisource Inc	USA	55	Utilities	11.11
NU	Northeast Utilities	USA	55	Utilities	21.12
POM	Pepco Holdings Inc	USA	55	Utilities	12.88
PCG	PG&E Corporation	USA	55	Utilities	37.48
PNW	Pinnacle West Capital (AZ)	USA	55	Utilities	28.07
PPL	PPL Corp	USA	55	Utilities	32.48
PGN	Progress Energy Inc	USA	55	Utilities	35.53
PEG	Public Service Enterprise Grp	USA	55	Utilities	31.92
STR	Questar Corp	USA	55	Utilities	33.35
SCG	SCANA Corp	USA	55	Utilities	30.42
SRE	Sempra Energy	USA	55	Utilities	47.32
SO	Southern Co	USA	55	Utilities	28.82
TE	TECO Energy Inc	USA	55	Utilities	11.50
WEC	Wisconsin Energy Corp	USA	55	Utilities	40.39
XEL	Xcel Energy Inc	USA	55	Utilities	17.54

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 215:

With reference to page 46, lines 1-5, please provide the methodology used to presume that gas companies are 88% as risky as the S&P Public Utilities.

Response:

As a preliminary matter, Mr. Moul did not make a separate determination of the 88% risk factor. Rather, the 5.50% risk premium for the Gas Group was deemed to be reasonable by reference to the 6.23% for the S&P Public Utilities. The relationship of those two values is 88% (5.50% ÷ 6.23%). The 5.50% common equity risk premium was determined after first establishing that a 6.23% common equity risk premium was appropriate for the S&P Public Utilities. The 6.23% common equity risk premium for the S&P Public Utilities was calculated based upon the holding period returns for both the utility equity index and the returns on public utility bonds published by Lehman Brothers. From the entire historical series, representative common equity risk premiums were calculated using arithmetic means, geometric means, and medians. By focusing on the middle values shown by the periods 1974-2007 and 1979-2007, the 6.23% common equity risk premium provides a reasonable common equity risk premium for the S&P Public Utilities. As noted in the fundamental risk analysis contained on pages 12 through 19 of Paul R. Moul's direct testimony, differences in risk characteristics were taken into account when developing a risk premium for the Gas Group as differentiated from the S&P Public Utilities, considering the factors of size, market ratios, common equity ratio, return on book equity, operating ratios, coverage, quality of earnings, internally generated funds, and betas.

PSC Case No. 2009-00141
AG DR Set 1-216
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 216:

With reference to pages 47-49, Attachment PRM-13, and Appendix I, please provide (1) documentation on the methodology used by *Value Line* in adjusting betas (Appendix I, page I-3, lines 13-20; (2) the individual company data used to make the leverage-adjusted beta adjustments (page 48); and (3) all empirical studies that support the use of leverage-adjusted betas such as proposed by Mr. Moul. Please provide copies of the source documents, work papers, and data in hard copy and electronic formats (Microsoft Excel), with all data and equations left intact.

Response:

(1) Value Line describes its procedure to calculate its betas as follows:

> Beta—a relative measure of the historical sensitivity of the stock's price to overall fluctuations in the New York Stock Exchange Composite Index. A Beta of 1.50 indicates a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Index. The "Beta coefficient" is derived from a regression analysis of the relationship between weekly percentage changes in the price of a stock and weekly percentage changes in the NYSE Index over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. The Betas are adjusted for their long-term tendency to converge toward 1.00.

From Mr. Moul's experience, the adjustment procedure apparently includes approximately two-thirds weight assigned to the calculated beta and one-third weight assigned to the market beta of 1.0.

(2) Please refer to the schedule that is attached in Attachment A to the response to AG DR Set 1-211.

(3) Please refer to the article by Robert S. Hamada that is attached in Attachment A.

The Effect of the Firm's Capital Structure on the Systematic Risk of Common Stocks

Robert S. Hamada

The Journal of Finance, Vol. 27, No. 2, Papers and Proceedings of the Thirtieth Annual Meeting of the American Finance Association, New Orleans, Louisiana, December 27-29, 1971. (May, 1972), pp. 435-452.

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THE EFFECT OF THE FIRM'S CAPITAL STRUCTURE ON THE SYSTEMATIC RISK OF COMMON STOCKS

ROBERT S. HAMADA*

I. INTRODUCTION

ONLY RECENTLY has there been an interest in relating the issues historically associated with corporation finance to those historically associated with investment and portfolio analyses. In fact, rigorous theoretical attempts in this direction were made only since the capital asset pricing model of Sharpe [13], Lintner [6], and Mossin [11], itself an extension of the Markowitz [7] portfolio theory. This study is one of the first empirical works consciously attempting to show and test the relationships between the two fields. In addition, differences in the observed systematic or nondiversifiable risk of common stocks, β, have never really been analyzed before by investigating some of the underlying differences in the firms.

In the capital asset pricing model, it was demonstrated that the efficient set of portfolios to any individual investor will always be some combination of lending at the risk-free rate and the "market portfolio," or borrowing at the risk-free rate and the "market portfolio." At the same time, the Modigliani and Miller (MM) propositions [9, 10] on the effect of corporate leverage are well known to the students of corporation finance. In order for their propositions to hold, personal leverage is required to be a perfect substitute for corporate leverage. If this is true, then corporate borrowing could substitute for personal borrowing in the capital asset pricing model as well.

Both in the pricing model and the MM theory, borrowing, from whatever source, while maintaining a fixed amount of equity, increases the risk to the investor. Therefore, in the mean-standard deviation version of the capital asset pricing model, the covariance of the asset's rate of return with the market portfolio's rate of return (which measures the nondiversifiable risk of the asset—the proxy β will be used to measure this) should be greater for the stock of a firm with a higher debt-equity ratio than for the stock of another firm in the same risk-class with a lower debt-equity ratio.[1]

This study, then, has a number of purposes. First, we shall attempt to link empirically corporation finance issues with portfolio and security analyses through the effect of a firm's leverage on the systematic risk of its common

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* Graduate School of Business, University of Chicago, currently visiting at the Graduate School of Business Administration, University of Washington. The research assistance of Christine Thomas and Leon Tsao is gratefully acknowledged. This paper has benefited from the comments made at the Finance Workshop at the University of Chicago, and especially those made by Eugene Fama. Remaining errors are due solely to the author.

[1] This very quick summary of the theoretical relationship between what is known as corporation finance and the modern investment and portfolio analyses centered around the capital asset pricing model is more thoroughly presented in [5], along with the necessary assumptions required for this relationship.

stock. Then, we shall attempt to test the MM theory, or at least provide another piece of evidence on this long-standing controversial issue. This test will not rely on an explicit valuation model, such as the MM study of the electric utility industry [8] and the Brown study of the railroad industry [2]. A procedure using systematic risk measures (β s) has been worked out in this paper for this purpose.

If the MM theory is validated by this procedure, then the final purpose of this study is to demonstrate a method for estimating the cost of capital of individual firms to be used by them for scale-changing or nondiversifying investment projects. The primary component of any firm's cost of capital is the capitalization rate for the firm if the firm had no debt and preferred stock in its capital structure. Since most firms do have fixed commitment obligations, this capitalization rate (we shall call it $E(R_A)$; MM denote it ρ^τ) is unobservable. But if the MM theory and the capital asset pricing model are correct, then it is possible to estimate $E(R_A)$ from the systematic risk approach for individual firms, even if these firms are members of a one-firm risk-class.[2]

With this statement of the purposes for this study, we shall, in Section II, discuss the alternative general procedures that are possible for estimating the effect of leverage on systematic risk and select the most feasible ones. The results are presented in Section III. And finally, tests of the MM versus the traditional theories of corporation finance are presented in Section IV.

II. SOME POSSIBLE PROCEDURES AND THE SELECTED ESTIMATING RELATIONSHIPS

There are at least four general procedures that can be used to estimate the effect of the firm's capital structure on the systematic risk of common stocks. The first is the MM valuation model approach. By estimating ρ^τ with an explicit valuation model as they have for the electric utility industry, it is possible to relate this ρ^τ with the use of the capital asset pricing model to a nonleveraged systematic risk measure, ${}_A\beta$. Then the difference between the observed common stock's systematic risk (which we shall denote ${}_B\beta$) and ${}_A\beta$ would be due solely to leverage. But the difficulties of this approach for all firms are many.

The MM valuation model approach requires the specification, in advance, of risk-classes. All firms in a risk-class are then assumed to have the same ρ^τ—the capitalization rate for an all-common equity firm. Unfortunately, there must be enough firms in a risk-class so that a cross-section analysis will yield statistically significant coefficients. There may not be many more risk-classes (with enough observations) now that the electric utility and railroad industries have been studied. In addition, the MM approach requires estimating expected asset earnings and estimating the capitalized growth potential implicit in stock prices. If it is possible to consider growth and expected earnings without having

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[2] It is, in fact, this last purpose of making applicable and practical some of the implications of the capital asset pricing model for corporation finance issues that provided the initial motivation for this paper. In this context, if one is familiar with the fair rate of return literature for regulated utilities, for example, an industry where debt is so prevalent, adjusting correctly for leverage is not frequently done and can be very critical.

to specify their exact magnitude at a specific point in time, considerable difficulty and possible measurement errors will be avoided.

The second approach is to run a regression between the observed systematic risk of a stock and a number of accounting and leverage variables in an attempt to explain this observed systematic risk. Unfortunately, without a theory, we do not know which variables to include and which variables to exclude and whether the relationship is linear, multiplicative, exponential, curvilinear, etc. Therefore, this method will also not be used.

A third approach is to measure the systematic risk before and after a new debt issue. The difference can then be attributed to the debt issue directly. An attractive feature of this procedure is that a good estimate of the market value of the incremental debt issue can be obtained. A number of disadvantages, unfortunately, are associated with this direct approach. The difference in the systematic risk may be due not only to the additional debt, but also to the reason the debt was issued. It may be used to finance a new investment project, in which case the project's characteristics will also be reflected in the new systematic risk measure. In addition, the new debt issue may have been anticipated by the market if the firm had some long-run target leverage ratio which this issue will help maintain; conversely, the market may not fully consider the new debt issue if it believes the increase in leverage is only temporary. For these reasons, this seemingly attractive procedure will not be employed.

The last approach, which will be used in this study, is to assume the validity of the MM theory from the outset. Then the observed rate of return of a stock can be adjusted to what *it would have been* over the same time period had the firm no debt and preferred stock in its capital structure. The difference between the observed systematic risk, ${}_B\beta$, and the systematic risk for this adjusted rate of return time series, ${}_A\beta$, can be attributed to leverage, if the MM theory is correct. The final step, then, is to test the MM theory.

To discuss this more specifically, consider the following relationship for the dollar return to the common shareholder from period $t-1$ to t:

$$(X-I)_t(1-\tau)_t - p_t + \Delta G_t = d_t + cg_t \tag{1}$$

where X_t represents earnings before taxes, interest, and preferred dividends and is assumed to be unaffected by fixed commitment obligations; I_t represents interest and other fixed charges paid during the period; τ is the corporation income tax rate; p_t is the preferred dividends paid; ΔG_t represents the change in capitalized growth over the period; and d_t and cg_t are common shareholder dividends and capital gains during the period, respectively.

Equation (1) relates the corporation finance types of variables with the market holding period return important to the investors. The first term on the left-hand-side of (1) is profits after taxes and after interest which is the earnings the common and preferred shareholders receive on their investment for the period. Subtracting out p_t leaves us with the earnings the common shareholder would receive from currently-held assets.

To this must be added any change in capitalized growth since we are trying to explain the common shareholder's market holding period dollar return. ΔG_t

must be added for growth firms to the current period's profits from existing assets since capitalized growth opportunities of the firm—future earnings from new assets over and above the firm's cost of capital which are already reflected in the stock price at $(t - 1)$—should change over the period and would accrue to the common shareholder. Assuming shareholders at the start of the period estimated these growth opportunities on average correctly, the expected value of ΔG_t would not be zero, but should be positive. For example, consider growth opportunities five years from now which yield more than the going rate of return and are reflected in today's stock price. These growth opportunities will become one year closer to fruition at time t than at time $t - 1$ so that their present value would become larger. ΔG_t then represents this increase in the present value of these future opportunities simply because it is now four years away rather than five.[3]

Since the systematic risk of a common stock is:

$$ {}_B\beta = \frac{\text{cov}\,(R_{B_t}, R_{M_t})}{\sigma^2(R_{M_t})} \tag{2} $$

where R_{Bt} is the common shareholder's rate of return and R_{Mt} is the rate of return on the market portfolio, then substitution of (1) into (2) yields:

$$ {}_B\beta = \frac{\text{cov}\left[\dfrac{(X-I)(1-\tau)_t - p_t + \Delta G_t}{S_{B_{t-1}}}, R_{M_t}\right]}{\sigma^2(R_{M_t})} \tag{2a} $$

where $S_{B_{t-1}}$ denotes the market value of the common stock at the beginning of the period.

The systematic risk for the same firm over the same period *if* there were no debt and preferred stock in its capital structure is:

$$ {}_A\beta = \frac{\text{cov}(R_{A_t}, R_{M_t})}{\sigma^2(R_{M_t})} $$

$$ = \frac{\text{cov}\left[\dfrac{X(1-\tau)_t + \Delta G_t}{S_{A_{t-1}}}, R_{M_t}\right]}{\sigma^2(R_{M_t})} \tag{3} $$

where R_{A_t} and $S_{A_{t-1}}$ represent the rate of return and the market value, respectively, to the common shareholder if the firm had no debt and preferred stock. From (3), we can obtain:

$$ {}_A\beta S_{A_{t-1}} = \frac{\text{cov}\,[X(1-\tau)_t + \Delta G_t, R_{M_t}]}{\sigma^2(R_{M_t})} \tag{3a} $$

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[3] Continual awareness of the difficulties of estimating capitalized growth, or changes in growth, especially in conjunction with leverage considerations, for purposes such as valuation or cost of capital is a characteristic common to students of corporation finance. This is the reason for the emphasis on growth in this paper and for presenting a method to neutralize for differences in growth when comparing rates of return.

Next, by expanding and rearranging (2a), we have:

$$ {}_{B}\beta S_{B_{t-1}} = \frac{\text{cov}\,[X(1-\tau)_t + \Delta G_t, R_{M_t}]}{\sigma^2(R_{M_t})} - \frac{\text{cov}\,[I(1-\tau)_t, R_{M_t}]}{\sigma^2(R_{M_t})} - \frac{\text{cov}\,(p_t, R_{M_t})}{\sigma^2(R_{M_t})} \quad (2b) $$

If we assume as an empirical approximation that interest and preferred dividends have negligible covariance with the market, at least relative to the (pure equity) common stock's covariance, then substitution of the LHS of (3a) into the RHS of (2b) yields:[4]

$$ {}_{B}\beta S_{B_{t-1}} = {}_{A}\beta S_{A_{t-1}} \quad (4) $$

or

$$ {}_{A}\beta = \left(\frac{S_B}{S_A}\right)_{t-1} {}_{B}\beta \quad (4a) $$

Because $S_{A_{t-1}}$, the market value of common stock *if* the firm had no debt and preferred stock, is not observable since most firms do have debt and/or preferred stock, a theory is required in order to measure what this quantity *would have been* at $t-1$. The MM theory [10] will be employed for this purpose, that is:

$$ S_{A_{t-1}} = (V - \tau D)_{t-1}. \quad (5) $$

Equation (5) indicates that if the Federal government tax subsidy for debt financing, τD, where D is the market value of debt, is subtracted from the observed market value of the firm, V_{t-1} (where V_{t-1} is the sum of S_B, D and the observed market value of preferred), then the market value of an unleveraged firm is obtained. Underlying (5) is the assumption that the firm is near its target leverage ratio so that no more or no less debt subsidy is capitalized already into the observed stock price. The conditions under which this MM relationship hold are discussed carefully in [4].

It is at this point that problems in obtaining satisfactory estimates of ${}_{A}\beta$ develop, since (4) theoretically holds only for the next period. As a practical matter, the accepted, and seemingly acceptable, method of obtaining estimates of a stock's systematic risk, ${}_{B}\beta$, is to run a least squares regression between a stock's and market portfolio's *historical* rates of return. Using past data for ${}_{B}\beta$, it is not clear which *period's* ratio of market values to apply in (4a) to estimate the firm's systematic risk, ${}_{A}\beta$. There would be no problem if the market value ratios of debt to equity and preferred stock to equity remained relatively stable over the past for each firm, but a cursory look at these data reveals that this is not true for the large majority of firms in our sample. Should we use the market value ratio required in (4a) that was observed at the start of our regression period, at the end of our regression period, or some kind of average over the period? In addition, since these different observed ratios will give us different estimates for ${}_{A}\beta$, it is not clear, without some criterion, how we should select from among the various estimates.

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[4] This general method of arriving at (4) was suggested by the comments of William Sharpe, one of the discussants of this paper at the annual meeting. A much more cumbersome and less general derivation of (4) was in the earlier version.

It is for this purpose—to obtain a standard—that a more cumbersome and more data demanding approach to obtain estimates of ${}_A\beta$ is suggested. Given the large fluctuations in market leverage ratios, intuitively it would appear that the firm's risk is more stable than the common stock's risk. In that event, a leverage-free rate of return time series for each firm should be derived and the market model applied to this time series directly. In this manner, the beta coefficient would give us a *direct* estimate of ${}_A\beta$ which can then be used as a criterion to determine if any of the market value ratios discussed above can be applied to (4a) successfully.

For this purpose, the "would-have-been" rate of return for the common stock if the firm had no debt and preferred is:

$$R_{A_t} = \frac{X_t(1-\tau)_t + \Delta G_t}{S_{A_{t-1}}}. \tag{6}$$

The numerator of (6) can be rearranged to be:

$$X_t(1-\tau)_t + \Delta G_t \equiv [(X-I)_t(1-\tau)_t - p_t + \Delta G_t] + p_t + I_t(1-\tau)_t.$$

Substituting (1):

$$X_t(1-\tau)_t + \Delta G_t = [d_t + cg_t] + p_t + I_t(1-\tau)_t.$$

Therefore, (6) can be written as:

$$R_{A_t} = \frac{d_t + cg_t + p_t + I_t(1-\tau)_t}{S_{A_{t-1}}}. \tag{7}$$

Since $S_{A_{t-1}}$ is unobservable for the firms with leverage, the MM theory, equation (5), will be employed; then:

$$R_{A_t} = \frac{d_t + cg_t + p_t + I_t(1-\tau)_t}{(V-\tau D)_{t-1}}. \tag{8}$$

The observed rate of return on the common stock is, of course:

$$R_{B_t} = \frac{(X-I)_t(1-\tau)_t - p_t + \Delta G_t}{S_{B_{t-1}}} = \frac{d_t + cg_t}{S_{B_{t-1}}}. \tag{9}$$

Equation (8) is the rate of return to the common shareholder of the same firm and over the same period of time as (9). However, in (8) there are the underlying assumptions that the firm never had any debt and preferred stock and that the MM theory is correct; (9) incorporates the exact amount of debt and preferred stock that the firm actually did have over this time period and no leverage assumption is being made. Both (8) and (9) are now in forms where they can be measured with available data. One can note that it is unnecessary to estimate the change in growth, or earnings from current assets, since these should be captured in the market holding period return, $d_t + cg_t$.

Using CRSP data for (9) and both CRSP and Compustat data for the components of (8), a time series of yearly R_{A_t} and R_{B_t} for $t = 1948\text{-}1967$ were derived for 304 different firms. These 304 firms represent an exhaustive sample of the firms with complete data on both tapes for all the years.

A number of "market model" [1, 12] variants were then applied to these data. For each of the 304 firms, the following regressions were run:

$$R_{Ait} = {}_{A}\alpha_i + {}_{A}\beta_i\, R_{Mt} + {}_{A}\epsilon_{it} \tag{10a}$$

$$R_{Bit} = {}_{B}\alpha_i + {}_{B}\beta_i\, R_{Mt} + {}_{B}\epsilon_{it} \tag{10b}$$

$$\ln(1 + R_{Ait}) = {}_{AC}\alpha_i + {}_{AC}\beta_i \ln(1 + R_{M_t}) + {}_{AC}\epsilon_{it} \tag{10c}$$

$$\ln(1 + R_{Bit}) = {}_{BC}\alpha_i + {}_{BC}\beta_i \ln(1 + R_{M_t}) + {}_{BC}\epsilon_{it} \tag{10d}$$

$$i = 1, 2, \ldots, 304$$
$$t = 1948\text{-}1967$$

where R_{M_t} is the observed NYSE arithmetic stock market rate of return with dividends reinvested, α_i and β_i are constants for each firm-regression, and the usual conditions are assumed for the properties of the disturbance terms, ϵ_{it}. Equations (10c) and (10d) are the continuously-compounded rate of return versions of (10a) and (10b), respectively.[5]

III. THE RESULTS

An abbreviated table of the regression results for each of the four variants, equations (10a)-(10d), summarized across the 304 firms is shown in Table 1.

The first column designated "mean" is the average of the statistic (indicated by the rows) over all 304 firms. Therefore, the mean ${}_{A}\hat{\alpha}$ of 0.0221 is the intercept term of equation (10a) averaged over 304 different firm-regressions. The second and third columns give the deviation measures indicated, of the 304 point estimates of, say, ${}_{A}\hat{\alpha}$. The mean standard error of estimate in the last column is the average over 304 firms of the individual standard errors of estimate.

The major conclusion drawn from Table 1 is the following mean β comparisons:

$$ {}_{B}\hat{\beta} > {}_{A}\hat{\beta}, \text{ i.e., } 0.9190 > 0.7030$$

$$ {}_{BC}\hat{\beta} > {}_{AC}\hat{\beta}, \text{ i.e., } 0.9183 > 0.7263.$$

The directional results of these betas, assuming the validity of the MM theory, are not imperceptible and clearly are not negligible differences from the investor's point of view. This is obtained in spite of all the measurement and data problems associated with estimating a time series of the RHS of (8) for

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[5] Because the R_{M_t} used in equations (10) is defined as the observed stock market return, and since adjusting for capital structure is the major purpose of this exercise, it was decided that the same four regressions should be replicated on a leverage-adjusted stock market rate of return. The major reason for this additional adjustment is the belief that the rates of return over time and their relationship with the market are more stable when we can abstract from all changes in leverage and get at the underlying risk of all firms.

For the 221 firms (out of the total 304) whose fiscal years coincide with the calendar year, average values for the components of the RHS of (8) were obtained for each year so that R_{M_t} could be adjusted in the same way as for the individual firms—a yearly time series of stock market rates of return, if all the firms on the NYSE had no debt and no preferred in their capital structure, was derived. The results, when using this adjusted market portfolio rate of return time series, were not very different from the results of equations (10), and so will not be reported here separately.

TABLE 1
SUMMARY RESULTS OVER 304 FIRMS OF EQUATIONS (10a)-(10d)

	Mean	Mean Absolute Deviation*	Standard Deviation	Mean Standard Error of Estimate
${}_A\hat{\alpha}$	0.0221	0.0431	0.0537	0.0558
${}_A\hat{\beta}$	0.7030	0.2660	0.3485	0.2130
${}_A\hat{R}^2$	0.3799	0.1577	0.1896	
${}_A\hat{\rho}$	0.0314			
${}_B\hat{\alpha}$	0.0187	0.0571	0.0714	0.0720
${}_B\hat{\beta}$	0.9190	0.3550	0.4478	0.2746
${}_B\hat{R}^2$	0.3864	0.1578	0.1905	
${}_B\hat{\rho}$	0.0281			
${}_{AC}\hat{\alpha}$	0.0058	0.0427	0.0535	0.0461
${}_{AC}\hat{\beta}$	0.7263	0.2700	0.3442	0.2081
${}_{AC}\hat{R}^2$	0.3933	0.1586	0.1909	
${}_{AC}\hat{\rho}$	0.0268			
${}_{BC}\hat{\alpha}$	−0.0052	0.0580	0.0729	0.0574
${}_{BC}\hat{\beta}$	0.9183	0.3426	0.4216	0.2591
${}_{BC}\hat{R}^2$	0.4012	0.1602	0.1922	
${}_{BC}\hat{\rho}$	0.0262			

* Defined as: $\frac{\sum_{i=1}^{N}|x_i - \bar{x}|}{N}$, where $N = 304$. $\hat{\rho}$ = first order serial correlation coefficient.

each firm. One of the reasons for the "traditional" theory position on leverage is precisely this point—that small and reasonable amounts of leverage cannot be discerned by the market. In fact, if the MM theory is correct, leverage has explained as much as, roughly, 21 to 24 per cent of the value of the mean β.

We can also note that if the covariance between the asset and market rates of return, as well as the market variance, was constant over time, then the systematic risk from the market model is related to the expected rate of return by the capital asset pricing model. That is:

$$E(R_{A_t}) = R_{F_t} + {}_A\beta[E(R_{M_t}) - R_{F_t}] \tag{11a}$$

$$E(R_{B_t}) = R_{F_t} + {}_B\beta[E(R_{M_t}) - R_{F_t}] \tag{11b}$$

Equation (11a) indicates the relationship between the expected rate of return for the common stock shareholder of a debt-free and preferred-free firm, to the systematic risk, ${}_A\beta$, as obtained in regressions (10a) or (10c). The LHS of (11a) is the important $\rho\tau$ for the MM cost of capital. The MM theory [9, 10] also predicts that shareholder expected yield must be higher (for the same real firm) when the firm has debt than when it does not. Financial risk is greater, therefore, shareholders require more expected return. Thus, $E(R_{B_t})$ must be greater than $E(R_{A_t})$. In order for this MM prediction to be true, from (11a) and (11b) it can be observed that ${}_B\beta$ must be greater than ${}_A\beta$, which is what we obtained.

Using the results underlying Table 1, namely the firm and stock betas, as the

criterion for selecting among the possible observed market value ratios that can be used, if any, for (4), the following cross-section regressions were run:

$$({}_{B}\beta)_i = a_1 + b_1 \left(\frac{S_A}{S_B} {}_{A}\beta \right)_i + u_{1i} \qquad i = 1, 2, \ldots, 102 \qquad (12a)$$

$$({}_{BO}\beta)_i = a_2 + b_2 \left(\frac{S_A}{S_B} {}_{AO}\beta \right)_i + u_{2i} \qquad i = 1, 2, \ldots, 102 \qquad (12b)$$

$$({}_{A}\beta)_i = a_3 + b_3 \left(\frac{S_B}{S_A} {}_{B}\beta \right)_i + u_{3i} \qquad i = 1, 2, \ldots, 102 \qquad (13a)$$

$$({}_{AO}\beta)_i = a_4 + b_4 \left(\frac{S_B}{S_A} {}_{BO}\beta \right)_i + u_{4i} \qquad i = 1, 2, \ldots, 102 \qquad (13b)$$

Because the preferred stock market values were not as reliable as debt, only the 102 firms (out of 304) that did not have preferred in any of the years were used. The test for the adequacy of this alternative approach, equation (4), to adjust the systematic risk of common stocks for the underlying firm's capital structure, is whether the intercept term, a, is equal to zero, and the slope coefficient, b, is equal to one in the above regressions (as well as, of course, a high R^2)—these requirements are implied by (4). The results of this test would also indicate whether future "market model" studies that only use common stock rates of return without adjusting, or even noting, for the firm's debt-equity ratio will be adequate. The total firm's systematic risk may be stable (as long as the firm stays in the same risk-class), whereas the common stock's systematic risk may not be stable merely because of unanticipated capital structure changes—the data underlying Table 3 indicate that there were very few firms which did not have major changes in their capital structure over the twenty years studied.

The results of these regressions, when using the average S_A and average S_B over the twenty years for each firm, are shown in the first column panel of Table 2. These regressions were then replicated twice, first using the December 31, 1947 values of S_{Ai} and S_{Bi} instead of the twenty-year average for each firm, and then substituting the December 31, 1966 values of S_{Ai} and S_{Bi} for the 1947 values. These results are in the second and third panels of Table 2.[6]

From the first panel of Table 2, it appears that this alternative approach via (4a) for adjusting the systematic risk for the firm's leverage is quite

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[6] The point should be made that we are not merely regressing a variable on itself in (12) and (13). (12a) and (12b) can be interpreted as correlating the ${}_{B}\beta_i$ obtained from (10b) and (10d)—the LHS variable in (12a) and (12b)—against the ${}_{B}\beta_i$ obtained from rearranging (4)—the RHS variable in (12a) and (12b)—to determine whether the use of (4) is as good a means of obtaining ${}_{B}\beta_i$ as the direct way via the equations (10). We would be regressing a variable on itself only if the ${}_{A}\beta_i$ were calculated using (4a), and then the ${}_{A}\beta_i$ thus obtained, inserted into (12a) and (12b).

Instead, we are obtaining ${}_{A}\beta_i$ using the MM model in *each* of the twenty years so that a leverage-adjusted 20 year time series of R_{A_i} is derived. Of course, if there were no data nor measurement problems, and if the debt-to-equity ratio were perfectly stable over this twenty year period for each firm, then we should obtain perfect correlation in (12a) and (12b), with a = 0 and b = 1, as (4) would be an identity.

TABLE 2
RESULTS FOR THE EQUATIONS (12a), (12b), (13a), AND (13b)*

	Using 20-Year Average for $\left(\frac{S_A}{S_B}\right)_i$			Using 1947 Value for $\left(\frac{S_A}{S_B}\right)_i$			Using 1966 Value for $\left(\frac{S_A}{S_B}\right)_i$		
	a	b	R^2	a	b	R^2	a	b	R^2
Eq. (12a)	−0.022 (0.021)	1.062 (0.021)	0.962	0.150 (0.048)	0.842 (0.045)	0.781	0.085 (0.041)	0.905 (0.038)	0.849
	constant suppressed	1.042 (0.009)	0.962	constant suppressed	0.966 (0.021)	0.781	constant suppressed	0.976 (0.017)	0.849
Eq. (12b)	−0.003 (0.013)	1.016 (0.013)	0.984	0.159 (0.047)	0.816 (0.044)	0.773	0.124 (0.037)	0.843 (0.034)	0.859
	constant suppressed	1.014 (0.005)	0.984	constant suppressed	0.952 (0.019)	0.773	constant suppressed	0.947 (0.015)	0.859

	Using 20-Year Average for $\left(\frac{S_B}{S_A}\right)_i$			Using 1947 Value for $\left(\frac{S_B}{S_A}\right)_i$			Using 1966 Value for $\left(\frac{S_B}{S_A}\right)_i$		
	a	b	R^2	a	b	R^2	a	b	R^2
Eq. (13a)	0.030 (0.016)	0.931 (0.017)	0.969	0.112 (0.028)	0.843 (0.030)	0.888	0.080 (0.027)	0.898 (0.030)	0.902
	constant suppressed	0.960 (0.007)	0.969	constant suppressed	0.948 (0.015)	0.888	constant suppressed	0.976 (0.014)	0.902
Eq. (13b)	0.007 (0.010)	0.979 (0.011)	0.988	0.119 (0.026)	0.852 (0.028)	0.902	0.063 (0.026)	0.942 (0.029)	0.911
	constant suppressed	1.004 (0.012)	0.911	constant suppressed	0.967 (0.013)	0.902	constant suppressed	1.005 (0.012)	0.911

* Standard error in parentheses.

satisfactory (at least with respect to our sample of firms and years) only if long-run averages of S_A and S_B are used. The second and third panels indicate that the equations (8) and (10) procedure is markedly superior when only one year's market value ratio is used as the adjustment factor. The annual debt-to-equity ratio is much too unstable for this latter procedure.

Thus, when forecasting systematic risk is the primary objective—for example, for portfolio decisions or for estimating the firm's cost of capital to apply to prospective projects—a long-run forecasted leverage adjustment is required. Assuming the firm's risk is more stable than the common stock's risk,[7] and if there is some reason to believe that a better forecast of the firm's future leverage can be obtained than using simply a past year's (or an average of past years') leverage, it should be possible to improve the usual extrapolation forecast of a stock's systematic risk by forecasting the total firm's systematic risk first, and then using the independent leverage estimate as an adjustment.

IV. TESTS OF THE MM VS. TRADITIONAL THEORIES OF CORPORATION FINANCE

To determine if the difference, ${}_B\beta - {}_A\beta$, found in this study is indeed the correct effect of leverage, some confirmation of the MM theory (since it was assumed to be correct up to this point) from the systematic risk approach is needed. Since a direct test by this approach seems impossible, an indirect, inferential test is suggested.

The MM theory [9, 10] predicts that for firms in the same risk-class, the capitalization rate if all the firms were financed with only common equity, $E(R_A)$, would be the same—regardless of the actual amount of debt and preferred each individual firm had. This would imply, from (11a), that if $E(R_A)$ must be the same for all firms in a risk-class, so must ${}_A\beta$. And if these firms had different ratios of fixed commitment obligations to common equity, this difference in financial risk would cause their observed ${}_B\beta$s to be different.

The major competing theory of corporation finance is what is now known as the "traditional theory," which has contrary implications. This theory predicts that the capitalization rate for common equity, $E(R_B)$, (sometimes called the required or expected stock yield, or expected earnings-price ratio) is constant, as debt is increased, up to some critical leverage point (this point being a function of gambler's ruin and bankruptcy costs).[8] The clear implication of this constant, horizontal, equity yield (or their initial downward sloping cost of capital curve) is that changes in market or covariability risk are assumed not to be discernible to the shareholders as debt is increased. Then the traditional theory is saying that the ${}_B\beta$s, a measure of this covariability risk, would be the same for all firms in a given risk-class irregardless of differences in leverage, as long as the critical leverage point is not reached.

Since there will always be unavoidable errors in estimating the β's of indi-

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[7] A faint, but possible, empirical indication of this point may be obtained from Table 1. The ratio of the mean point estimate to the mean standard error of estimate is less for the firm β than for the stock β in both the discrete and continuously compounded cases.

[8] This interpretation of the traditional theory can be found in [9, especially their figure 2, page 275, and their equation (13) and footnote 24 where reference is made to Durand and Graham and Dodd].

TABLE 3
INDUSTRY MARKET VALUE RATIOS OF PREFERRED STOCK (P) AND DEBT (D) TO COMMON STOCK (S)

Industry Number	Industry	Number of Firms		P/S			D/S			$\frac{P+D}{S}$		
20	Food and Kindred Products	30	Mean*		0.22			0.81			1.04	
			ROM**	0.00		1.18	0.00		3.55	0.00		4.13
			ROCR***	0.00		2.52	0.00		8.10	0.00		10.01
28	Chemicals and Allied Products	30	Mean		0.07			0.25			0.33	
			ROM	0.00		0.51	0.00		0.90	0.00		1.20
			ROCR	0.00		1.54	0.00		2.07	0.00		2.92
29	Petroleum and Coal Products	18	Mean		0.06			0.22			0.27	
			ROM	0.00		0.26	0.00		0.55	0.03		0.57
			ROCR	0.00		0.83	0.00		1.54	0.00		2.30
33	Primary Metals	21	Mean		0.14			0.54			0.68	
			ROM	0.00		1.31	0.00		1.95	0.00		3.04
			ROCR	0.00		4.69	0.00		6.20	0.00		7.49
35	Machinery, except Electrical	28	Mean		0.07			0.33			0.40	
			ROM	0.00		0.49	0.00		1.92	0.00		2.32
			ROCR	0.00		1.28	0.00		6.92	0.00		7.62

TABLE 3 (*Continued*)

Industry Number	Industry	Number of Firms		P/S			D/S			$\frac{P+D}{S}$	
36	Electrical Machinery & Equipment	13	Mean		0.06			0.35			0.41	
			ROM	0.00		0.29	0.00		1.31	0.01		1.33
			ROCR	0.00		1.13	0.00		2.53	0.00		2.53
37	Transportation Equipment	24	Mean		0.08			0.38			0.47	
			ROM	0.00		0.54	0.00		0.93	0.00		1.32
			ROCR	0.00		2.33	0.00		3.76	0.00		6.09
49	Utilities	27	Mean		0.25			1.03			1.28	
			ROM	0.00		0.53	0.49		2.64	0.52		3.12
			ROCR	0.00		3.12	0.12		16.40	0.12		19.52
53	Dep't Stores, Order Houses & Vending Mach. Operators	17	Mean		0.13			0.49			0.62	
			ROM	0.00		0.38	0.01		1.52	0.01		1.87
			ROCR	0.00		1.09	0.00		3.19	0.00		3.66

* "Mean" refers to the average ratio over 20 years and over all firms in the industry.

** "Range of Means" (ROM) refers to the lowest firm's mean (over 20 years) ratio and the highest firm's mean (over 20 years) ratio in the industry.

*** "Range of Company Ranges" (ROCR) refers to the lowest and highest ratio in the industry, regardless of the year.

vidual firms and in specifying a risk-class, we would not expect to find a set of firms with identical systematic risk. But by specifying reasonable a priori risk-classes, if the individual firms had closer or less scattered $_A\beta$s than $_B\beta$s, then this would support the MM theory and contradict the traditional theory. If, instead, the $_B\beta$s were not discernibly more diverse than the $_A\beta$s, and the leverage ratio differed considerably among firms, then this would indicate support for the traditional theory.[9]

In order to test this implication, risk-classes must be first specified. The SEC two-digit industry classification was used for this purpose. Requiring enough firms for statistical reasons in any given industry, nine risk-classes were specified that had at least 13 firms; these nine classes are listed in Table 3 with their various leverage ratios.[10] It is clear from this table that our first requirement is met—that there is a considerable range of leverage ratios among firms in a risk-class and also over the twenty-year period.

Three tests will be performed to distinguish between the MM and traditional theories. The first is simply to calculate the standard deviation of the unbiased β estimates in a risk-class. The second is a chi-square test of the distribution of β's in an industry compared to the distribution of the β's in the total sample. Finally, an analysis of variance test on the estimated variance of the β's between industries, as opposed to within industries, is performed. In all tests, only the point estimate of β (which should be unbiased) for each stock and firm is used.[11]

The first test is reported in Table 4. If we compare the standard deviation of $_{AO}\beta$ with the standard deviation of $_{BO}\beta$ by industries (or risk-classes), we can note that $\sigma(_{AO}\beta)$ is less than $\sigma(_{BO}\beta)$ for eight out of the nine classes. The probability of obtaining this is only 0.0195, given a 50% probability that $\sigma(_{AO}\beta)$ can be larger or smaller than $\sigma(_{BO}\beta)$. These results indicate that the systematic risk of the firms in a given risk-class, if they were all financed only with common equity, is much less diverse than their observed stock's systematic risk. This supports the MM theory, at least in contrast to the traditional theory.[12]

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[9] The traditional theory also implies that $E(R_A)$ is equal to $E(R_B)$ for all firms. Unfortunately, we do not have a functional relationship between these traditional theory capitalization rates and the measured βs of this study. Clearly, since the $_A\beta$s were obtained assuming the validity of the MM theory, they would not be applicable for the traditional theory. In fact, no relationship between the $_A\beta$ and $_B\beta$ for a given firm, or for firms in a given risk-class, can be specified as was done for the capitalization rates.

[10] The tenth largest industry had only eight firms. For our purpose of testing the uniformity of firm βs relative to stock βs within a risk-class, the use of the two-digit industry classification as a proxy does not seem as critical as, for instance, its use for the purpose of performing an MM valuation model study [8] wherein the ρ^τ must be pre-specified to be exactly the same for all firms in the industry.

[11] Since these βs are estimated in the market model regressions with error, precise testing should incorporate the errors in the β estimation. Unfortunately, to do this is extremely difficult and more importantly, requires the normality assumption for the market model disturbance term. Since there is considerable evidence that is contrary to this required assumption [see 3], our tests will ignore the β measurement error entirely. But ignoring this is partially corrected in our first and third tests since means and variances of these point estimate βs must be calculated, and this procedure will "average out" the individual measurement errors by the factor 1/N.

[12] Of course, there could always be another theory, as yet not formulated, which could be even

TABLE 4

MEAN AND STANDARD DEVIATION OF INDUSTRY β'S

Industry Number	Industry	Number of Firms		$_A\beta$	$_B\beta$	$_{AO}\beta$	$_{BO}\beta$
20	Food & Kindred Products	30	Mean β	0.515	0.815	0.528	0.806
			σ(β)	0.232	0.448	0.227	0.424
28	Chemicals & Allied Products	30	Mean β	0.747	0.928	0.785	0.946
			σ(β)	0.237	0.391	0.216	0.329
29	Petroleum & Coal Products	18	Mean β	0.633	0.747	0.656	0.756
			σ(β)	0.144	0.188	0.148	0.176
33	Primary Metals	21	Mean β	1.036	1.399	1.106	1.436
			σ(β)	0.223	0.272	0.197	0.268
35	Machinery, except Electrical	28	Mean β	0.878	1.037	0.917	1.068
			σ(β)	0.262	0.240	0.271	0.259
36	Electrical Machinery and Equipment	13	Mean β	0.940	1.234	0.951	1.164
			σ(β)	0.320	0.505	0.283	0.363
37	Transportation Equipment	24	Mean β	0.860	1.062	0.875	1.048
			σ(β)	0.225	0.313	0.225	0.289
49	Utilities	27	Mean β	0.160	0.255	0.166	0.254
			σ(β)	0.086	0.133	0.098	0.147
53	Department Stores, etc.	17	Mean β	0.652	0.901	0.692	0.923
			σ(β)	0.187	0.282	0.198	0.279

Our second test, the chi-square test, requires us to rank our 300 $_A\beta$s into ten equal categories, each with 30 $_A\beta$s (four miscellaneous firms were taken out randomly). By noting the value of the highest and lowest $_A\beta$ for each of the ten categories, a distribution of the number of $_A\beta$s in each category, by risk-class, can be obtained. This was then repeated for the other three betas. To test whether the distribution for each of the four β's and for each of the risk-classes follows the expected uniform distribution, a chi-square test was performed.[13]

Even with just casual inspection of these distributions of the betas by risk-class, it is clear that two industries, primary metals and utilities, are so highly skewed that they greatly exaggerate our results.[14] Eliminating these

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more strongly supported than the MM theory. If we compare $\sigma(_A\beta)$ to $\sigma(_B\beta)$ by risk-classes in Table 4, precisely the same results are obtained as those reported above for the continuously-compounded betas.

[13] By risk-classes, seven of the nine chi-square values of $_A\beta$ are larger than those of $_B\beta$, as are eight out of nine for the continuously-compounded betas. This would occur by chance with probabilities of 0.0898 and 0.0195, respectively, if there were a 50% chance that either the firm or stock chi-square value could be larger. Nevertheless, if we inspect the individual chi-square values by risk-class, we note that most of them are large so that the probabilities of obtaining these values are highly unlikely. For all four βs, the distributions for most of the risk-classes are nonuniform.

[14] Primary metals have extremely large betas; utilities have extremely small betas.

two industries, and also two miscellaneous firms so that an even 250 firms are in the sample, new upper and lower values of the β's were obtained for each of the ten class intervals and for each of the four β's.

In Table 5, the chi-square values are presented; for the total of all risk-classes, the probability of obtaining a chi-square value less than 120.63 is over 99.95% (for ${}_{A}\beta$), whereas the probability of obtaining a chi-square value less than 99.75 is between 99.5% and 99.9% (for ${}_{B}\beta$). More sharply contrasting results are obtained when ${}_{AC}\beta$ is compared to ${}_{BC}\beta$. For ${}_{AC}\beta$, the probability of obtaining less than 128.47 is over 99.95%, whereas for ${}_{BC}\beta$, the probability of obtaining less than 78.65 is only 90.0%. By abstracting from financial risk, the underlying systematic risk is much less scattered when grouped into risk-classes than when leverage is assumed not to affect the systematic risk. The null hypothesis that the β's in a risk-class come from the same distribution as all β's is rejected for ${}_{AC}\beta$, but not for ${}_{BC}\beta$ (at the 90% level). Although this, in itself, does not tell us *how* a risk-class differs from the total market, an inspection of the distributions of the betas by risk-class underlying Table 5 does indicate more clustering of the ${}_{AC}\beta$s than the ${}_{BC}\beta$s so that the MM theory is again favored over the traditional theory.

The analysis of variance test is our last comparison of the implications of the two theories. The ratio of the estimated variance between industries to the estimated variance within the industries (the F-statistic) when the seven

TABLE 5
CHI-SQUARE RESULTS FOR ALL β'S AND ALL INDUSTRIES
(EXCEPT UTILITIES AND PRIMARY METALS)

Industry		${}_{A}\beta$	${}_{B}\beta$	${}_{AC}\beta$	${}_{BC}\beta$
Food and Kindred	Chi-Square	18.67	11.33	26.00	9.33
	$P\{\chi^2 < \}^* =$	95-97.5%	70-75%	99.5-99.9%	50-60%
Chemicals	Chi-Square	9.33	10.67	12.00	7.33
	$P\{\chi^2 < \} =$	50-60%	60-70%	75-80%	30-40%
Petroleum	Chi-Square	17.56	25.33	18.67	22.00
	$P\{\chi^2 < \} =$	95-97.5%	99.5-99.9%	95-97.5%	99-99.5%
Machinery	Chi-Square	19.14	12.00	24.86	9.14
	$P\{\chi^2 < \} =$	97.5-98%	75-80%	99.5-99.9%	50-60%
Electrical Machinery	Chi-Square	13.92	7.77	12.38	9.31
	$P\{\chi^2 < \} =$	80-90%	40-50%	80-90%	50-60%
Transportation Equipment	Chi-Square	15.17	16.83	13.50	6.83
	$P\{\chi^2 < \} =$	90-95%	90-95%	80-90%	30-40%
Dep't Stores	Chi-Square	14.18	3.59	14.18	3.59
	$P\{\chi^2 < \} =$	80-90%	5-10%	80-90%	5-10%
Miscellaneous	Chi-Square	12.67	12.22	6.89	11.11
	$P\{\chi^2 < \} =$	80-90%	80-90%	30-40%	70-75%
Total	Chi-Square	120.63	99.75	128.47	78.65
	$P\{\chi^2 < \} =$	over 99.95%	99.5-99.90%	over 99.95%	90.0%

* Example: $P\{\chi^2 < 18.67\} =$ 95-97.5% for 9 degrees of freedom.

industries are considered (again, the two obviously skewed industries, primary metals and utilities, were eliminated) is less for $_B\beta$ ($F = 3.90$) than for $_A\beta$ ($F = 9.99$), and less for $_{BC}\beta$ ($F = 4.18$) than for $_{AC}\beta$ ($F = 10.83$). The probability of obtaining these F-statistics for $_A\beta$ and $_{AC}\beta$ is less than 0.001, but for $_B\beta$ and $_{BC}\beta$ greater than or equal to 0.001. These results are consistent with the results obtained from our two previous tests. The MM theory is more compatible with the data than the traditional theory.[15]

V. CONCLUSIONS

This study attempted to tie together some of the notions associated with the field of corporation finance with those associated with security and portfolio analyses. Specifically, if the MM corporate tax leverage propositions are correct, then approximately 21 to 24% of the observed systematic risk of common stocks (when averaged over 304 firms) can be explained merely by the added financial risk taken on by the underlying firm with its use of debt and preferred stock. Corporate leverage does count considerably.

To determine whether the MM theory is correct, a number of tests on a contrasting implication of the MM and "traditional" theories of corporation finance were performed. The data confirmed MM's position, at least vis-à-vis our interpretation of the traditional theory's position. This should provide another piece of evidence on this controversial topic.

Finally, if the MM theory and the capital asset pricing model are correct, and if the adjustments made in equations (8) or (4a) result in accurate measures of the systematic risk of a leverage-free firm, the possibility is greater, without resorting to a fullblown risk-class study of the type MM did for the electric utility industry [8], of estimating the cost of capital for individual firms.

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[15] All of our tests, it should be emphasized, although consistent, are only inferential. Aside from assuming that the two-digit SEC industry classification is a good proxy for risk-classes and that the errors in estimating the individual βs can be safely ignored, the tests rely on the two theories exhausting all the reasonable theories on leverage. But there is always the use of another line of reasoning. If the results of the MM electric utility study [8] are correct, and if these results can be generalized to all firms and to all risk-classes, then it can be claimed that the MM theory is universally valid. Then our result in Section III does indicate the correct effect of the firm's capital structure on the systematic risk of common stocks.

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COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 217:

With reference to pages 47-48, Attachment PRM-13, and Appendix I, please: (1) list all regulatory cases (by name, docket number, and filing date) in which Mr. Moul has provided rate of return testimony and proposed his CAPM-beta adjustment procedure; (2) indicate all cases (by name, docket number, and date), which a regulatory commission has adopted Mr. Moul's proposed CAPM-beta adjustment procedure in arriving at an overall rate of return; and (3) provide copies of the 'Rate of Return' section of the Commission's decisions for all cases in which a regulatory commission has adopted the adjustment.

Response:

(1) The first testimony that Mr. Moul offered where he compared the financial risk of the market capitalization to the book capitalization was Appalachian Power Company (Case No. 05-1278-E-PC-PW-42T). He has proposed this adjustment in all subsequent cases where it was warranted. For a list of those cases, please refer to the response to AG DR Set 1-209.

(2) and (3)
Please refer to an excerpt from those orders that are attached. In these orders, the Pennsylvania Public Utility Commission ("PPUC") used the same type of leverage adjustment as proposed here. However, the PPUC uses DCF to set the cost of equity and does not specifically cite its return in the context of the CAPM.

PSC Case No. 2009-00141
AG DR Set 1-218
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 218:

With reference to 49 and 50, Attachment PRM-13, and Appendix I, please provide copies of all date, source documents, and work papers used in the calculation of the historic and forecasted market premiums of 6.8% and 11.84%. Please provide copies of the source documents, work papers, and data in hard copy and electronic formats (Microsoft Excel), with all data and equations left intact.

Response:

Please refer to page 6 of Attachment PRM-13 for the source document for the historical market premium. The Microsoft Excel spreadsheet that is attached in Attachment A provides the development of the forecast market premium. The source document for the Value Line return is provided on page 5 of Attachment PRM-13. The source document for the growth component of the S&P 500 is attached in Attachment B.

Value Line Return

As of:	Dividend Yield		Median Appreciation Potential		Median Total Return
12-Sep-08	2.2%	+	15.02%	=	17.22%

DCF Result for the S&P 500 Composite

D/P	(	1+.5g	)	+	g	=	k
4.52%	(	1.0486	)	+	9.71%	=	14.45%

where:	Price (P)	at	28-Feb-09	=	735.09
	Dividend (D)	for	1st Qtr. '09	=	8.31
	Dividend (D)		annualized	=	33.24
	Growth (g)		First Call EpS	=	9.71%

Summary

Value Line	17.22%
S&P 500	14.45%
Forecast Market Return (R_m)	15.84%
Risk-free Rate of Return (R_f)	4.00%
Market Premum (R_m-R_f)	11.84%

AG DR Set 1-218 Attachment B

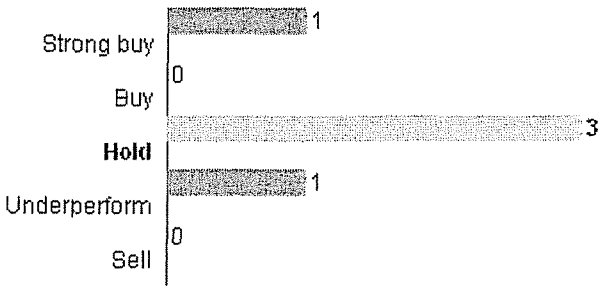
Vanguard

Research Funds & Stocks » Stocks, Bonds, & CDs » Stock Profile

ALLIANT ENERGY CORP COM (New York Stock Exchange : LNT)

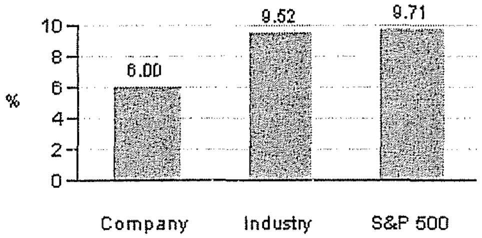
Overview	Charts	News
Fundamentals	Price history	Financials
Share details	**Earnings**	Analyst reports

First Call Consensus



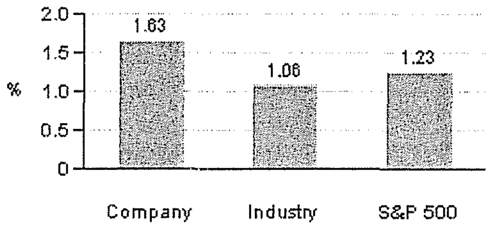
Expected Annual Growth Rates

Long term estimated growth rate



PEG Ratio

P/E ratio divided by the expected growth rate. The higher the PEG ratio, the more expensive the stock.



Consensus Estimates

	This Quarter (03/2009)	Next Quarter (06/2009)	This Year (12/2009)	Next Year (12/2010)
Average Estimate	$0.57	$0.38	$2.37	$2.66
Number of Analysts	1	1	5	4
High Estimate	$0.57	$0.38	$2.55	$2.80
Low Estimate	$0.57	$0.38	$2.25	$2.55
Year Ago EPS	$0.62	$0.36	$2.43	$2.37
EPS Growth	–8.06%	–38.71%	–2.47%	12.24%

rrent Price to Earnings

	Company	Industry	S&P 500
railing	9.52	10.28	10.78
Forward	10	10	12
Current Fiscal Year	9.80	10.08	11.97
Next Fiscal Year	8.70	9.19	9.34

Earnings Estimates Revision Trend

	This Quarter (03/2009)	Next Quarter (06/2009)	This Year (12/2009)	Next Year (12/2010)	Long-Term Growth
Current	$0.57	$0.38	$2.37	$2.66	6.00%
7 Days Ago	$0.57	$0.38	$2.37	$2.66	—
30 Days Ago	—	—	$2.38	$2.78	—
60 Days Ago	—	—	$2.54	$2.78	—
90 Days Ago	—	—	$2.84	$3.10	—

Historical Earnings Surprise

	12/2008	09/2008	06/2008	03/2008	12/2007
Estimate	$0.56	$1.00	$0.39	$0.64	$0.59
Actual	$0.46	$0.99	$0.36	$0.62	$0.64
Difference	–$0.10	–$0.01	–$0.03	–$0.02	$0.05
Surprise	–17.90%	–1.00%	–7.70%	–3.10%	8.50%

Glossary

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COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 219:

With reference to page 51, lines 1-22, please: (1) provide copies of the SBBI document that forms the basis for the small capitalization adjustment of 0.92%; and (2) provide all data, work document, and calculations used in determining in the size adjustment of 0.92%, including a copy of complete chapter and associated tables of the Ibbotson publication. Please provide the data in hard copy and electronic formats (Microsoft Excel), with all data and equations left intact.

Response:

1) The requested document is attached in Attachment A.

2) Please refer to the Excel spreadsheet that is provided in AG Set 1 No. 211 Attachment A that provides the average market capitalization for $1,814,356,000 of the Gas Group. The source of the data is each company's annual report/SEC Form 10-K, which can be obtained from the website of each company.

Ibbotson® SBBI®
2008 Classic Yearbook

Market Results for
Stocks, Bonds, Bills, and Inflation
1926–2007

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Chapter 7

Firm Size and Return

The Firm Size Phenomenon

One of the most remarkable discoveries of modern finance is the finding of a relationship between firm size and return.[1] On average, small companies have higher returns than large ones. Earlier chapters document this phenomenon for the smallest stocks on the New York Stock Exchange (NYSE). The relationship between firm size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks. In this chapter, the returns across the entire range of firm size are examined.

Construction of the Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices (CRSP) at the University of Chicago's Graduate School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

In 1993, CRSP changed the method used to construct these portfolios, thereby causing the return and index values in Table 7-2 and 7-3 to be significantly different from those reported in previous editions of the Yearbook. Previously, some eligible companies had been excluded or delayed from inclusion when the portfolios were reformed at the end of each calendar quarter. Also, while in prior editions of the Yearbook we used NYSE-listed securities only in the composition of size decile portfolios, starting with the 2001 edition we use the entire population of NYSE, AMEX, and NASDAQ-listed securities for use in the firm size chapter.

The New York Stock Exchange universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of all their eligible equity securities. The companies are then split into 10 equally populated groups or deciles. Eligible companies traded on the American Stock Exchange (AMEX) and the Nasdaq National Market (NASDAQ) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the appropriate portfolio when two consecutive month-end prices are available. If the final NYSE price of a security that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the portfolio. When a month-end NYSE price is missing, the month-end value is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value is not available, the last available daily price is used.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices. Appropriate adjustments are made to prices to account for stock splits and dividends. The return on a portfolio for one month is calculated as the weighted average of the returns for the individual stocks in the portfolio. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

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[1] Rolf W. Banz was the first to document this phenomenon. See Banz, Rolf W., "The Relationship Between Returns and Market Value of Common Stocks," *Journal of Financial Economics*, Volume 9 (1981), pp. 3–18.

Aspects of the Firm Size Effect

The firm size phenomenon is remarkable in several ways. First, the greater risk of small stocks does not, in the context of the Capital Asset Pricing Model, fully account for their higher returns over the long term. In the CAPM, only systematic, or beta risk, is rewarded. Small company stocks have had returns in excess of those implied by the betas of small stocks. Secondly, the calendar annual return differences between small and large companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large stocks and in most other capital markets.

In addition, the firm size effect is seasonal. For example, small company stocks outperformed large company stocks in the month of January in a large majority of the years. Again, such predictability is surprising and suspicious in the light of modern capital market theory. These three aspects of the firm size effect (long-term returns in excess of risk, serial correlation and seasonality) will be analyzed after the data are presented.

Table 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ

Summary Statistics of Annual Returns
from 1926 to 2007

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.6	11.3	18.91	0.08
2	10.9	13.2	21.62	0.04
3	11.3	13.7	23.31	-0.03
4	11.1	14.1	25.68	-0.01
5	11.7	14.8	26.49	-0.02
6	11.7	15.1	27.10	0.03
7	11.6	15.5	29.47	0.01
8	11.8	16.6	34.18	0.05
9	11.9	17.3	36.45	0.04
10-Smallest	13.6	21.0	44.58	0.16
Mid Cap	11.3	14.0	24.42	-0.02
Low Cap	11.7	15.5	29.03	0.03
Micro	12.5	18.5	38.84	0.08
NYSE/AMEX/NASDAQ Total Value Weighted Index	10.1	12.0	19.94	0.03

Source: ©200801 CRSP®, Center for Research in Security Prices. Graduate School of Business, The University of Chicago used with permission. All rights reserved www.crsp.chicagogsb.edu

Results are for quarterly re-ranking for the deciles. The small company stock summary statistics presented in earlier chapters comprise a re-ranking of the portfolios every five years prior to 1982.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles from 1926–2007 are presented in Table 7-1. Note from this exhibit that the average return tends to increase as one moves from the largest decile to the smallest. (Because securities are ranked quarterly, returns on the ninth and tenth deciles are different than those suggested by the small company stock index presented in earlier chapters. A detailed methodology for the small company stock index is included in Chapter 3.) The total risk, or standard deviation of annual returns, also increases with decreasing firm size. The serial correlations of returns are near zero for all but the smallest decile.

Table 7-2 is a year-by-year history of the returns for the different size categories. Table 7-3 shows the growth of $1.00 invested in each of the categories as of year-end 1925.

The sheer magnitude of the size effect in some years is noteworthy. While the largest stocks actually declined in 2001, the smallest stocks rose more than 30 percent. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and tenth decile returns was far more substantial. The divergence in the performance of small and large company stocks is a common occurrence.

In Table 7-4, the decile returns and index values of the NYSE/AMEX/NASDAQ population are broken down into mid-cap, low-cap, and micro-cap stocks. Mid-cap stocks are defined here as the aggregate of deciles 3–5. Based on the most recent data, as shown in the bottom section of Table 7-5, companies within this mid-cap range have market capitalizations at or below $9,206,713,000, but greater than $2,411,794,000. Low-cap stocks include deciles 6–8, and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $2,411,794,000 but greater than $723,258,000. Micro-cap stocks include deciles 9–10, and include companies with market capitalizations at or below $723,258,000. The returns and index values of the entire NYSE/AMEX/NASDAQ population are also included. All returns presented are value-weighted based on the market capitalizations of the deciles contained in each sub-group. Graph 7-1 graphically depicts the growth of $1.00 invested in each of these capitalization groups.

Table 7-2

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ

Year-by-Year Returns

from 1926 to 1970

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
1926	0.1359	0.0598	0.0248	0.0226	−0.0236	0.0522	−0.0143	−0.1085	−0.0815	−0.0567
1927	0.3407	0.3051	0.3150	0.3890	0.3434	0.2558	0.3468	0.2833	0.2567	0.2619
1928	0.3920	0.3764	0.3843	0.3471	0.5520	0.2718	0.3520	0.3174	0.3983	0.6895
1929	−0.1080	−0.0793	−0.2184	−0.3431	−0.2510	−0.4096	−0.3725	−0.4019	−0.4973	−0.5266
1930	−0.2452	−0.3743	−0.3527	−0.3488	−0.3578	−0.3643	−0.3624	−0.4931	−0.4463	−0.4807
1931	−0.4141	−0.5115	−0.4628	−0.4609	−0.4696	−0.5174	−0.4881	−0.4928	−0.5029	−0.4942
1932	−0.1094	0.0252	−0.0374	−0.1264	−0.1378	0.0726	−0.1440	0.0246	−0.0093	0.3981
1933	0.4601	0.7625	1.0089	1.1243	0.9510	1.0247	1.1046	1.7322	1.7477	2.1844
1934	0.0208	0.0583	0.0864	0.1845	0.0929	0.1951	0.1434	0.3076	0.2156	0.3489
1935	0.4170	0.5630	0.3705	0.3751	0.6525	0.5091	0.6671	0.6459	0.5849	0.8226
1936	0.2990	0.3437	0.2736	0.4170	0.4952	0.4927	0.5413	0.5036	0.8772	0.8523
1937	−0.3188	−0.3699	−0.3812	−0.4371	−0.4852	−0.4664	−0.4984	−0.5300	−0.5230	−0.5643
1938	0.2494	0.3401	0.3423	0.3512	0.5040	0.4189	0.3574	0.4344	0.3388	0.0540
1939	0.0480	−0.0388	−0.0279	0.0042	0.0173	0.0603	0.0482	−0.0425	−0.0526	0.1737
1940	−0.0702	−0.0884	−0.0844	−0.0405	−0.0079	−0.0580	−0.0574	−0.0632	−0.0491	−0.3114
1941	−0.1069	−0.0778	−0.0590	−0.0984	−0.1197	−0.0990	−0.0890	−0.0893	−0.1253	−0.1798
1942	0.1337	0.2365	0.2026	0.2031	0.2097	0.2463	0.2915	0.2971	0.4429	0.8021
1943	0.2344	0.3526	0.3343	0.4049	0.4949	0.4129	0.7226	0.7146	0.8725	1.3764
1944	0.1719	0.2539	0.2299	0.3309	0.4004	0.4405	0.3841	0.4888	0.5649	0.7055
1945	0.2950	0.4764	0.5448	0.6366	0.5341	0.6117	0.6509	0.6896	0.7690	0.9559
1946	−0.0446	−0.0439	−0.0794	−0.1267	−0.0896	−0.0615	−0.1484	−0.1533	−0.0972	−0.1833
1947	0.0578	0.0079	−0.0013	0.0207	0.0341	−0.0335	−0.0217	−0.0323	−0.0356	−0.0053
1948	0.0371	0.0016	0.0253	−0.0206	−0.0252	−0.0344	−0.0329	−0.0659	−0.0741	−0.0520
1949	0.1846	0.2518	0.2595	0.1953	0.1861	0.2329	0.2177	0.1652	0.1979	0.2489
1950	0.2879	0.2892	0.2672	0.3137	0.3703	0.3387	0.3786	0.3995	0.4132	0.5514
1951	0.2141	0.2286	0.2116	0.1663	0.1439	0.1372	0.1812	0.1511	0.1125	0.0685
1952	0.1428	0.1294	0.1213	0.1190	0.1107	0.1012	0.1039	0.0767	0.0852	0.0230
1953	0.0115	0.0169	0.0033	−0.0136	−0.0293	−0.0095	−0.0241	−0.0772	−0.0464	−0.0818
1954	0.4850	0.4815	0.5892	0.5083	0.5673	0.5956	0.5738	0.5287	0.6366	0.6863
1955	0.2846	0.1877	0.1834	0.1933	0.1770	0.2267	0.1843	0.2024	0.2055	0.2556
1956	0.0795	0.1108	0.0741	0.0902	0.0806	0.0594	0.0830	0.0523	0.0590	−0.0072
1957	−0.0931	−0.0869	−0.1285	−0.1079	−0.1384	−0.1821	−0.1677	−0.1855	−0.1423	−0.1685
1958	0.4073	0.4969	0.5407	0.5965	0.5583	0.5629	0.6817	0.6527	0.7145	0.6975
1959	0.1236	0.0967	0.1363	0.1523	0.1994	0.1517	0.1988	0.1799	0.2011	0.1542
1960	0.0037	0.0548	0.0482	0.0128	−0.0165	−0.0087	−0.0586	−0.0507	−0.0378	−0.0690
1961	0.2627	0.2710	0.2893	0.2934	0.2856	0.2699	0.3042	0.3378	0.3021	0.3201
1962	−0.0878	−0.0959	−0.1194	−0.1296	−0.1634	−0.1793	−0.1641	−0.1474	−0.1701	−0.1456
1963	0.2249	0.2141	0.1647	0.1712	0.1273	0.1853	0.1782	0.1997	0.1280	0.1117
1964	0.1599	0.1428	0.1997	0.1625	0.1623	0.1666	0.1597	0.1714	0.1532	0.2094
1965	0.0893	0.1925	0.2483	0.2425	0.3217	0.3776	0.3373	0.3190	0.3194	0.4315
1966	−0.1027	−0.0574	−0.0507	−0.0623	−0.0721	−0.0452	−0.0955	−0.0864	−0.0589	−0.1008
1967	0.2197	0.2079	0.3169	0.4564	0.5145	0.5343	0.6472	0.8133	0.9064	1.1416
1968	0.0753	0.1654	0.1979	0.1829	0.2759	0.3047	0.2673	0.4047	0.3711	0.6136
1969	−0.0584	−0.1295	−0.1172	−0.1662	−0.1808	−0.1871	−0.2445	−0.2471	−0.3158	−0.3290
1970	0.0231	0.0182	0.0330	−0.0699	−0.0601	−0.0593	−0.0973	−0.1614	−0.1526	−0.1785

Table 7-2 (continued)

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ

Year-by-Year Returns

from 1971 to 2007

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
1971	0.1484	0.1328	0.2011	0.2472	0.1890	0.2244	0.2018	0.1735	0.1647	0.1853
1972	0.2212	0.1278	0.0938	0.0881	0.0863	0.0695	0.0632	0.0205	−0.0229	−0.0057
1973	−0.1274	−0.2266	−0.2278	−0.2680	−0.3217	−0.3191	−0.3702	−0.3534	−0.3897	−0.4203
1974	−0.2803	−0.2441	−0.2458	−0.2834	−0.2167	−0.2694	−0.2558	−0.2423	−0.2635	−0.2715
1975	0.3169	0.4573	0.5363	0.6168	0.5966	0.5675	0.6326	0.6579	0.6649	0.7579
1976	0.2073	0.3045	0.3811	0.4008	0.4363	0.4808	0.5018	0.5690	0.5101	0.5516
1977	−0.0884	−0.0367	0.0109	0.0376	0.1126	0.1408	0.1754	0.2261	0.2022	0.2310
1978	0.0637	0.0229	0.1084	0.0974	0.1207	0.1637	0.1705	0.1632	0.1605	0.2815
1979	0.1519	0.2871	0.3061	0.3516	0.3557	0.4888	0.4206	0.4638	0.4594	0.4158
1980	0.3275	0.3442	0.3186	0.3043	0.3193	0.3141	0.3623	0.3233	0.3823	0.3071
1981	−0.0833	0.0059	0.0372	0.0403	0.0484	0.0677	−0.0040	0.0055	0.0802	0.0856
1982	0.1964	0.1749	0.2081	0.2566	0.3076	0.2940	0.2919	0.2955	0.2608	0.2855
1983	0.2057	0.1686	0.2662	0.2633	0.2626	0.2589	0.2727	0.3721	0.3130	0.3690
1984	0.0840	0.0770	0.0253	−0.0458	−0.0269	0.0248	−0.0426	−0.0745	−0.0896	−0.1951
1985	0.3137	0.3770	0.2910	0.3390	0.3115	0.3097	0.3255	0.3651	0.3077	0.2582
1986	0.1801	0.1810	0.1636	0.1732	0.1512	0.0871	0.1250	0.0387	0.0572	0.0040
1987	0.0504	0.0036	0.0393	0.0167	−0.0402	−0.0509	−0.0843	−0.0804	−0.1269	−0.1488
1988	0.1486	0.1982	0.2126	0.2237	0.2138	0.2336	0.2394	0.2854	0.2285	0.2105
1989	0.3295	0.3008	0.2629	0.2308	0.2423	0.2107	0.1785	0.1788	0.1058	0.0550
1990	−0.0088	−0.0853	−0.1015	−0.0875	−0.1409	−0.1849	−0.1532	−0.1979	−0.2460	−0.3128
1991	0.3039	0.3463	0.4140	0.3883	0.4811	0.5326	0.4421	0.4707	0.5066	0.4807
1992	0.0474	0.1577	0.1387	0.1249	0.2613	0.1878	0.1920	0.1287	0.2495	0.3398
1993	0.0732	0.1319	0.1614	0.1562	0.1694	0.1726	0.1900	0.1853	0.1658	0.2558
1994	0.0174	−0.0174	−0.0423	−0.0098	−0.0166	0.0034	−0.0252	−0.0308	−0.0309	−0.0298
1995	0.3940	0.3526	0.3533	0.3275	0.3324	0.2692	0.3264	0.2935	0.3500	0.3047
1996	0.2375	0.1962	0.1714	0.1883	0.1366	0.1737	0.1965	0.1720	0.2064	0.1722
1997	0.3486	0.3012	0.2512	0.2611	0.1565	0.2864	0.3003	0.2538	0.2554	0.2204
1998	0.3515	0.1272	0.0758	0.0724	0.0054	0.0116	−0.0090	0.0098	−0.0503	−0.1155
1999	0.2450	0.1976	0.3433	0.3006	0.2595	0.3492	0.2570	0.3886	0.3430	0.2809
2000	−0.1362	−0.0030	−0.0620	−0.0997	−0.0710	−0.1028	−0.1068	−0.1300	−0.1336	−0.1295
2001	−0.1529	−0.0882	−0.0411	−0.0095	−0.0214	0.0952	0.1226	0.2111	0.3168	0.3672
2002	−0.2246	−0.1736	−0.1934	−0.1771	−0.1778	−0.2122	−0.2298	−0.1997	−0.1870	−0.0550
2003	0.2568	0.3738	0.4029	0.4438	0.4090	0.4877	0.5079	0.5775	0.6825	0.9232
2004	0.0794	0.2013	0.1796	0.1874	0.1734	0.2205	0.1888	0.2189	0.1518	0.1857
2005	0.0371	0.1215	0.1237	0.1059	0.1011	0.0306	0.1057	0.0751	0.0211	0.0591
2006	0.1561	0.1559	0.1453	0.1164	0.1557	0.1504	0.1627	0.1773	0.1723	0.1947
2007	0.0715	0.0745	0.0362	0.0436	0.0798	0.0502	−0.0181	−0.0574	−0.0655	−0.0988

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Table 7-3

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ

Year-End Index Values

from 1925 to 1970

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
1925	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1926	1.136	1.060	1.025	1.023	0.976	1.052	0.986	0.892	0.918	0.943
1927	1.523	1.383	1.348	1.420	1.312	1.321	1.328	1.144	1.154	1.190
1928	2.120	1.904	1.865	1.913	2.036	1.681	1.795	1.507	1.614	2.011
1929	1.891	1.753	1.458	1.257	1.525	0.992	1.126	0.902	0.811	0.952
1930	1.427	1.097	0.944	0.818	0.979	0.631	0.718	0.457	0.449	0.494
1931	0.836	0.536	0.507	0.441	0.519	0.304	0.368	0.232	0.223	0.250
1932	0.745	0.549	0.488	0.385	0.448	0.327	0.315	0.237	0.221	0.350
1933	1.087	0.968	0.980	0.819	0.874	0.661	0.662	0.649	0.608	1.113
1934	1.110	1.025	1.065	0.970	0.955	0.790	0.757	0.848	0.739	1.502
1935	1.573	1.602	1.460	1.334	1.578	1.192	1.263	1.396	1.171	2.737
1936	2.043	2.152	1.859	1.890	2.359	1.780	1.946	2.099	2.198	5.070
1937	1.392	1.356	1.150	1.064	1.215	0.950	0.976	0.987	1.049	2.209
1938	1.739	1.817	1.544	1.437	1.827	1.347	1.325	1.415	1.404	2.328
1939	1.822	1.747	1.501	1.443	1.858	1.429	1.389	1.355	1.330	2.732
1940	1.694	1.592	1.374	1.385	1.844	1.346	1.309	1.270	1.265	1.882
1941	1.513	1.468	1.293	1.248	1.623	1.212	1.193	1.156	1.106	1.543
1942	1.716	1.816	1.555	1.502	1.963	1.511	1.540	1.500	1.596	2.781
1943	2.118	2.456	2.075	2.110	2.935	2.135	2.653	2.571	2.989	6.609
1944	2.482	3.079	2.552	2.808	4.110	3.076	3.672	3.828	4.678	11.272
1945	3.214	4.546	3.942	4.596	6.305	4.957	6.062	6.468	8.275	22.046
1946	3.071	4.347	3.629	4.014	5.741	4.652	5.163	5.476	7.471	18.004
1947	3.248	4.381	3.625	4.097	5.936	4.496	5.050	5.299	7.205	17.909
1948	3.369	4.388	3.717	4.012	5.787	4.341	4.884	4.950	6.671	16.978
1949	3.991	5.493	4.681	4.796	6.864	5.353	5.948	5.768	7.992	21.203
1950	5.140	7.081	5.932	6.301	9.405	7.166	8.199	8.072	11.294	32.894
1951	6.240	8.699	7.187	7.349	10.759	8.149	9.685	9.292	12.565	35.147
1952	7.131	9.825	8.059	8.223	11.950	8.973	10.691	10.005	13.636	35.956
1953	7.213	9.991	8.085	8.111	11.600	8.888	10.433	9.232	13.004	33.013
1954	10.711	14.802	12.848	12.235	18.181	14.182	16.420	14.114	21.282	55.670
1955	13.760	17.580	15.205	14.599	21.400	17.397	19.446	16.970	25.656	69.900
1956	14.853	19.529	16.332	15.916	23.124	18.431	21.060	17.857	27.168	69.396
1957	13.470	17.832	14.233	14.198	19.924	15.076	17.529	14.546	23.303	57.705
1958	18.957	26.693	21.928	22.668	31.048	23.561	29.478	24.040	39.955	97.953
1959	21.300	29.275	24.918	26.121	37.239	27.135	35.337	28.365	47.990	113.061
1960	21.379	30.880	26.119	26.456	36.625	26.898	33.268	26.927	46.177	105.255
1961	26.996	39.248	33.676	34.217	47.083	34.158	43.387	36.023	60.125	138.951
1962	24.626	35.485	29.654	29.784	39.388	28.035	36.268	30.713	49.895	118.721
1963	30.163	43.082	34.539	34.883	44.402	33.230	42.730	36.845	56.280	131.978
1964	34.985	49.234	41.437	40.552	51.610	38.767	49.555	43.159	64.902	159.611
1965	38.108	58.713	51.723	50.386	68.213	53.405	66.272	56.926	85.635	228.480
1966	34.193	55.341	49.099	47.249	63.298	50.991	59.940	52.010	80.588	205.453
1967	41.705	66.847	64.658	68.813	95.866	78.234	98.734	94.311	153.636	439.993
1968	44.846	77.906	77.451	81.396	122.311	102.069	125.130	132.475	210.656	709.971
1969	42.226	67.817	68.375	67.872	100.202	82.976	94.532	99.739	144.137	476.376
1970	43.202	69.048	70.634	63.128	94.184	78.055	85.334	83.643	122.140	391.361

Table 7-3 (continued)

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ

Year-End Index Values

from 1971 to 2007

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
1971	49.614	78.220	84.840	78.733	111.986	95.574	102.555	98.152	142.251	463.897
1972	60.588	88.219	92.800	85.668	121.649	102.214	109.038	100.166	138.989	461.252
1973	52.872	68.225	71.661	62.705	82.511	69.595	68.675	64.766	84.822	267.379
1974	38.051	51.573	54.045	44.933	64.629	50.848	51.110	49.073	62.475	194.777
1975	50.107	75.156	83.029	72.648	103.187	79.706	83.441	81.356	104.015	342.394
1976	60.496	98.043	114.670	101.766	148.210	118.026	125.313	127.645	157.075	531.273
1977	55.150	94.447	115.917	105.594	164.897	134.645	147.294	156.511	188.836	654.010
1978	58.662	96.612	128.487	115.880	184.803	156.680	172.407	182.054	219.145	838.103
1979	67.573	124.353	167.818	156.623	250.536	233.273	244.923	266.484	319.830	1186.563
1980	89.701	167.152	221.286	204.280	330.543	306.533	333.657	352.628	442.096	1550.986
1981	82.225	168.142	229.516	212.522	346.545	327.292	332.330	354.563	477.533	1683.724
1982	98.373	197.556	277.278	267.058	453.151	423.504	429.345	459.342	602.061	2164.350
1983	118.613	230.863	351.083	337.382	572.155	533.157	546.428	630.267	790.532	2963.089
1984	128.580	248.647	359.950	321.924	556.787	546.386	523.167	583.294	719.739	2384.988
1985	168.909	342.377	464.695	431.051	730.235	715.608	693.473	796.261	941.193	3000.828
1986	199.333	404.336	540.738	505.722	840.656	777.940	780.160	827.051	995.039	3012.819
1987	209.373	405.791	561.967	514.158	806.865	738.379	714.401	760.568	868.719	2564.450
1988	240.479	486.219	681.430	629.189	979.398	910.856	885.452	977.657	1067.212	3104.231
1989	319.725	632.465	860.592	774.400	1216.701	1102.788	1043.520	1152.434	1180.144	3274.927
1990	316.902	578.507	773.211	706.642	1045.257	898.832	883.703	924.312	889.850	2250.599
1991	413.209	778.817	1093.351	980.996	1548.178	1377.587	1274.347	1359.413	1340.606	3332.408
1992	432.810	901.670	1245.020	1103.529	1952.780	1636.354	1519.061	1534.323	1675.153	4464.900
1993	464.503	1020.578	1445.962	1275.847	2283.644	1918.725	1807.736	1818.700	1952.842	5607.215
1994	472.589	1002.854	1384.863	1263.350	2245.744	1925.233	1762.129	1762.683	1892.418	5440.254
1995	658.780	1356.430	1874.151	1677.087	2992.225	2443.565	2337.375	2280.026	2554.811	7098.134
1996	815.253	1622.506	2195.427	1992.894	3400.933	2867.934	2796.556	2672.270	3082.007	8320.741
1997	1099.445	2111.187	2746.916	2513.238	3933.328	3689.300	3636.387	3350.379	3869.224	10154.708
1998	1485.915	2379.687	2955.039	2695.278	3954.470	3732.147	3603.656	3383.105	3674.528	8981.398
1999	1850.027	2850.031	3969.458	3505.544	4980.576	5035.437	4529.801	4697.756	4935.046	11504.455
2000	1598.084	2841.614	3723.175	3156.152	4626.887	4517.945	4046.134	4086.935	4275.709	10015.142
2001	1353.736	2591.047	3570.016	3126.178	4527.747	4948.263	4542.144	4949.628	5630.180	13692.776
2002	1049.719	2141.232	2879.527	2572.540	3722.803	3898.416	3498.349	3961.428	4577.542	12939.410
2003	1319.261	2941.558	4039.559	3714.332	5245.404	5799.749	5275.096	6249.216	7701.702	24885.064
2004	1424.057	3533.716	4764.974	4410.421	6154.827	7078.579	6270.782	7617.377	8870.497	29505.904
2005	1476.960	3963.004	5354.417	4877.438	6776.904	7295.351	6933.901	8189.383	9057.341	31248.240
2006	1707.561	4581.010	6132.574	5445.162	7832.365	8392.825	8062.291	9641.490	10617.624	37331.379
2007	1829.633	4922.512	6354.580	5682.401	8457.442	8814.025	7916.521	9087.966	9922.573	33643.819

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Table 7-4

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ

Mid-, Low-, Micro-, and Total Capitalization Returns and Index Values

from 1926 to 1965

	Total Return				Index Value			
Year	**Mid-Cap Stocks**	**Low-Cap Stocks**	**Micro-Cap Stocks**	**Total Value Weighted NYSE/ AMEX/ NASDAQ**	**Mid-Cap Stocks**	**Low-Cap Stocks**	**Micro-Cap Stocks**	**Total Value Weighted NYSE/ AMEX/ NASDAQ**
1925					1.000	1.000	1.000	1.000
1926	0.0150	–0.0042	–0.0732	0.0918	1.015	0.996	0.927	1.092
1927	0.3421	0.2914	0.2579	0.3326	1.362	1.286	1.166	1.455
1928	0.4041	0.3073	0.4685	0.3877	1.913	1.681	1.712	2.019
1929	–0.2617	–0.3953	–0.5042	–0.1447	1.412	1.017	0.849	1.727
1930	–0.3521	–0.3900	–0.4548	–0.2850	0.915	0.620	0.463	1.235
1931	–0.4632	–0.5040	–0.5028	–0.4356	0.491	0.308	0.230	0.697
1932	–0.0794	–0.0076	0.0890	–0.0868	0.452	0.305	0.251	0.636
1933	1.0296	1.1752	1.8694	0.5711	0.918	0.664	0.719	1.000
1934	0.1165	0.1990	0.2509	0.0429	1.025	0.796	0.899	1.043
1935	0.4181	0.5857	0.6484	0.4432	1.453	1.262	1.483	1.505
1936	0.3594	0.5103	0.8743	0.3226	1.975	1.906	2.779	1.991
1937	–0.4202	–0.4897	–0.5339	–0.3470	1.145	0.973	1.295	1.300
1938	0.3756	0.4029	0.2627	0.2804	1.575	1.365	1.635	1.664
1939	–0.0092	0.0360	0.0021	0.0286	1.561	1.414	1.639	1.712
1940	–0.0557	–0.0588	–0.1236	–0.0708	1.474	1.331	1.436	1.591
1941	–0.0835	–0.0935	–0.1373	–0.1004	1.351	1.206	1.239	1.431
1942	0.2042	0.2706	0.5247	0.1604	1.627	1.533	1.889	1.661
1943	0.3868	0.5728	1.0007	0.2834	2.256	2.411	3.779	2.131
1944	0.2953	0.4324	0.6051	0.2131	2.922	3.453	6.067	2.585
1945	0.5704	0.6423	0.8266	0.3808	4.589	5.671	11.081	3.570
1946	–0.0964	–0.1125	–0.1260	–0.0582	4.146	5.033	9.685	3.362
1947	0.0132	–0.0296	–0.0254	0.0373	4.201	4.884	9.438	3.488
1948	0.0000	–0.0412	–0.0660	0.0211	4.201	4.683	8.815	3.561
1949	0.2243	0.2127	0.2149	0.2014	5.143	5.679	10.709	4.278
1950	0.3027	0.3655	0.4591	0.2960	6.700	7.755	15.626	5.545
1951	0.1830	0.1546	0.0977	0.2068	7.926	8.954	17.153	6.691
1952	0.1184	0.0967	0.0647	0.1342	8.865	9.820	18.263	7.589
1953	–0.0084	–0.0290	–0.0578	0.0067	8.790	9.535	17.207	7.640
1954	0.5605	0.5747	0.6518	0.5008	13.717	15.016	28.423	11.466
1955	0.1850	0.2080	0.2213	0.2522	16.254	18.139	34.713	14.358
1956	0.0803	0.0654	0.0377	0.0827	17.559	19.324	36.021	15.546
1957	–0.1242	–0.1783	–0.1506	–0.1005	15.379	15.879	30.595	13.984
1958	0.5612	0.6188	0.7093	0.4502	24.009	25.705	52.296	20.279
1959	0.1536	0.1726	0.1868	0.1267	27.697	30.143	62.066	22.848
1960	0.0243	–0.0338	–0.0468	0.0116	28.372	29.125	59.162	23.114
1961	0.2897	0.2951	0.3077	0.2694	36.591	37.720	77.364	29.341
1962	–0.1314	–0.1683	–0.1648	–0.1017	31.784	31.373	64.612	26.356
1963	0.1593	0.1867	0.1193	0.2098	36.849	37.228	72.322	31.885
1964	0.1813	0.1652	0.1834	0.1613	43.531	43.380	85.589	37.027
1965	0.2608	0.3499	0.3798	0.1446	54.883	58.560	118.099	42.382

Table 7-4 *(continued)*

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ

Mid-, Low-, Micro-, and Total Capitalization Returns and Index Values

from 1966 to 2007

	Total Return				Index Value			
Year	**Mid-Cap Stocks**	**Low-Cap Stocks**	**Micro-Cap Stocks**	**Total Value Weighted NYSE/ AMEX/ NASDAQ**	**Mid-Cap Stocks**	**Low-Cap Stocks**	**Micro-Cap Stocks**	**Total Value Weighted NYSE/ AMEX/ NASDAQ**
1966	–0.0586	–0.0710	–0.0825	–0.0874	51.667	54.402	108.350	38.678
1967	0.3994	0.6387	1.0344	0.2874	72.301	89.152	220.425	49.793
1968	0.2108	0.3182	0.5015	0.1414	87.541	117.516	330.968	56.835
1969	–0.1469	–0.2216	–0.3236	–0.1091	74.684	91.473	223.855	50.632
1970	–0.0201	–0.0987	–0.1681	0.0000	73.181	82.447	186.219	50.633
1971	0.2123	0.2032	0.1767	0.1615	88.720	99.201	219.119	58.808
1972	0.0906	0.0558	–0.0138	0.1684	96.760	104.740	216.094	68.710
1973	–0.2594	–0.3435	–0.4078	–0.1806	71.661	68.764	127.965	56.298
1974	–0.2513	–0.2587	–0.2676	–0.2704	53.654	50.977	93.719	41.076
1975	0.5709	0.6092	0.7150	0.3875	84.285	82.032	160.725	56.995
1976	0.3979	0.5074	0.5335	0.2676	117.824	123.659	246.479	72.247
1977	0.0385	0.1708	0.2177	–0.0426	122.364	144.775	300.133	69.170
1978	0.1075	0.1663	0.2245	0.0749	135.514	168.846	367.501	74.348
1979	0.3298	0.4626	0.4369	0.2262	180.207	246.954	528.062	91.169
1980	0.3144	0.3310	0.3464	0.3281	236.862	328.684	710.997	121.085
1981	0.0409	0.0305	0.0818	–0.0365	246.549	338.709	769.132	116.668
1982	0.2443	0.2939	0.2723	0.2100	306.780	438.251	978.589	141.169
1983	0.2644	0.2882	0.3410	0.2198	387.885	564.555	1312.296	172.191
1984	–0.0103	–0.0224	–0.1403	0.0451	383.886	551.933	1128.144	179.959
1985	0.3115	0.3283	0.2833	0.3217	503.449	733.158	1447.702	237.848
1986	0.1640	0.0876	0.0321	0.1619	586.028	797.391	1494.152	276.353
1987	0.0124	–0.0682	–0.1383	0.0166	593.295	742.983	1287.501	280.948
1988	0.2167	0.2474	0.2192	0.1803	721.864	926.810	1569.715	331.592
1989	0.2479	0.1923	0.0815	0.2886	900.803	1105.014	1697.698	427.301
1990	–0.1053	–0.1779	–0.2744	–0.0596	805.915	908.474	1231.790	401.841
1991	0.4191	0.4865	0.5005	0.3467	1143.665	1350.402	1848.285	541.148
1992	0.1612	0.1738	0.2814	0.0980	1327.972	1585.155	2368.310	594.169
1993	0.1627	0.1824	0.2010	0.1114	1543.968	1874.236	2844.304	660.341
1994	–0.0262	–0.0152	–0.0314	–0.0006	1503.455	1845.671	2755.122	659.943
1995	0.3404	0.2947	0.3320	0.3679	2015.193	2389.607	3669.698	902.746
1996	0.1685	0.1804	0.1926	0.2135	2354.833	2820.608	4376.369	1095.495
1997	0.2329	0.2804	0.2402	0.3140	2903.227	3611.590	5427.553	1439.479
1998	0.0591	0.0051	–0.0817	0.2429	3074.679	3630.005	4983.978	1789.136
1999	0.3135	0.3290	0.3165	0.2525	4038.478	4824.171	6561.244	2240.972
2000	–0.0755	–0.1100	–0.1307	–0.1144	3733.482	4293.368	5704.010	1984.685
2001	–0.0280	0.1324	0.3398	–0.1115	3628.977	4861.826	7642.314	1763.484
2002	–0.1850	–0.2159	–0.1386	–0.2115	2957.622	3812.278	6583.040	1390.564
2003	0.4161	0.5178	0.7806	0.3162	4188.202	5786.399	11722.090	1830.258
2004	0.1807	0.2103	0.1670	0.1196	4944.849	7002.991	13679.145	2049.203
2005	0.1136	0.0676	0.0362	0.0615	5506.364	7476.441	14174.565	2175.292
2006	0.1387	0.1620	0.1815	0.1547	6270.320	8687.837	16746.776	2511.871
2007	0.0477	–0.0022	–0.0797	0.0580	6569.388	8668.496	15412.865	2657.653

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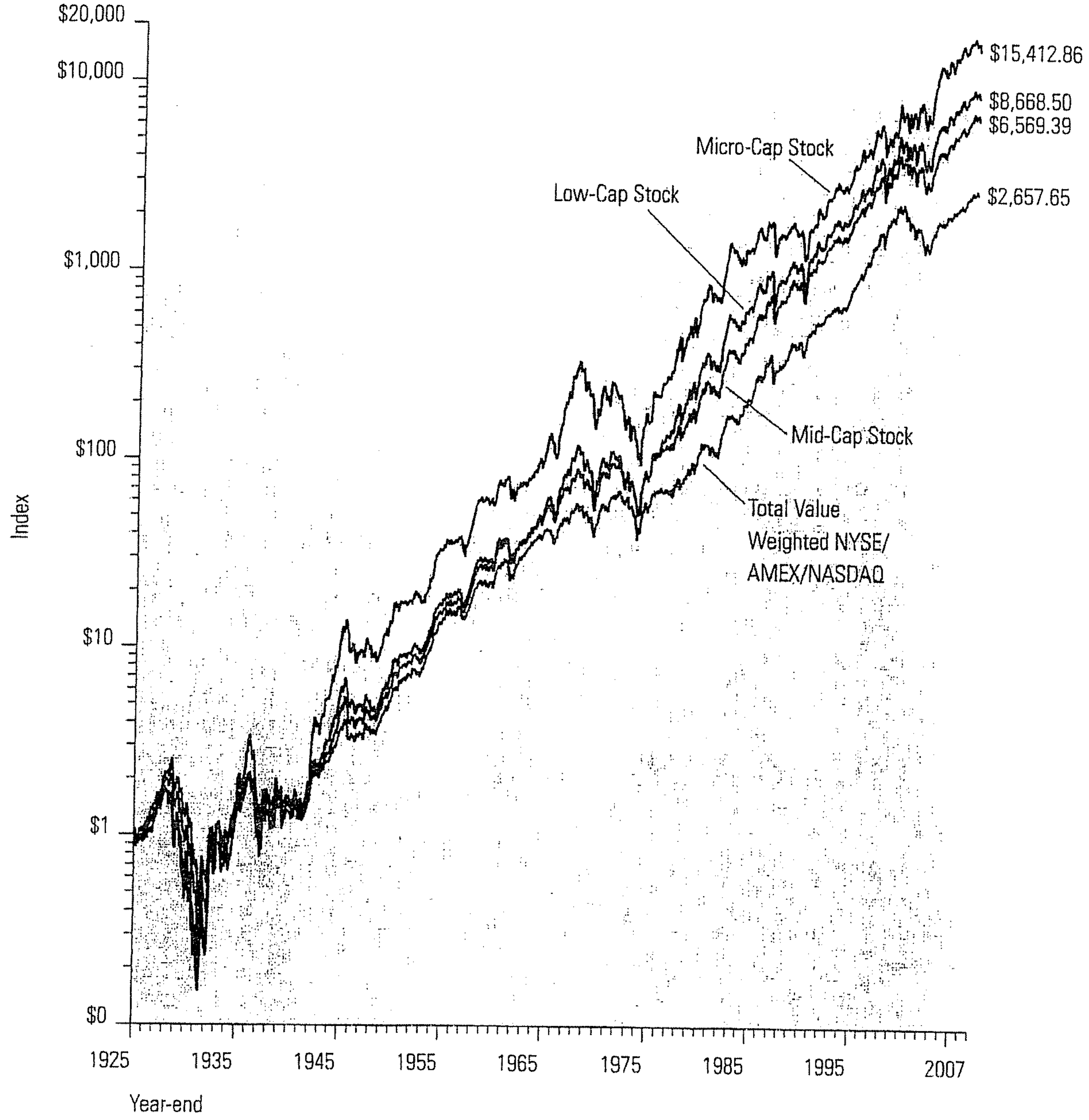
Graph 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro-, and Total Capitalization Stocks

Year-End 1925 = $1.00

from 1925 to 2007



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Size of the Deciles

Table 7-5 reveals that most of the market value of the stocks listed on the NYSE/AMEX/NASDAQ is represented by the top three deciles. Approximately two-thirds of the value is represented by the first decile, which currently consists of 167 stocks. The smallest decile represents just over one percent of the market value of the NYSE/AMEX/NASDAQ. The data in the second column of Table 7-5 are averages across all 82 years. Of course, the proportions represented by the various deciles vary from year to year.

In columns three and four are the number of companies and market capitalization. These present a snapshot of the structure of the deciles near the end of 2007.

The lower portion of Table 7-5 shows the largest firm in each decile and its market capitalization.

Table 7-5

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ:

Bounds, Size, and Composition
from 1926 to 2007

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Recent Percentage of Total Capitalization
1-Largest	63.22%	167	$10,357,817,750	62.34%
2	13.97%	174	2,327,351,920	14.01%
3	7.56%	192	1,111,672,200	6.69%
4	4.73%	184	709,696,610	4.27%
5	3.24%	203	541,399,790	3.26%
6	2.38%	251	411,039,680	2.47%
7	1.75%	275	379,465,160	2.28%
8	1.30%	380	291,182,590	1.75%
9	1.02%	641	284,538,240	1.71%
10-Smallest	0.83%	1775	201,705,150	1.21%
Mid-Cap 3–5	15.53%	579	2,362,768,280	14.22%
Low-Cap 6–8	5.43%	906	1,081,687,170	6.51%
Micro-Cap 9–10	1.85%	2,416	486,243,740	2.93%

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Historical average percentage of total capitalization shows the average, over the last 82 years, of the decile market values as a percentage of the total NYSE/AMEX/NASDAQ calculated each month. Number of companies in deciles, recent market capitalization of deciles and recent percentage of total capitalization are as of September 30, 2007.

Decile	Recent Market Capitalization (in thousands)	Company Name
1-Largest	$472,518,672	Exxon Mobil Corp.
2	20,234,526	General Mills Inc.
3	9,206,713	Reliant Energy Inc.
4	5,012,577	Manitowoc Co Inc.
5	3,422,743	FMC Corp
6	2,411,794	Webster Financial Corp.
7	1,633,320	Simpson Manufacturing Co. Inc.
8	1,128,765	Metal Management Inc.
9	723,258	Citadel Broadcasting Corp.
10-Smallest	363,479	Emergency Medical Services Corp.

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Market capitalization and name of largest company in each decile as of September 30, 2007

Long-Term Returns in Excess of Risk

The Capital Asset Pricing Model (CAPM) does not fully account for the higher returns of small company stocks. Table 7-6 shows the returns in excess of risk over the past 82 years for each decile of the NYSE/AMEX/NASDAQ.

The CAPM can be expressed as follows:

$$k_s = r_f + (\beta_s \times ERP) \qquad (28)$$

where,

k_s = the expected return for company s;
r_f = the expected return of the riskless asset;
β_s = the beta of the stock of company s; and,
ERP = the expected equity risk premium, or the amount by which investors expect the future return on equities to exceed that on the riskless asset.

The amount of an asset's systematic risk is measured by its beta. A beta greater than 1 indicates that the security is riskier than the market, and according to the CAPM equation, investors are compensated for taking on this additional risk. However, based on historical return data on the NYSE/AMEX/NASDAQ decile portfolios, the smaller deciles have had returns that are not fully explainable by the CAPM. This return in excess of CAPM grows larger as one moves from the largest companies in decile 1 to the smallest in decile 10. The excess return is especially pronounced for micro-cap stocks (deciles 9–10). This size related phenomenon has prompted a revision to the CAPM that includes the addition of a size premium.

The CAPM is used here to calculate the CAPM return in excess of the riskless rate and to compare this estimate to historical performance. According to the CAPM, the return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. Table 7-6 uses the 82-year arithmetic mean income return component of 20-year government bonds as the historical riskless rate. (However, it is appropriate to match the maturity, or duration, of the riskless asset with the investment horizon.) This CAPM return in excess of the riskless rate is β (beta) multiplied by the realized equity risk premium. The realized equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (estimated by the 82-year arithmetic mean return on large company stocks, 12.26 percent, less the historical riskless rate, 5.21 percent). The difference between the excess return predicted by the CAPM and the realized excess return is the size premium, or return in excess of CAPM.

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjusting for the size premium. Based on the risk (or beta) of a security, the expected return should fluctuate along the security market line. However, the expected returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of their risk.

Table 7-6

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ:

Long-Term Returns in Excess of CAPM
from 1926 to 2007

Decile	Beta*	Arithmetic Mean Return	Actual Return in Excess of Riskless Rate**	CAPM Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.31%	6.10%	6.45%	−0.34%
2	1.03	13.16%	7.95%	7.27%	0.68%
3	1.10	13.72%	8.51%	7.75%	0.76%
4	1.12	14.07%	8.86%	7.93%	0.93%
5	1.16	14.85%	9.64%	8.17%	1.47%
6	1.18	15.14%	9.93%	8.33%	1.60%
7	1.24	15.46%	10.26%	8.76%	1.50%
8	1.30	16.58%	11.38%	9.18%	2.20%
9	1.35	17.28%	12.07%	9.51%	2.56%
10-Smallest	1.41	20.98%	15.77%	9.95%	5.82%
Mid-Cap, 3–5	1.12	14.01%	8.81%	7.88%	0.92%
Low-Cap, 6–8	1.22	15.49%	10.29%	8.64%	1.65%
Micro-Cap, 9–10	1.36	18.46%	13.25%	9.59%	3.65%

*Betas are estimated from monthly returns in excess of the 30-day U.S. Treasury bill total return, January 1926–December 2007.

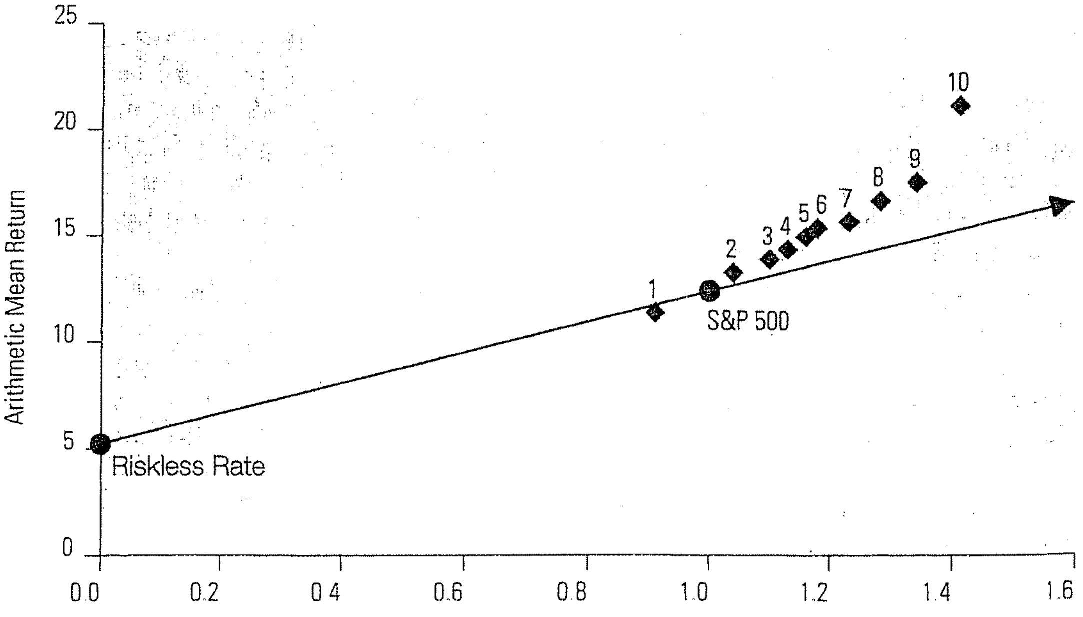
**Historical riskless rate measured by the 82-year arithmetic mean income return component of 20-year government bonds (5.21).

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.26 percent) minus the arithmetic mean income return component of 20-year government bonds (5.21 percent) from 1926–2007.

Graph 7-2

Security Market Line Versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ:

from 1926 to 2007



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Serial Correlation in Small Company Stock Returns

The serial correlation, or first-order autocorrelation, of returns on large capitalization stocks is near zero. [See Table 7-1.] If stock returns are serially correlated, then one can gain some information about future performance based on past returns. For the smallest stocks, the serial correlation is near or above 0.1. This observation bears further examination.

Table 7-7
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ:
Serial Correlations of Annual Returns in Excess of Decile 1 Returns
1926–2007

Decile	Serial Correlations of Annual Returns in Excess of Decile 1 Return
Decile 2	0.26
Decile 3	0.29
Decile 4	0.25
Decile 5	0.26
Decile 6	0.34
ecile 7	0.28
Decile 8	0.34
Decile 9	0.30
Decile 10	0.41

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To remove the randomizing effect of the market as a whole, the returns for decile 1 are geometrically subtracted from the returns for deciles 2 through 10. The result illustrates that these series differences exhibit greater serial correlation than the decile series themselves. Table 7-7 above presents the serial correlations of the excess returns for deciles 2 through 10. These serial correlations suggest some predictability of smaller company excess returns. However, caution is necessary. The serial correlation of small company excess returns for non-calendar years (February through January, etc.) do not always confirm the results shown here for calendar (January through December) years. The results for the non-calendar years (not shown in this book) suggest that predicting small company excess returns may not be easy.

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PSC Case No. 2009-00141
AG DR Set 1-220
Respondent(s): Paul R. Moul

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO REQUESTS FOR INFORMATION OF THE ATTORNEY GENERAL

Data Request 220:

With reference to Appendix I, pages I-3 – I-4, please provide: (1) all data, work papers, source document, and calculations used in estimating the "Dividend Yield" and "Median Appreciation Potential,' for the companies followed by *Value Line*; (2) the dividend yield and appreciation potential data for the individual companies covered by *Value Line*; (3) copies of the source documents and the dividend yields and projected EPS growth rates for each of the 500 companies in the S&P 500. Please provide copies of the source documents, work papers, and data in both hard copy and electronic (Microsoft Excel) formats.

Response:

(1) Value Line's narrative of the "Median Appreciation Potential" as copied from its internet website is provided below.

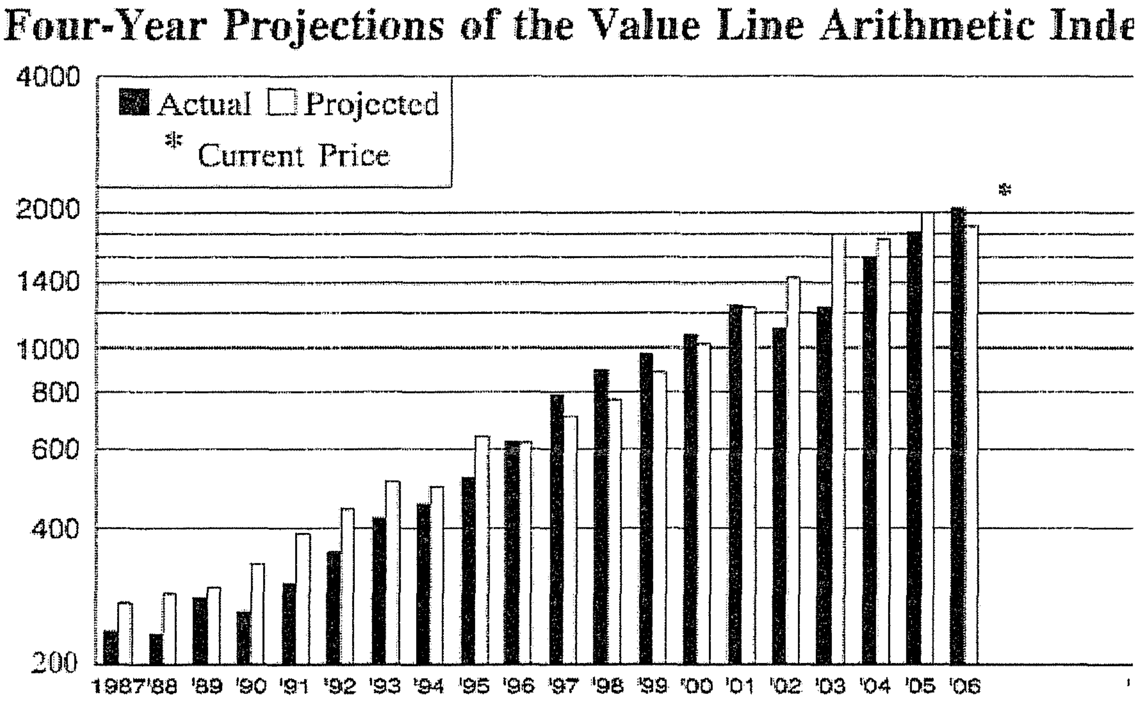
> JANUARY 26, 2007
>
> **AN EVALUATION OF VALUE LINE'S 3- TO 5- YEAR PRICE APPRECIATION POTENTIAL**
>
> The following is an update to the evaluation of our 3- to 5-year price appreciation potential. The results of this study were first published on November 8, 2002, with subsequent updates furnished on February 11, 2005 and January 27, 2006. The original article and accompanying chart detailed the methodology behind our evaluation and discussed some of the more interesting results. For the benefit of our subscribers, we briefly review the methodology used for this analysis.
>
> **PRICE APPRECIATION POTENTIAL**
>
> The estimate of the median price appreciation potential is found by first calculating the percentage change between the current price of each stock in our universe and the middle of its 3- to 5- year Target Price Range. These figures are then arrayed, and the median price appreciation potential is determined. We select the median of the array (the middle) as the most likely price, in order to play down the effect of outliers, that is, excessively large or small percentage price changes.

The chart included below depicts the results of those projections from 1983 to 2006, using the Value Line Arithmetic Index as our measure of the market. For simplicity sake, we take the actual price as the average of the middle year of the 3- to 5-year forecast, so that a projection made at the end of 1983 would be compared to the average price of the index in 1987. Strictly speaking this would be a 3 1/2 year forecast, from the end of 1983 to midyear 1987.

UPDATE FOR 2006

Our estimate for the year 2006 (made at the end of 2002) was 1861. The average price of the Value Line Arithmetic Index in 2006 was 2047. Interestingly, the year ended with the Index at 2217, about 8% above the 4-year projection made in 2002.

The average deviation between the projected and actual average prices was 16% (ignoring signs). The median deviation during this period was 14%. Our projection for 2010 now stands at 3000, 35% above the current level.



Four-Year Projections of the Value Line Arithmetic Inde

Actual	236	234	281	262	303	354	421	455	518	621	788	897	971	1072	1247	1107	1232	1594	1804	2047			
Projected	274	287	296	335	390	442	508	495	637	618	707	769	883	1024	1228	1438	1795	1743	1995	1861			3

(2) and (3) The source document provided on page 5 of Attachment PRM-13 was the sole data relied upon by Mr. Moul in his testimony for this purpose. There is no additional data on an individual company basis that was used by Mr. Moul.