

**INDEX TO WORKPAPERS
DIRECT TESTIMONY OF
ADRIEN M. MCKENZIE, CFA**

NO.	Title
WP-1	Moody's Investors Service, "Regulation Will Keep Cash Flow Stable As Major Tax Break Ends," <i>Industry Outlook</i> (Feb. 19, 2014)
WP-2	S&P Global Ratings, "Assessing U.S. Investors-Owned Utility Regulatory Environments," <i>RatingsExpress</i> (Aug. 10, 2016)
WP-3	Moody's Investors Service, "Kentucky Power Company," <i>Credit Opinion</i> (Feb. 4, 2016)
WP-4	Moody's Investors Service, "US utility sector upgrades driven by stable and transparent regulatory frameworks," <i>Sector Comment</i> (Feb. 2, 2014)
WP-5	Josh Boak, "Record-low U.S. Treasury yield points to rising economic fears," AP News (Jul. 6, 2016)
WP-6	William Poole, "Prospects for and Ramifications of the Great Central Banking Unwind," <i>Financial Analysts Journal</i> (November/December 2013)
WP-7	BlackRock, "When the Fed Yields," <i>BlackRock Investment Institute</i> (May 2015)
WP-8	Michael S. Derby, "Fed Grapples With Massive Portfolio," <i>The Outlook</i> , The Wall Street Journal (Jan. 29, 2017)
WP-9	Josh Zumbrun, "Trump's Fiscal Plans, Fed's Asset Unwinding Could Fuel Rate Rise," <i>The Outlook</i> , The Wall Street Journal (May 7, 2017)
WP-10	<i>Press Release</i> , Federal Reserve, Policy Normalization Principles and Plans (Sep. 17, 2014), http://www.federalreserve.gov/newsevents/press/monetary/20140917c.htm . Document not provided. Available at URL.
WP-11	<i>Addendum to the Policy Normalization Principles and Plans</i> , Federal Reserve (Jun. 13, 2017), https://www.federalreserve.gov/monetarypolicy/files/FOMC_PolicyNormalization.20170613.pdf . Document not provided. Available at URL.
WP-12	Morin, Roger A., "New Regulatory Finance," <i>Public Utilities Reports</i> at 71 (2006)
WP-13	Gordon, Myron J., "The Cost of Capital to a Public Utility," <i>MSU Public Utilities Studies</i> at 89 (1974)
WP-14	Morin, Roger A., "New Regulatory Finance," <i>Public Utilities Reports, Inc.</i> at 298 (2006)
WP-15	Morin, Roger A., "New Regulatory Finance," <i>Public Utilities Reports, Inc.</i> , at 307 (2006)
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WP-17	Morin, Roger A., "New Regulatory Finance," <i>Public Utilities Reports</i> at 189 (2006)
WP-18	Marshall E. Blume, "Betas and Their Regression Tendencies," <i>Journal of Finance</i> , Vo. 30, No. 3 (Jun. 1975), pp. 785-795
WP-19	Brigham, E.F., Shome, D.K., and Vinson, S.R., "The Risk Premium Approach to Measuring a Utility's Cost of Equity," <i>Financial Management</i> (Spring 1985)
WP-20	Harris, R.S., and Marston, F.C., "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," <i>Financial Management</i> (Summer 1992)
WP-21	Morin, Roger A., "New Regulatory Finance," <i>Public Utilities Reports</i> , at 128 (2006)
WP-22	Brigham, E.F., Aberwald, D.A., and Gapenski, L.C., "Common Equity Flotation Costs and Rate Making," <i>Public Utilities Fortnightly</i> , May, 2, 1985
WP-23	Morin, Roger A., "New Regulatory Finance," <i>Public Utilities Reports, Inc.</i> at 335 (2006)
WP-24	Morin, Roger A., "New Regulatory Finance," <i>Public Utilities Reports, Inc.</i> at 323 (2006)

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WP-26	<i>Wolters Kluwer, Blue Chip Financial Forecast</i> , Vol. 36, No. 6 (Jun. 1, 2017)
WP-27	Value Line Investment Survey, <i>Forecast for the U.S. Economy</i> (Jun. 2, 2017)
WP-28	IHS Global Insight, <i>The 30-Year Focus</i> (Apr. 2017)
WP-29	Energy Information Administration, <i>Annual Energy Outlook 2017</i> (Jan. 5, 2017)
WP-30	Regulatory Research Associates, "Adjustment Clauses – A State-by-State Overview," <i>Regulatory Focus</i> (Aug. 22, 2016)
WP-31	Edison Electric Institute, <i>Alternative Regulation for Emerging Utility Challenges: 2015 Update</i> (Nov. 11, 2015)
WP-32	Value Line <i>Summary & Index</i> (May 19, 2017)
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WP-41	Duff & Phelps, "2016 Valuation Handbook – Guide to Cost of Capital (Preview Version)," John Wiley & Sons (2016) at p. 19
WP-42	Utility Risk Premium – Regulatory Research Assoc. data (1974-2016)

US Regulated Utilities

Regulation Will Keep Cash Flow Stable As Major Tax Break Ends

Our outlook for the US regulated utility industry is stable. This outlook reflects our expectations for the fundamental business conditions in the industry.

- » **Cost-recovery mechanisms, coupled with annual base-rate increases, will keep the ratio of industry-wide cash flow to debt at about 18%, within our range for a stable outlook.** Favorable rate orders are part of what we view as a broader shift toward stronger regulatory support for the industry, all the more important this year given the end of bonus depreciation. Industry regulation is the most important driver of our outlook.
- » **Ratemaking mechanisms, such as revenue decoupling and riders, allow utilities to recover costs faster and improve the quality, predictability and stability of cash flow.** The ratio of cash flow to gross profit for a peer group of 122 US operating companies has been more stable on a year-over-year basis since 2009, as the use of riders in regulatory agreements has become more commonplace.
- » **We are also seeing signs of improved regulatory support in historically contentious states, such as Connecticut and Illinois.** Stronger recovery mechanisms put in place last year for [Connecticut Natural Gas Corp.](#) (A3 stable) and [Commonwealth Edison Co.](#) (Baa1 stable) in Illinois will likely make cash flow more predictable for utilities in each state. This marks a turnaround in both states, where regulatory support was lacking for certain cost-recovery provisions in the past.
- » **Stagnant customer demand is leading some utilities to pursue shareholder growth through financial engineering.** Some companies are restructuring their businesses by creating master limited partnerships and “yieldcos” to defend their historically high equity multiples. For now, credit risks are limited but so are any benefits for bondholders, and these structures may weaken sponsor credit quality over time.
- » **What could change our outlook.** We could shift our outlook to positive if the ratio of cash flow to debt rose toward 25% on a sustainable basis, which could happen if return on equity rises or utilities deleverage significantly. A more contentious regulatory environment that resulted in a material deterioration in cash flow, such that the ratio fell to 13%, could cause us to have a negative outlook.

Supportive regulatory relationships drive our stable outlook

Regulatory support will help US electric and gas utilities maintain stable credit profiles in 2014, even with stagnant customer demand and without the cash-flow boost from bonus depreciation.

Fundamentally, the regulatory environment is the most important driver of our outlook because it sets the pace for cost-recovery. Favorable rate orders, even in states where utilities have had contentious regulatory relationships in the past, are part of what we view as a broader shift toward stronger regulatory support for the industry.

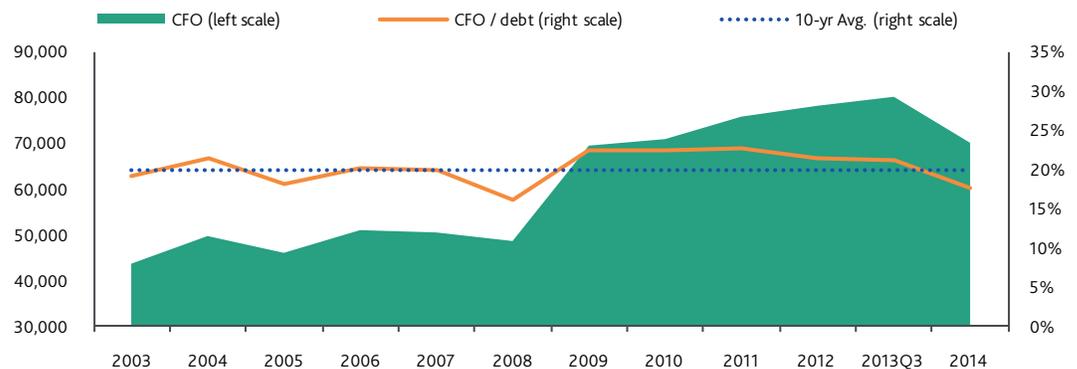
The improved regulatory framework, led by special cost-recovery mechanisms and annual base-rate increases, is all the more important this year for two reasons. First is the end of bonus depreciation, a temporary tax break that expired on December 31. We incorporate a view that bonus depreciation will not be extended; however, various corporate sectors are currently lobbying for the extension in 2014. Second is stagnant customer demand, which is also leading some utilities to pursue shareholder growth through financial engineering (please see page 6).

As Exhibit 1 shows, the ratio of cash flow to debt will decline this year to 18%, just below the 10-year trend line but within our range for a stable outlook. The decline is largely because of higher cash taxes, but utilities can still get some tax relief in 2014 by applying net operating loss carry-forwards (from factors unrelated to bonus depreciation) from past years to this year's tax payments—an option they didn't use when bonus depreciation was in effect.

We would likely shift our outlook to positive if the ratio of cash flow to debt rose to 25%, although that would take a marked increase in regulatory-allowed ROE levels or steps by utilities to scale back their dividend and stock-repurchase plans. A more contentious regulatory environment or a widespread adoption of more-aggressive financial strategies resulting in a material deterioration in cash flow, such that the ratio fell to 13%, would likely lead to a negative outlook.

EXHIBIT 1

Cash Flow to Debt Will Hover Below the 10-Year Average



Notes: Figures are in thousands of US dollars. A list of the 122 utilities included in our analysis starts on page 7. Data for the third quarter of 2013 are the latest available. Data for 2014 are our estimates.

Source: Moody's Investors Service

Improved regulatory environment means stable, more predictable cost-recovery

The US regulatory environment has improved significantly in the past year, providing for faster and more-certain cost-recovery in 2014.

[Puget Sound Energy Inc.](#)'s (PSE; Baa1 stable) June 2013 rate order is a good example. Its regulator, the Washington Utilities and Transportation Commission, approved the decoupling of electric and gas revenue from sales volume, and a property-tax tracker that provides more-efficient recovery of property-tax expense. The commission acknowledged a need to reduce regulatory lag times by expediting the utility's rate filings and offering more real-time true-up of costs during rate filings. The regulator also provided the company with forward-looking annual revenue adjustments (about 3% for electric and 2% for gas) over the next three years. As a result of these changes, we expect that Puget Sound's cash-flow-to-debt ratio will continue to surpass 20%, exceeding the industry average, even without the cash-flow benefit of bonus depreciation.

Another example is [Westar Energy Inc.](#)'s (Baa1 stable) 2013 abbreviated rate case with the Kansas Corporation Commission. In addition to providing incremental cost-recovery for environmental upgrades, the regulator allowed Westar to increase its monthly fixed charge on customer bills. This movement in rate design will allow Westar to recover a greater portion of its fixed costs through fixed rates, rather than volumetric rates, thereby reducing Westar's dependency on selling higher volumes to recover fixed costs. The shift to a \$12 residential monthly fixed charge from \$9 will be a benefit amid flat customer demand in Kansas over the past three years (see Exhibit 2).

EXHIBIT 2

Demand for Electricity Has Been Stagnant in Kansas

Actual Consumption

Kansas Residential Electricity
 Consumption, TWh



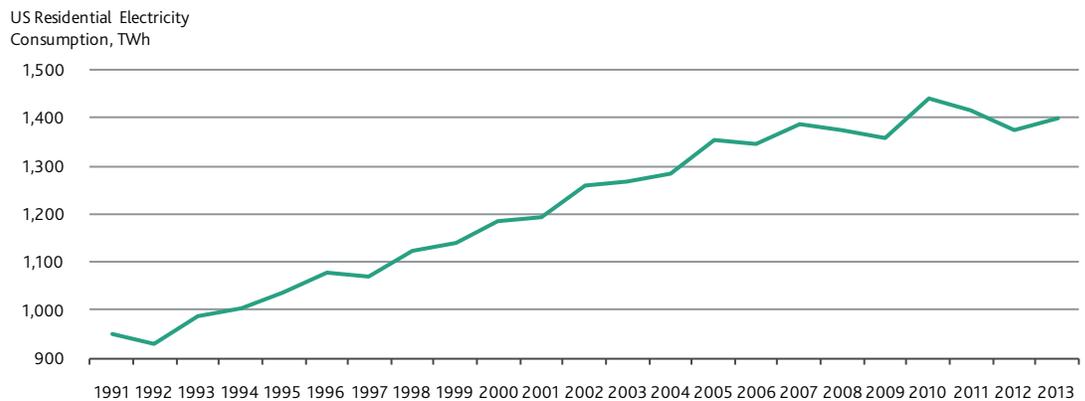
Notes: TWh stands for terawatt hour. 2013 US Energy Information Administration (EIA) data are through October 2013. Our estimates for November and December 2013 are based on historical trends.

Source: US Energy Information Administration

As demand for electricity wanes, rate structures that are tied more closely to volumetric charges than to fixed charges will threaten the gross profits of most electric and gas utilities. Exhibit 3 below shows the drop-off in US electricity demand since 2010, largely attributable to weather and slow economic growth as well as conservation and efficiency measures.

EXHIBIT 3
Demand for Electricity Is Slow to Rebound

Actual Consumption



Note: 2013 EIA data is through October 2013. Our estimates for November and December 2013 are based on historical trends.
 Source: US Energy Information Administration

The industry's financial profile is becoming more predictable and steady because of these special recovery mechanisms that supplement cash recovery between general rate cases. As Exhibit 4 shows, the average ratio of cash flow from operations to gross profit had a standard deviation of 2.4% on a year-over-year basis between 2003 and 2008. This compares with a 1.1% standard deviation on average between 2009 and the third quarter of 2013, the latest data available, a period marked by a more pervasive use of cost-recovery mechanisms throughout the US.

EXHIBIT 4
Cost-Recovery Mechanisms Make Cash Flow More Predictable

Year	CFO / Gross Profit	Standard Deviation Rolling Two-Year Average	Average Standard Deviation
2003	30.9%		
2004	37.0%	4.3%	
2005	34.0%	2.1%	
2006	37.3%	2.4%	
2007	34.9%	1.7%	
2008	32.9%	1.4%	2.4%
2009	44.9%		
2010	42.5%	1.7%	
2011	44.8%	1.6%	
2012	44.3%	0.3%	
3Q13	43.0%	0.9%	1.1%

Note: The latest data available are for the third quarter of 2013.
 Source: Moody's Investors Service

Cost-recovery improves, but not without exceptions

Most regulated electric and gas utilities in the US have shown evidence of improved regulatory relationships. Apart from Puget Sound's and Westar's cost-recovery improvements, we have seen regulatory improvement in Illinois and Connecticut, states in which the relationships between regulators and utilities have been somewhat contentious.

Stronger recovery mechanisms put in place late last year in both Illinois and Connecticut will make utility cash flow more predictable. For example, in Illinois, **Commonwealth Edison's** (ComEd) cash flow to debt coverage will start improving in 2014, supported by the adoption of a version of formula ratemaking (i.e., the Energy Infrastructure Modernization Act, or "EIMA," which helps define various aspects of rate structure and cost-recovery in Illinois). The implementation of EIMA will make cost-recovery more tied to factors determined by a formula and less tied to rate-case negotiations (the results of which are less predictable).

Similarly, the Connecticut legislature in 2013 passed the Comprehensive Energy Strategy, which encourages the use of decoupling mechanisms and infrastructure replacement riders (i.e., the Distribution Integrity Management Program, or DIMP), while promoting growth of local distribution companies (LDCs) through customer conversions. These measures are subject to approval by the Public Utilities Regulatory Authority in rate-case proceedings, but were approved in **Connecticut Natural Gas's** (CNG; A3 stable) December 2013 rate case. We expect decoupling, DIMP and conversion incentives to be applied to all LDCs in the state going forward.

These moves mark a turnaround in both states from past years, when regulatory support was lacking for certain cost-recovery provisions and when general rate case outcomes were deemed less than favorable from an investor perspective. For example, the Illinois legislature passed the EIMA in 2011, but the Illinois Commerce Commission did not fully implement it, initially, which made future cost-recovery for ComEd uncertain. Likewise, Connecticut LDCs had few tracking mechanisms and were exposed to declining customer usage in rate design. Now, through the adoption of EIMA in ComEd's rate structure (clarified by Senate Bill 9 in 2013) and CNG's implementation of decoupling and the DIMP, the financial profiles of both companies will likely improve.

These cost-recovery improvements are part of the broader trend we are seeing in the industry, but there are a few high-profile exceptions. [Entergy Corp.](#) (Baa3 stable), which has a history of contentious regulatory relationships in Arkansas and Texas, is one example.

Last year, [Entergy Arkansas Inc.](#) (Baa2 stable) put forth a nearly \$145 million rate request but received about \$81 million (the Arkansas Public Service Commission did allow a new cost-recovery rider for certain regional transmission expenses, however). [Entergy Texas Inc.](#) (Baa3 stable) requested about \$53 million in rate increases for 2014, but the Texas Public Utilities Commission's (PUC) staff recommended a rate increase of a little more than \$3 million. The PUC has not issued a final decision.

Another high-profile exception is [Consolidated Edison of New York's](#) (A2 stable) pending rate settlement, which calls for a two-year freeze on electric rates and a three-year rate freeze on gas and steam rates. Although the rate freeze would curb Consolidated Edison of New York's earnings, the settlement is credit neutral because of the provision for reasonable recovery of deferred storm costs related to Hurricane Sandy and other investments.

This year, one utility that might also buck the positive trend is [Jersey Central Power & Light Co.](#) (JCP&L; Baa2 negative). JCP&L has been the target of public criticism over its handling of outages related to Hurricane Sandy, besides allegations of over-earning. The staff of the New Jersey Board of Public Utilities has proposed that base rates be cut by \$207 million (not considering recovery of storm costs, which will be addressed in a separate rate proceeding). This compares with the company's request for an increase of \$11 million (again, not considering storm costs).

JCP&L's financial flexibility and financial metrics have already been weakened by costs associated with Hurricane Sandy, so a material rate reduction could hurt JCP&L's rating. If JCP&L can bring its ratio of cash flow to debt to at least 14% despite a rate decrease, then our rating outlook could stabilize. JCP&L had 12% cash flow to debt through the 12 months ended the third quarter of 2013.

More utilities are turning to financial engineering

Against a backdrop of stagnant demand, some utility holding companies are turning to forms of financial engineering, such as creating master limited partnerships (MLPs) and so-called yieldcos, to defend their historically high equity multiples. For the few companies that have proceeded with these strategies so far, the credit impact is neutral because the vehicles are small relative to the corporate sponsor's consolidated credit profile. But longer term, credit risks could increase if these companies eventually lose too much cash flow from their most stable assets and don't reduce debt enough to rebalance their capital structures.

We expect some more companies to go public with these financial-engineering vehicles this year. The joint venture among OGE, CenterPoint and ArcLight—the Enable Midstream Partners MLP—plans to complete an initial public offering in the first quarter. [Dominion Resources Inc.](#) (Baa2 stable) expects to publicly offer its MLP by mid-year. In addition, [NextEra Energy Inc.](#) (Baa1 stable) expects to make a decision whether to form a yieldco by then.

Meantime, several companies have pursued acquisitions outside of their core utility holdings and service territories, like [MidAmerican Energy Holdings Co.](#) (A3 stable), [TECO Energy Inc.](#) (Baa1 stable), and [Avista Corp.](#) (Baa1 stable). This trend is bound to continue as companies try to expand their regulated footprint and achieve regulatory diversity. We expect that most M&A activity in 2014 will be conservatively financed much like these transactions, which included equity financings.

EXHIBIT 5

Regulated Utilities: M&A Activity

Acquirer / Acquiree	Acquirer			Acquiree			Financing	Credit Implication
	Revenue	CFO	Debt	Revenue	CFO	Debt		
MidAmerican Energy Holdings Co. / NV Energy, Inc.	\$12,373	\$505	\$4,255	\$2,930	\$794	\$5,125	\$5.6 billion in debt & equity	Positive; no ratings actions
TECO Energy, Inc. / New Mexico Gas Company	\$2,851	\$680	\$3,156	\$332	\$65	\$250	\$950 million in debt, equity, & cash	Affirmed TECO Energy ratings
Avista Corp / Alaska Energy and Resources Company (AERC)	\$1,581	\$295	\$1,739	\$42	\$20	\$115	\$170 million in equity	Neutral for Avista
Fortis, Inc. / UNS Energy Corporation	\$3,654	\$976	\$5,783	\$1,483	\$400	\$1,937	\$4.3 billion in debt & equity	Slightly positive for UNS Energy Corporation; no ratings action

Notes: Financials are in millions, as of the 12 months ended September 30, 2013. AERC financials are based on Alaska Electric Light and Power Co. (AELP) 2012 FERC Form 1 data. Fortis and New Mexico Gas financials are as reported as of fiscal 2012. We expect TECO Energy will assume \$200 million of debt already existing at New Mexico Gas Company. We expect Fortis to assume approximately \$1.8 billion of debt already existing at UNS Energy Corporation. In addition, we expect Fortis to finance the UNS acquisition in a manner similar to historical precedent, with a balanced mix of debt and equity issued upstream from the utility (we expect Fortis to keep UNS's current capital structure in place).

Sources: Fortis Inc. Annual Report, AELP 2012 FERC Form 1, SNL, Moody's Financial Metrics

Appendix: Peer Group

Moody's Financial Metrics

	Entity Name	LT Rating	Outlook	CFO/Debt (3-Yr Avg) LTM 3Q11- LTM3Q13
Integrated	Alabama Power Company	A1	Stable	26%
	ALLETE, Inc.	A3	Stable	22%
	Appalachian Power Company	Baa1	Stable	17%
	Arizona Public Service Company	A3	Stable	28%
	Avista Corp.	Baa1	Stable	18%
	Black Hills Power, Inc.	A3	Stable	22%
	Cleco Power LLC	Baa1	Positive	19%
	Consumers Energy Company	(P)A3	Stable	27%
	Dayton Power & Light Company	Baa3	Stable	34%
	DTE Electric Company	A2	Stable	24%
	Duke Energy Carolinas, LLC	A1	Stable	23%
	Duke Energy Corporation	A3	Stable	15%
	Duke Energy Florida, Inc.	A3	Stable	21%
	Duke Energy Indiana, Inc.	A2	Stable	16%
	Duke Energy Kentucky, Inc.	Baa1	Stable	23%
	Duke Energy Ohio, Inc.	Baa1	Stable	25%
	Duke Energy Progress, Inc.	A1	Stable	23%
	El Paso Electric Company	Baa1	Stable	25%
	Empire District Electric Company (The)	Baa1	Stable	20%
	Entergy Arkansas, Inc.	Baa2	Stable	19%
	Entergy Louisiana, LLC	Baa1	Stable	17%
	Entergy Mississippi, Inc.	Baa2	Stable	16%
	Entergy New Orleans, Inc.	Ba2	Stable	20%
	Entergy Texas, Inc.	Baa3	Stable	14%
	Florida Power & Light Company	A1	Stable	32%
	Georgia Power Company	A3	Stable	25%
	Gulf Power Company	A2	Stable	26%
	Hawaiian Electric Company, Inc.	Baa1	Stable	17%
	Idaho Power Company	A3	Stable	16%
	Indiana Michigan Power Company	Baa1	Stable	21%
	Interstate Power and Light Company	A3	Stable	18%
	Kansas City Power & Light Company	Baa1	Stable	18%
	Kansas City Power & Light Company - Greater MO	Baa2	Stable	22%
	Madison Gas and Electric Company	A1	Stable	30%
	MidAmerican Energy Company	A1	Stable	24%
	Mississippi Power Company	Baa1	Stable	14%
	Nevada Power Company	Baa1	Stable	18%

	Entity Name	LT Rating	Outlook	CFO/Debt (3-Yr Avg) LTM 3Q11- LTM3Q13
	Northern States Power Company (Minnesota)	A2	Stable	25%
	Northern States Power Company (Wisconsin)	(P)A2	Stable	30%
	NorthWestern Corporation	A3	Stable	19%
	Ohio Power Company	Baa1	Stable	32%
	Oklahoma Gas & Electric Company	A1	Stable	27%
	Otter Tail Power Company	A3	Stable	24%
	Pacific Gas & Electric Company	A3	Stable	25%
	PacifiCorp	A3	Stable	23%
	Portland General Electric Company	A3	Stable	25%
	Public Service Co. of North Carolina, Inc.	A3	Stable	25%
	Public Service Company of Colorado	A3	Stable	23%
	Public Service Company of New Hampshire	Baa1	Stable	20%
	Public Service Company of New Mexico	Baa2	Positive	21%
	Public Service Company of Oklahoma	A3	Stable	27%
	Puget Sound Energy, Inc.	Baa1	Stable	21%
	San Diego Gas & Electric Company	A1	Stable	21%
	Sierra Pacific Power Company	Baa1	Stable	16%
	South Carolina Electric & Gas Company	Baa2	Stable	17%
	Southern California Edison Company	A2	Stable	30%
	Southern Indiana Gas & Electric Company	A2	Stable	28%
	Southwestern Electric Power Company	Baa2	Stable	18%
	Southwestern Public Service Company	Baa1	Stable	21%
	Tampa Electric Company	A2	Stable	32%
	Tucson Electric Power Company	Baa1	Stable	19%
	Union Electric Company	(P)Baa1	Stable	22%
	UNS Energy Corporation	Baa2	Stable	19%
	Virginia Electric and Power Company	A2	Stable	27%
	Westar Energy, Inc.	Baa1	Stable	16%
	Wisconsin Electric Power Company	A1	Stable	17%
	Wisconsin Power and Light Company	A1	Stable	31%
	Wisconsin Public Service Corporation	A1	Stable	26%
T&Ds	AEP Texas North Company	Baa1	Stable	22%
	Ameren Illinois Company	(P)Baa1	Stable	26%
	Atlantic City Electric Company	Baa2	Stable	15%
	Baltimore Gas and Electric Company	A3	Stable	19%
	CenterPoint Energy Houston Electric, LLC	A3	Stable	16%
	Central Hudson Gas & Electric Corporation	A2	Stable	29%
	Central Maine Power Company	A3	Stable	27%
	Cleveland Electric Illuminating Company (The)	Baa3	Stable	15%
	Commonwealth Edison Company	Baa1	Stable	21%

Entity Name	LT Rating	Outlook	CFO/Debt (3-Yr Avg) LTM 3Q11- LTM3Q13
Connecticut Light and Power Company	Baa1	Stable	13%
Consolidated Edison Company of New York, Inc.	A2	Stable	23%
Delmarva Power & Light Company	Baa1	Stable	17%
Duquesne Light Company	A3	Stable	26%
Jersey Central Power & Light Company	Baa2	Negative	18%
New York State Electric and Gas Corporation	A3	Stable	26%
Niagara Mohawk Power Corporation	A3	Stable	23%
NSTAR Electric Company	A2	Stable	29%
Ohio Edison Company	Baa2	Stable	25%
Oncor Electric Delivery Company LLC	Baa3	Stable	20%
Orange and Rockland Utilities, Inc.	A3	Stable	21%
PECO Energy Company	A2	Stable	30%
Pennsylvania Electric Company	Baa2	Stable	18%
Pennsylvania Power Company	Baa2	Stable	37%
Potomac Edison Company (The)	Baa3	Stable	19%
Potomac Electric Power Company	Baa1	Stable	16%
Public Service Electric and Gas Company	A2	Stable	25%
Rochester Gas & Electric Corporation	Baa1	Stable	26%
Texas-New Mexico Power Company	Baa1	Positive	26%
Toledo Edison Company	Baa3	Stable	8%
United Illuminating Company	Baa1	Stable	20%
West Penn Power Company	Baa2	Stable	25%
Western Massachusetts Electric Company	A3	Stable	23%
LDCs			
Atlanta Gas Light Company	A2	Stable	30%
Atmos Energy Corporation	A2	Stable	23%
Berkshire Gas Company	Baa1	Stable	29%
Connecticut Natural Gas Corporation	A3	Stable	26%
DTE Gas Company	Aa3	Stable	24%
Indiana Gas Company, Inc.	A2	Stable	27%
Laclede Gas Company	(P)A3	Stable	26%
New Jersey Natural Gas Company	(P)Aa2	Stable	19%
Northern Illinois Gas Company	A2	Stable	49%
Northwest Natural Gas Company	(P)A3	Stable	20%
Piedmont Natural Gas Company, Inc.	A2	Stable	23%
Questar Gas Company	A2	Stable	25%
SEMCO Energy, Inc.	Baa1	Stable	15%
SourceGas LLC	Baa2	Stable	14%
South Jersey Gas Company	A2	Stable	21%
Southern California Gas Company	A1	Stable	32%
Southern Connecticut Gas Company	Baa1	Stable	22%

Entity Name	LT Rating	Outlook	CFO/Debt (3-Yr Avg) LTM 3Q11- LTM3Q13
UGI Utilities, Inc.	A2	Stable	27%
UNS Gas, Inc.	Baa1	Stable	27%
Washington Gas Light Company	A1	Stable	35%
Wisconsin Gas LLC	A1	Stable	28%
Yankee Gas Services Company	Baa1	Stable	18%

Source: Moody's Investors Service

Moody's Related Research

Industry Outlooks:

- » [US Regulated Utilities: Regulation Provides Stability as Business Model Faces Challenges, July 2013 \(156754\)](#)
- » [US Regulated Utilities: Regulatory Support, Low Natural Gas Prices Maintains Stability, February 2013 \(149379\)](#)
- » [US Unregulated Power: Headwinds continue for the merchant power players, July 2013 \(156302\)](#)
- » [US Coal Industry Outlook Stabilizes as Business Conditions Hit Bottom, August 2013 \(157309\)](#)
- » [Global Oil & Gas: Persistent High Oil Prices Keep Industry Robust, but Global Supply Increasing \(Summary\), December 2013 \(160980\)](#)

Special Comment:

- » [US utility sector upgrades driven by stable and transparent regulatory frameworks, January 2014 \(163726\)](#)
- » [YieldCos: Fantastic for Shareholders; Less So for Bondholders, November 2013 \(160121\)](#)
- » [Planned Capital Expenditures Set to Fall in 2015, And Modestly Decline Thereafter, October 2013 \(158945\)](#)
- » [US Telecommunications and Regulated Utilities: End of Bonus Depreciation Could Prompt Cuts in Capital Spending, Dividends, September 2013 \(157572\)](#)
- » [US Local Gas Distribution Companies: Lower risks and unique growth opportunities versus electric utility peers, May 2013 \(153018\)](#)
- » [The Prospect of US LNG Exports Influences Pricing and Gas Markets Worldwide, May 2013 \(151819\)](#)
- » [US Extends Tax Credit for Wind Power, a Credit Positive for Developers and Utilities, January 2013 \(148915\)](#)

Rating Methodology:

- » [Regulated Electric and Gas Utilities, December 2013 \(157160\)](#)

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Standard & Poor's Credit Research

Assessing U.S. Investor-Owned Utility Regulatory Environments

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Assessing U.S. Investor-Owned Utility Regulatory Environments

Regulatory advantage is the most heavily weighted factor when S&P Global Ratings analyzes a regulated utility's business risk profile. One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions where a utility operates. A utility management team's skill in dealing with regulatory risk can sometimes overcome a difficult regulatory environment. Conversely, companies' regulatory risk can increase even with supportive regulatory regimes if management fails to devote the necessary time and resources to the important task of managing regulatory risk. We modify our assessment of regulatory advantage to account for this dynamic in our ratings methodology (for the criteria we use to rate utilities, see "Corporate Methodology," and "Key Credit Factors For The Regulated Utilities Industry," published Nov. 19, 2013, on RatingsDirect.)

There are specific factors we use in the U.S. to assess the credit implications of the numerous regulatory jurisdictions here that help us determine the "preliminary regulatory advantage" in our credit analysis of each investor-owned regulated utility. We organize the subfactors of regulatory advantage into four categories:

- Regulatory stability,
- Tariff-setting procedures and design,
- Financial stability, and
- Regulatory independence and insulation.

Regulatory Stability

The foundation of our opinion of a jurisdiction is the stability of its approach to regulating utilities, encompassing transparency, predictability, and consistency. Given the maturity of the U.S. investor-owned utility industry, the long history of utility regulation (going back to the early 20th century) and the well-established constitutional protections accorded to utility investments, we emphasize the principle of consistency when weighing regulatory stability. We also incorporate the degree to which the regulatory framework either explicitly or implicitly considers credit quality in its design.

Regulatory Change Can Bring Stability, Or Take It Away

While stability is one of the four pillars of our approach to evaluating regulatory risk, experience shows us that it's not an absolute positive or negative for creditors. Change can boost or lessen risk, and any improvement in a regulatory regime will overcome any negative connotations of instability. A good example is Michigan, which in about 2008 revamped its whole approach to utility regulation. As implemented in subsequent years by the Michigan Public Service Commission, the reforms have almost completely transformed the regulatory environment in that state.

However, during any period of change, we see the uncertainties surrounding the process and the outcome as possible major causes of risk. A more recent and still ongoing example is New York, where the Public Service Commission's (NYPSC) Reforming the Energy Vision (REV) proceeding is possibly revving up risk for utilities. While the NYPSC seemed at first to be focusing more on high-minded policy questions than on making a lot of changes to day-to-day operations, the current phase could eventually disrupt the way utilities make money and affect their ability to earn the authorized return. If the end result is greater operating risk with no opportunity to earn greater returns, our assessment of the regulatory environment could change.

Durability of regulatory system

An established, dependable approach to regulating utilities is a hallmark of a credit-supportive jurisdiction. Creditors lend capital to utilities over long periods to fund the development of long-lived assets. A firm understanding of the basic "rules" that will govern how the utility will recover its costs, including servicing its debt and the return on its capital over an extended period, is essential to accurately assess credit risk. Major or frequent changes to the regulatory model invariably raise risk due to the possibility of future changes. Steady application of transparent, comprehensible policies and practices lowers risk.

How long a regulatory framework has been in place is the most important factor in this area. We view jurisdictions as most supportive when there have been no major changes or where the approach has been consistent for a long time and is not prone to further changes. Jurisdictions that have undergone a major, fundamental change in the regulatory paradigm that seems to be working well are a little less supportive, and less so a jurisdiction that is transitioning to a new regulatory approach. Credit risk rises if the transition attracts political attention. The less-supportive jurisdictions are those that frequently alter the basic regulatory approach. We also view the framework's development less favorably if policy disputes or legal actions cause contention, indicating that the political consensus regarding utility regulation is fragile.

Some jurisdictions permit competitive markets to prevail for some important functions of the delivery of utility services, notably wholesale markets for electricity and retail markets for electric or gas service. In others, vertical integration is the norm. A jurisdiction's credit-supportiveness is more prone to suffer if market forces directly influence major cost items that utilities could otherwise control through cost-based regulation because of the potential volatility it creates. The risk inherent in a market-based model is straightforward: utility rates are more volatile when markets influence them rather than fully embedded costs, and regulators are apt to resist full and timely recovery when market price changes are abrupt and substantial (and perhaps misunderstood). We observe less support for credit quality in jurisdictions that are in the midst of deregulating important parts of the utility framework. The uncertainty of the timing

of reaching the outcome--and what the result will be--is a negative factor from a credit perspective. Utilities are also prone to financial stress when the transition to competition causes potential "rate shock" for customers that regulators could resist.

Transparency of regulatory framework and attitude toward credit quality

We believe regulation works best when it is rule-based. Creditor interests are better protected by the presence of and adherence to a pre-set code of rules and procedures that we can look to when assessing risk. Risk is lower when the rules are more transparent and when they take into account a utility's financial integrity. We regard jurisdictions that require regulators to protect utilities' financial soundness and have transparent policies and procedures as the most credit-supportive. We ascribe higher risk in jurisdictions where policies and procedures support financial integrity, but where inconsistency can selectively arise. We believe a jurisdiction provides even less support when transparency merely exists. We see less support when any of these credit factors are absent, or if the regulator's record on following precedent is poor.

Tariff-Setting Procedures

We review rate decisions as part of our surveillance on each U.S. utility. We focus on the jurisdiction's overall approach to setting rates and the process it uses to establish base rates (practices pertaining to separate tariff provisions for large expenses are in the "Financial Stability" part of our analysis). We focus on whether base rates, over time, fairly reflect a utility's cost structure and allow a fair opportunity to earn a compensatory return that provides creditors with a financial cushion that supports credit quality. If the process is geared toward an incentive-based system, our analysis centers on the risks related to the incentive mechanisms. If the jurisdiction has vertically integrated utilities, we review the resource procurement process and assess how it affects regulatory risk.

Rate Cases Can Affect Creditworthiness

Although not common, rate case outcomes can sometimes lead directly to a change in our opinion of creditworthiness. Often it's a case that takes on greater importance because of the issues being litigated. For example, in 2010, we downgraded Florida Power & Light and its affiliates following a Florida Public Service Commission rate ruling that attracted attention due to drastic changes to settled practices on rate case particulars like depreciation rates. More recently, in June 2016, we downgraded Central Hudson Electric & Gas due to our revised opinion of regulatory risk. While that reflected the company's own management of regulatory risk, it was prompted in part by other rate case decisions in New York that highlighted the overall risk in the state.

Sometimes change comes from outside the usual rate case process. The aforementioned improvement in Michigan (see the previous sidebar) came from legislative changes that reformed rate case procedures such as interim rate increases and time limits on rate decisions. In March 2016, we affirmed our ratings on Entergy Corp. and kept the outlook positive based on the prospect of lower regulatory risk as the company pursues strategic changes in its various jurisdictions. For instance, legislation in Arkansas allowing for formula rates could better enable Entergy to manage regulatory lag and earn its authorized return.

Ability to timely recover costs

We review authorized returns and capital structures in our analysis, but we focus mainly on actual earned returns. Examples abound of utilities with healthy authorized returns that have no meaningful expectation of earning those returns due to, for example, rate case lag (i.e., the relationship between approved rates and the age of the costs used to set those rates) or expense disallowances. Also, the stability of the returns is as important as the absolute level of financial returns, and we note the equity component in the capital structure used to generate the revenue requirement in rate proceedings. Higher authorized and earned returns and thicker equity ratios translate into better credit measures and a more comfortable equity cushion for creditors. We consider a regulatory approach that allows utilities the opportunity to consistently earn a reasonable return as a positive credit factor.

A very credit-supportive jurisdiction is one in which all of the utilities it regulates consistently earn above-average returns. We assess jurisdictions lower if only some of them do, and lower still if the earnings records are below average or highly variable from year to year. We deem jurisdictions as weaker when all utilities earn well-below-average returns, and we consider jurisdictions where all utilities consistently earn exceedingly poor returns, including years with negative returns, as weakest.

We consider "regulatory lag" along with the record of earned returns to assess timeliness. Credit-supportive jurisdiction typically have a track record of little regulatory lag, indicating that responsibility for a poor or uneven earnings history lies more with management than its regulators. In addition to the regulator's efficiency in completing rate cases, we consider the obsolescence of the costs on which the rates are based, the timing of interim rates, and other practices (such as allowing rates to automatically change in a future period based on inflation) that affect a utility's ability to earn its authorized return.

If a jurisdiction uses incentives as the primary ratemaking tool and institutes a comprehensive incentive program that allows revenues and costs to diverge, we evaluate the incentive mechanisms' effect on a utility's earnings capability and stability. A common approach features an extended period between base rate reviews, during which rates change according to a formula based on inflation, a predetermined productivity factor, and capital spending. An incentive-based program can be close to credit-neutral compared with systems that permit more frequent and dynamic rate changes if the risk is symmetrical (i.e., an equal opportunity to earn over or under the authorized return and equivalent reward or penalty for doing so) and limited (a maximum or minimum earnings band). The effect on regulatory risk depends on whether we believe the efficiency targets are realistic and achievable, the regulator's treatment of disparities in actual versus authorized spending, and the framework's flexibility to adjust returns for capital market conditions. If there are operating standards, we determine whether they fairly reward or punish utilities if performance deviates from expectations.

There is a muted effect on regulatory risk in jurisdictions where incentives are not central, but are instead used only to augment cost-of-service regulation. A moderate amount of incentives that carry symmetrical risks can even modestly support better credit quality. For example, a fuel-adjustment and purchased-power clause with a sharing mechanism that affects less than 10% of the total fuel costs and cuts both ways when commodity markets change can modestly reduce risk by offering the utility a mild incentive for effective procurement and efficient operations, without unduly exposing it to commodity price risk.

We typically view jurisdictions as credit-supportive if regulators use symmetrical incentive mechanisms sparingly in the rate-setting process. When incentives play a larger role in the rate-setting approach, but are well-designed to evenly allocate risk, we see less support for credit quality. We regard still lower jurisdictions where incentives dominate and are poorly designed. Jurisdictions where incentives significantly degrade risk and are part of a comprehensive incentive regime harbor the most risk for creditors.

Financial Stability

When we evaluate U.S. utility regulatory environments, we consider financial stability to be of substantial importance. Cash takes precedence in credit analysis. A regulatory jurisdiction that recognizes the significance of cash flow in its decision-making is one that will appeal to creditors.

Creative Ratemaking Can Help...If Used Correctly

The ability of financial stability factors to help a utility maintain and smooth its cash flow gives prominence to this area of our analysis. In addition to the near-ubiquitous fuel clauses, we see utilities give more attention to obtaining so-called "disc" mechanisms (DSIC, for distribution system investment charge, is a common acronym for this kind of rate adjustment) that accelerate and stabilize cash flow realization when a utility pursues a strategy of boosting rate base to fuel earnings growth.

For instance, Duquesne Light recently filed for a DSIC mechanism in Pennsylvania in conjunction with a long-term plan to improve its distribution system. Approval, requested for October, would enhance our view of Duquesne's ability to manage regulatory risk, because it would consequently be joining the other Pennsylvania utilities that already benefit from this mechanism. On the other end of the spectrum, Mississippi Power's ongoing travails in obtaining rate relief for its Kemper coal-fired plant, which has experienced significant cost and schedule problems, points to how regulatory risk can deteriorate under stress when well-established procedures for handling large and risky capital projects are absent or not followed.

Treatment of significant expenses

When utilities have major expenses such as fuel and purchased power/gas/water, the presence of separate tariff provisions to facilitate full and contemporaneous recovery is the most prominent factor in this part of our analysis. The timely adjustment of rates in response to changing commodity prices and other expenses that are largely out of management's control is a key feature of a credit-supportive regulatory jurisdiction. The analysis centers on the special tariff mechanisms to determine their effectiveness in producing the cash flow stability they are designed to achieve. The frequency of rate adjustments, the ability to quickly react to unusual market volatility, and the control of opportunities to engage in hindsight disallowances of costs could affect our analysis almost as much as whether the tariff provisions exist at all. The record of disallowances plays a part when we assess regulatory advantage.

We consider jurisdictions to be very credit-supportive if utilities can recover all high-expense items through an automatic tariff clause that is based on projected costs, adjusts frequently, and has no record of any significant disallowances. We see more risk if separate mechanisms exist, but lack some of the above features. We view jurisdictions that lack independent rate mechanisms for large expenses and have a record of significant disallowances

as weakest.

Treatment of capital spending

When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.

Very supportive jurisdictions offer a separate recovery mechanism for all capital spending, a mandated current cash return during construction, and a bonus return for some or all capital projects. We deem a jurisdiction weaker if there is a separate mechanism for only certain kinds of spending and the cash return and higher return are subject to the regulator's discretion. We view jurisdictions that don't allow separate recovery or a current return as being lower on the scale. We assess a jurisdiction as weaker still when it doesn't have independent rate mechanisms for capital projects, and we view it as most risky when full recovery occurs only after a utility's assets become operational.

Cash-smoothing mechanisms

We have a more positive view of jurisdictions that use innovative regulatory provisions that help to smooth cash flow from period to period. For a jurisdiction that focuses on incentives in its basic approach to ratemaking, through multiyear rate plans or a formula rate plan, we view the availability of "reopeners" (to adjust rates for unexpected events out of the utility's control) as key to this part of our analysis. The utility's ability to petition for a rate increase when unexpected or uncontrollable costs arise in the midst of a long-term rate plan is a critical risk mitigant.

Other examples of risk-dampening regulatory policies include hedging program approvals, and decoupling (the separation of a utility's profits from sales) or weather-related mechanisms. If a utility seeks approval of a hedging program to manage exposure to commodity prices, it can reduce risk if there's a clearly stated hedging policy that its regulator has endorsed, and a track record of activity that conforms to the policy that has not been subject to regulatory second-guessing. A well-designed decoupling or weather-normalization mechanism that efficiently adjusts rates to offset the sales effect of economic conditions, customer usage trends, or weather will soften earnings and cash flow volatility to the benefit of creditors. If applicable, we view a record of regulatory responsiveness to extreme events for utilities that are prone to violent or disruptive weather (like hurricanes) as favorable for credit quality.

A jurisdiction is more credit-supportive if it makes extensive use of extraordinary and credit-supportive rate mechanisms. Also favorable are jurisdictions that use innovative mechanisms selectively, or have regulators that are receptive to reopeners where incentives are the main ratemaking method.

Regulatory Independence And Insulation

The role of politics in U.S. utility regulation is often misunderstood. In most jurisdictions, the regulator's function is to set and regulate rates and service standards with due regard not only for the interests of those who advance the capital needed to provide safe and reliable utility service, but for other constituents as well. Creditors should recognize that utility regulation harbors political as well as economic risks. Therefore, how politics could influence regulation helps us evaluate a regulatory environment.

Political Influence On Utility Regulation Can Yield Unexpected Results

This is often the most variable area of our analysis and the most difficult to assess. The most dramatic, fairly recent reminder of how political forces can influence regulatory risk was last year's unexpected reversal by the popularly elected Mississippi Supreme Court of a significant rate increase granted for Mississippi Power to help pay for a major power plant under construction. Regulators, who were ordered to roll back rates and issue refunds, struggled to make decisions amid the strained political atmosphere and extra scrutiny that the Court's action had created. The episode also highlighted the greater regulatory risk that attends jurisdictions that expose regulators (and in this case the appellate court) to direct political accountability.

Another more recent example of political influence on regulation underscores the complexity of this area of analysis, because it featured many participants at both the federal and state level. Electric utilities in Ohio had a credible strategy for dealing with rising competitive risks in their merchant generation portfolios by offering the output to retail customers at pre-set prices on a long-term basis, which the state regulator approved. The federal regulator (Federal Energy Regulatory Commission, or FERC), responding to complaints by other generators that the plan would inhibit the operation of the competitive electricity market, essentially overruled the Ohio regulators and blocked the utilities from pursuing the strategy that would have reduced its risk profile. It essentially decided that its political interest in and ideological commitment to efficient electricity markets overrode the state's political interest in stable electric rates. The saga is still continuing with attempts to bypass the FERC's ruling through other means, but no matter what the ultimate result, we see how political considerations can increase risk.

Political independence of regulator

The primary factor in this part of our analysis is the regulators' (and, when relevant, the judicial body that reviews the regulators' decisions) political independence. We think it's more credit-supportive when the regulator is substantially independent of the political process. Jurisdictions are somewhat less favorable when insulation is strong, such as when the executive branch of government appoints regulators subject to legislative approval. We consider jurisdictions to be further down the scale when the same voters who pay utility bills directly elect the regulators, but institutional efforts have been made to erect some shield for regulators from transient political concerns. We view jurisdictions that arrange for direct political accountability of regulators that persistently influences regulatory decisions as less supportive.

Record of direct political intervention

The overall atmosphere that a regulator operates in can affect its ability to deliver sound, fair, and timely rate decisions and set prudent regulatory policies that assist utilities in managing business and financial risk. In this part of our

evaluation, we may consider the tone that politicians set, the history of political insulation given to the regulatory body and the courts that review its actions, and the behavior of important constituencies that intervene in utility proceedings. We also track the public visibility of utility issues, because we believe that the likelihood of constructive regulatory behavior increases with the comparative obscurity of utility issues.

We view a jurisdiction as having a lower risk if the regulatory environment is marked by cooperative attitudes and constructive interventions in important matters before the regulator. We assess a jurisdiction lower when the atmosphere is more combative and restricts the regulator's ability to act in the long-term best interests of all parties. We consider jurisdictions as weaker if the regulatory environment is so infused with short-term political influence over regulatory decisions that the regulator can't effectively consider investor interests in its decisions.

Related Criteria And Research

Related Criteria

- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- Criteria | Corporates | Utilities: Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013

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Kentucky Power Company

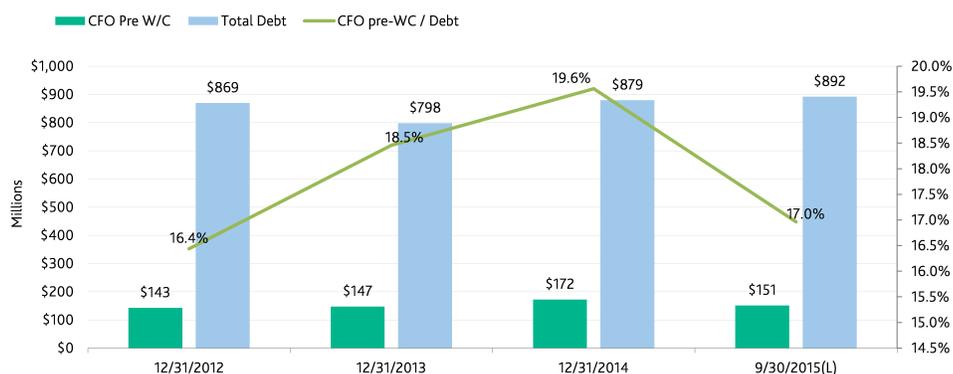
Vertically integrated utility subsidiary of AEP

Summary Rating Rationale

Kentucky Power Company's (KPCo) Baa2 rating reflects its relatively low-risk operating profile as a vertically integrated electric utility with a constructive relationship with its regulator, the Kentucky Public Service Commission (KPSC). The rating considers financial metrics that are appropriate for the rating and reflective of important settlement agreements the utility has negotiated to transform its rate base.

Exhibit 1

Historical CFO Pre W/C, Total Debt and CFO Pre W/C to Debt



Source: Moody's Financial Metrics

Credit Strengths

- » Regulatory support with sufficient cost recovery
- » Relatively stable cash flow credit metrics

Credit Challenges

- » Service territory's economic recovery hampered by exposure to Appalachian coal industry

Rating Outlook

The stable rating outlook is primarily based on our expectation that KPCo will maintain a constructive relationship with the KPSC and that the combination of recent rate actions, the extension of bonus depreciation and prudent financial policy will enable the utility to preserve financial credit metrics that support the rating. These metrics include a ratio of CFO pre-WC to debt in the mid-to-upper teen's range.

Factors that Could Lead to an Upgrade

- » A rating upgrade appears unlikely over the near to intermediate term
- » Longer term, interest coverage above 4.5x and CFO pre-WC to debt above 20% on a sustainable basis

Factors that Could Lead to a Downgrade

- » A deterioration in KPCo's relationship with its regulator
- » An increase in capital or operating expenses that KPCo was unable to recover on a timely basis
- » A material decrease in cash flow, or increase in leverage, causing interest coverage to fall below 3.5x, or the ratio of CFO Pre-WC to debt to fall below 13% for a sustained period of time

Key Indicators

Exhibit 2

KEY INDICATORS [1]

Kentucky Power Company

	12/31/2011	12/31/2012	12/31/2013	12/31/2014	9/30/2015(L)
CFO pre-WC + Interest / Interest	3.8x	3.8x	4.2x	5.4x	4.4x
CFO pre-WC / Debt	17.8%	16.4%	18.5%	19.6%	17.0%
CFO pre-WC – Dividends / Debt	13.3%	12.5%	15.9%	6.5%	11.6%
Debt / Capitalization	43.9%	40.9%	36.5%	41.5%	41.0%

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
 Source: Moody's Financial Metrics

Detailed Rating Considerations

Regulatory support with sufficient cost recovery is a key rating driver

Moody's views the regulatory environment in Kentucky as reasonably supportive to long-term credit quality. The KPSC has a suite of cost recovery mechanisms that help reduce regulatory lag including a fuel adjustment clause, energy efficiency and environmental recovery riders which allow a utility to earn a return on essentially all construction work in progress. Utilities can also start to collect interim rates approximately six months after filing a rate case if the KPSC has not acted on it.

Over the past few years, in an effort to address both environmental and reliability issues, KPCo worked with its regulators to obtain the approvals necessary to support a significant transformation of its generation rate base including: 1) the closure of half of its prior coal-based generation base (800 MW Big Sandy Unit 2) in May 2015, 2) the natural gas repowering of Big Sandy Unit 1 (to be completed in 2016), and 3) the acquisition of one half (780 MW) of the coal-fired Mitchell plant from an affiliate as of December 2013.

In June 2015, the KPSC issued an order approving a modified stipulation agreement in KPCo's December 2014 filed rate case that included a net revenue increase of \$45 million. The increase consisted of a \$68 million increase in rider rates offset by a \$23 million

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decrease in annual base rates. The approved agreement was positive as it reflects KPCo's ownership interest in the Mitchell Plant and includes riders to recover costs (and an ROE of 10.25%) associated with the planned shut down and coal-to-gas conversion at the Big Sandy plant. As a result, in 2016, AEP expects KPCo will be able to earn a return on equity of about 8.6%. This is a significant improvement over the negative return exhibited for the twelve months ending September 2015 while the company was operating under a rate freeze and required to refund certain fuel related costs for the period when KPCo simultaneously owned the Mitchell plant and operated Big Sandy Unit 2.

Service territory's economic recovery is hampered by exposure to Appalachian coal industry

According to Moody's Economy.com, Kentucky's economy is expanding largely as a result of strength in auto manufacturing, and logistics thanks to strong domestic demand and rising online sales. We note however that KPCo's service territory in eastern Kentucky is disproportionately exposed to the Appalachian coal business which continues to be negatively impacted by higher production costs, environmental mandates and low natural gas prices which have reduced demand for coal as a fuel source for electricity generation. In 2014, approximately 45% of KPCo's energy sales were to industrial customers.

Relatively stable cash flow credit metrics

KPCo's key cash flow based financial credit metrics remain appropriate for the rating even as the utility has worked through a period of under earning due to rate freezes and required refunds. As of December 2014, we calculate KPCo's three year average ratio of cash flow from operations excluding changes in working capital (CFO pre-WC) to debt to be about 18% and its retained cash flow to debt ratio be about 11.5%. These metrics fall within the mid "Baa" scoring range indicated for these factors in our rating methodology for regulated electric and gas utilities. In contrast, we calculate KPCo's return on equity for 2014 and 2013 at 5.1% and 1.1% respectively. This is partially attributable to the utility's relatively low leverage. Including deferred taxes in the capital structure, as of December 2014, we calculate KPCo's ratio of debt to capitalization as approximately 41% which falls in the "A" scoring range indicated in the methodology.

For 2016, based on recent rate actions, management anticipates KPCo should be able to earn a return of about 8.6%. We anticipate cash flow to debt credit metrics will remain in the mid-upper teens.

Liquidity Analysis

KPCo's liquidity is adequate. For the twelve months ending September 30, 2015, KPCo generated approximately \$115 million of cash from operations, invested \$113 million in capital expenditures and up streamed \$48 million in dividend payments to parent AEP, resulting in a negative free cash flow (FCF) of approximately \$46 million. In 2014 KPCo generated CFO of approximately \$213 million, invested \$102 million in capital expenditures and up streamed \$115 million in dividend payments, resulting in a negative FCF of \$4 million. Prospectively we see KPCo generating a CFO ranging from \$150 - 175 million, investing approximately \$100 million and maintaining a prudent dividend policy.

Although KPCo does not benefit from a dedicated external credit facility, the company does have access to its parent company American Electric Power Company, Inc.'s (AEP, Baa1 stable) liquidity through participation in its utility money pool. As of September 30, 2015, KPCo's borrowing limit under the money pool was \$250 million and the utility had borrowed approximately \$7 million. KPCo also utilizes AEP's \$750 million receivable securitization facility; at the end of September, KPCO had approximately \$34 million of receivables sold under its arrangement with AEP Credit. KPCo's nearest maturity is September of 2017 when \$325 million of senior notes come due; in addition KPCO has \$65 million of variable rate pollution control bonds supported by a bilateral letter of credit that matures in June 2017.

AEP's liquidity position is adequate. AEP has two syndicated credit facilities totaling \$3.5 billion, one is a \$1.75 billion facility expiring June 2017, and the other is also a \$1.75 billion facility expiring in July 2018. AEP is not required to make a representation with respect to either material adverse change or material litigation in order to borrow under the facility. Default provisions which would preclude the use of the facility exclude defaults at non-significant subsidiaries including AEP Generation Resources, AEP's merchant generating facility. The facilities contain a covenant requiring that AEP's consolidated debt to capitalization (as defined) will not exceed 67.5%; as of September 30, 2015 the contractually defined ratio was 50.6%.

Profile

Kentucky Power Company (KPCo), a vertically integrated electric utility company headquartered in Frankfort, Kentucky, is a wholly owned subsidiary of American Electric Power Company, Inc. (AEP, Baa1 stable), with about \$1.5 billion in rate base (6% of AEP's total) and 2014 revenue of about \$782 million (about 5% of AEP total revenue). The utility is primarily regulated by the Kentucky Public Service Commission (KPSC).

Following the closure of the 800 MW Big Sandy Unit 2 in May 2015, and the conversion of Big Sandy Unit 1 to natural gas in 2016, KPCo is estimated to have a total owned generation capacity of 1,048 MW, comprised of 26% natural gas and 74% coal. KPCo's generating capacity consists of a 50% ownership in the coal-fired Mitchell plant (780 MW) and Big Sandy Unit 1 that is being converted from coal to natural gas and is expected to have a generating capacity of 268 MW. KPCo also purchases approximately 390 MW from its affiliate AEP Generating Company's share of the Rockport plant under a long-term unit power agreement. KPCo's is a winter peaking utility, in February 2015 the system reached a peak of 1,666 MW; its 2014 summer peak demand was 1,097 MW. KPCo is the one of the lowest electricity cost providers in Kentucky with a typical bill of \$96 a month, based on 1,000 kWh of residential usage.

Rating Methodology and Scorecard Factors

Exhibit 3

Rating Factors			Moody's 12-18 Month Forward View As of Date Published [3]	
Kentucky Power Company			Measure	Score
Regulated Electric and Gas Utilities Industry Grid [1][2]			Current LTM 12/31/2014	
Factor 1 : Regulatory Framework (25%)			Measure	Score
a) Legislative and Judicial Underpinnings of the Regulatory Framework			A	A
b) Consistency and Predictability of Regulation			A	A
Factor 2 : Ability to Recover Costs and Earn Returns (25%)				
a) Timeliness of Recovery of Operating and Capital Costs			Baa	Baa
b) Sufficiency of Rates and Returns			Baa	Baa
Factor 3 : Diversification (10%)				
a) Market Position			Ba	Ba
b) Generation and Fuel Diversity			B	B
Factor 4 : Financial Strength (40%)				
a) CFO pre-WC + Interest / Interest (3 Year Avg)			4.4x	Baa
b) CFO pre-WC / Debt (3 Year Avg)			18.2%	Baa
c) CFO pre-WC – Dividends / Debt (3 Year Avg)			11.5%	Baa
d) Debt / Capitalization (3 Year Avg)			39.6%	A
Rating:				
Grid-Indicated Rating Before Notching Adjustment				Baa2
HoldCo Structural Subordination Notching				
a) Indicated Rating from Grid				Baa2
b) Actual Rating Assigned				Baa2

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] As of 12/31/2014(L)

[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.

Source: Moody's Financial Metrics

Ratings

Exhibit 4

Category	Moody's Rating
KENTUCKY POWER COMPANY	
Outlook	Stable
Issuer Rating	Baa2
Senior Unsecured	Baa2
PARENT: AMERICAN ELECTRIC POWER COMPANY, INC.	
Outlook	Stable
Senior Unsecured	Baa1
Jr Subordinate Shelf	(P)Baa2
Commercial Paper	P-2

Source: Moody's Investors Service

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REPORT NUMBER 1013769

US utility sector upgrades driven by stable and transparent regulatory frameworks

- » We recently upgraded most US investor-owned utilities and many of their holding companies due to our view that the US regulatory environment has improved over the past several years. Most of the companies placed on review for upgrade in November 2013¹ were upgraded in late January 2014, and most by one notch. Please see Appendix A for a list of companies that were upgraded.
- » US regulated utilities appear financially secure, thanks to their suite of transparent and timely cost and investment recovery mechanisms. When compared with other regulatory environments in developed countries², the overall regulatory environment for US utilities has steadily improved over the past few years and is expected to remain supportive and constructive for at least the next 3-5 years.
- » A more favorable regulatory environment allows US regulated utilities to generate relatively stable and predictable revenue and cash flow, which can support a material amount of leverage. But most US utilities maintain a conservative capital structure, where the ratios of debt to EBITDA and cash flow to debt hover in the 4.0x and 20% range, respectively. Key financial ratios are likely to decline over the next few years, as interest rates rise and tax payments increase with the expiration of bonus depreciation.
- » US utilities own and operate enormous, capital intensive, long-lived critical infrastructure assets. They are often one of the larger companies residing in a particular state, they pay big property taxes and employ lots of people. The importance of utilities to state and local governments is not lost on elected officials, and utilities maintain very effective constituency outreach programs.
- » Utilities have demonstrated strong, stable access to the capital markets. Utilities do not maintain high cash balances, but their committed credit facilities are typically syndicated across several banks and contain few, if any, borrowing constraints. However, a combination of significant capital investments and sizable shareholder dividends that are typically well beyond the cash generated from operations means that utilities are generally in a negative free cash flow position.
- » A handful of companies placed on review in late 2013 were not upgraded. Some of the reasons include sizable non-utility businesses with higher business risk, or a large amount of debt at the holding company as a percentage of total consolidated debt. For a few issuers, ratings weren't upgraded because these companies were viewed as being appropriately positioned at their existing rating category, relative to their rated peers.

¹ See press release: [Moody's places ratings of most US regulated utilities on review for upgrade, November 08, 2013](#).

² For example: Australia, Canada, Japan, South Korea and the United Kingdom.

Supportive regulatory frameworks

Over the past few years, the US regulatory environment has been very supportive of utilities. We think this is partly a function of regulators acknowledging that their utility infrastructure needs a material amount of ongoing investment for maintenance, refurbishment and renovation purposes. Utility infrastructure is necessary to facilitate a growing economy, and since utility investments help create jobs, utilities have been able to garner support from both politicians and regulators to authorize prudently incurred investments in these critical assets. We also think regulators prefer to regulate financially healthy utilities. Recent legislation that helps utilities recover their costs and investments in a more timely manner are evidenced in Virginia, South Carolina, Florida and Illinois.

We think political risks are also manageable, in part, because elected officials are increasingly viewing their local utilities as a reliable source of investment into the local infrastructure. Investments bring jobs, and employment growth helps the economy. This is part of the “virtuous circle” for regulated utilities, and we see a few more years of continued smooth sailing, where elected officials, their regulators, consumer groups and utilities share a common understanding with respect to strengthening this infrastructure sector.

From a practical perspective, a few regulatory hot spots of contentiousness will flare up over our rating horizon, but it is unclear at this time as to which utilities might be affected. We have generally seen such situations result in outcomes that were difficult for utilities but not punitive, and they have generally been isolated incidents rather than a broad pandemic. As a result, we continue to keep an eye on the magnitude of rate increases, and how likely those rates can be absorbed by the service territory or market before consumers become intolerant, in order to identify utilities that are exceptions to the generally positive regulatory environment.

Stable and predictable financial profile

A transparent suite of timely recovery mechanisms helps utilities generate stable and predictable revenues and cash flows, which can support a material amount of leverage. But most US utilities maintain a relatively solid capital structure, where the ratios of debt to EBITDA and cash flow to debt hovers in the 4.0x and 20% range, respectively. Key financial ratios are likely to decline over the next few years, as interest rates rise and tax payments increase with the expiration of bonus depreciation.

In the table below, we illustrate the sector's financial stability by showing the historical medians for most of the companies included in our US utility rated universe. We show the 4-year (2009 – 2012) and 2-year (2011 – 2012) average medians by rating category. We also include the latest twelve months ended September 2013. In general, lower debt to EBITDA and dividend payout ratios correspond with higher credit ratings, as do higher cash flow to debt ratios. We note that A1 rated companies invest more heavily in their assets, relative to depreciation and amortization (D&A). Because we show these financial ratios by rating category, the rating category might include different kinds of companies included in our peer groups. For example, the Baa1 rating category might include parent holding companies (which also include hybrid integrated companies), vertically integrated, transmission and distribution, local gas distribution or transmission only companies.

EXHIBIT 1

US regulated utilities – selected financial ratios, by rating category (medians)

Rating	Debt / EBITDA			CFO / debt			Dividend payout			Cap Ex / D&A		
	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM
A1	2.7	2.8	3.0	31%	32%	25%	35%	33%	39%	2.4	2.7	2.7
A2	3.3	3.3	3.5	27%	26%	22%	67%	70%	64%	1.8	1.9	2.0
A3	3.9	4.0	4.0	22%	23%	22%	56%	67%	52%	2.1	1.9	2.2
Baa1	4.1	4.2	4.0	19%	20%	19%	61%	64%	52%	1.8	1.9	2.2
Baa2	4.3	4.3	4.5	17%	17%	17%	56%	56%	78%	1.7	1.9	2.1
Baa3	4.2	4.4	4.3	18%	17%	18%	120%	91%	99%	1.3	1.5	1.4

We also examined the broad peer group of utilities by sector classification. For example, we looked at the selected financial ratios for parent holding companies, vertically integrated utilities, transmission and distribution utilities and natural gas local distribution companies. We note that the financial ratios by sector classification means that both A3 and Baa3 rated companies might be included in the “Vertically Integrated” peer group and in other peer groups. We observe that the ratio of cash flow to debt is better for the utilities than it is for the parent holding companies³.

EXHIBIT 2

US regulated utilities – selected financial ratios, by sector classification

Sector		Debt / EBITDA			CFO / debt			Dividend payout			Cap Ex / D&A		
		4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM
Holding companies	Median	4.5	4.7	4.4	18%	18%	17%	68%	69%	69%	2.3	2.3	2.5
	Total	4.1	4.3	4.2	19%	19%	18%	67%	73%	78%	2.0	2.1	2.1
LDC's	Median	4.0	4.0	4.1	24%	22%	22%	75%	70%	76%	2.0	2.2	3.1
	Total	3.5	3.5	3.4	26%	25%	23%	60%	61%	58%	2.1	2.3	2.5
T&D (electric or gas)	Median	4.0	3.7	4.2	21%	22%	20%	97%	88%	57%	1.6	1.9	1.5
	Total	3.7	3.7	3.7	22%	22%	20%	92%	86%	67%	1.5	1.8	1.9
Transmission	Median	2.3	2.3	2.5	37%	33%	26%	82%	92%	71%	5.7	6.4	6.4
	Total	3.9	3.9	4.1	20%	19%	16%	80%	83%	58%	4.7	5.3	5.5
Vertically Integrated	Median	3.7	3.7	3.7	22%	23%	20%	53%	59%	56%	2.0	2.0	2.1
	Total	3.6	3.6	3.6	23%	23%	23%	59%	64%	68%	2.1	2.1	2.1

³ See [Appendix A](#) for a table of selected financial ratios by sector classification, by rating

Critical infrastructure assets

US utilities own and operate enormous, capital intensive, long-lived critical infrastructure assets. They are often cited as being one of the larger companies residing in a particular state, pay big property taxes and employ lots of people. The importance of utilities to state and local governments is not lost on elected officials, and utilities maintain very effective constituency outreach programs⁴.

EXHIBIT 3

US regulated utilities – selected financial data, by rating category (\$ billions)

Rating	Revenues			EBITDA			CFO			Debt		
	4-yr avg	2-yr avg	LTM									
Medians												
A1	\$2.6	\$2.7	\$2.8	\$0.8	\$0.8	\$0.8	\$0.6	\$0.7	\$0.6	\$2.1	\$2.2	\$2.4
A2	\$1.6	\$1.5	\$1.4	\$0.4	\$0.5	\$0.5	\$0.4	\$0.4	\$0.4	\$1.5	\$1.6	\$1.7
A3	\$1.7	\$1.7	\$1.7	\$0.4	\$0.5	\$0.5	\$0.4	\$0.4	\$0.4	\$1.7	\$1.8	\$1.9
Baa1	\$1.6	\$1.6	\$1.6	\$0.4	\$0.4	\$0.5	\$0.3	\$0.4	\$0.4	\$1.7	\$1.8	\$1.9
Baa2	\$1.6	\$1.6	\$1.6	\$0.8	\$0.5	\$0.5	\$0.3	\$0.4	\$0.4	\$2.0	\$2.1	\$2.3
Baa3	\$1.7	\$1.7	\$1.6	\$0.5	\$0.5	\$0.5	\$0.4	\$0.4	\$0.4	\$2.2	\$2.2	\$2.3
Total												
A1	\$50.3	\$50.2	\$51.3	\$15.8	\$16.3	\$17.5	\$13.2	\$13.7	\$14.2	\$50.7	\$54.8	\$58.3
A2	\$86.4	\$85.4	\$86.6	\$25.6	\$27.1	\$29.0	\$22.2	\$23.6	\$22.8	\$86.6	\$92.0	\$98.9
A3	\$151.3	\$154.0	\$166.8	\$47.5	\$49.9	\$54.2	\$39.3	\$42.5	\$45.3	\$187.3	\$199.4	\$221.6
Baa1	\$468.5	\$473.4	\$499.6	\$144.4	\$150.8	\$160.0	\$117.3	\$125.7	\$130.9	\$576.9	\$610.6	\$668.0
Baa2	\$1.7	\$1.6	\$1.6	\$32.7	\$32.2	\$40.4	\$25.5	\$26.9	\$27.1	\$125.1	\$129.1	\$135.8
Baa3	\$5.4	\$5.6	\$5.6	\$17.6	\$18.8	\$18.2	\$1.7	\$1.8	\$1.8	\$81.3	\$89.6	\$94.8

EXHIBIT 4

US regulated utilities – selected financial data, by sector classification (\$ billions)

Sector		Revenue			EBITDA			CFO			Total Debt		
		4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM
Holding companies	Median	\$4.0	\$4.1	\$4.5	\$1.1	\$1.1	\$1.2	\$0.9	\$1.0	\$0.9	\$5.2	\$5.3	\$5.2
	Total	\$337.4	\$342.1	\$358.4	\$106.3	\$109.7	\$121.9	\$84.7	\$89.8	\$92.1	\$437.5	\$467.0	\$509.5
LDC's	Median	\$0.7	\$0.7	\$0.6	\$0.1	\$0.2	\$0.2	\$0.1	\$0.1	\$0.1	\$0.6	\$0.6	\$0.6
	Total	\$26.8	\$25.7	\$26.0	\$5.9	\$6.3	\$6.5	\$5.4	\$5.4	\$5.1	\$20.5	\$22.0	\$22.3
T&D (electric or gas)	Median	\$1.4	\$1.2	\$1.1	\$0.3	\$0.4	\$0.3	\$0.3	\$0.3	\$0.3	\$1.3	\$1.3	\$1.4
	Total	\$74.7	\$70.5	\$67.3	\$21.3	\$21.8	\$22.5	\$16.8	\$17.7	\$16.5	\$78.1	\$80.0	\$84.2
Transmission	Median	\$0.3	\$0.3	\$0.3	\$0.2	\$0.2	\$0.2	\$0.1	\$0.1	\$0.1	\$0.4	\$0.5	\$0.6
	Total	\$2.0	\$2.2	\$2.5	\$1.4	\$1.5	\$1.7	\$1.1	\$1.1	\$1.2	\$5.5	\$6.0	\$7.1
Vertically Integrated	Median	\$1.7	\$1.7	\$1.7	\$0.5	\$0.5	\$0.5	\$0.4	\$0.4	\$0.4	\$1.7	\$1.8	\$1.9
	Total	\$195.3	\$197.9	\$202.7	\$60.1	\$62.9	\$65.5	\$49.2	\$52.4	\$53.6	\$215.9	\$227.7	\$237.5

⁴ See [Appendix B](#) for a table of selected financial data, by sector classification by rating

Strong, Stable access to capital

Our view of the supportive US utility regulatory environments resulted in several rating upgrades where companies attained an A2 rating from A3, or Baa2 from Baa3. Consistent with these long term rating changes, some utilities also achieved a change in their short-term commercial paper (CP) ratings. For more information on the linkage between long term ratings and short term ratings, please see [Moody's Rating Symbols and Definitions](#).

EXHIBIT 5

Selected companies that received short-term commercial paper rating changes*

Name	Sector	Old Rating	New Rating	Rating Outlook	Short term Rating
Questar Corporation	Holdco	A3	A2	Stable	P-1 from P-2
Wisconsin Energy Corporation	Holdco	A3	A2	Stable	P-1 from P-2
DTE Gas Company	LDC	A3	A2	Stable	P-1 from P-2
Northern Illinois Gas Company	LDC	A3	A2	Stable	P-1 from P-2
Peoples Gas Light and Coke Company	LDC	A3	A2	Stable	P-1 from P-2
Consolidated Edison Company of New York, Inc.	T&D (electric or gas)	A3	A2	Stable	P-1 from P-2
PECO Energy Company	T&D (electric or gas)	A3	A2	Stable	P-1 from P-2
Public Service Electric and Gas Company	T&D (electric or gas)	A3	A2	Stable	P-1 from P-2
Atmos Energy Corporation	LDC	Baa1	A2	Stable	P-1 from P-2
DTE Electric Company	Vertically Integrated	A3	A2	Stable	P-1 from P-2
Northern States Power Company (Minnesota)	Vertically Integrated	A3	A2	Stable	P-1 from P-2
Northern States Power Company (Wisconsin)	Vertically Integrated	A3	A2	Stable	P-1 from P-2
Southern California Edison Company	Vertically Integrated	A3	A2	Stable	P-1 from P-2
Piedmont Natural Gas Company, Inc.	LDC	A3	A2	Stable	P-1 from P-2
South Jersey Gas Company	LDC	A3	A2	Stable	P-1 from P-2
Vectren Utility Holdings, Inc.	Vertically Integrated	A3	A2	Stable	P-1 from P-2
Virginia Electric and Power Company	Vertically Integrated	A3	A2	Stable	P-1 from P-2
Pinnacle West Capital Corporation	Holdco	Baa2	Baa1	Stable	P-2 from P-3
Ameren Corporation	Holdco	Baa3	Baa2	Stable	P-2 from P-3
NiSource Finance	Holdco	Baa3	Baa2	Stable	P-2 from P-3
Union Electric Company	Vertically Integrated	Baa2	Baa1	Stable	P-2 from P-3
Kansas City Power & Light Greater MO Op.	Vertically Integrated	Baa3	Baa2	Stable	P-2 from P-3

*Not all short-term ratings are listed here. Instead, we show a list of upgrades associated with the short term commercial paper rating. This list does not include utilities that may have had short-term ratings on industrial development bonds, such as Duke Indiana and Duke Carolinas. In Duke's case, both companies had their short-term IDB ratings upgraded (both VMIG and Prime ratings), but are not included on our list, but are available on the individual company's press releases.

Utility credit facilities are usually unsecured, so we tend to examine the few instances of secured revolving credits more closely. In many cases, security for credit facilities was initially granted when the utility incurred financial stress and/or was rated below investment grade. Similar to first mortgage bonds, secured credit facilities at the utility level are mostly viewed as having a materially lower risk of incurring any losses given a default. As a result, the costs and fees for secured credit facilities are typically lower than unsecured credit facilities, which regulators may view in a positive light, although we typically view utilities with secured credit facilities as possessing somewhat less financial flexibility.

One of the big credit positives that unsecured credit facilities provide utilities is the "ability" to raise capital or secure continued liquidity through a secured facility. This is a type of financial flexibility that can be useful for utilities experiencing a period of financial distress, since the security may be

granted in exchange for accommodations from lenders such as an increase in facility size, longer maturities, or easing of financial covenants or other terms.

EXHIBIT 6

Selected companies with secured credit facilities

Name	Sector	Old	New	Outlook	Comment
Avista Corp.	Vertically Integrated	Baa2	Baa1	Stable	Secured Revolver
Consumers Energy Company	Vertically Integrated	Baa1	A3	Stable	Secured Revolver
Oncor Electric Delivery Company LLC	T&D (electric or gas)	Baa3	Baa3	Stable	Secured Revolver
Puget Energy, Inc.	Holdco	Ba1	Baa3	Stable	Cross - Over / secured rev.
UNS Energy Corporation	Holdco	Baa3	Baa2	Stable	Secured Revolver
Westar Energy, Inc.	Holdco	Baa2	Baa1	Stable	Secured Revolver

Notable upgrades

Two companies were upgraded by 2-rating notches, Edison International (EIX: A3 stable) and Western Massachusetts Electric Company (WMECO: A3 stable). Prospectively, both companies are increasing the stability and predictability of their revenues and cash flows, because they are becoming more regulated.

EXHIBIT 7

Selected companies with 2 notch rating upgrades

Name	Sector	Old	New	Outlook
Atmos Energy Corporation	LDC	Baa1	A2	Stable
Edison International	Holdco	Baa2	A3	Stable
Western Massachusetts Electric Company	T&D (electric or gas)	Baa2	A3	Stable

For EIX, the increase in regulated revenues and cash flows (as a percentage of the total) will result from the divestiture of its risky non-utility businesses. In this case, EIX has benefitted because the former merchant generation operations at Edison Mission Energy (EME not rated) are no longer part of the consolidated entity, and we view the litigation risk from suits by EME creditors as manageable for EIX.

With the recent completion of a large transmission project in December 2013, WMECO is increasing the portion of its revenues derived from FERC-regulated transmission only assets. The FERC regulatory environment is viewed as being both transparent and predictable over the long term, with a very timely suite of cost recovery mechanisms and a reasonable assurance of a guaranteed return.

Four companies crossed over to the investment grade rating category from the non-investment grade category. Three are parent holding companies, all of which own solid investment grade utility operating subsidiaries.

EXHIBIT 8

Selected companies that crossed-over into investment grade from non-investment grade

Name	Sector	Old	New	Outlook
PNM Resources, Inc.	Holdco	Ba1	Baa3	Positive
Entergy Texas, Inc.	Vertically Integrated	Ba1	Baa3	Stable
Puget Energy, Inc.	Holdco	Ba1	Baa3	Stable
IPALCO	Holdco	Ba1	Baa3	Stable

For Entergy Texas Inc (ET: Baa3 stable), where we think Texas regulation is less favorable for non-ERCOT, vertically integrated utilities than they are on the unbundled transmission and distribution utilities, we see a steadily improving financial profile, including a sustainable production of cash flow to debt in the low-teen's, at a minimum. However, ET has the most most challenging regulatory relations of all the Texas utilities.

Puget Energy's (PE: Baa3 Stable)cross over to investment grade reflects an expectation for sustained improvement in the company's financials, due to supportive regulatory treatment. For example, the most recent rate case decision for its utility Puget Sound Energy, Inc. (PSE: Baa1, stable) by the Washington Utilities and Transportation Commission's (WUTC) allowance for a full electric and gas revenue decoupling mechanism and a series of predetermined annual delivery rate increases, including cost escalation factors.

Five issuers in two corporate families, Cleco Corporation (Cleco: Baa2, positive) and PNM Resources Inc. (PNM: Baa3, positive), continue to exhibit materially favorable regulatory or financial trends, reflected in the positive rating outlooks assigned at the conclusion of our review. For the remainder of the companies, stable rating outlooks were the norm.

EXHIBIT 9

Selected companies with positive rating outlooks

Name	Sector	Old	New	Outlook	Comment
Cleco Corporation	Holdco	Baa3	Baa2	Positive	
Cleco Power LLC	Vertically Integrated	Baa2	Baa1	Positive	
PNM Resources, Inc.	Holdco	Ba1	Baa3	Positive	Cross - Over
Texas-New Mexico Power Company	T&D (electric or gas)	Baa2	Baa1	Positive	
Public Service Company of New Mexico	Vertically Integrated	Baa3	Baa2	Positive	

For PNM, as soon as its San Juan Generating Station environmental compliance requirement is resolved, or close to it, and assuming financial metrics remain consistent with our expectations, additional rating upgrades could be considered. For Cleco, the positive outlooks reflect our expectation that Cleco Power LLC (CNL: Baa1, positive) will receive a constructive outcome on its latest regulatory filing, including the extension of its formula rate plan for another five-year period. This would follow the December 2013 approval received from the Louisiana Public Service Commission to transfer the Coughlin power plant to CLN.

EXHIBIT 10

Selected companies still on review for possible upgrade

Name	Sector	Old	New	Outlook	Comment
Brooklyn Union Gas Company	LDC	A3	A3	RUR - up	
Key Span Gas East Corp	LDC	A3	A3	RUR - up	
Niagara Mohawk Power Corp	T&D (electric or gas)	A3	A3	RUR - up	
New England Power Corp	T&D (electric or gas)	A3	A3	RUR - uP	

Companies not upgraded

For some holding companies with material non-utility businesses, rating upgrades were constrained. Our analysis was heavily influenced by the size, composition and strategy of those non-utility businesses. We widened the notching between some parent holding companies and their operating subsidiaries, especially if there was significant non-utility subsidiary debt or parent holding company debt. Negative rating consequences might also hold back the rating at the utility subsidiary, since parent holding company debt could be viewed as a proxy for utility subordinated debt or preferred stock.

As part of our review process, several corporate families are now characterized by a wider rating notching differential between the parent and one or more utility subsidiaries.

EXHIBIT 11

Parent holding companies with a three notch differential from one or more subsidiaries

Parent	Rating	Subsidiary	Rating	Notch differential
NextEra	Baa1	Florida Power & Light	A1	3
Sempra	Baa1	San Diego Gas & Electric	A1	3
Exelon Corp	Baa2	PECO Energy	A2	3
Dominion Resources	Baa2	VEPCO / DomGas	A2	3
PS Enterprises Group	Baa2	Public Service Electric & Gas	A2	3
Southern Company	Baa1	Alabama Power	A1	3
Integrus Energy	Baa1	Wisconsin Public Service	A1	3
Duquesne Light Holdgs.	Baa3	Duquesne Light Company	A3	3

In the table below, we show the utilities and holdcos that were placed on review for upgrade but were not upgraded. For these companies, ratings were confirmed at their existing rating categories⁵.

EXHIBIT 12

Selected companies that were not upgraded

Name	Sector	Old	New	Outlook	Summary Rationale
American Transmission Company LLC	Transmission	A1	A1	Stable	Credit supportive FERC regulation already incorporated
Madison Gas and Electric Company	Vertically Integrated	A1	A1	Stable	Credit supportive regulation already incorporated
NSTAR Electric Company	T&D (electric or gas)	A2	A2	Stable	Credit supportive regulation already incorporated
International Transmission Company	Transmission	A3	A3	Stable	Credit supportive FERC regulation already incorporated
ITC Midwest LLC	Transmission	A3	A3	Stable	Credit supportive FERC regulation already incorporated
Michigan Electric Transmission Company, LLC	Transmission	A3	A3	Stable	Credit supportive FERC regulation already incorporated
Otter Tail Power Company	Vertically Integrated	A3	A3	Stable	Supportive regulation already incorporated
Integrus Energy Group, Inc.	Holdco	Baa1	Baa1	Stable	Non-utility business / Holdco debt
ITC Great Plains LLC	Transmission	Baa1	Baa1	Stable	Credit supportive FERC regulation already incorporated
Hawaiian Electric Company, Inc.	Vertically Integrated	Baa1	Baa1	Stable	Declining metrics, higher leverage
Duke Energy Kentucky, Inc.	Vertically Integrated	Baa1	Baa1	Stable	Declining metrics, higher leverage
Dominion Resources Inc.	Holdco	Baa2	Baa2	Stable	Non-utility business / Holdco debt
Hawaiian Electric Industries, Inc.	Holdco	Baa2	Baa2	Stable	Declining metrics, higher leverage
LG&E and KU Energy LLC	Holdco	Baa2	Baa2	Stable	Holdco debt
Bay State Gas Company	LDC	Baa2	Baa2	Stable	Supportive regulation already incorporated

⁵ See [Appendix C](#) for a table of selected companies that were not placed on review for upgrade on 8 November 2013.

EXHIBIT 12

Selected companies that were not upgraded

Name	Sector	Old	New	Outlook	Summary Rationale
ITC Holdings Corp.	Transmission	Baa2	Baa2	Stable	Credit supportive FERC regulation already incorporated
Entergy Arkansas, Inc.	Vertically Integrated	Baa2	Baa2	Stable	Supportive regulation already incorporated
Kentucky Power Company	Vertically Integrated	Baa2	Baa2	Stable	Supportive regulation already incorporated
Duquesne Light Holdings, Inc.	Holdco	Baa3	Baa3	Stable	Non-utility business / Holdco debt
Pepco Holdings, Inc.	Holdco	Baa3	Baa3	Stable	Holdco debt
PPL Corporation	Holdco	Baa3	Baa3	Stable	Holdco debt
Atlantic City Electric Company	T&D (electric or gas)	Baa2	Baa2	Stable	Supportive regulation already incorporated

For a few companies, such as Madison Gas and Electric Company (MG&E: A1, stable) and NSTAR Electric Company (NSTAR Electric: A2, stable), their ratings already captured our view about the credit supportiveness of their regulatory environment and they exhibit prospective financials that are commensurate with their rating category. Their ratings also compare well with similarly rated utilities that operate in commensurately sized metro areas. The same can be said for Otter Tail Power Company (OTP: A3, stable), where we confirmed the utility at A3 and upgraded the parent holding company Otter Tail Corporation (OTC: Baa2, stable) to Baa2, thus narrowing the notching differential between the parent and the subsidiary.

The FERC regulated transmission companies, namely American Transmission Company LLC (ATC: A, stable) and ITC Holdings Corp. (ITC: Baa2, stable) and its operating subsidiaries, were not upgraded because the credit supportive FERC regulatory framework is already sufficiently incorporated into our credit analysis. Moreover, unlike most state regulatory jurisdictions, which are improving, we see the FERC maintaining a relatively steady level of supportiveness, which is high.

We summarize the rationale behind our rating confirmations for the rest of the companies in the pages that follow.

American Transmission Company (A1, stable)

The rating confirmation for American Transmission Company (ATC) reflects our view of the supportive regulatory framework of the FERC. We believe ATC's A1 issuer rating is well positioned reflecting the relatively stable and predictable cash flows supported by a federal regulatory framework governed by the FERC that promotes a tariff framework that allows timely recovery of operating and investment costs. The rating also considers ATC's low business risk profile, which is characterized by limited exposure to demand volatility and solid market position. The rating is constrained by ATC's small size, lack of geographic diversification, financial metrics that are weak for the rating but mitigated by the favorable FERC regulatory framework and the funding requirements associated with the company's significant capital expenditure program.

Our view of the supportive federal regulatory framework governed by the FERC is balanced against the current Section 206 complaint filed against the regional rate used by Transmission Owners in the Midcontinent Independent System Operator, Inc. (MISO) in November 2013. To date, FERC has taken no action on this complaint, which the TOs have filed a motion to dismiss. While it is too early in the process to determine the ultimate credit impact of any final outcome from the Section 206 complaint on ATC, we believe the final resolution of a similar Section 206 complaint filed at FERC currently being litigated against TOs in the New England ISO will provide some clarity on how similar cases will be treated going forward as to FERC's policies on these matters. We expect a final resolution by the FERC on the New England Section 206 complaint by the second quarter of 2014.

Given that ATC's credit metrics are expected to continue to be weak for its rating, ongoing favorable regulatory support provided by the FERC regulatory construct represents an essential factor in ATC's ability to maintain its financial strength.

ITC Holdings Corp (Baa2, stable) & subsidiaries

The rating confirmation for ITC Holdings Corp (ITC) and its subsidiaries reflects our view of the supportive regulatory framework of the FERC. We believe ITC Holdings' Baa2 senior unsecured rating is well positioned reflecting the relatively stable and predictable cash flows provided by its electric transmission operating subsidiaries and a solid market position. The Baa2 rating is constrained by the significant amount of debt maintained at the parent level and consolidated credit metrics that are weak for the rating but mitigated by the favorable FERC regulatory framework. The rating also considers the significant capital expenditure program currently being undertaken at ITC Holdings' operating subsidiaries.

Our view of the supportive federal regulatory framework governed by the FERC is balanced against the current Section 206 complaint filed against the regional rate used by Transmission Owners in the MISO including ITC's MISO-based subsidiaries (ITC Transmission, METC and ITC Midwest) in November 2013. To date, FERC has taken no action on this complaint, which the TOs have filed a motion to dismiss. While it is too early in the process to determine the ultimate credit impact of any final outcome from the Section 206 complaint on ITC's MISO-based subsidiaries, we believe the final resolution of a similar Section 206 complaint filed at FERC currently being litigated against the TOs in the New England ISO will provide some clarity on how similar cases will be treated going forward as to FERC's policies on these matters. We expect a final resolution by the FERC on the New England Section 206 complaint by the second quarter of 2014. Given that ITC's credit metrics are expected to continue to be weak for its rating, ongoing favorable regulatory support provided by the FERC regulatory construct represents an essential factor in ITC's ability to maintain its financial strength.

The ratings of ITC's subsidiaries reflect the same supportive FERC regulatory framework that provides a robust set of timely recovery mechanisms and healthy returns resulting in strong credit metrics. However, ITC's subsidiary ratings are constrained by the significant leverage at its parent, ITC Holdings, Corp. ITC has historically issued debt at the parent level to finance acquisitions, which accounts for approximately 70% of total parent level debt, as well as to finance equity infusions to its transmission subsidiaries. This holdco/opco financing approach used within the industry creates a benefit of double leverage by having higher equity ratios at the utility subsidiaries. As of September 30, 2013, parent level debt represented approximately 54% of ITC's consolidated debt. ITC has indicated it expects to continue funding its operations with internally generated cash, revolving credit facilities and long-term debt at the operating subsidiaries and parent as necessary.

Madison Gas & Electric Company (A1, stable)

The rating confirmation of MG&E's rating reflects our view that the utility already captures the regulatory environment in Wisconsin as above average relative to its integrated utility peers. The rating further acknowledges that MG&E's credit metrics have historically been strong for the rating category but are expected to soften as the company funds its near term capital expenditure program with a mix of internally generated funds and incremental debt, but should remain in line with comparable A1 rated utilities. Finally, the rating captures MG&E's comparatively small and concentrated service territory relative to the other utilities in the same rating category.

NSTAR Electric Company (A2, stable)

The rating confirmation of NSTAR Electric reflects our view that the regulatory environment in Massachusetts is slightly above average for T&D utilities, and those associated benefits have already been incorporated with NSTAR's current rating. The rating further acknowledges that NSTAR Electric's credit metrics are commensurate with the mid range of the A-rating category and that it compares well relative to other A2-rated transmission and distribution peers operating in a single metro area. It also captures that NSTAR Electric has a standalone \$450 million committed credit facility and that the utility's historical ability to report significant amounts of positive free cash flow has diminished in recent years.

Otter Tail Power Company (A3, stable)

The rating confirmation of OTP reflects the overall credit supportive regulatory environments which the utility currently operates; a robust suite of recovery mechanisms that provide timely recovery of prudent costs and investments; and reasonably diverse service territory spread across three states. The rating also factors in the expected slight decline in financial metrics due to the current substantial capex program to grow rate base, including sizeable investments in transmission assets, as well as the continued pressure from material upstream dividend distributions to help the parent meet its somewhat aggressive dividend policy.

Duke Energy Kentucky, Inc (Baa1, stable)

The rating confirmation of Duke Energy Kentucky, Inc. reflects adequate but declining financial metrics, increasing capital expenditures, and anticipated higher debt levels that offset the generally credit supportive regulatory environment in Kentucky. The utility's cash flow pre-working capital to debt ratio has fallen from the 25% range in 2011 and prior years to the 20% range more recently, and is likely to fall into the high teens as debt levels rise. The utility has not filed for a rate increase in several years and has no immediate plans to file a base rate case. Duke Energy Kentucky Inc's small size and status as a subsidiary of Baa1 rated Duke Energy Ohio, which was not placed on review for upgrade in November, are also rating constraints.

Hawaiian Electric Industries, Inc. (Baa2, stable) and utility subsidiary

The rating confirmation of Hawaiian Electric Company, Inc. (HECO: Baa1, stable) reflects a weak financial profile. The ratings of Hawaiian Electric Industries, Inc (HEI: Baa2, stable) at current levels reflect the relatively stable earnings and cash flow historically provided by both the vertically integrated utility businesses at HECO and the stable banking operations at American Savings Bank. The ratings also recognize the challenges at HECO and its subsidiaries, which have some of the highest retail electric rates in the country. The utility operations face heavy pressure from regulators and stakeholders to reduce rates and dependence on fuel oil. While rate reduction initiatives involving infrastructure improvements and new generation may present investment opportunities for the utilities, they also present the potential for under-recovery. HEI projects \$2.9 billion of capital expenditures at the utilities over the next five years, which is sizable compared with the total authorized rate base of \$2.2 billion. HECO benefits from a robust suite of regulatory mechanisms to mitigate this risk, including the revenue adjustment mechanism (RAM), which allows for rate base additions in between rate cases. The banking subsidiary, which provides about one-third of operating income to HEI, is managing well through the housing downturn and the low net interest margin environment.

Integrys Energy Group (Baa1, stable)

The confirmation of Integrys Energy Group's (Integrys: Baa1, stable) rating takes into consideration the company's sizable non-regulated energy marketing business, currently making up about 10-15% of consolidated earnings as well as the substantial amount of debt held at the parent. Today's rating action assumes Integrys' management will keep holding company debt around 30% of consolidated debt, while maintaining the size of its unregulated segment at current levels. It further assumes that management would take necessary actions to address any deterioration in its business risk profile if required in the future.

Bay State Gas Company (Baa2, stable)

The rating confirmation of Bay State Gas Company (Bay State: Baa2, stable) reflects the inter-company relationship with its parent, NiSource. This intercompany relationship constrains Bay State's rating at the parent rating level because Bay State's debt is being guaranteed by its Baa2 rated parent.

Dominion Resources Inc. (Baa2 stable)

The rating confirmation of Dominion Resources Inc (Dominion: Baa2, stable) reflects high leverage at the parent holding company. We also see weak near term cash flow generation at the non-utilities businesses; a sustained period of high capital investments, much of which is associated with a risky, multi-year construction program to construct an LNG export terminal (which will also create some asset concentration risk), and; a more welcoming stance towards corporate financial engineering, which contribute to a more complex capital structure and a net reduction of financial flexibility.

Duquesne Light Holdings, Inc (Baa3, stable)

The rating confirmation of Duquesne Light Holdings, Inc (DLH: Baa3, stable) reflects the high level of parent company debt and unregulated operations which do not benefit from our more favorable view of the US regulatory environment.

Pepco Holdings Inc. (Baa3, stable) and subsidiary

The rating confirmation of Pepco Holdings Inc.'s (PHI: Baa3, stable) reflects meaningful parent company debt and an aggressive dividend payout policy primarily funded through incremental debt issuances prevented upward movement in its rating.

Despite generally improving regulatory environments across the US, Atlantic City Electric Company's (ACE: Baa2, stable) regulatory construct has not benefitted from similar developments. For instance, unlike the majority of its sister utilities, ACE does have access to a decoupling mechanism that would improve the predictability of its earnings by eliminating fluctuations based on weather and changes in customer usage patterns. Furthermore, ACE continues to wrestle with significant lag in its earnings which keep the company's financial metrics squarely in the mid-Baa range.

Kentucky Power Company (Baa2, stable)

The rating confirmation of Kentucky Power Company (KEPCO: Baa2, stable) reflects the high leverage, a large capital expenditure program and weak financial metrics. The settlement outcome of last October clears the path to complete the transfer of the Mitchell Plant (including considerations of potential greenhouse initiatives), and the conversion of the Big Sandy Unit 1 to natural gas. KEPCO'S financial metrics for LTM third-quarter 2013, are reasonably within the range for the rating

category. However, on a forward looking basis, a large capital expenditure program and increased leverage will contribute to weaker financial metrics such as CFO pre-WC to debt averaging between 12-14% and CFO pre WC – Div to debt between 9-11%.

Entergy Arkansas, Inc. (Baa2, stable)

The rating confirmation of Entergy Arkansas Inc. (EA: Baa2, stable) reflects less favorable rate case outcomes in May 2010 and December 2013. Arkansas operates under traditional rate of return regulation rather than the more credit supportive formula rate plans in place in Louisiana and Mississippi, where Entergy's other large subsidiaries operate. The rate of return regulation contributes to regulatory lag at EA. Under Arkansas regulation, the test year is either fully historical or 6 months historical and 6 months projected. However, there are fuel and certain other riders that help offset some aspects of the lag.

LTM third-quarter 2013 metrics are consistent with that of fiscal year end 2012, with Cash Flow Interest Coverage of 4.5x and CFO pre-WC to debt of 13%. According to Moody's adjusted projections, EA will be able to maintain appropriate metrics for the rating, including CFO pre-WC to debt, and CFO pre-WC – Div to debt of around 16% and 14% respectively.

PPL Corporation (Baa3, stable)

The rating confirmation of PPL Corporation (PPL: Baa3, stable) reflects the upgrades of its US regulated utilities, which represent 31% of consolidated earnings, but these upgrades were not sufficient to shift PPL's consolidated credit profile as their financial metrics remain weak for its rating category. LKE did not receive an upgrade because of the high debt level at LKE relative to the consolidated LKE. Moreover, because there is free movement of cash between PPL and LKE, PPL has a constraining effect on LKE's ratings.

Appendix A: Selected utility sector rating changes

Name	Sector	Old	New	Outlook
AES Corporation, (The)	HoldCo	Ba3	Ba3	Stable
Indianapolis Power & Light Company	Integrated	Baa2	Baa1	Stable
IPALCO Enterprises, Inc.	HoldCo	Ba1	Baa3	Stable
AGL Resources Inc.	HoldCo	Baa1	A3	Stable
AGL Resources Inc.	HoldCo	Baa1	A3	Stable
Atlanta Gas Light Company	LDC	A3	A2	Stable
Northern Illinois Gas	LDC	A3	A2	Stable
Pivotal Utility Holdings	LDC	A3	A2	Stable
ALLETE, Inc.	Integrated	Baa1	A3	Stable
Superior Water, Light and Power Company	Integrated	Baa1	A3	Stable
Alliant Energy Corporation	HoldCo	Baa1	A3	Stable
Wisconsin Power and Light Company	Integrated	A2	A1	Stable
Ameren Corporation	HoldCo	Baa3	Baa2	Stable
Ameren Illinois Company	T&D	Baa2	Baa1	Stable
Union Electric Company	Integrated	Baa2	Baa1	Stable
American Electric Power Company, Inc.	HoldCo	Baa2	Baa1	Stable
AEP Texas Central Company	T&D	Baa2	Baa1	Stable
AEP Texas North Company	T&D	Baa2	Baa1	Stable
Appalachian Power Company	Integrated	Baa2	Baa1	Stable
Indiana Michigan Power Company	Integrated	Baa2	Baa1	Stable
Public Service Company of Oklahoma	Integrated	Baa1	A3	Stable
Southwestern Electric Power Company	Integrated	Baa3	Baa2	Stable
Atmos Energy Corporation	LDC	Baa1	A2	Stable
Avista Corp.	Integrated	Baa2	Baa1	Stable
MidAmerican Energy Holdings Co.	HoldCo	Baa1	A3	Stable
MidAmerican Energy Company	Integrated	A2	A1	Stable
MidAmerican Funding, LLC	HoldCo	A3	A2	Stable
PacifiCorp	Integrated	Baa1	A3	Stable
NV Energy Inc.	HoldCo	Baa3	Baa2	Stable
Nevada Power Company	Integrated	Baa2	Baa1	Stable
Sierra Pacific Power Company	Integrated	Baa2	Baa1	Stable
Black Hills Corporation	HoldCo	Baa2	Baa1	Stable
Black Hills Power, Inc.	Integrated	Baa1	A3	Stable
CenterPoint Energy, Inc.	HoldCo	Baa2	Baa1	Stable
CenterPoint Energy Houston Electric, LLC	T&D	Baa1	A3	Stable

Name	Sector	Old	New	Outlook
CH Energy Group, Inc.	HoldCo	not rated		
Central Hudson Gas & Electric Corporation	T&D	A3	A2	Stable
Cleco Corporation	HoldCo	Baa3	Baa2	Positive
Cleco Power LLC	Integrated	Baa2	Baa1	Positive
CMS Energy Corporation	HoldCo	Baa3	Baa2	Stable
Consumers Energy Company	Integrated	Baa1	A3	Stable
Consolidated Edison, Inc.	HoldCo	Baa1	A3	Stable
Consolidated Edison Company of New York, Inc.	T&D	A3	A2	Stable
Orange and Rockland Utilities, Inc.	T&D	Baa1	A3	Stable
Dominion Resources Inc.	HoldCo	Baa2	Baa2	Stable
Dominion Gas Holdings	LDC	A3	A2	Stable
Virginia Electric and Power Company	Integrated	A3	A2	Stable
DTE Energy Company	HoldCo	Baa1	A3	Stable
DTE Electric Company	Integrated	A3	A2	Stable
DTE Gas Company	LDC	A3	A2	Stable
Duke Energy Corporation	HoldCo	A3	Baa1	Stable
Duke Energy Carolinas, LLC	Integrated	A2	A1	Stable
Duke Energy Florida, Inc.	Integrated	Baa1	A3	Stable
Duke Energy Indiana, Inc.	Integrated	A3	A2	Stable
Duke Energy Progress, Inc.	Integrated	A2	A1	Stable
Progress Energy, Inc.	HoldCo	Baa2	Baa1	Stable
Duquesne Light Holdings, Inc.	HoldCo	Baa3	Baa3	Stable
Duquesne Light Company	T&D	Baa1	A3	Stable
Edison International	HoldCo	Baa2	A3	Stable
Southern California Edison Company	Integrated	A3	A2	Stable
El Paso Electric Company	Integrated	Baa2	Baa1	Stable
Empire District Electric Company (The)	Integrated	Baa2	Baa1	Stable
Portland General Electric Company	Integrated	Baa1	A3	Stable
Entergy Corporation	HoldCo	Baa3	Baa3	Stable
Entergy Gulf States Louisiana, LLC	Integrated	Baa2	Baa1	Stable
Entergy Louisiana, LLC	Integrated	Baa2	Baa1	Stable
Entergy Mississippi, Inc.	Integrated	Baa3	Baa2	Stable
Entergy Texas, Inc.	Integrated	Ba1	Baa3	Stable

Name	Sector	Old	New	Outlook
Exelon Corporation	HoldCo	Baa2	Baa2	Stable
Baltimore Gas and Electric Company	T&D	Baa1	A3	Stable
Commonwealth Edison Company	T&D	Baa2	Baa1	Stable
PECO Energy Company	T&D	A3	A2	Stable
Great Plains Energy Incorporated	HoldCo	Baa3	Baa2	Stable
Kansas City Power & Light Company	Integrated	Baa2	Baa1	Stable
Kansas City Power & Light Greater MO Oper	Integrated	Baa3	Baa2	Stable
Iberdrola S.A.	HoldCo	Baa1	Baa1	Negative
Central Maine Power Company	T&D	Baa1	A3	Stable
New York State Electric and Gas Corporation	T&D	Baa1	A3	Stable
Rochester Gas & Electric Corporation	T&D	Baa2	Baa1	Stable
IDACORP, Inc.	HoldCo	Baa2	Baa1	Stable
Idaho Power Company	Integrated	Baa1	A3	Stable
Integrus Energy Group, Inc.	HoldCo	Baa1	Baa1	Stable
North Shore Gas Company	LDC	A3	A2	Stable
Peoples Gas Light and Coke Company	LDC	A3	A2	Stable
Wisconsin Public Service Corporation	Integrated	A2	A1	Stable
Laclede Group, Inc. (The)	LDC	Baa2	Baa1	Stable
Laclede Gas Company	LDC	Baa1	A3	Stable
LDC HOLDINGS LLC	HoldCo	not rated		
PNG Companies LLC	LDC	Baa3	Baa2	Stable
New Jersey Resources Corp	HoldCo	not rated		
New Jersey Natural Gas Company	LDC	Aa3	Aa2	Stable
NextEra Energy, Inc.	HoldCo	Baa1	Baa1	Stable
Florida Power & Light Company	Integrated	A2	A1	Stable
NiSource Inc.	HoldCo	(P)Ba2 (preferred)	(P)Ba1 (preferred)	Stable
NiSource Finance	HoldCo	Baa3	Baa2	Stable
Northern Indiana Public Service Company	Integrated	Baa2	Baa1	Stable
Northeast Utilities	HoldCo	Baa1	Baa1	Stable
Connecticut Light and Power Company	T&D	Baa2	Baa1	Stable
Public Service Company of New Hampshire	Integrated	Baa2	Baa1	Stable
Western Massachusetts Electric Company	T&D	Baa2	A3	Stable
Yankee Gas Services Company	LDC	Baa2	Baa1	Stable
NorthWestern Corporation	Integrated	Baa1	A3	Stable

Name	Sector	Old	New	Outlook
OGE Energy Corp.	HoldCo	Baa1	A3	Stable
Oklahoma Gas & Electric Company	Integrated	A2	A1	Stable
Otter Tail Corporation	HoldCo	Baa3	Baa2	Stable
Pepco Holdings, Inc.	HoldCo	Baa3	Baa3	Stable
Delmarva Power & Light Company	T&D	Baa2	Baa1	Stable
Potomac Electric Power Company	T&D	Baa2	Baa1	Stable
Piedmont Natural Gas Company, Inc.	LDC	A3	A2	Stable
Pinnacle West Capital Corporation	HoldCo	Baa2	Baa1	Stable
Arizona Public Service Company	Integrated	Baa1	A3	Stable
PNM Resources, Inc.	HoldCo	Ba1	Baa3	Positive
Public Service Company of New Mexico	Integrated	Baa3	Baa2	Positive
Texas-New Mexico Power Company	T&D	Baa2	Baa1	Positive
PPL Corporation	HoldCo	Baa3	Baa3	Stable
Kentucky Utilities Co.	Integrated	Baa1	A3	Stable
Louisville Gas & Electric	Integrated	Baa1	A3	Stable
PPL Electric Utilities Corporation	T&D	Baa2	Baa1	Stable
Public Service Enterprise Group Incorporated	HoldCo	(P)Baa2	(P)Baa2	Stable
Public Service Electric and Gas Company	T&D	A3	A2	Stable
Puget Energy, Inc.	HoldCo	Ba1	Baa3	Stable
Puget Sound Energy, Inc.	Integrated	Baa2	Baa1	Stable
Questar Corporation	HoldCo	A3	A2	Stable
Questar Gas Company	LDC	A3	A2	Stable
SEMCO Energy, Inc.	LDC	Baa2	Baa1	Stable
Sempra Energy	HoldCo	Baa1	Baa1	Stable
San Diego Gas & Electric Company	Integrated	A2	A1	Stable
Southern California Gas Company	LDC	A2	A1	Stable
SourceGas Holdings LLC	HoldCo	not rated		
SourceGas LLC	LDC	Baa3	Baa2	Stable
South Jersey Industries Inc	HoldCo	not rated		
South Jersey Gas Company	LDC	A3	A2	Stable
Southern Company (The)	HoldCo	Baa1	Baa1	Stable
Alabama Power Company	Integrated	A2	A1	Stable
Gulf Power Company	Integrated	A3	A2	Stable

Name	Sector	Old	New	Outlook
Southwest Gas Corporation	LDC	Baa1	A3	Stable
TECO Energy, Inc.	HoldCo	Baa2	Baa1	Stable
Tampa Electric Company	Integrated	A3	A2	Stable
UGI Corporation	HoldCo	not rated		
UGI Utilities, Inc.	LDC	A3	A2	Stable
UIL Holdings Corporation	HoldCo	Baa3	Baa2	Stable
Berkshire Gas Company	LDC	Baa2	Baa1	Stable
Connecticut Natural Gas Corporation	LDC	Baa1	A3	Stable
Southern Connecticut Gas Company	LDC	Baa2	Baa1	Stable
United Illuminating Company	T&D	Baa2	Baa1	Stable
UNS Energy Corporation	HoldCo	Baa3	Baa2	Stable
Tucson Electric Power Company	Integrated	Baa2	Baa1	Stable
UNS Electric, Inc.	Integrated	Baa2	Baa1	Stable
UNS Gas, Inc.	LDC	Baa2	Baa1	Stable
Vectren Utility Holdings, Inc.	HoldCo	A3	A2	Stable
Indiana Gas Company, Inc.	LDC	A3	A2	Stable
Southern Indiana Gas & Electric Company	Integrated	A3	A2	Stable
Westar Energy, Inc.	HoldCo	Baa2	Baa1	Stable
WGL Holdings, Inc.	HoldCo	no long term rating		
Washington Gas Light Company	LDC	A2	A1	Stable
Wisconsin Energy Corporation	HoldCo	A3	A2	Stable
Wisconsin Electric Power Company	Integrated	A2	A1	Stable
Wisconsin Gas LLC	LDC	A2	A1	Stable
Xcel Energy Inc.	HoldCo	Baa1	A3	Stable
Northern States Power Company (Minnesota)	Integrated	A3	A2	Stable
Northern States Power Company (Wisconsin)	Integrated	A3	A2	Stable
Public Service Company of Colorado	Integrated	Baa1	A3	Stable
Southwestern Public Service Company	Integrated	Baa2	Baa1	Stable

Appendix B: Selected financial ratios – by sector classification, by rating

Name		Debt / EBITDA			CFO / debt			Dividend payout			Cap Ex / D&A		
		4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM
Holding companies	Median	4.3	4.3	3.8	21%	22%	23%	51%	60%	62%	2.7	2.8	2.7
A2 and A3 rated	Total	4.1	4.2	4.3	21%	20%	19%	56%	59%	60%	2.2	2.2	2.2
Holding companies	Median	4.6	5.0	3.8	19%	15%	18%	66%	71%	59%	1.7	1.8	1.5
Baa1 rated	Total	4.1	4.2	4.4	19%	19%	18%	65%	65%	74%	2.2	2.3	2.2
Holding companies	Median	5.4	5.3	5.2	14%	15%	16%	71%	79%	110%	2.0	2.0	1.9
Baa2 and lower rated	Total	4.1	4.3	3.9	19%	19%	17%	83%	99%	103%	1.7	1.9	2.0
LDC's	Median	3.9	3.8	3.8	24%	23%	19%	71%	78%	79%	1.9	2.3	2.4
A - rated	Total	3.3	3.3	3.4	27%	26%	23%	63%	65%	58%	2.0	2.3	2.6
LDC's	Median	3.8	3.9	3.4	26%	21%	26%	82%	76%	74%	1.7	1.9	2.0
Baa1 and Baa2 rated	Total	4.0	4.0	3.3	23%	21%	23%	42%	39%	52%	2.3	2.0	2.1
T&D (electric or gas)	Median	2.9	2.8	2.7	27%	30%	26%	60%	67%	37%	1.7	2.0	1.8
A - rated	Total	3.5	3.5	3.6	24%	26%	22%	67%	67%	57%	1.8	2.0	2.1
T&D (electric or gas)	Median	5.0	4.6	4.3	16%	16%	16%	72%	69%	55%	1.9	2.0	2.3
Baa1 rated	Total	3.9	3.8	3.8	21%	20%	18%	98%	89%	66%	1.6	1.8	2.1
T&D (electric or gas)	Median	3.6	4.1	4.5	21%	18%	19%	155%	141%	87%	1.0	1.0	1.0
Baa2 and lower rated	Total	3.6	3.7	3.8	20%	20%	20%	133%	127%	95%	1.2	1.4	1.3
Transmission	Median	2.3	2.3	2.5	37%	33%	26%	82%	92%	71%	5.7	6.4	6.4
	Total	3.9	3.9	4.1	20%	19%	16%	80%	83%	58%	4.7	5.3	5.5
Vertically Integrated	Median	3.6	3.7	4.1	25%	25%	17%	29%	29%	33%	2.0	1.9	1.8
A1 rated	Total	3.1	3.2	3.2	27%	26%	25%	45%	46%	63%	2.3	2.4	2.0
Vertically Integrated	Median	3.6	3.6	3.7	22%	20%	18%	76%	80%	61%	2.2	2.2	2.2
A2 rated	Total	3.2	3.2	3.1	27%	26%	25%	57%	58%	51%	2.2	2.1	2.1
Vertically Integrated	Median	3.9	4.0	4.0	22%	22%	20%	50%	64%	48%	2.1	1.9	2.2
A3 rated	Total	3.8	3.8	3.8	22%	23%	23%	66%	84%	71%	2.0	1.9	2.1
Vertically Integrated	Median	3.8	3.9	4.2	18%	18%	17%	69%	74%	73%	1.8	1.8	2.1
Baa1 rated	Total	4.2	4.1	4.5	19%	19%	19%	67%	70%	103%	1.9	2.0	2.2
Vertically Integrated	Median	5.8	5.7	5.4	14%	16%	17%	55%	47%	74%	2.1	1.9	2.1
Baa2 and lower rated	Total	4.4	4.3	4.0	16%	18%	17%	65%	46%	65%	2.3	2.4	2.4

Appendix C: Selected financial data – by sector classification, by rating

Name		Revenue			EBITDA			CFO			Total Debt		
		4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM	4-yr avg	2-yr avg	LTM
Holding companies	Median	\$4.0	\$4.1	\$4.5	\$1.1	\$1.2	\$1.4	\$1.0	\$1.2	\$1.2	\$4.9	\$5.3	\$5.2
A2 and A3 rated	Total	\$90.5	\$92.4	\$103.7	\$28.6	\$30.2	\$34.0	\$24.1	\$25.8	\$27.9	\$117.6	\$126.9	\$147.2
Holding companies	Median	\$5.9	\$5.5	\$7.2	\$1.6	\$1.7	\$2.4	\$1.3	\$1.2	\$1.7	\$7.3	\$8.6	\$9.2
Baa1 rated	Total	\$111.0	\$111.0	\$114.9	\$35.3	\$36.5	\$37.5	\$27.5	\$29.3	\$29.7	\$145.7	\$153.8	\$163.4
Holding companies	Median	\$3.2	\$3.2	\$3.1	\$1.0	\$1.0	\$1.0	\$0.7	\$0.8	\$0.8	\$5.1	\$5.3	\$5.1
Baa2 ad lower rated	Total	\$135.9	\$138.7	\$139.8	\$42.3	\$43.0	\$50.4	\$33.0	\$34.7	\$34.5	\$174.2	\$186.3	\$198.8
LDC's	Median	\$0.9	\$0.9	\$0.8	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.7	\$0.8	\$0.8
A - rated	Total	\$19.0	\$18.6	\$18.7	\$4.5	\$4.9	\$5.1	\$4.1	\$4.3	\$4.0	\$14.9	\$16.4	\$17.7
LDC's	Median	\$0.4	\$0.4	\$0.4	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	\$0.3	\$0.3
Baa1 and Baa2 rated	Total	\$7.7	\$7.1	\$7.4	\$1.4	\$1.4	\$1.4	\$1.3	\$1.2	\$1.0	\$5.6	\$5.6	\$4.6
T&D (electric or gas)	Median	\$1.7	\$1.6	\$1.6	\$0.6	\$0.6	\$0.7	\$0.5	\$0.5	\$0.5	\$1.7	\$1.8	\$1.8
A - rated	Total	\$27.4	\$25.8	\$25.3	\$7.9	\$8.1	\$8.5	\$6.5	\$7.2	\$6.6	\$27.4	\$28.3	\$30.7
T&D (electric or gas)	Median	\$1.3	\$1.2	\$1.2	\$0.3	\$0.4	\$0.4	\$0.3	\$0.3	\$0.3	\$1.6	\$1.7	\$1.8
Baa1 rated	Total	\$31.4	\$30.4	\$28.3	\$8.2	\$8.6	\$9.0	\$6.7	\$6.6	\$6.1	\$32.1	\$32.8	\$34.2
T&D (electric or gas)	Median	\$1.3	\$1.1	\$0.9	\$0.4	\$0.3	\$0.3	\$0.3	\$0.2	\$0.3	\$1.3	\$1.3	\$1.4
Baa2 and lower rated	Total	\$16.0	\$14.4	\$13.7	\$5.2	\$5.1	\$5.1	\$3.6	\$3.8	\$3.8	\$18.6	\$18.9	\$19.3
Transmission	Median	\$0.3	\$0.3	\$0.3	\$0.2	\$0.2	\$0.2	\$0.1	\$0.1	\$0.1	\$0.4	\$0.5	\$0.6
	Total	\$2.0	\$2.2	\$2.5	\$1.4	\$1.5	\$1.7	\$1.1	\$1.1	\$1.2	\$5.5	\$6.0	\$7.1
Vertically Integrated	Median	\$3.4	\$3.5	\$3.7	\$1.0	\$1.1	\$1.2	\$0.9	\$1.0	\$0.8	\$3.7	\$4.1	\$4.8
A1 rated	Total	\$39.7	\$39.7	\$40.7	\$13.0	\$13.5	\$14.7	\$10.9	\$11.2	\$11.7	\$40.2	\$43.2	\$46.6
Vertically Integrated	Median	\$3.3	\$3.3	\$3.3	\$0.9	\$0.9	\$1.0	\$0.7	\$0.7	\$0.6	\$3.2	\$3.4	\$3.6
A2 rated	Total	\$40.1	\$40.7	\$42.4	\$12.8	\$13.7	\$14.9	\$11.0	\$11.3	\$11.5	\$40.8	\$43.6	\$46.8
Vertically Integrated	Median	\$1.7	\$1.7	\$1.7	\$0.4	\$0.5	\$0.5	\$0.4	\$0.4	\$0.4	\$1.7	\$1.8	\$1.9
A3 rated	Total	\$66.4	\$67.2	\$68.6	\$20.3	\$21.0	\$21.5	\$16.6	\$18.2	\$18.8	\$76.1	\$79.2	\$80.9
Vertically Integrated	Median	\$1.5	\$1.5	\$1.6	\$0.4	\$0.4	\$0.4	\$0.3	\$0.3	\$0.3	\$1.5	\$1.6	\$1.7
Baa1 rated	Total	\$36.8	\$37.7	\$38.0	\$10.5	\$11.1	\$10.6	\$8.2	\$8.9	\$8.9	\$43.6	\$45.8	\$47.7
Vertically Integrated	Median	\$1.2	\$1.2	\$1.3	\$0.3	\$0.3	\$0.3	\$0.2	\$0.3	\$0.3	\$1.6	\$1.6	\$1.6
Baa2 and lower rated	Total	\$12.3	\$12.5	\$12.9	\$3.5	\$3.7	\$3.9	\$2.5	\$2.8	\$2.6	\$15.2	\$15.8	\$15.6

Appendix D: Companies not placed on review for upgrade

Name	Sector	Old	New	Outlook	Comment
Northwest Natural Gas Company	LDC	A3	A3	Negative	Not placed on review on November 8
Public Service Co. of North Carolina, Inc.	LDC	A3	A3	Stable	Not placed on review on November 8
Georgia Power Company	Vertically Integrated	A3	A3	Stable	Not placed on review on November 8
Pacific Gas & Electric Company	Vertically Integrated	A3	A3	Stable	Not placed on review on November 8
Interstate Power and Light Company	Vertically Integrated	A3	A3	Stable	Not placed on review on November 8
Oncor Electric Delivery Company LLC	T&D (electric or gas)	Ba2	Ba2	Stable	Not placed on review on November 8
DPL Inc.	Holdco	Ba2	Ba2	Stable	Not placed on review on November 8
Entergy New Orleans, Inc.	Vertically Integrated	Ba2	Ba2	Stable	Not placed on review on November 8
NextEra Energy, Inc.	Holdco	Baa1	Baa1	Stable	Not placed on review on November 8
PG&E Corporation	Holdco	Baa1	Baa1	Stable	Not placed on review on November 8
Sempra Energy	Holdco	Baa1	Baa1	Stable	Not placed on review on November 8
Southern Company (The)	Holdco	Baa1	Baa1	Stable	Not placed on review on November 8
Duke Energy Ohio, Inc.	T&D (electric or gas)	Baa1	Baa1	Stable	Not placed on review on November 8
Monongahela Power Company	T&D (electric or gas)	Baa1	Baa1	Stable	Not placed on review on November 8
Ohio Power Company	T&D (electric or gas)	Baa1	Baa1	Stable	Not placed on review on November 8
Mississippi Power Company	Vertically Integrated	Baa1	Baa1	Stable	Not placed on review on November 8
Exelon Corporation	Holdco	Baa2	Baa2	Stable	Not placed on review on November 8
Public Service Enterprise Group Incorporated	Holdco	Baa2	Baa2	Stable	Not placed on review on November 8
CenterPoint Energy Resources Corp.	LDC	Baa2	Baa2	Stable	Not placed on review on November 8
Jersey Central Power & Light Company	T&D (electric or gas)	Baa2	Baa2	Negative	Not placed on review on November 8
Metropolitan Edison Company	T&D (electric or gas)	Baa2	Baa2	Stable	Not placed on review on November 8
Ohio Edison Company	T&D (electric or gas)	Baa2	Baa2	Stable	Not placed on review on November 8
Pennsylvania Electric Company	T&D (electric or gas)	Baa2	Baa2	Stable	Not placed on review on November 8
Pennsylvania Power Company	T&D (electric or gas)	Baa2	Baa2	Stable	Not placed on review on November 8
South Carolina Electric & Gas Company	Vertically Integrated	Baa2	Baa2	Stable	Not placed on review on November 8
Entergy Corporation	Holdco	Baa3	Baa3	Stable	Not placed on review on November 8
FirstEnergy Corp.	Holdco	Baa3	Baa3	Negative	Not placed on review on November 8
SCANA Corporation	Holdco	Baa3	Baa3	Stable	Not placed on review on November 8
Cleveland Electric Illuminating Company (The)	T&D (electric or gas)	Baa3	Baa3	Stable	Not placed on review on November 8
Dayton Power & Light Company	T&D (electric or gas)	Baa3	Baa3	Stable	Not placed on review on November 8
Potomac Edison Company (The)	T&D (electric or gas)	Baa3	Baa3	Stable	Not placed on review on November 8
Toledo Edison Company	T&D (electric or gas)	Baa3	Baa3	Stable	Not placed on review on November 8

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Record-low US Treasury yield points to rising economic fears

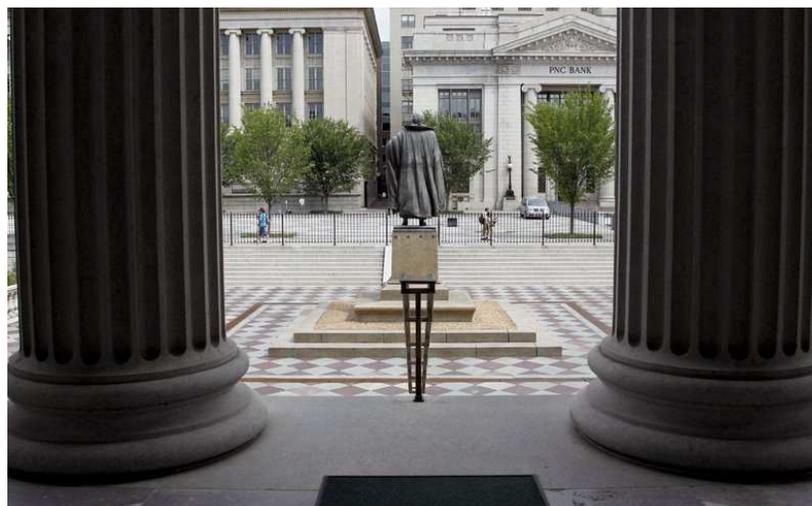
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By JOSH BOAK

Jul. 06, 2016

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WASHINGTON (AP) — Fear and uncertainty about the global economy are leading investors to embrace the relative safety of U.S. government debt and slashing yields to record lows.

Interest paid on the 10-year Treasury note reached 1.34 percent early Wednesday, just below the previous record set in 2012. Historically, when concerns have flared about a potential recession, investors have shifted money into havens such as U.S. Treasuries and sent yields falling.

The market's signal this time seems somewhat hazier than usual, and there's far from any consensus among economists that a recession is approaching.

As recently as the start of June, the yield on the Treasury note was 1.85 percent. Then the U.S. government issued an anemic May jobs report. And Britain voted to abandon the European

Union — a move that caught markets off guard and magnified concerns about the global economic order.

What makes the record-low Treasury yield something of an oddity is that the U.S. economy — the world's largest — still looks relatively sturdy, far more so than most other major economies. But yields on other nations' debt are even lower. Yields on German and Japanese debt, for example, are negative. So foreign investors still get a smidgen of a return by buying Treasury notes.

All those factors have raised a host of questions: Are investors bracing for a global downturn? Will the United States remain an economic haven and benefit from the influx of capital? Does U.S. debt simply deliver a better return than foreign debt? Might inflation veer closer to zero?

In this case, the answer might be all of the above.

“There are a lot of factors conspiring to push the yield down to unprecedented levels,” said David Joy, chief markets strategist at Ameriprise Financial.

Other market analysts detect newfound signs of caution. They see uncertain investors seeking to shield themselves from the risks of the unknown.

“There's just generally a feeling that (investors) want to be in some kind of safety,” said Tom di Galoma, managing director at Seaport Holdings. “I think we're going to see lower yields across the globe.”

Those lower yields will help some corners of the U.S. economy. Mortgage rates, for example, generally track shifts in 10-year Treasury notes. So homebuyers will likely be able to borrow more cheaply. The real estate firm Zillow is reporting 30-year fixed mortgage rates below 3.30 percent, near all-time average weekly lows.

The falling yields might also help lead the Federal Reserve to delay a long-awaited resumption in short-term rate hikes. The central bank cut its key short-term rate to a record low near

zero in 2008 to try to rejuvenate an economy paralyzed by the Great Recession.

Economic growth had recovered just enough late last year for the Fed to raise rates modestly. But the Fed has held off on a second hike as the economic outlook has grown uncertain and other major central banks have continued to stimulate their economies.

The flow of money into U.S. Treasuries has also served to raise the value of the dollar against other currencies. This helps hold down inflation, because a stronger dollar makes imports less expensive. But it also hurts U.S. exporters, whose goods become costlier overseas.

John Canally, chief economic strategist at LPL Financial, attributed much of the decline in U.S. yields to foreign investors. He thinks the U.S. economy remains insulated for now from any global downturn.

The next big test for 10-year yields will be Friday's monthly jobs report. Economists have estimated that employers added 180,000 jobs in June after a dismal gain of just 38,000 in May and a still-temperish 123,000 in April. Stronger job growth could assuage any anxieties about the U.S. economy and renew speculation about when the Fed might resume raising rates.

The "data will tell us if the April and May slowdown in jobs was a sign of things to come or an anomaly," Canally said.

—

AP Business Writer Marley Jay contributed to this report from New York.

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PERSPECTIVES

Prospects for and Ramifications of the Great Central Banking Unwind

William Poole

At the CFA Institute Global Investment Risk Symposium held in Washington, DC, on 7–8 March 2013, William Poole gave a presentation on what he calls the “great central banking unwind.” Total assets on the balance sheets of the U.S. Federal Reserve and European Central Bank have exploded since 2008. The challenges and pressure faced by these and other central banks will probably have serious consequences for the global economy.

I am very uneasy about the current economic and fiscal situation in the United States and Europe. The central bank policies and fiscal disequilibrium in these countries are unlike any circumstances they have endured in the past; it is uncertain how the massive easing of the last five years is going to affect the developed nations’ economies as well as the global economy. The world is in uncharted territory.

I am going to focus on the U.S. Federal Reserve System and the European Central Bank (ECB). The Fed is the most important central bank in the world: Without stability in the United States, the world economy will not have stability. Not only must central banks navigate the challenges presented by slower growth and fiscal deficits, but they also face powerful political pressures that, if succumbed to, may have harmful consequences domestically and globally.

Fed Issues vs. ECB Issues

Although both the United States and the eurozone had significant economic downturns and financial disruption during the financial crisis, the Fed’s expansionary monetary policy has been motivated primarily by a concern over unemployment whereas the ECB’s policy has been motivated by an effort to support the sovereign debt of fiscally weak governments—in particular, the southern European countries.

Figure 1 shows the Fed’s balance sheet assets from 2007 to 2013. Before the financial crisis, its

assets were around \$850 billion; they have now risen to nearly \$3 trillion, and the Fed keeps pumping money into the system. It is unclear when the Fed’s policy of easing is going to stop or how it is going to be reversed.

But the Fed is not alone. The ECB has been pumping funds into the European markets, as shown in **Figure 2**. Total assets on the ECB’s balance sheet have increased from about €1.2 trillion in 2007 to about €3 trillion in the first quarter of 2013. The Bank of England (BOE) and a number of other central banks have been following suit. A massive monetary expansion has taken place over the last five years.

The ECB is acting as a lifeboat for sinking public finances after a collision of high levels of entitlement spending and sustained low economic growth. The plight of Greece in 2012 has led the way; other nations, Italy prominent among them, will most certainly follow. Greece was unable to raise needed funds by issuing sovereign debt after December 2008 because investors would no longer buy it; the risk of default was too high.

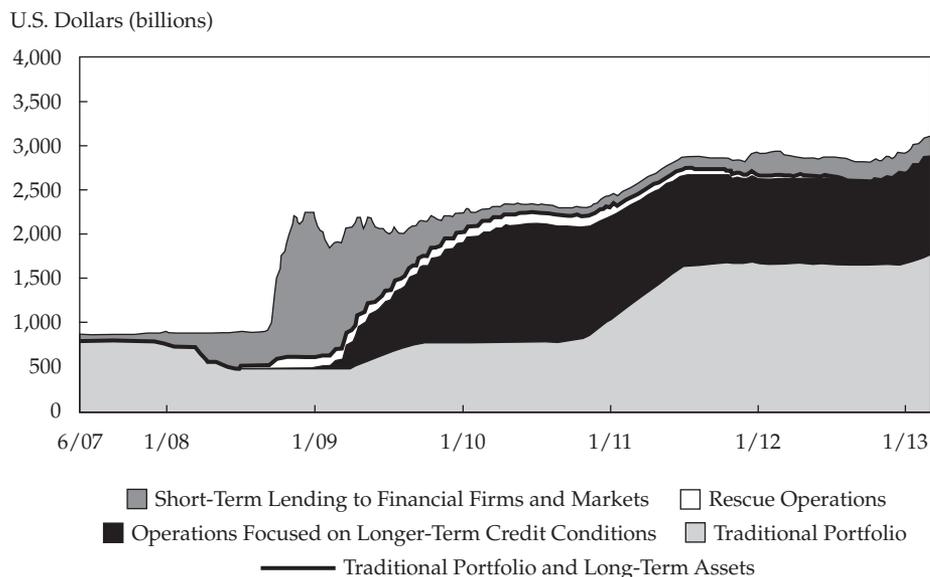
Great Fed Unwind

Given the very large buildup of assets on its balance sheet, it might appear that the Fed has to unwind the position, but that is not necessarily the case. The Fed might keep a very large portfolio indefinitely.

Reserve Ratio. The monetary mechanism that the Fed, or any central bank, uses to control the growth of money and credit is completely different from what it was in the past. The Fed’s main instrument of controlling money and credit growth in the past was the reserve requirement, which sets

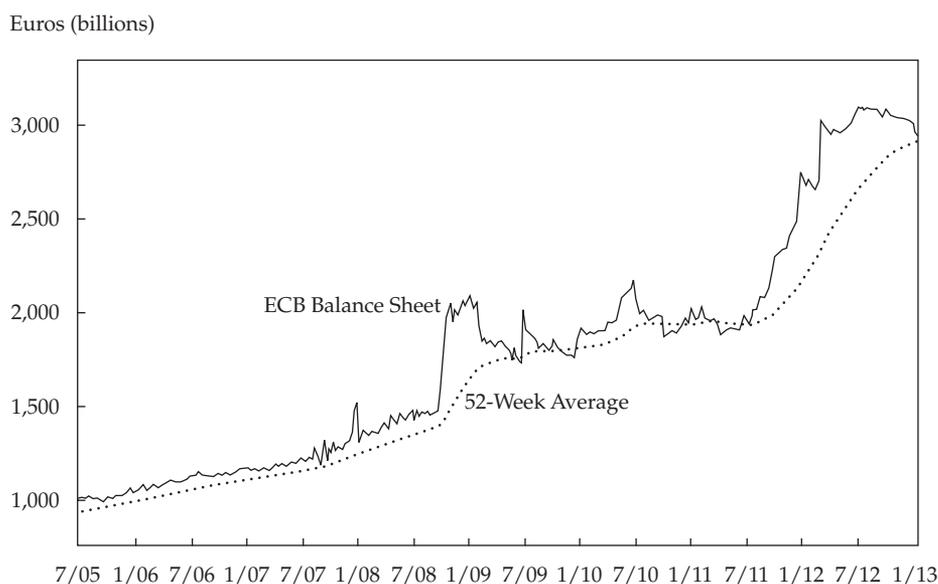
William Poole is a senior fellow at the Cato Institute, Washington, DC.

Figure 1. U.S. Federal Reserve Balance Sheet Assets, June 2007–February 2013



Source: Based on a figure from the Federal Reserve Bank of St. Louis, "U.S. Financial Data" (22 February 2013):7.

Figure 2. ECB Balance Sheet Assets, 2005–2013



Sources: Based on data from Gold Silver Worlds and Weldon Financial.

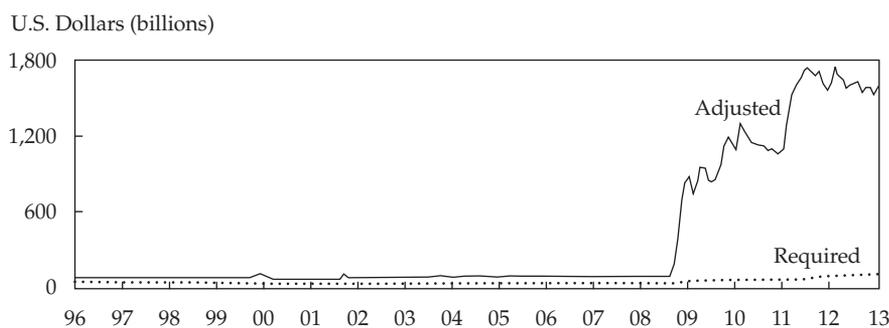
forth the amount of reserves that banks had to keep on deposit with the Fed. The amount of a bank's deposits with the Fed is a percentage of its total demand deposits.

Today, banks are no longer constrained by the reserve ratio. In the past, the Fed had no authority to pay interest on bank reserves, so banks typically held only the minimum amount of reserves required. But in 2008, new legislation gave the Fed the authority to pay interest on reserves, which the Fed has currently set at the rate of 0.25%. That rate

is above other money market rates and thus has provided an incentive for banks to increase their excess reserves at the Fed.

Figure 3 shows the dramatic increase in bank reserves since mid-2008; as of 20 February 2013, they are now more than \$1.5 trillion. Given the latest round of quantitative easing (QE) by the Federal Reserve, these bank reserves will continue to grow. The dotted line in Figure 3 represents the amount of required reserves, which contrasts markedly with the enormous stockpile of excess reserves sitting

Figure 3. Adjusted and Required Federal Reserves, January 1996–February 2013



Source: Based on a figure from the Federal Reserve Bank of St. Louis, “Monetary Trends” (26 February 2013):6.

on bank balance sheets. Banks are holding these reserves rather than lending them or buying assets with them because the Fed is paying interest on them. Reserves are the raw material for a money and credit expansion, but this raw material is not being actively used. To date, money and credit growth has been moderate. There are no signs of overheating, and the same is true for inflation expectations.

Two measures of the money supply—money zero maturity (MZM) and M2—are plotted in **Figure 4** from 1996 through mid-February 2013. M2 is calculated as M1 (all physical money, such as coins and currency, plus demand deposits, or checking accounts, and Negotiable Order of Withdrawal accounts) plus time deposits, savings deposits, and noninstitutional money market funds. MZM is defined as the liquid money supply in an economy—all assets convertible to cash on demand without penalty. The bigger area of shading at the right is the most recent recession, drawn from the cycle peak in December 2007 to the cycle trough in June 2009. The smaller area of shading on the left represents the much milder recession in 2001. Money stock growth measured by both definitions has recently been well within the normal range.

Inflation expectations can be measured in a number of ways, but I prefer a market-based measure to a survey measure. A market-based measure is derived from the spread between inflation-indexed Treasury bonds and conventional bonds. **Figure 5** compares yields in percentage terms for three different maturities: 5, 10, and 30 years. The spread between the conventional and indexed bonds stays in a relatively tight range from December 2011 to February 2013, and the spreads at the 10-year mark are in the same range they have been in for the past 10–12 years.

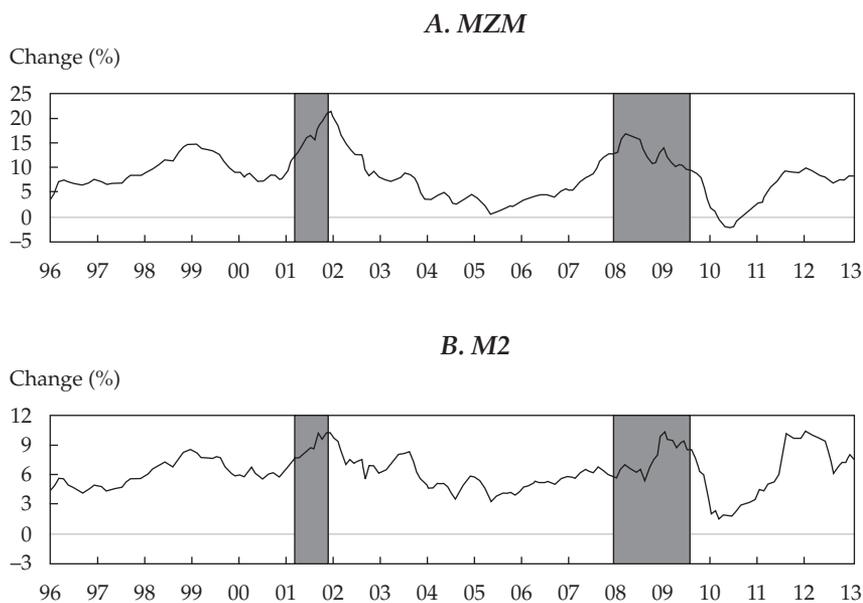
Raising the Federal Funds Rate. If inflation starts to rise, the Federal Reserve’s standard strategy is to raise its target for the federal funds rate,

which is the interest rate on interbank lending and borrowing. Federal funds are nothing more than bank reserves; banks are able to lend the reserve balances they have on account at the Fed. Now that the Fed pays interest on bank reserves, the interest rate on bank reserves is tied, almost to the basis point, to the federal funds rate. The Fed cannot raise the federal funds rate without also raising the rate that it pays on bank reserves, and at some point, the rate increases must be large enough to persuade banks to hold reserves rather than engage in an excessive expansion of money and credit that would create an inflation problem.

Despite all of the progress the financial industry has made in terms of modeling and statistical technology, the Fed basically decides how much to raise the federal funds rate in the same manner that a driver attempts to hold a steady speed when driving in mountainous territory. If the car is going too fast down the mountain, the driver eases up on the accelerator. If that action isn’t enough, the driver eases up more and maybe taps the brakes. Likewise, the Fed reduces its assets to drive up interest rates, but the required pace of reduction is not clear *ex ante*. The basic idea is simple: If the economy is growing too fast, the Fed taps on the monetary policy brake by increasing interest rates. The Fed then adjusts its policy based on feedback and observation of recent data.

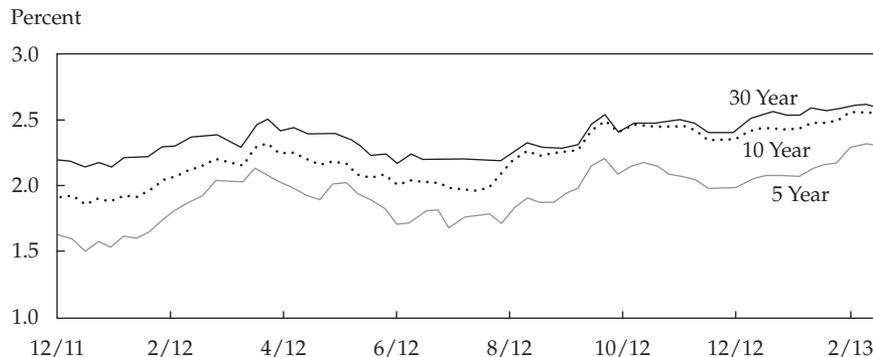
Forecasts. Everyone who deals with portfolio management knows that an action taken in response to a problem depends on the decision maker’s belief about a forecast. And when making decisions, it is easy to be in denial about the most recent information. Likewise, if the Fed starts to see inflation while the unemployment rate is still high, it may choose to deny reality and take the position that the inflation bump is a temporary aberration, perhaps related to energy prices or some other issue.

Figure 4. Change in Two Measures of the Money Supply, January 1996–February 2013



Note: Change is the percentage change from one year ago.
 Source: Based on a figure from the Federal Reserve Bank of St. Louis, “Monetary Trends” (26 February 2013):4.

Figure 5. Inflation-Indexed Treasury Yield Spreads, December 2011–February 2013



Note: Data represent averages of daily figures.
 Source: Based on a figure from the Federal Reserve Bank of St. Louis, “U.S. Financial Data” (22 February 2013):12.

Such inaction on the part of the Federal Reserve might be motivated by a desire to avoid tightening policy too soon because of an overriding interest in and responsibility for advancing the rate of employment growth. But if the Fed is in denial too long, inflation can become embedded in the economy. One of the best examples of Fed inflation denial is illustrated by monetary policy from roughly 1965 to 1979; Paul Volcker took over as chairman of the Fed in August 1979 to deal with the inflation. After 1965, the Fed was concerned that tighter policy would choke off employment growth, so it allowed inflation to creep up and up until the creep became a gallop.

Political Pressure. The Fed is also likely to face political pressure to raise rates only slowly. Federal Reserve chairman Ben Bernanke talks a lot about risk management and the tradeoff between benefits and costs; he maintains that the need to balance these two issues justifies proceeding with the current policy. But Bernanke does not discuss the risk of political intervention in Fed policy despite numerous examples of the Fed giving in to political pressure and waiting too long to change its policy, which results in a detrimental outcome for the economy.

Mortgage finance interests have been extremely well organized politically and are quite influential.

Part of the Fed's QE policy is to buy \$40 billion of mortgage-backed securities (MBSs) a month. Stopping that part of its expansionary policy—without even considering unwinding the portfolio—will produce a lot of political pushback. This pushback will come through the housing and mortgage interests, through representatives in Congress, and perhaps through the president. Essentially, pressure on the Fed will come from inside the government and may not be very visible; it may be limited to a few op-ed articles from the housing lobby. The true amount of political pressure will largely be hidden.

Pressure to keep rates low will come also from those who argue that the Fed should do its share to hold down the federal budget deficit. Higher interest rates will produce a rapid and enormous increase in the interest expense in the federal budget. The Fed is going to be encouraged to suppress interest rates until longer-run reforms can be put in place to address the budget deficit.

Recent discussion has centered on the impact of Fed policy on a number of issues. For example, is Fed policy creating a bubble in the bond or stock markets or in farmland prices? Is Fed policy pushing down the dollar exchange rate? Bubbles are easy to understand after the fact but very difficult to identify in real time. Many market fluctuations were thought to be unsustainable at the time but turned out to be justified by fundamentals. So, Fed policy may or may not be bubble inducing. But the real issue is the politics of monetary policy.

I believe that the Fed will not successfully resist the political winds that buffet it. I am not a political expert or a political analyst by trade. My qualification for speaking on this topic is that I have followed the interactions between monetary policy and politics for a very long time. As with all things political, the politics of the Fed means that realities often fail to match outward appearances.

I believe the Fed is likely to overdo its current QE policy of purchasing \$45 billion of Treasuries and \$40 billion of MBSs per month. Turning off the spigot would be difficult, but to be effective, the Fed has to stop its expansionary policy before inflation becomes embedded in the economy. For policy to be effective, it needs to be preemptive. Inflation control is better when accomplished before inflation has risen, not after.

Uncertainties. Although forecasts always contain uncertainties, the federal budget and regulatory uncertainties today are greater than at any time over the past 60 years. These budget and regulatory uncertainties are the prime explanation for the slowness of the economic recovery; businesses are hanging back until they better understand, or think they better understand, the way that the regulations

are going to be written and interpreted. The amount of regulations on the business sector is larger than it has been since the 1930s: the Affordable Care Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as the policies of the Environmental Protection Agency and the Department of Labor. I think President Obama and his administration—in large part because they do not understand the markets as well as they might—will not hesitate to pressure the Fed, initially from the inside and perhaps ultimately from the outside by encouraging heavy public criticism once the Fed embarks on a policy of raising rates. Such an approach will likely be counterproductive, and the markets will respond very negatively.

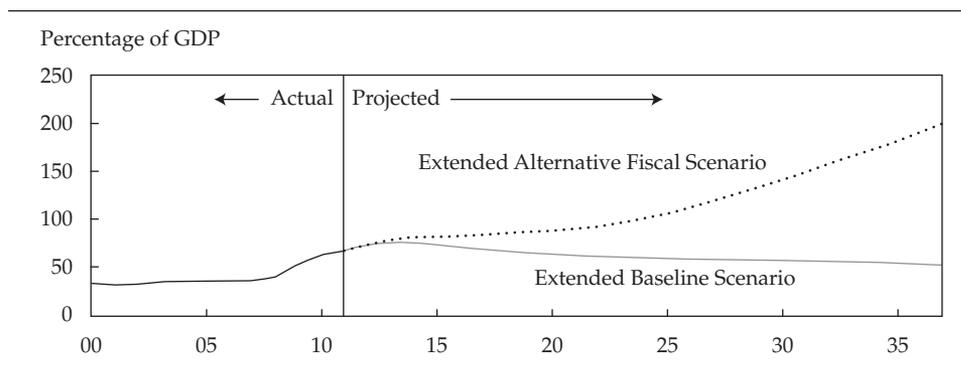
The very deep fiscal disequilibrium in the United States is best understood by looking at the data from the Congressional Budget Office (CBO). The budget games that are played with the numbers are full of screwy and misleading accounting. For example, the alternative minimum tax (AMT) was patched one year at a time so that the forward projections of revenues from the AMT would be in all the official projections of the budget. But the patchwork nature of the process created uncertainty about its final structure. Another example on the expenditure side is from more than 10 years ago: Since the Clinton years, legislation on the books has called for large reductions in Medicare reimbursements to physicians. The "doc fix" was enacted one year at a time so that the physicians would not have their reimbursements cut by a third. The budget encompassed forward projections of outlays that were lower than the outlays that would actually occur.

Figure 6 shows the federal debt forecast under two CBO long-term budget scenarios as of June 2012. This forecast is updated each summer. The dotted line shows the projected debt level over the next 25 years without the kind of budget gimmicks I just described. The shaded line shows the debt-level projection with all the budget gimmicks included. The United States is in the process of struggling with this enormous disequilibrium, although its struggle so far has been about the discretionary part of the budget, without any very serious political discussion—let alone legislative proposals—related to Social Security and Medicare expenditures, which are driving the budget. Until entitlement outlays are addressed, the budget is going to look more like the dotted line in Figure 6 than the shaded line.

Great ECB Unwind

The ECB has acquired a substantial amount of the sovereign debt of the fiscally weak southern European countries. It has also been lending to banks that have, in turn, purchased the debt of the weak

Figure 6. Federal Debt Forecast under the CBO's Long-Term Budget Scenarios, 2000–2037



Note: Forecast is as of June 2012.

Source: Based on a figure from the Congressional Budget Office, "The 2012 Long-Term Budget Outlook" (5 June 2012):2.

countries. The European banking regulations have so-called risk-weighted capital requirements, but the risk weight on all sovereign debt is zero. So, a bank can buy the bonds of Italy or Spain or even Greece and have a zero capital requirement. Obviously, the capital requirements are not truly risk weighted; they are politically weighted. The capital requirements in Europe, as in the United States, are deeply affected by the politics of bank regulation.

The situation in Europe is still very much in flux. Italy recently had a very indecisive election. The citizens of the weak nations are not embracing the austerity that is required to bring their economies back in line. They want to keep their benefits, and they do not want to pay taxes. These desires are perfectly rational but are not conducive to fiscal sustainability. So, the crisis that has long been predicted—because of much larger welfare state commitments than can be financed with an aging and retired population—has finally arrived and is by no means resolved.

The ECB cannot unwind the assets it owns unless Spain, Italy, Portugal, and Greece resolve their fiscal problems. Thus, these countries' debt might remain on the ECB's balance sheet—and the loans to these countries on European banks' balance sheets—for some time. Therefore, if Europe begins to have an inflation problem, the ECB will have its hands tied to a significant extent and will be limited in its ability to deal with rising inflation.

Europe is afraid of contagion, in which a default in one country results in investors fleeing the bond markets of the other fiscally weak countries. Thus, the weak countries remain supported by the fiscally sound countries—essentially, Germany—but Germany does not have the resources to support the weak countries indefinitely.

The ECB's charter was supposed to protect it from this situation, but the ECB has caved in to the pressure. To date, there is no evidence of

inflationary problems in Europe, at least on the continent, although the United Kingdom has experienced some inflation.

It is a close call in Europe, but I believe that the fundamental fiscal weakness in Europe will end in a crisis. The European community encompasses over-extended welfare states, many of which, particularly in southern Europe, have weak administration of tax law and negative politics on decreasing outlays. Many of its public enterprises are inefficient, and its labor markets are burdened by structural rigidities.

The consequences of poor fundamentals in Europe are negative economic growth and rising unemployment. It remains an open question whether Germany's voters will ultimately say that they will no longer support Italy, Spain, Portugal, and Greece. The Merkel administration has retained the support of the German people so far, but without any improvement in the situation, the time may come when Germany's voters ask themselves why they should pay for the excesses of others.

Conclusion

Because no precedents exist for the massive monetary easing that has been practiced over the past five years in the United States and Europe, the uncertainty surrounding the outcome of central bank policy is also vast. So far, inflationary pressures remain subdued, but the ability and willingness of the Fed and the ECB to react quickly to control inflation fears are in jeopardy, largely because of political forces. Total assets on the balance sheets of most developed nations' central banks have grown massively since 2008, and the timing of when the banks will unwind those positions is uncertain.

This article qualifies for 0.5 CE credit.

Question and Answer Session

William Poole

Question: Is the dual mandate of maximum employment and price stability a burden on Fed policy?

Poole: The dual mandate is not necessarily a problem. The 1977 law stated that the Fed is supposed to work toward two objectives: inflation and employment. In January 2012, the Federal Open Market Committee (FOMC) set forth the principles with which it approaches its dual mandate. At that time, the FOMC adopted an inflation target of 2%, and the target was renewed in January 2013. The published principles state that no central bank can promise to create a certain level of employment growth or a certain level of unemployment because those are real variables that are controlled by the real conditions in the economy, including such conditions as fiscal policy, and are ultimately not the responsibility of Fed policy.

Question: What is the primary weakness of the Fed?

Poole: I fault the Fed for its lack of intellectual leadership on the economy and, in particular, Bernanke's lack of forthrightness about the limits of the Fed's ability to address slow growth and fiscal disequilibrium. Most of the Federal Reserve bank presidents (with the exceptions of Charles Plosser in Philadelphia, Richard Fisher in Dallas, Jeffrey Lacker in Richmond, and to some extent, my successor in St. Louis, Jim Bullard) have been essentially silent on this issue, speaking only in vague terms about the necessity for fiscal stability and not identifying the uncertainty over that issue as a reason for the slow economic expansion.

Question: Is the Fed structured for failure?

Poole: That question is very important. Institutions need to be considered separately from the individuals who inhabit them. If certain individuals are going to make a mess of something,

no institutional structure can guard against that except through a system of checks and balances. Past research has shown that central bank independence produces a better result than monetary policy run by the Treasury. Independence for the Federal Reserve began 100 years ago, when the Federal Reserve Act was signed in December 1913. The Fed's structure provides substantial independence, allowing room for strong leadership to do what has to be done in the face of adverse political pressure. The Fed's structure does not guarantee independence, but it provides the room. Paul Volcker has made significant use of that independence, whereas Arthur Burns, one of the architects of monetary policy and the inflation that culminated from it, did not. No institutional structure can guarantee a good result, but institutional structures can allow strong people to fail because they lose control.

Question: If the Fed were to adopt the equivalent of a Taylor rule today,¹ what should it be?

Poole: A simple Taylor-like rule that relates to only a couple of variables when so much is going on is unworkable at this point. An appropriate goal might be to have a central bank that is more constrained by legislative rules, but I just do not see a workable rule at this time.

Question: What is your opinion about returning to the gold standard?

Poole: I think the gold standard is unworkable. It was not as satisfactory in the 19th century, during its heyday, as is often argued. The basic problem is easy to see. When there is a flight to liquidity, when the market wants more gold, there is no more gold. The supply is fixed. All sorts of liabilities backed by gold have been issued, but those liabilities far exceed the gold supply. Therefore, the gold standard is a recipe for a banking system that collapses under stress, although it did stabilize the price level over a long period of time.

Notes

1. A Taylor rule is a monetary policy rule that stipulates how much the central bank should change the nominal interest rate in response to changes in inflation, output, or other economic conditions.

WHEN THE FED YIELDS
DYNAMICS AND IMPACT OF U.S. RATE RISE
MAY 2015

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Summary

The U.S. labor market is strengthening, inflation appears to have troughed and financial markets are looking frothy. What happens when the Federal Reserve (Fed) finally yields to this reality and raises short-term interest rates? Our portfolio managers in April debated the powerful, often conflicting forces shaping the Fed's decision and the U.S. yield curve. Here are our main conclusions:



Ewen Cameron Watt (TOP LEFT)
 Global Chief Investment Strategist,
 BlackRock Investment Institute

Russ Koesterich (TOP RIGHT)
 Global Chief Investment Strategist,
 BlackRock Investment Institute

Rick Rieder (BOTTOM LEFT)
 Chief Investment Officer, BlackRock
 Fundamental Fixed Income

Jean Boivin (BOTTOM RIGHT)
 Deputy Chief Investment Strategist,
 BlackRock Investment Institute

- ▶ We expect the Fed to raise short-term interest rates in 2015—but probably not before September. Technological advances are set to keep dampening wage growth and inflation, reducing the need for the Fed to raise short-term rates as quickly and as high as in past tightening cycles.
- ▶ **The longer the Fed waits, the greater the risk of asset price bubbles—and subsequent crashes.** Years of easy money have inflated asset valuations and encouraged look-alike yield-seeking trades. We would prefer to see the Fed depart from its zero interest rate policy (ZIRP) sooner rather than later.
- ▶ A glut of excess bank reserves and the rise of non-bank financing mean the Fed's traditional tools for targeting short-term rates have lost their potency. Overnight reverse repurchase agreements are part of the new playbook. We expect the Fed's plan for ending zero rates to work, but do not rule out hiccups.
- ▶ The impact of any U.S. rate hikes on long-maturity bonds is crucial. We suspect the Fed would prefer to see a gentle upward parallel shift in the yield curve, yet it has only a limited ability to influence longer-term rates. We detail how the absence of a steady buyer in the U.S. Treasury market will start to be felt in 2016.
- ▶ We see the yield curve flattening a bit more over time due to strong investor demand for long-term bonds. Demand for high-quality liquid fixed income assets from regulated asset owners alone (think insurers and central banks) is set to outstrip net issuance to the tune of \$3.5 trillion in 2015 and \$2.3 trillion next year.
- ▶ The forces anchoring bond yields lower are here to stay—and their effects could last longer than people think. Yet yields may have fallen too far. Bonds today offer little reward for the risk of even modestly higher interest rates or inflation. **A less predictable Fed, rising bond and equity correlations and a rebound in eurozone growth could trigger yield spikes.**
- ▶ Asset markets show rising correlations and low return for risk, our quantitative research suggests. We see correlations rising further as the Fed raises rates. We are now entering a period when both bonds and stocks could decline together. Poor trading liquidity could temporarily magnify any moves.
- ▶ Overseas demand should underpin overall demand for U.S. fixed income, especially given negative nominal yields in much of Europe. Credit spreads look attractive—on a relative basis. U.S. inflation-linked debt should deliver better returns than nominal government bonds in the long run, we think, even if inflation only rises moderately.
- ▶ **Low-beta global equity sectors such as utilities and consumer staples have become bond proxies and look to be the biggest losers when U.S. yields rise.** Cyclical sectors such as financials, technology and energy are potential winners.
- ▶ Angst about Fed rate rises, a rising U.S. dollar and poor liquidity could roil emerging markets (EM). Yet EM dollar debt looks attractive given a global dearth of high-yielding assets. EM equities look cheap, but many companies are poor stewards of capital. We generally like economies with strong reform momentum.

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Timing of Rate Rise

The Fed is ending years of zero rates—at a time when other major central banks are going the opposite way (more than 20 central banks have cut rates so far this year). This is an unusual situation. **The impact of the start of the rate-hiking cycle is underappreciated, we believe. Complacency is high among many asset owners who have benefited from the greatest carry trade in history, the \$5 trillion-plus expansion in central bank balance sheets since 2008. We are in uncharted territory.**

Current U.S. wage and inflation data bear limited resemblance to conditions at the start of the three most recent Fed tightening cycles. There are good reasons for this: The impact of a weak post-crisis recovery and technological advances have depressed both. Yet the unemployment rate stands at a similar level as in 2004—the last time the central bank started hiking rates. See the first row of the table below.

Central banks have dominated markets by buying up long-duration, high-quality liquid assets in return for cash.

The resulting shortage of high-quality assets has lowered corporate bond yields and, in turn, encouraged equity shortages created by debt-funded buybacks and mergers. Private equity and real estate valuations are soaring on overheated markets and easy credit. There is only limited diversification available when the quantitative easing (QE) tide has floated so many boats.

U.S. Treasuries trade at historically low yields and offer almost no term premium (compensation for the risk that interest rates rise faster than expected; see pages 8–9). Yet they look like great value compared with German bunds. See the table's second row. Credit spreads are not pricey on a relative basis versus the past (the third row).

Earnings yields of major stock indexes are at similar levels to previous hiking cycles, except that Japanese equities currently offer better value than in the 1990s (the fourth row). Other markets give very different readings. The dollar has rallied much more in the past 12 months in anticipation of the Fed's tightening—and given loose monetary policies elsewhere. Oil prices in the past year have seen a slide more precipitous than any year since the 1980s.

THIS TIME FEELS DIFFERENT

Economic and Market Indicators at Start of Rate Hiking Cycles, 1994–2015

	1994	1999	2004	May 21, 2013 "Taper Tantrum"	2015
ECONOMICS					
U.S. Unemployment	6.6%	4.3%	5.6%	7.5%	5.5%
Core PCE Inflation	2.3%	1.4%	2%	1.3%	1.4%
Hourly Earnings Growth	2.8%	3.7%	2%	1.9%	1.8%
GOVERNMENT BONDS					
U.S. 10-year Yield	5.7%	5.8%	4.7%	1.9%	2%
Yield Curve (10-year minus two-year)	160	25	212	171	143
Term Premium	2.1%	1.4%	2%	0.4%	-0.1%
U.S. 10-year Spread vs. Bunds	-6	159	37	55	179
CREDIT AND EM BOND SPREADS					
U.S. Investment Grade	67	107	93	122	121
U.S. High Yield	329	458	402	418	437
Emerging Market Dollar Debt	—	1,013	496	285	376
EQUITY VALUATION (EARNINGS YIELD)					
S&P 500	6.8%	4.2%	6.2%	7.3%	5.8%
Eurostoxx	5.4%	4.8%	8.2%	8.6%	6%
MSCI Emerging Markets	4.7%	5.3%	11.3%	9.9%	8%
Japan Topix	1.5%	1.8%	5.9%	6.6%	6.5%
U.S. DOLLAR AND COMMODITIES					
U.S. Dollar Index (12-month change)	2%	2%	-5%	3%	20%
Oil Price (12-month change)	-22%	9%	38%	3%	-43%

Sources: BlackRock Investment Institute, Thomson Reuters, JP Morgan, Barclays and MSCI, April 28, 2015. Notes: Yield curve and spreads are in basis points. Historical yields are not indicative of future levels.

ZERO IS THE WRONG NUMBER

The Fed has a window of opportunity to raise interest rates. Markets are pretty stable, U.S. employment is growing at a steady clip, and other central banks—led by the Bank of Japan (BoJ) and European Central Bank (ECB)—are flooding global markets with liquidity. The BlackRock U.S. Employment Index—our gauge of 10 key labor market indicators—has risen back to pre-crisis levels. See the chart on the right.

All of our index's subcomponents have turned positive this year. Its momentum has slowed a bit recently, yet non-farm payrolls (the largest component of our index) have been growing at the fastest 12-month pace since 2006. The Fed funds rate stood at 6% back then, versus zero today.

To be sure, inflation today is much lower than in 2006. Yet zero is the wrong number for short-term rates, we believe. Giving regular doses of morphine to a patient who is no longer in much pain is a health hazard and a waste of medical supplies.

Zero may also be a dangerous number. The Fed's highly accommodative monetary policy has inflated asset values across global markets. The longer the Fed leaves its target rate at zero, the greater the chance of asset price bubbles—and eventual crashes. Modest rate rises would merely take U.S. monetary policy to very stimulative, down from ultra-stimulative.

Fed Chair Janet Yellen's *modus operandi* appears to involve flagging a tightening measure—and then soon soothing markets with the message easy monetary policies are here to stay. This probably reflects a legitimate fear that long-term interest rates could snap back sharply when the Fed changes gears, undermining the economic recovery. The Fed has always said its stance depends upon the strength of economic data. Yet it appears to be moving the goal posts:

- 1. Old story:** The data would need to be very weak to prevent us from hiking.
- 2. New story:** The data must be strong enough to justify hiking.

Markets have picked up on this subtle but important shift. Fed funds futures currently point to a mere 8% chance of a June rate hike (versus over 60% back in December 2014)—and have fully priced in a rate rise by year end. We do not rule out a rate hike in June but think a September liftoff is more likely.

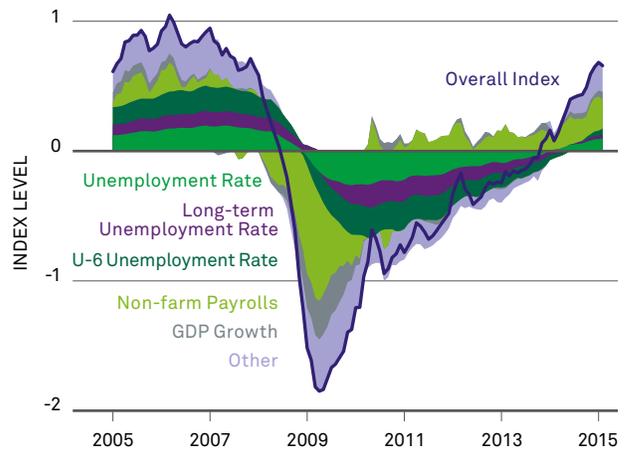


"The Fed keeps employing emergency policy settings—at a time when there is no longer an emergency."

— Bob Miller
 Head of Multi-Sector and Rates,
 BlackRock Americas Fixed Income

BACK TO WORK

BlackRock U.S. Employment Index, 2005–2015



Source: BlackRock Investment Institute, March 2015. Notes: Other includes household employment, hires rate, quits rate, openings rate and the vacancy-to-unemployment ratio. The U-6 unemployment rate includes those who are seeking full-time work but have settled for a part-time job, as well as those who are not actively looking for work but have indicated they want a job.

The U.S. economy is once again underperforming expectations (as it has in the first quarter of the past five years). The Fed, therefore, has stated it wants to see two things before it is ready to push the launch button:

- 1. Solid jobs growth:** The U.S. economy has generated an average of 260,000 jobs per month over the past year. Jobs growth has been pretty steady (despite a March blip)—and it is hard to see this trend changing any time soon. This argues for raising the short-term rate sooner rather than later.
- 2. A trough in inflation:** Falling oil prices and the strong U.S. dollar have dampened headline consumer price index (CPI) inflation—and have even dragged long-term inflation expectations lower (these expectations have overshot, in our view; see page 12). The Fed's preferred core inflation gauge—personal consumption expenditures (PCE)—stood at just 1.4% in March. This is well below the central bank's 2% target.

The Fed has said it does not expect to see inflation hit its target before raising rates. The effects of an aging population and rapid technological innovation are suppressing inflation and nominal growth, as detailed in *Interpreting Innovation* of September 2014. Goods prices have been stagnant over the past five years, dragging overall inflation lower.

Hike Mechanics

Ending the zero interest rate policy should be pretty straightforward. Or should it? The Fed is unusual among global central banks in that it does not set a policy rate. Instead, the central bank targets a range for short-term lending in the interbank market, the Fed funds rate.

The Fed used to guide markets toward its targeted funds rate by adjusting the supply of reserves in the banking system. To raise interest rates, it would drain reserves from the system by selling securities.

The problem: Excess reserves in the U.S. banking system—the amount of cash banks keep in hand above and beyond regulatory requirements—have swollen to around \$2.6 trillion. (The Fed bought many of its securities under QE from commercial banks, which opted to park the proceeds at the Fed instead of lending them.) As a result, the Fed has introduced two new measures:

- 1. Interest on excess reserves (IOER):** The Fed started paying interest on banks' excess reserves in 2008, at a rate of 0.25% a year. This was supposed to act as a floor for short-term rates by reducing the incentive for banks to lend at rates below IOER. Yet in practice, the level has looked more like a ceiling. The reason: Non-bank financial institutions such as money market funds have no access to IOER. These institutions also have a glut of cash—and have been investing it in short-term U.S. Treasuries, pushing short-term rates below the Fed's target.
- 2. Overnight reverse repos:** These overnight reverse repurchase agreements enable the Fed to offer interest to non-bank financial institutions. Here is how it works: The Fed sells a security to these institutions, taking in cash and thereby draining liquidity from the system. It then agrees to buy it back a day later at a slightly higher price. The annualized reverse repo rate currently stands at five basis points. This tool now acts as the true floor for interest rates.

The Fed expects the effective Fed funds rate—a weighted average rate of overnight lending between banks—to drift in a “corridor” between the reverse repo rate and IOER. The system has worked since the introduction of the reverse repo program in September 2013. See the chart on the right.

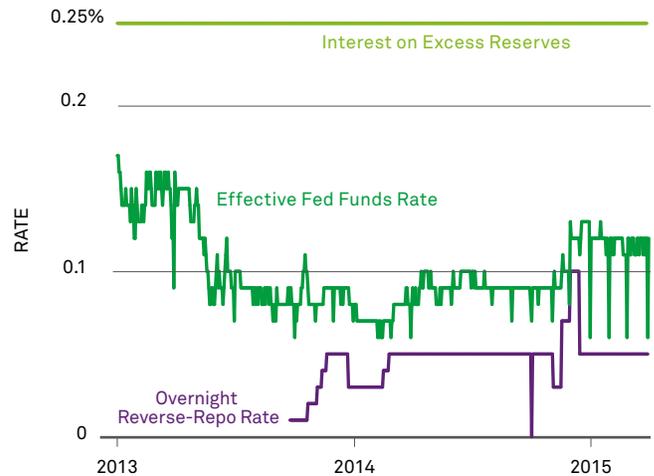


“Unconventional monetary policy calls for an unconventional exit.”

— Terry Simpson
 Global Investment Strategist,
 BlackRock Investment Institute

THREADING THE NEEDLE

Key U.S. Short-Term Interest Rates, 2013–2015



Sources: BlackRock Investment Institute, Bloomberg and New York Fed, April 2015.

Will the Fed be effective in using these tools to lift the short-term rate and tighten monetary conditions? It depends on what the Fed's goals are:

- 1. Stabilization of the Fed funds rate.** This is definitely doable, in our view, with some hiccups along the way.
- 2. Anchoring the short end of the yield curve.** The Fed should have no trouble focusing the market's attention on one of the rates, and defining that rate as a floor or a ceiling.
- 3. Influencing the shape of the entire yield curve.** This objective is the most important for both the economy and markets. Yet it is the trickiest to control through the Fed funds rate (see pages 6–7).

To control short-term rates, the Fed will likely have to lift its \$300 billion daily cap on reverse repos. This is not ideal: The central bank limited the facility to avoid becoming the go-to safe house in times of market stress. If this fails, the Fed could sell short-dated Treasuries. How much is in its coffers? Some \$400 billion matures by the end of 2017. If the Fed were to start selling these securities, short-term rates should rise. Yet this would suggest the Fed's master plan has failed. Short-term yields could spike as market participants rush to get ahead of the Fed sales. This, in turn, could pressure rates up the yield curve.

After Liftoff

A fixation on the timing of the Fed's first rate hike risks missing the big picture. What matters more is the pace and trajectory of rate rises after liftoff. We are on a long journey. The important thing is keeping in mind the destination, not obsessing about whether we will make a left or right turn at the next intersection depending on the traffic. Markets are pricing in a gentle climb, with interest rate futures currently pointing to a rise of just 0.7% in short term rates in the year after September. Two key points:

- ▶ Even if market participants agree the Fed will tighten at a gentle pace, there are many possible paths from zero.
- ▶ **A steady and well-telegraphed monetary tightening may not prevent an initial snap back in yields,** the International Monetary Fund warns in its latest *Global Financial Stability Report*. A sudden rise of one percentage point in U.S. Treasury yields is "quite conceivable" as the Fed's first rate hike approaches, it says. The long period of low rates has extended the U.S. bond market's duration, or sensitivity to moves in short-term interest rates. The duration of the Barclays U.S. Aggregate Bond Index now stands at 5.5 years versus 4.3 in 2007.

An even more important question: What happens to the U.S. yield curve once the Fed successfully lifts short-term rates? This question really falls into two parts:

1. What does the Fed want to happen? It would like to see the entire curve shift upward (gently), we think. A steeper yield curve, by contrast, would drive up mortgage rates and could torpedo the economic recovery. This would undo much of the Fed's post-crisis work: Its purchases of U.S. Treasuries and mortgage-backed securities were aimed at lowering long-term rates to spur mortgage lending and reduce the cost of credit for businesses and households.
2. What actually happens to the yield curve after liftoff? Any snap back in the term or inflation risk premia (see pages 8–9) could lead to a temporary steepening. Yet our best guess is a gentle flattening over time as the entire curve shifts upward. Why? Long-end yields are capped by a shortage of supply of high-quality bonds, insatiable demand and lower yields in other developed countries.



"Neither the Fed nor markets should be confused: There is no such thing as an immaculate tightening. There are powerful, conflicting forces."

— Peter Fisher
 Senior Director,
 BlackRock Investment Institute

LAW OF SUPPLY AND DEMAND

Supply and Demand of Global Fixed Income, 2015–2017

	2015	2016	2017
SUPPLY (\$ trillions)			
Government Bonds	-\$0.5	\$1	\$4
Other Bonds	\$1.5	\$1.5	\$1.8
Supply	\$1	\$2.5	\$5.8
DEMAND (\$ trillions)			
Regulated Asset Owners	\$4.5	\$4.8	\$5
Shortfall	\$3.5	\$2.3	-\$0.8

Source: BlackRock Investment Institute, April 2015.
 Note: Forecasts are BlackRock estimates.

Demand from regulated asset owners alone (insurers, central banks, pension funds and banks) is set to outstrip the total global supply of high-quality, liquid fixed income in 2015 and 2016, we estimate. (Demand for bonds is relatively inelastic, yet supply is on the decline; see page 7.) The situation flips in 2017, when we expect a big rise in the net supply of sovereign debt as the ECB and BoJ exit QE. See the table above.

Regulated asset owners fall into two broad categories:

1. "Price-insensitive" buyers such as insurers and reserve managers. They hold \$40 trillion-plus in high-quality, liquid fixed income assets, we estimate. These asset owners have annual reinvestment needs of some \$4 trillion—and have little choice but to keep plowing it into bonds.
2. "Price-sensitive" asset owners such as pension funds and banks. This group holds \$20 trillion-plus of top-rated fixed income, we estimate. These buyers need to buy bonds for regulatory purposes (pension fund defeasement and bank capital requirements) but have a little more leeway to wait for attractive prices. They have annual reinvestment needs of at least \$500 billion.

Many regulated asset owners suffer from a duration mismatch. Eurozone insurers tend to have liabilities (future payouts) with a longer duration than their assets. As yields fall, they must scramble to buy even more long-term bonds to keep the duration mismatch from widening further. This is a bit like a dog chasing its tail, according to *research* by the Bank for International Settlements published in April.

FINANCIAL CURIOSITY

Bidding up the price of long-dated bonds only ends up extending the duration of insurers' liabilities further. The risk? The more the term premium gets depressed, the greater the potential snap-back when the decline is reversed (see pages 8–10).

From whom will the regulated asset owners buy? Answer: return-seeking investors such as mutual funds and sovereign wealth funds. This price-sensitive group holds over \$50 trillion of high-quality liquid fixed income, we estimate.

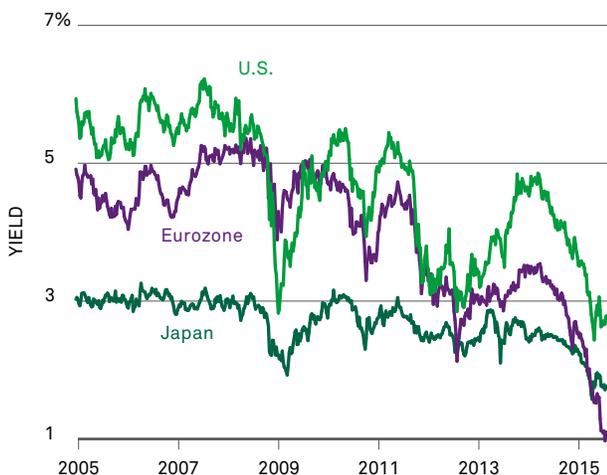
Markets expect this resulting dynamic to last for a long time. 10-year forwards on 10-year U.S. swap rates currently trade at 2.8%, implying a rise in yields of just 0.8% over the next decade. That is just eight basis points a year! See the chart below. And markets are pricing in a dire outlook for the eurozone and Japan, with 10-year forwards below 2% a decade from now. This makes little sense (unless you believe these economies will suffer permanent stagnation). Nominal bond yields should, in theory, track nominal economic growth rates in the long run. That would imply long-term yields closer to 4%–5% in the U.S. and 3% in the eurozone.

Government bond investors have a high probability of loss at this time. Bonds of a dozen or so eurozone countries come with negative yields. And the ones that do provide a paltry income can quickly turn into loss-making investments. The act of *paying* a government for lending it money deserves prime shelf space in the cabinet of financial curiosities.

Muted supply is another factor keeping yields low. Fiscal austerity means budget deficits are coming down around the world, curbing governments' need to issue debt.

VERY LOW FOR VERY LONG

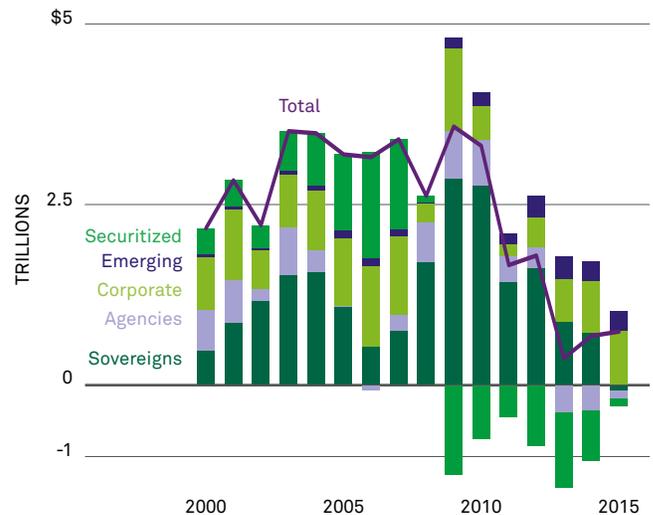
10-Year Forward 10-Year Swap Rates, 2005–2015



Sources: BlackRock Investment Institute and Thomson Reuters, April 28, 2015.

WANTED: BONDS

Developed Market Net Bond Issuance, 2000–2015



Sources: BlackRock Investment Institute and Morgan Stanley, March 2015.

Notes: The bars reflect fixed income issuance in the U.S., eurozone, Japan and U.K. Issuance is net of central bank purchases. Securitized products include covered bonds.

IN SHORT SUPPLY

Issuance of sovereign debt (net of central bank purchases) is expected to be negative in 2015—the first time on record. See the chart above. Corporate issuance is already at highs and unlikely to come to the rescue, we think. Companies raising debt to buy back shares could trigger ratings downgrades, impairing their ability to issue debt in the future. And the rise of asset-light business models (the sharing economy) means fewer corporations need to tap the debt markets.

Global sovereign bonds have become a single bet on duration, as seen in the long-term convergence of yields across countries. Demand for U.S. Treasuries is underpinned by overseas investors. Treasuries look attractive from a European and Japanese perspective. Japanese Government Bonds (JGBs) have long yielded next to nothing, driving domestic investors with yield targets to buy foreign bonds. The ECB's asset purchases have triggered a collapse even in the yields of riskier sovereign credits. Portuguese 10-year sovereign debt now yields less than equivalent U.S. Treasuries. We expect the ECB's fire hose of liquidity to support eurozone bonds. Yet valuations are getting disconnected from fundamentals, and we are wary of chasing yields lower.

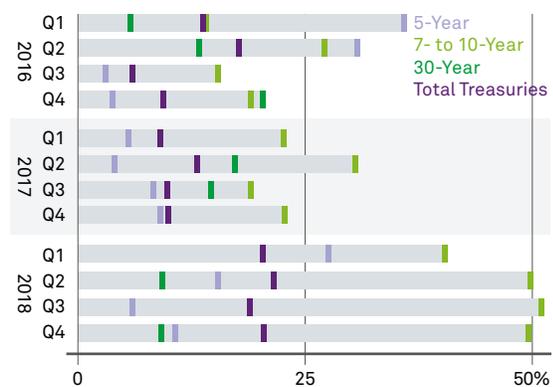
Bottom line: Exiting a long period of zero interest rates is tricky and a bit unsettling. Some of us feel like the informed citizens of Pompeii around 79 AD: We are grateful for the lovely sea views but worry about the volcano in the background.

UNDOING QE

The Fed's full exit from QE is another factor that could affect the shape of the yield curve. The Fed ended its monthly buying of U.S. Treasuries and mortgages in October 2014. Yet it still re-invests the proceeds of all maturing securities on its balance sheet. This does not matter this year: A paltry \$3 billion, or 0.07% of the Fed's Treasury holdings, matures in the remainder of 2015, Fed data show. Yet roughly one-third of the Fed's U.S. Treasury portfolio, or \$785 billion, comes due by the end of 2018. See the chart below.

RUNNING OFF

Run-Off of Fed Treasury Holdings as Share of Issuance



Sources: BlackRock Investment Institute and New York Fed, April 2015.
 Note: The analysis assumes current issuance trends.

The Fed has said it will stop (or start phasing out) reinvesting when it raises the Fed funds rate. We expect it to keep re-investing for three months after liftoff—and then “taper” re-investments in U.S. Treasuries to zero over several months. It likely will keep re-investing maturing mortgage securities for the time being to avoid derailing a U.S. housing recovery.

Where will the Fed's absence be felt most acutely?

1. The Fed's maturing five-year Treasuries are equivalent to a whopping 35% of gross issuance in the first half of 2016.
2. The Fed's maturing seven- to 10-year Treasuries equal half the gross issuance starting in 2018.

Letting these bonds run off represents an additional tightening of monetary policy—a dynamic that may well have greater impact on financial markets than the ending of ZIRP in the short run.

Yield Breakdown

Bond yields around the world are eerily low. U.S. long-term yields are near record lows, Japanese 10-year government bonds yield just 0.3% and eurozone yields hover near zero or have actually gone negative in short- and medium-term maturities (there are reports of home owners suing their banks to get interest on their mortgages).

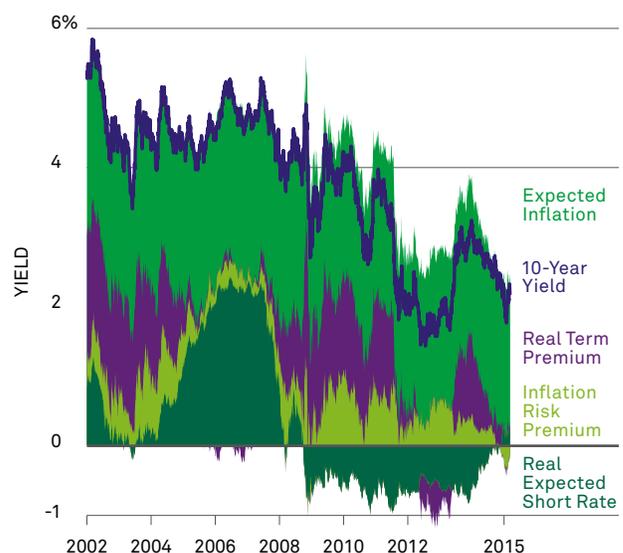
Why is this so? We break down the 10-year U.S. Treasury yield into four components to help answer this question: Expected inflation, the real expected short rate, the inflation risk premium and the real term premium.

Expected inflation: Nominal bond yields must compensate investors for the expected loss in purchasing power due to inflation. Expected inflation as measured by Goldman Sachs has been the largest component of the 10-year yield over the past decade or so, yet it has remained relatively steady. See the green shaded area in the chart below.

Real expected short rate: This reflects market expectations for the Fed's policy path over the coming year. It was stuck in a range of -50 to -100 basis points from the financial crisis through 2012, as the Fed flooded markets with liquidity. It has been on an upswing since the “taper tantrum” in 2013 (a yield spike caused by the Fed's announcing a tapering of its asset purchases). The current reading reflects expectations that the Fed will soon normalize policy (gently).

WHO STOLE MY TERM PREMIUM?

Breakdown of 10-Year U.S. Treasury Yield, 2002–2015



Sources: BlackRock Investment Institute, Goldman Sachs and U.S. Federal Reserve, March 2015. Note: The chart is based on Federal Reserve estimates of the term premium and Goldman Sachs estimates of expected inflation and the inflation risk premium.

PREMIUM PUZZLE AND REAL RIDDLE

The remaining two components of the 10-year yield make up the nominal term premium. A compression in the term premium has been the key contributor to the decline in 10-year yields since 2013. We break down this premium into two parts: the inflation risk premium (shaded light-green in the chart on page 8) and the real term premium (purple). Some observations on each:

Inflation risk premium: Bond holders typically demand an additional premium to compensate them for the risk that their inflation expectations may be wrong. This inflation risk premium has historically swung between zero and 1%—but recently dipped below zero. This is an oddity that we think will adjust itself.

The decline in U.S. yields is reflected by a compression of the inflation risk premium by about 0.75% over the past two years. Today's negative inflation risk premium is puzzling—the uncertainty around expected inflation does not appear lower than usual, a [recent paper](#) from the Cleveland Fed shows. In fact, we believe inflation risks may be growing. Potential upside and downside shocks over the next decade include:

- ▶ Further swings in the price of oil and other key commodities.
- ▶ The risk of unintended or unwanted market reactions to central banks exiting their unconventional monetary policies.
- ▶ Signs some central banks are feeling more relaxed about overshooting their inflation targets, while others (the Bank of Canada, for example) are making noise about the benefits of raising their inflation targets.

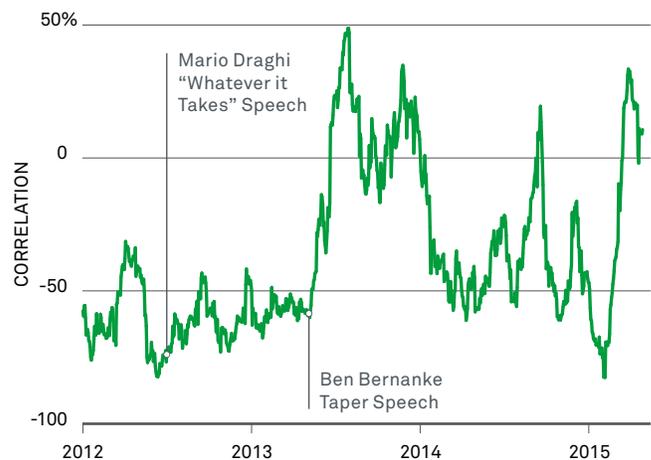
Real term premium: Holders of long-term bonds also need to be compensated for the risk that real interest rates will rise by more than expected in the future. The real term premium has flipped in and out of negative territory in the past couple of years. It rose to as high as 1.3% during the taper tantrum and then started a rapid decent that put it in negative territory this year.

There are good reasons to believe the real term premium could take off from today's depressed levels. QE compressed the term premium by sparking an appetite for yield and encouraging investors to pile into look-alike trades. Low premium levels have often been followed by sharp reversals. What could bring this about?

A change in the Fed's policy path could trigger such an upward movement, possibly steepening the yield curve for a while. And the gravitational pull of rock-bottom eurozone interest rates' dragging global bond yields lower may be waning. Eurozone yields appear to have fallen by more than the ECB's program of bond purchases justifies (even allowing for asset shortages).

COUNT ON CORRELATION

Global Equity and U.S. Treasury Return Correlation, 2012–2015



Sources: BlackRock Investment Institute, MSCI and Thomson Reuters, April 28, 2015.
 Note: The line shows the 30-day rolling correlation between MSCI World Equity Index and U.S. 10-year Treasury returns.

Today's low term premium partly reflects muted volatility in yields. Yet Fed policy is becoming more unpredictable with the end of zero rates. This will likely result in more volatility.

The correlation between equity and bond returns has been mostly negative since the financial crisis. Bonds have been handy portfolio diversifiers, rallying when equities fall. Investors have been willing to trade off some of the usual premium for term risk in exchange for this hedging value. Yet correlations between equities and bonds have risen sharply in 2015—and are now positive again. See the chart above. This could act like an amplifier for the term premium.

It is not just bonds and equities starting to move in lock step. Markets overall are characterized by rising correlations and relatively low returns for risk, our quantitative research shows.

Poor trading liquidity plays into this. The situation is acute in corporate bonds, but even many equities suffer from transactional limits, as detailed in [The Liquidity Challenge](#) of June 2014. Illiquidity runs the risk of magnifying market moves, as highlighted in [A Disappearing Act](#) of May 2014.

Conclusion: One might be excused for thinking today's low rates are caused by expectations the Fed will tighten at a gentle pace and end at a historically low level. Yet the recent dive in 10-year U.S. Treasury yields is best explained by the collapse in the inflation risk and term premia. Structural forces such as technological innovation mean these risk premia are likely to settle at lower levels than in the past. Yet they appear to have overshot to the downside. Yields could spike—even if the Fed tightens steadily and predictably.

WHAT-IFS AND THEN-WHATS

It pays to be prepared. This is why our Risk and Quantitative Analysis group works with portfolio managers to create economic and financial scenarios—and to assess their likely impact on our portfolios and segments of global financial markets. Recent analyses have focused on the effects of oil price changes, China's economic trajectory and the ECB's kicking off bond purchases.

The table below gives a flavor of how we approach global monetary policy outcomes. It outlines three scenarios that could influence the Fed's next move and highlights the likely market impact for each (without getting into the nitty-gritty of expected performance in each asset class).

The *Global Stagnation* scenario assumes a failure by the ECB and BoJ to revive their economies as well as other

geopolitical and economic headwinds. This should keep the Fed on hold for longer than markets currently expect. The result is not great for most markets, except for government bonds, in this scenario.

The *U.S. Growth as Expected* scenario has U.S. growth shrugging off temporary setbacks and plodding ahead. The Fed raises short-term rates as expected. This would boost most asset classes with the main exceptions of short-term bonds and gold.

The *Rapid U.S. Rate Rises* scenario has the Fed playing catch-up to strong economic data. This would hit most asset prices except for a strengthening U.S. dollar, we think. U.S. assets would generally outperform other geographies.

CONTINGENCY PLANNING

BlackRock Economic and Market Scenarios, 2015

	Global Stagnation	U.S. Growth as Expected	Rapid U.S. Rate Rises
Description	Global growth disappoints and/or markets lose confidence in central banks using quantitative easing to jumpstart economies.	The U.S. economy stays on a recovery track, shaking off weakness induced by a severe winter and port strike.	"Taper tantrum" redux. Fed rate hikes spook the markets and trigger a sell-off in (richly valued) risk assets.
Key Ingredients	<ul style="list-style-type: none"> ▶ The Fed delays rate hikes. Failure of eurozone and Japanese monetary policy leads to a loss of confidence in central bank action. ▶ Geopolitical risks in peripheral Europe and/or Russia flare up. China slowdown dampens global demand. 	<ul style="list-style-type: none"> ▶ The Fed tightens in a well-telegraphed move amid a U.S. labor market recovery and signs that disinflation has bottomed. ▶ Robust GDP growth creates a positive feedback loop, reinforcing the Fed's decision to continue raising rates. 	<ul style="list-style-type: none"> ▶ The Fed embarks on a series of rate hikes in the face of strong U.S. economic data. ▶ Subdued global growth expectations and short-term worries around liquidity result in a "knee-jerk" reaction to the Fed tightening by the markets.
Global Equities	<p style="text-align: center;">-</p> <ul style="list-style-type: none"> ▶ Japan and eurozone underperform the U.S. ▶ Defensive stocks outperform pro-growth (consumer discretionary) and rate-sensitive (financials) sectors. 	<p style="text-align: center;">+</p> <ul style="list-style-type: none"> ▶ EM stocks and momentum strategies underperform. ▶ Cyclical sectors such as financials outperform defensives. 	<p style="text-align: center;">-</p> <ul style="list-style-type: none"> ▶ Bond proxies (utilities) underperform sectors benefiting from higher rates (financials). ▶ Global equities fall, but the U.S. outperforms Europe.
Government Debt	<p style="text-align: center;">+</p> <p>A flight to quality draws buyers to long maturity debt.</p>	<p style="text-align: center;">-</p> <p>U.S. short-term rates move up. Yield-hungry investors cap any yield rises of long-dated bonds.</p>	<p style="text-align: center;">-</p> <p>U.S. short-term rates spike, the dollar rallies and the yield curve flattens.</p>
Credit	<p style="text-align: center;">-</p> <p>Credit spreads widen significantly.</p>	<p style="text-align: center;">+</p> <p>Credit spreads narrow a bit (and stay there). U.S. leads the rally.</p>	<p style="text-align: center;">-</p> <p>Market overreaction causes a sell-off in credit. Spreads widen.</p>

Source: BlackRock Investment Institute, April 2015.

Market Impact

QE has created asset shortages. This is feeding an appetite for lower-quality bonds, bond-like equities, real estate and private equity. Leverage is rising. The longer this lasts, the riskier. A sell-off triggered by an unwinding of leverage and magnified by poor liquidity could sink many boats.

Think of it as a fruit market. A couple of people are buying up all the apples every day, irrespective of price. Other shoppers rush to buy pears, oranges and guavas to meet their vitamin C needs. Prices rise to record levels. Then one day the apple buyers disappear. The result: a rapid resetting of prices.

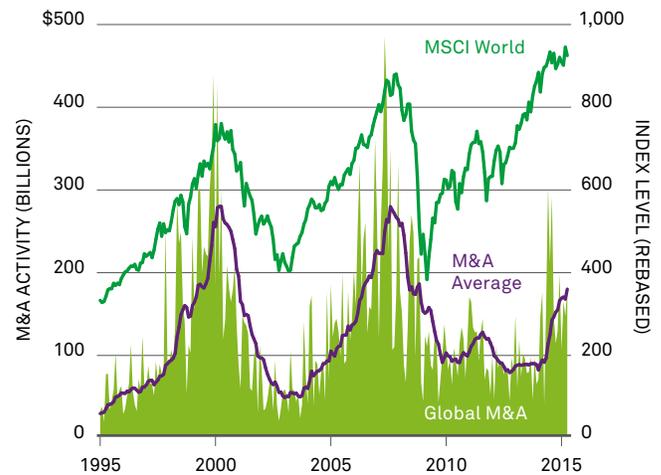
How close are we to this scenario? Our “bubblemeter” (see *Squeezing Out More Juice* of December 2013) is no longer flashing red, but is on the rise again. Our gauge’s numerator—a measure of corporate leverage—has been climbing since 2012. The denominator (equity market volatility), however, has modestly rebounded.

A boom in mergers and acquisitions (M&A) is underway. M&A peaks have in the past coincided with equity downturns. See the chart to the right. Yet M&A activity today (by value) is still roughly 35% below past highs in 2000 and 2007.

What happens to global financial markets when the Fed tightens the liquidity spigot? The past may be an imperfect guide because monetary stimulus has been way off the pre-financial crisis chart. The history of the past three U.S. rate hiking cycles is worth a quick review. See the chart below.

BUYING AT THE HIGH

Global Monthly M&A Activity and Equity Prices, 1995–2015



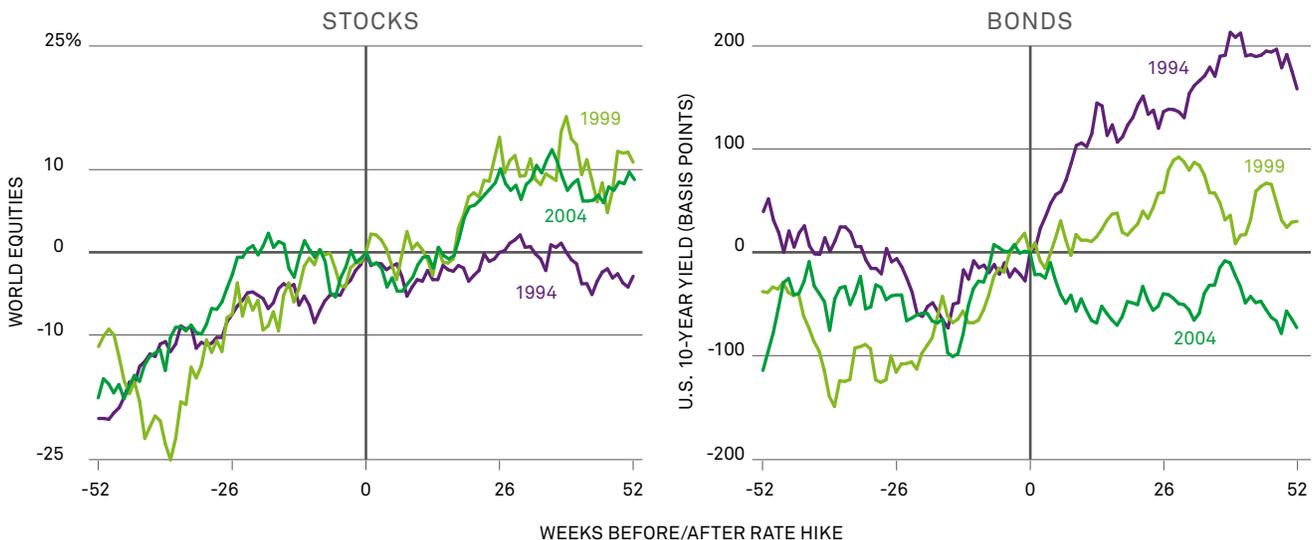
Sources: BlackRock Investment Institute, Thomson Reuters and MSCI, April 2015.
 Notes: M&A activity is based on the monthly enterprise value of announced deals for publicly listed targets, including spin-offs. The M&A average is a 12-week trailing measure.

U.S. bond yields rose in both 1994 and 1999, with most of the movement coming after the Fed’s first hike. The biggest bond sell-off was in 1994, when the Fed surprised markets by hiking rates much faster than expected.

Global equities performed well in the year ahead of the first rate rise in a tightening cycle—and extended those gains in the year thereafter (except in 1994). Bottom line: Equities performed well before and after the rate hike when the pace of tightening was steady and/or predictable (1999 or 2004).

FEARING THE FED?

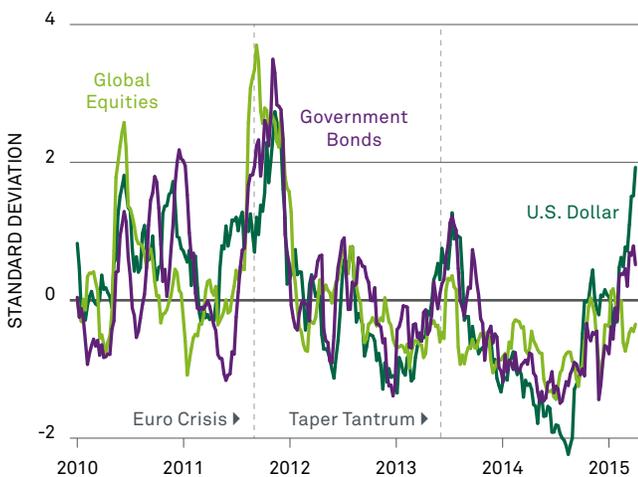
Returns of Stocks and Bonds Around First Fed Rate Hike



Sources: BlackRock Investment Institute and Thomson Reuters, April 2015.
 Notes: Charts are rebased to zero on the day of the first rate rise in a cycle. World equities are represented by the MSCI World Index; U.S. bonds are 10-year U.S. Treasuries.

A HISTORY OF VOLATILITY

Asset Volatility, 2010–2015



Sources: BlackRock Investment Institute and Thomson Reuters, April 2015. Notes: The chart shows the level of volatility versus the period average in standard deviations. Government bonds are based on an average of U.S., German, U.K. and Japanese 10-year bond returns. Global equities are based on the MSCI World Index. The U.S. dollar is based on the DXY Index.

VOLATILITY ALERT

There are plenty of caveats. The S&P 500 Index, for example, has fallen a median 8% after a rate rise coincided with a turn in the business cycle (13 episodes since the 1950s), our research shows. The sell-offs typically have been short-lived (about two months). The reason: increased uncertainty rooted in the withdrawal of excess liquidity. Even in cases when the Fed flagged the move well in advance, U.S. equities have shown a knee-jerk reaction to the first hike in a cycle. The move in *real* interest rates is key, we find. When inflation stabilizes and real rates do not move much, equities have historically been resilient.

We believe financial market volatility will rise further. Currencies have grabbed the volatility lead so far in 2015. See the chart above. We expect bonds and equities to follow. It is not so much the *level* of volatility that matters; it is the upward *change* in volatility that matters today. Why? In the (near) zero-rate world, many asset owners have taken on more risk. Markets where gains have been driven by rapid multiple expansion (rather than earnings growth) look most vulnerable to corrections. It would not take much volatility for the momentum of popular trades such as U.S. biotech shares and bond-like equities to reverse course.



“We have seen a trough in inflation for now; we are beginning to see some anecdotal evidence of wage pressures.”

— Gargi Chaudhuri
 Portfolio Manager,
 Inflation-Linked Bond Portfolios, Americas

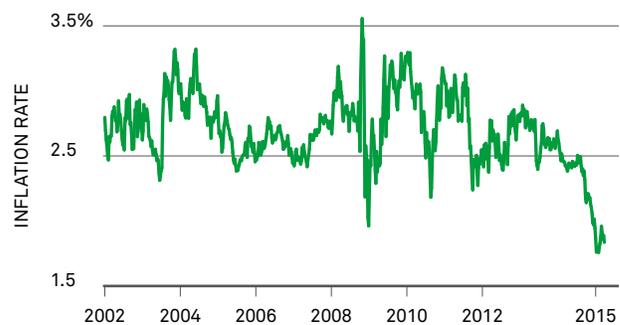
TANTALIZING TIPS

We have already outlined why we currently see little long-term value in nominal government bonds. Long-term Treasury Inflation Protected Securities (TIPS) and other inflation-linked debt are likely to deliver better returns, even if inflation only rises moderately from today’s depressed expectations.

Breakeven inflation rates (a market-implied measure of inflation expectations and the inflation risk premium) have collapsed over the past two years. The plunge in five-year/five-year breakevens (the Fed’s favorite measure), is more severe than that seen at the height of the global financial crisis in late 2008. See the chart below. The market looks to have overreacted.

WITHER INFLATION

U.S. Five-Year/Five-Year Breakeven Inflation Rate, 2002–2015



Source: U.S. Federal Reserve, April 2015. Notes: The breakeven inflation rate is a market-based measure of expected inflation and the inflation risk premium derived from five-year U.S. Treasury bonds and five-year inflation indexed Treasuries. The value reflects inflation expectations five years from now for the following five years.

TIPS are pricing in an average CPI rate of just 1.8% over the coming decade, compared with 2.3% over the past 10 years (a period that included the worst financial crisis since the Great Depression). The Fed’s favored inflation measure—core PCE—typically runs 0.35% below CPI inflation. This means the market sees core PCE stuck at 1.45% over the next decade, far below the central bank’s 2% target. The market is effectively predicting a consistent failure in Fed policy until 2025.

The implication: Core PCE only has to average above 1.45% (a low bar) over the next decade for 10-year TIPS to outperform nominal Treasuries. If inflation were to exceed the Fed’s target, hedged TIPS (buying TIPS while simultaneously selling equivalent Treasuries) would be a home run.

CREDIT CONUNDRUM

The Fed's tightening has the potential to threaten the dynamics supporting U.S. credit markets: domestic growth momentum and the global hunt for yield. It could also lay bare fault lines: poor liquidity, rising corporate leverage, deteriorating underwriting standards and high (absolute) valuations. Now is a time for increasing credit quality, boosting liquidity and reducing risk in credit portfolios, we believe.

What about high yield? The Fed's impact will depend upon its effect on economic growth expectations, we believe. Some observations from previous tightening cycles:

- ▶ 1994: A big spike in 10-year bond yields lowered growth expectations. This led to a rise in high yield bond default expectations, hurting the sector.
- ▶ 2004: Rate hikes had little impact on 10-year yields, and growth expectations held steady. Ditto for default rates—and the performance of high yield bonds.

The caveat: We have never before exited ZIRP. It is difficult to separate the signal from the noise when drawing conclusions from a few previous tightening cycles. What is different today? A long period of low interest rates has triggered huge inflows into high yield bonds, making the sector more sensitive to movements in short-term rates. This is particularly true for lower-quality credits such as CCC-rated bonds, we believe.

The U.S. high yield benchmark index currently offers a higher premium above U.S. Treasuries than at the start of past tightening cycles, as the table on page 3 shows. A bloodbath in energy issuers (15% of the index) has made the segment look more reasonable.

EQUITIES EXPLAINED

Low-beta sectors such as utilities and telecoms have done well since the crisis, outperforming the MSCI World Index by a cumulative 15%, our research shows. Lower volatility and higher returns! What is not to like? Yet this has made these stocks momentum trades—and vulnerable to any rate rise. Their stable cash flows become less valuable when rates move up, as detailed in *Risk and Resilience* of September 2013.

Utilities, in particular, are sensitive to rate rises. Their correlation with daily changes in the 10-year U.S. Treasury yield has been the highest of any sector in recent history. Whenever yields rise, global utilities tend to significantly underperform global equities. See the right bar in the chart to the right. This was true even before the financial crisis, as the chart shows. (See the dot within the bar.)

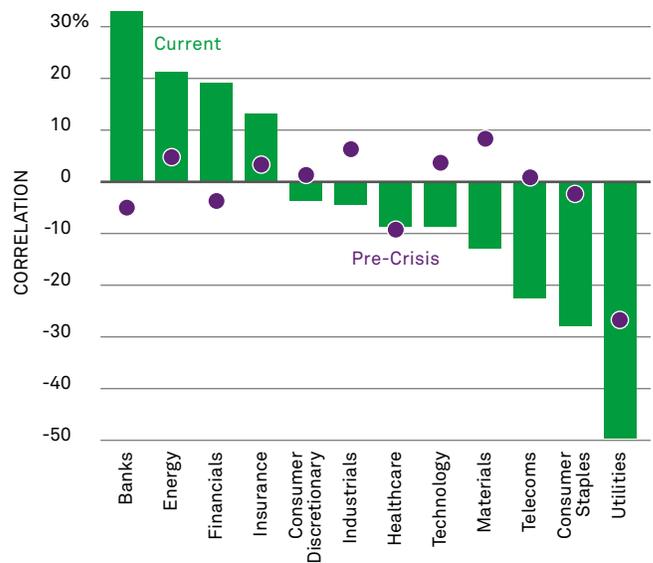
The key change? All sectors appear a lot more sensitive to interest rate changes these days.

The correlation with yield changes hovered around zero for all sectors except utilities in the period 2005 to 2007, as the chart shows. Correlations have recently increased, however, indicating the Fed's policy has been driving sector performance. Consumer staples and telecoms have now joined utilities as bond proxies. Global financials currently offer a mirror image of utilities. The sector usually outperforms when yields rise. See the left bar in the chart below. The outperformance has been even more stark for U.S. financials. Why? Even a small rise in interest rates could deliver a big boost to bank earnings. We will detail our views on the effect of the Fed's tightening on U.S. equities in *Market Perspectives* of May 2015.

European and Japanese equities should be resilient in the face of U.S. rate hikes. We see the ECB and BoJ pressing on with QE, lending support to eurozone and Japanese bond proxies. A rising U.S. dollar (and weak euro and yen) boosts the earnings of European and Japanese cyclicals. Japanese companies have found religion. Buybacks and dividend rises are becoming more common. At the same time, domestic pension funds are re-allocating from domestic bonds to equities. Result: sizeable domestic investor demand for the first time in 30 years or so. In Europe, we like cyclical sectors such as autos. These benefit from the weak euro and a rebound in domestic demand from depressed levels. Yet the continent's equities are no longer dirt-cheap.

FEELING SENSITIVE

Global Sector Correlation With U.S. 10-Year Yield Changes, 2015



Sources: BlackRock Investment Institute, Thomson Reuters and MSCI, April 2015. Notes: Correlations are based on MSCI sector performance versus MSCI World and changes in the 10-year U.S. Treasury yield over a 150-day window. Pre-crisis is an average of 2005–2008 values.

Emerging Markets

The Fed's moves and the path of the U.S. dollar have always loomed large in EM economies. This appears to be playing out again. Unusually, most EM assets have been in the global financial markets' dumpster—even before the Fed has started to tighten. The taper tantrum triggered a sell-off in EM debt and currencies in mid-2013, hitting countries with large current account deficits particularly hard.

The U.S. dollar has since risen by 17% on a trade-weighted basis. This is challenging for countries and companies that have feasted on cheap U.S. dollar debt. The strengthening dollar has depressed (dollar-denominated) commodities prices, hurting exporters of raw materials. The depreciating euro and yen have made eurozone and Japanese goods more competitive against high-end EM manufacturers.

Yet many EM economies have a lot more financial firepower to weather the storm this time: piles of foreign currency reserves, domestic savings pools to balance any foreign selling, healthy fiscal balances and investment grade ratings. See our interactive [EM Marker](#) for details.

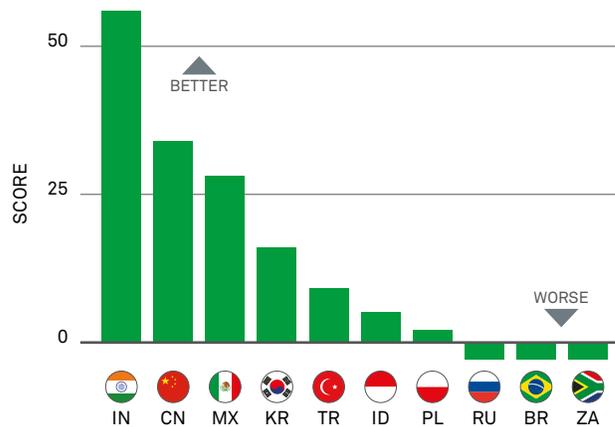
And traditional export markets are on a gentle upswing. Japan and Europe are slowly growing, boosted by depreciating currencies and QE. The U.S. economy is a relative outperformer. EM locomotive China is slowing, but growth is coming off a much larger base. All major economies stand to benefit from lower oil prices, as detailed in [Concentrated Pain, Widespread Gain](#) of February 2015.

Our overarching theme in EM investing is differentiation, as EM economies are developing at very different speeds (some appear to be going in reverse, actually). That said, angst over the Fed's tightening is likely to affect the asset class at times (with plenty of out- and underperformance between countries, sectors and strategies).

We favor Asian fixed income due to solid credit fundamentals, attractive valuations and economic reform momentum. India and China lead in perceived progress on structural reforms. See the chart above. We also like selected Eastern European countries such as Poland. These "satellites of love" orbiting the ECB benefit as eurozone investors search for alternatives to negative yields at home.

RANKING REFORMERS

Emerging Market Structural Reform Index, 2014



Sources: BlackRock Investment Institute and Citigroup, December 2014. Note: Scores are based on Citigroup economists' survey on structural reform progress.

HARD CURRENCY RULES

U.S. dollar-denominated EM debt looks especially attractive as a result. Average yields are twice those of U.S. Treasuries, and much sovereign EM debt carries an investment grade rating. Around 64% of the J.P. Morgan hard currency EM sovereign bond index is investment grade, versus 40% a decade ago.

Country selection is critical. We expect credit ratings to drift lower in 2015 on the back of slower economic growth and falling commodity prices. Venezuela, Russia and Brazil have been among the biggest losers—yet big falls in asset prices mean investors in these countries are now better compensated for the risks.

Local-currency EM debt is a riskier bet. These bonds offer nice diversification potential, but a rising U.S. dollar (mirrored by falling EM currencies) threatens to erode their attractive yields. Emerging economies with current account deficits and a reliance on dollar funding would be most vulnerable to Fed rate hikes, we believe.

Investors should consider currency hedges when venturing into local markets, as detailed in [Headache or Opportunity?](#) of September 2014. This is because monetary policy in many EM countries is in clear easing mode and the U.S. dollar rally appears to have legs.



"The underperformance of the asset class in recent years can be explained by the lack of export growth momentum."

— Gerardo Rodriguez
 Portfolio Manager,
 BlackRock Emerging Market Allocation Fund

CORPORATE CHALLENGES

What happens to EM corporate debt when the Fed finally lifts rates? The answer depends on the time frame:

Short term: Expect an increase in volatility, exacerbated by poor liquidity. Some countries lack a stable base of domestic buyers and we fear many foreign buyers are “investment tourists” ready to bail at the first sign of trouble. Higher volatility could impair the functioning of capital markets, but we expect any such hiccups to be temporary.

Medium to long-term: Fundamental credit risks are the key to performance. The rising U.S. dollar poses a risk to countries and companies dependent on external funding. Companies headquartered in emerging markets have binged on cheap debt in recent years. They raised a record gross \$371 billion in 2014, according to J.P. Morgan, up almost fourfold from 2005 levels.

The mountain of dollar-denominated EM corporate debt has increased as a share of GDP, but is still at relatively low levels. China's corporate dollar debt has jumped 15-fold from 2009 levels, for example. Yet the total outstanding makes up a paltry 2% of GDP, according to J.P. Morgan. Corporate dollar debt makes up 10% of GDP in Latin America, however.

The good news: Many EM corporates have been cutting capital expenditures (due to falling commodity prices and lower oil exploration) and will have less need to issue debt in the future. Relatively muted supply and yield-seeking investor demand should underpin the market. Rapid capital markets development and growing financing needs for infrastructure and social spending are likely to boost domestic demand for yielding assets. We see two caveats:

1. Many companies have a currency mismatch: revenues in local currency, but debt-servicing costs in U.S. dollars. Currency depreciation can cause financial mayhem. Telecoms, media and domestic airlines are the biggest potential losers in the EM world. There will be a handful of winners: Companies in IT services, pulp and paper, sugar, steelmaking and infrastructure often have dollar revenues, but costs in local currencies.
2. Many EM companies are poor stewards of capital. What happens if you raise debt, fail to earn a return and are faced with rising servicing costs? You hit a wall.



“We don’t see a repeat of the taper tantrum as EM economies and currencies have adjusted. But U.S. policy normalization is also unlikely to push the EM boat forward.”

— Sergio Trigo Paz
Head,
BlackRock EM Fixed Income

EXAMINING EM EQUITIES

EM equities closed out 2014 with a fourth straight year of underperforming developed markets. We could see them do better this year if strong economic data give the Fed confidence to raise U.S. rates. U.S. growth is good news for export-oriented EM economies, removes a drag on performance (the lack of export growth momentum) and could boost investor risk appetite in an increasingly interlinked world.

Our India equities team, for example, notes the country's benchmark index has generated average quarterly returns of 8.3% in the five periods of rising U.S. rates in the last two decades (outperforming both the S&P 500 and EM indexes). We believe history is likely to repeat itself here and in other EM equities markets. Valuations look attractive and currency weakness is an added booster.

CURRENT ACCOUNTING

EM equities in countries with steepening yield curves tend to outperform those with flattening curves, our equities quants find. We suspect the reasons include easy funding for companies and an expectation of future growth as expressed by higher long rates. High short-term rates sometimes point to high inflation and/or a brewing currency crisis.

We use current account trends as a risk factor in the short term for this strategy. The performance of the “Fragile Five” (Brazil, India, Indonesia, South Africa and Turkey) in 2013, for example, shows emerging markets with gaping current account deficits can plummet in the face of funding fears.

Yet the story changes completely in the long run: Countries with high current account deficits tend to outperform others, we find. The reason? They tend to face more pressure to enact structural reforms and are a bit like value stocks—they have a lot of upside due to low investor expectations.

Similarly, countries with the weakest currencies far outperform others in the long run, Credit Suisse's [2014 Global Investment Returns Yearbook](#) shows. A weak currency often forces necessary economic adjustments. Investors demand higher risk premia as a result. Cases in point so far in 2015: The Indonesian and Indian stock markets (also boosted by reform momentum after electing new leaders in 2014).

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THE OUTLOOK

Fed Grapples With Massive Portfolio

Years after the financial crisis, central bank considers what to do with holdings of long-term bonds and other assets



Federal Reserve Chairwoman Janet Yellen, seen Jan. 12, 2017, in Washington, has said the Fed would reduce its bondholdings once interest rate increases were 'well under way.' PHOTO: AARON P. BERNSTEIN/GETTY IMAGES

By **MICHAEL S. DERBY**

Updated Jan. 29, 2017 2:24 p.m. ET

While Federal Reserve officials ponder when to raise short-term interest rates again, they are beginning to wrestle with another big policy decision—whether this is the year to start shrinking their immense portfolio of mortgage and Treasury securities.

The Fed has boosted its portfolio of long-term bonds and other assets to \$4.45 trillion from less than \$1 trillion in 2007, just ahead of the financial crisis. Officials believe the large portfolio has helped to spur economic growth by holding down long-term interest rates.

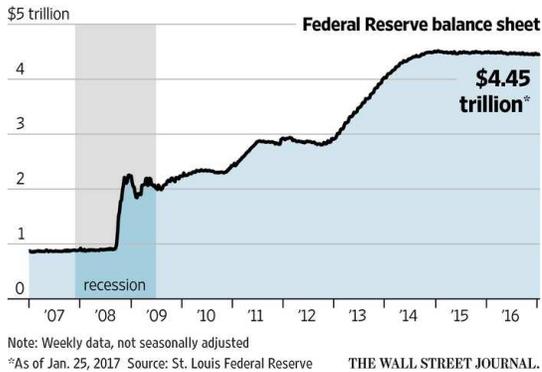
With the economy closer to healed from the financial crisis and recession, the central bank has already begun raising short-term rates. Fed Chairwoman Janet Yellen has said the Fed would reduce the bondholdings once interest rate increases were “well under way.” Many officials hope to get the portfolio back to some state of precrisis normalcy.

A great deal is at stake with the bond decision. Shrinking the portfolio could jolt financial markets, pushing up interest costs on government debt and mortgage bonds and reverberating through the broader economy.

Officials don't know how markets will react when they shrink the holdings because they have never done it before. But they know plenty about the skittishness of investors. When they signaled they would end bond purchases in 2013, they sparked a market “taper tantrum” that sent interest rates higher and hurt emerging markets.

Peak Value

Fed officials are trying to decide when to reduce the value of the central bank's holdings



Fed officials hold their next policy meeting Tuesday and Wednesday. They are expected to keep interest rates and their portfolio steady.

The balance sheet debate is still in its early stages, but it is on Ms. Yellen's mind. In a speech Jan. 19 at Stanford University, she noted the stimulative effects of the Fed's bondholdings are diminishing over time as the moment nears for the Fed to shrink them. Sheer anticipation of a drawdown of the bonds could

push long-term rates higher, she said in a footnote to her comments. That's a reason to proceed cautiously.

Bond dealers surveyed by the New York Fed in December said they expected the central bank to keep its portfolio steady for another 18 months.

But several Fed officials have said recently the time to start shrinking the balance sheet could come in 2017. This year "might be a good time to play that card," St. Louis Fed President James Bullard said in a December interview with The Wall Street Journal.

The Fed should raise its benchmark federal-funds rate above 1% "sometime this year," Philadelphia Fed President Patrick Harker said Jan. 20. Once that happens, "the next step" is to do something to allow the balance sheet to start shrinking, he said.

Boston Fed President Eric Rosengren has also expressed sympathy for the idea.

"We've not yet made any precise decisions about when that will occur," Ms. Yellen said in December.

Fed officials have said for a while they want to raise the fed-funds rate first because they're most familiar with this tool. They also want it high enough so they have room to cut it later if needed to provide stimulus in response to another economic downturn.

Officials are starting to discuss the balance sheet plans now for several reasons.

First, they don't see political support for letting it get any bigger. And like the argument about short-term rates, reducing it would give them some room to expand it later if they need to spur the economy.

Some also worry that raising short-term rates is boosting the dollar, which curbs exports and weighs on inflation, which is already below their 2% target. Shrinking the balance sheet instead of raising short-term rates could be a way to tighten financial conditions without bearing the costs of a stronger currency.

Many questions about mechanics loom. Officials have long said they won't sell their securities, fearful it could jolt to markets. Instead, to shrink the portfolio they will alter their current practice of using the proceeds from maturing bonds to buy new ones, a process called reinvestment.

There are a few of ways they could do this. They could halt all reinvestment. They could reduce the amount reinvested gradually. Or they could start by reinvesting proceeds from long-dated maturities into shorter ones.

They also haven't decided how big the balance sheet should be when they finish. "We are actively discussing and researching the question," Mr. Harker said.

A January research note by Fed economists Erin Syron, Soo Jeong Kim and Bernd Schlusche projected the portfolio would decline to \$2.7 trillion by 2025.

Former Fed Chairman Ben Bernanke has argued in favor of keeping the securities portfolio large, or reducing it only moderately.

Given changes in the way the Fed manages interest rates and other shifts in markets and the economy, he wrote in a blog post Thursday, "the optimal size" of the holdings could be more than \$2.5 trillion currently and could reach \$4 trillion or more over the next decade.

"In a sense, the U.S. economy is 'growing into' the Fed's \$4.5 trillion balance sheet," he said, "reducing the need for rapid shrinkage over the next few years."

Write to Michael S. Derby at michael.derby@wsj.com

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<https://www.wsj.com/articles/trumps-fiscal-plans-feds-asset-unwinding-could-fuel-rate-rise-1494175037>

THE OUTLOOK

Trump's Fiscal Plans, Fed's Asset Unwinding Could Fuel Rate Rise

After years of high deficits and demand for Treasuries, bond market looks set for a reversal



President Donald Trump's ideas for tax and spending plans could lead to wider budget deficits significantly, at precisely the moment the Fed is getting out of the market. PHOTO: CHERISS MAY/NURPHOTO/ZUMA PRESS

By Josh Zumbrun

Updated May 7, 2017 12:40 p.m. ET

Two of the most powerful economic forces in Washington could be aligning in coming years to put considerable upward pressure on long-term interest rates.

President Donald Trump is flirting with tax and spending plans that could widen the budget deficit, just as the Fed flirts with plans to shrink its \$4.5 trillion portfolio of bond and other holdings. Larger deficits could mean that the supply of U.S. Treasury securities hitting the markets is rising just as demand for these securities diminishes with the Fed unwinding.

More supply and less demand tends to mean lower prices, and with bonds, lower prices mean higher yields and interest rates.

“The bond market is about to get hit all at once,” said Stephen Stanley, chief economist of Amherst Pierpont Securities.

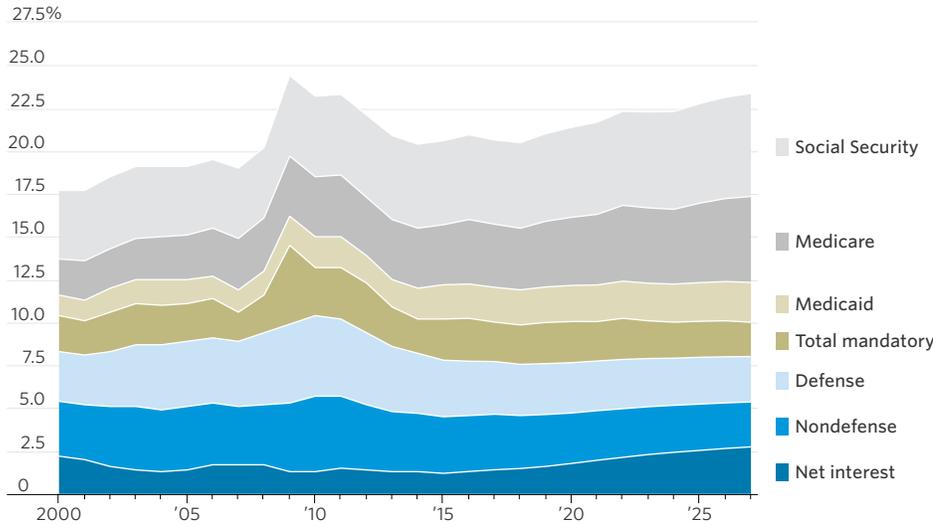
This will be a remarkable reversal.

The U.S. deficit exploded during the 2007-09 recession as tax receipts collapsed. In 2009, the deficit topped \$1 trillion for the first time in history. It began to narrow but remained over \$1 trillion from 2010 to 2012, as tax collections remained depressed from the era of high joblessness, and as President Barack Obama enacted an \$800 billion stimulus plan.

During that era of high deficits, demand soared world-wide for the safety of U.S. government bonds. The Treasury also had a big buyer for its debt in the form of the Fed,

Government spending is on the rise...

Spending as a share of GDP

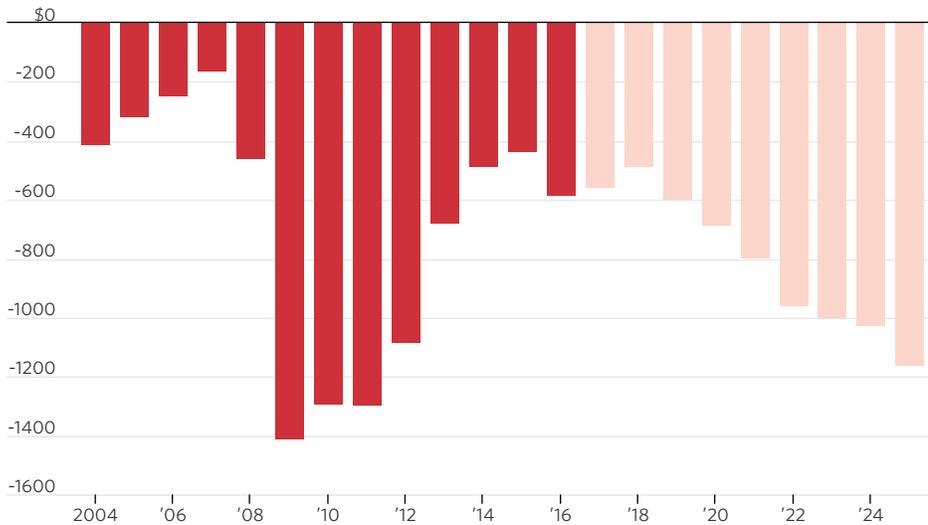


Note: Figures for 2017-2027 are forecasts.
Source: Congressional Budget Office

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...the deficit is expected to quickly climb...

Annual deficit, in billions



Note: Figures for 2017-2027 are forecasts.
Source: Congressional Budget Office

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which began purchasing billions of dollars a month worth of Treasury securities in March 2009, under the program that became known as “quantitative easing,” or QE.

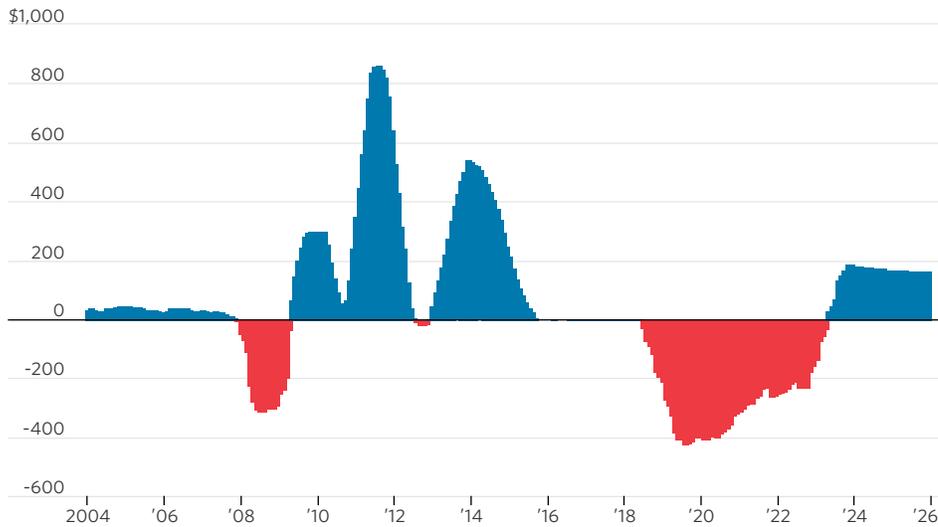
Though not intended to finance the deficit, the Fed’s first QE program sucked in \$300 billion of Treasury debt. The second program, launched in 2010, added another \$600 billion of Treasuries. In the third round of QE, from 2012 to 2014, the Fed added another \$800 billion. Deficits eventually started narrowing, thanks to a reduction in crisis-era spending and new caps on spending combined with rising tax revenue.

Now the tide is poised to turn.

The Congressional Budget Office projects deficits will reach \$1 trillion again by 2023 under current law. This owes largely to the baby boom generation, born in the years after World War II, hitting retirement en masse and claiming Social Security and Medicare benefits. Medicaid and Medicare spending are set to rise to 7.3% of gross domestic product over the next decade, from 5.8% now, according to CBO estimates. Social Security is set to rise to 6% of GDP from 5%. Mr. Trump has said he doesn’t plan to

...just as the Fed is expected to exit the Treasury market.

Annual change in Fed's portfolio of Treasuries, in billions



Note: Figures for 2017-2027 are forecasts.

Source: Federal Reserve

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alter these entitlements.

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Some plans, such as for tax cuts, could widen deficits. The University of Chicago regularly polls leading academic economists on important public policy issues. Asked this month if Mr. Trump's tax plan would pay for itself through higher economic growth, not one respondent thought that it would. Instead, it could force the Treasury to issue significantly more debt.

"Absent offsetting tax increases, it would be a fiscal disaster," said David Autor, the Massachusetts Institute of Technology economist.

One estimate from the Penn Wharton Budget Model, which calculates the effects of tax plans, estimates the current version of Mr. Trump's tax plan would increase U.S. debt by 31% more than current policy.

This could all happen at precisely the moment the Fed is getting out of the market. Since its large-scale bond-buying program ended in 2014, the Federal Reserve has continued to buy new Treasury securities when its existing holdings mature.

Fed officials are eager to move away from these crisis-era policies and are considering allowing their bondholdings to mature later this year, without being replaced. That will leave about \$400 billion of debt hitting the market as it rolls off the Fed balance sheet, according to a Fed estimate.

"We will have to see the specifics of the Fed's implementation of balance-sheet reduction, but all indications are that they will be very cautious and gradual," said Roberto Perli, a former Fed economist and partner at Cornerstone Macro. "If true, that should reassure markets and reduce the odds of any tantrums."

Treasury Secretary Steven Mnuchin and his staff are already considering how to handle the challenge of raising large amounts of debt. Last week, the Treasury sought the counsel of its Borrowing Advisory Committee, composed of major Wall Street bond market participants.

The committee cautioned that under plausible scenarios, the Treasury might have to more than double the amount of debt it auctions for 10-year and 30-year bonds.

5/8/2017

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Dated May 22, 2017

Item No. 73

Attachment 67

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Right now the market seems unperturbed by all of this. Yields on 10-year Treasury notes, at 2.35%, aren't far from historic lows, held down by a range of forces including low inflation and global demand for safe assets. Most forecasters have long expected rates to rise, and been embarrassed by those forecasts when interest rates stayed stuck in a rut. But the market risks becoming complacent about the idea that the old logic of low rates will last forever.

Write to Josh Zumbrun at Josh.Zumbrun@wsj.com

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Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors. The Value Line data are commercially available on a timely basis to investors in paper format or electronically. Value Line betas are derived from a least-squares regression analysis between weekly percent changes in the price of a stock and weekly percent changes in the New York Stock Exchange Average over a period of 5 years. In the case of shorter price histories, a smaller time period is used, but 2 years is the minimum. Value Line betas are computed on a theoretically sound basis using a broadly based market index, and they are adjusted for the regression tendency of betas to converge to 1.00. This necessary adjustment to beta is discussed below.

Practical and Conceptual Difficulties

Computational Issues. Absolute estimates of beta may vary over a wide range when different computational methods are used. The return data, the time period used, its duration, the choice of market index, and whether annual, monthly, or weekly return figures are used will influence the final result.

Ideally, the returns should be total returns, that is, dividends and capital gains. In practice, beta estimates are relatively unaffected if dividends are excluded. Theoretically, market returns should be expressed in terms of total returns on a portfolio of all risky assets. In practice, a broadly based value-weighted market index is used. For example, Merrill Lynch betas use the Standard & Poor's 500 market index, while Value Line betas use the New York Stock Exchange Composite market index. In theory, unless the market index used is the true market index, fully diversified to include all securities in their proportion outstanding, the beta estimate obtained is potentially distorted. Failure to include bonds, Treasury bills, real estate, etc., could lead to a biased beta estimate. But if beta is used as a relative risk ranking device, choice of the market index may not alter the relative rankings of security risk significantly.

To enhance statistical significance, beta should be calculated with return data going as far back as possible. But the company's risk may have changed if the historical period is too long. Weighting the data for this tendency is one possible remedy, but this procedure presupposes some knowledge of how risk changed over time. A frequent compromise is to use a 5-year period with either weekly or monthly returns. Value Line betas are computed based on weekly returns over a 5-year period, whereas Merrill Lynch betas are computed with monthly returns over a 5-year period. In an empirical study of utility

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so that the current value can be widely off the mark as a measure of the expected future value.

5.4 Other Measures of Growth

The measure of expected growth in the dividend established in the previous two sections, the intrinsic growth rate, is not the only possible measure of the variable. Another plausible measure is some average of the past rates of growth in the dividend. Under our model of security valuation, dividend, earnings, and price per share all are expected to grow at the same rate. Hence, the rates of growth in the dividend, earnings, and price also are candidates for estimates of the expected rate of growth in the dividend.

Let us consider first the rate of growth in earnings per share. The earnings per share during T adjusted for stock splits and stock dividends to make interperiod comparisons valid is

$$AYPS(T) = AFC(T)/.5 [ANS(T) + ANS(T - 1)], \quad (5.4.1)$$

where $ANS(T)$ is the number of shares outstanding at the end of T adjusted for stock splits and dividends. The rate of growth in earnings per share during T is

$$YGR(T) = [AYPS(T) - AYPS(T - 1)]/AYPS(T - 1). \quad (5.4.2)$$

For reasons to be given shortly, the smoothed rate of growth in earnings is superior to the current rate as a forecast of the expected rate. The smoothed rate of earnings growth is obtained from

$$\begin{aligned} Ln[1 + YGRS(T)] &= \lambda Ln[1 + YGR(T)] \\ &+ (1 - \lambda) Ln[1 + YGRS(T - 1)], \end{aligned} \quad (5.4.3)$$

with $\lambda = .15$ and $YGRS(1953) = .04$.

The primary reason for a difference between YGR and GRTH is a change in the rate of return on the common equity. To illustrate, assume a firm that has been earning a return on common of .10 and retaining one-half of its income to finance its investment. The rate of growth under both measures will be .05. If the firm's rate

of return on common rises from .10 to .11, the retention growth rate will rise from .05 to $(.5)(.11) = .055$. However, the earnings growth rate will rise from .05 to .155.⁵ Furthermore, the earnings growth rate in subsequent periods will be .055 if the return on common remains .11. This example suggests that the intrinsic growth rate is superior to the earnings growth rate as a measure of expected growth. Investors nonetheless may look to past data on earnings growth for information on expected future growth, and it is the growth investors expect that should be used to measure share yield.

A number of considerations suggest that investors may, in fact, use earnings growth as a measure of expected future growth. First, the intrinsic growth rate includes stock financing growth as well as retention growth. The former is difficult for us to measure and may be even more difficult for investors. Consequently, investors may use past earnings growth to forecast the future since it incorporates in one statistic growth from all sources. Second, we saw that inflation will result in a rise in the allowed rate of return on equity for a regulated company. If this response to inflation takes place with a lag, that is, the regulatory agency raises RRC over time, earnings growth will reflect the forecast rate of growth better than intrinsic growth. Finally, it appears that security analysts use past growth in earnings more than any other variable to forecast future growth.

Given that earnings growth is used by investors to forecast future growth, the smoothed value of the variable YGRS is superior to the current value. The previous illustration revealed that YGR overreacts to changes in the allowed rate of return and therefore is subject to large random fluctuations. The data on YGR confirm this conclusion.

The use of dividend growth as a forecast of future growth is subject to the same limitations as earnings if the firm pays a constant fraction of its earnings in dividends. That is, under this assumption the dividend growth rate in any period is the same as the earnings growth rate. Firms tend to change their dividend rate from one

⁵Let the book value per share at the start of T be $BVS(T - 1) = \$50.00$. With $RRC(T) = .10$, $AYP(T) = \$5.00$, and with $RETR(T) = .5$, $BVS(T) = \$51.50$. If $RRC(T + 1) = .10$, $AYP(T + 1) = \$5.25$, and $YGR(T + 1) = RTGR(T - 1) = .05$. However, if $RRC(T + 1) = .11$, $RTGR(T + 1) = (.11)(.5) = .055$, while $AYP(T + 1) = \$5.775$, and $YGR(T + 1) = (\$5.775 - \$5.00)/\$5.00 = .155$.

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The average growth rate estimate from all the analysts that follow the company measures the consensus expectation of the investment community for that company. In most cases, it is necessary to use earnings forecasts rather than dividend forecasts due to the extreme scarcity of dividend forecasts compared to the widespread availability of earnings forecasts. Given the paucity and variability of dividend forecasts, using the latter would produce unreliable DCF results. In any event, the use of the DCF model prospectively assumes constant growth in both earnings and dividends. Moreover, as discussed below, there is an abundance of empirical research that shows the validity and superiority of earnings forecasts relative to historical estimates when estimating the cost of capital.

The uniformity of growth projections is a test of whether they are typical of the market as a whole. If, for example, 10 out of 15 analysts forecast growth in the 7%–9% range, the probability is high that their analysis reflects a degree of consensus in the market as a whole. As a side note, the lack of uniformity in growth projections is a reasonable indicator of higher risk. Chapter 3 alluded to divergence of opinion amongst analysts as a valid risk indicator.

Because of the dominance of institutional investors and their influence on individual investors, analysts' forecasts of long-run growth rates provide a sound basis for estimating required returns. Financial analysts exert a strong influence on the expectations of many investors who do not possess the resources to make their own forecasts, that is, they are a cause of g . The accuracy of these forecasts in the sense of whether they turn out to be correct is not at issue here, as long as they reflect widely held expectations. As long as the forecasts are typical and/or influential in that they are consistent with current stock price levels, they are relevant. The use of analysts' forecasts in the DCF model is sometimes denounced on the grounds that it is difficult to forecast earnings and dividends for only one year, let alone for longer time periods. This objection is unfounded, however, because it is present investor expectations that are being priced; it is the consensus forecast that is embedded in price and therefore in required return, and not the future as it will turn out to be.

Empirical Literature on Earnings Forecasts

Published studies in the academic literature demonstrate that growth forecasts made by security analysts represent an appropriate source of DCF growth rates, are reasonable indicators of investor expectations and are more accurate than forecasts based on historical growth. These studies show that investors rely on analysts' forecasts to a greater extent than on historic data only.

Academic research confirms the superiority of analysts' earnings forecasts over univariate time-series forecasts that rely on history. This latter category

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Chapter 9: Discounted Cash Flow Application

recommendation that is different than the expected ROE that the method assumes the utility will earn forever. For example, using an expected return on equity of 11% to determine the growth rate and using the growth rate to recommend a return on equity of 9% is inconsistent. It is not reasonable to assume that this regulated utility company is expected to earn 11% forever, but recommend a 9% return on equity. The only way this utility can earn 11% is that rates be set by the regulator so that the utility will in fact earn 11%. One is assuming, in effect, that the company will earn a return rate exceeding the recommended cost of equity forever, but then one is recommending that a different rate be granted by the regulator. In essence, using an ROE in the sustainable growth formula that differs from the final estimated cost of equity is asking the regulator to adopt two different returns.

The circularity problem is somewhat dampened by the self-correcting nature of the DCF model. If a high equity return is granted, the stock price will increase in response to the unanticipated favorable return allowance, lowering the dividend yield component of market return in compensation for the high g induced by the high allowed return. At the next regulatory hearing, more conservative forecasts of r would prevail. The impact on the dual components of the DCF formula, yield and growth, are at least partially offsetting.

Third, the empirical finance literature discussed earlier demonstrates that the sustainable growth method of determining growth is not as significantly correlated to measures of value, such as stock price and price/earnings ratios, as other historical growth measures or analysts' growth forecasts. Other proxies for growth, such as historical growth rates and analysts' growth forecasts, outperform retention growth estimates. See for example Timme and Eisman (1989).

In summary, there are three proxies for the expected growth component of the DCF model: historical growth rates, analysts' forecasts, and the sustainable growth method. Criteria in choosing among the three proxies should include ease of use, ease of understanding, theoretical and mathematical correctness, and empirical validation. The latter two are crucial. The method should be logically valid and consistent, and should possess an adequate track record in predicting and explaining security value. The retention growth method is the weakest of the three proxies on both conceptual and empirical grounds. The research in this area has shown that the first two growth proxies do a better job of explaining variations in market valuation (M/B and P/E ratios) and are more highly correlated to measures of value than is the retention growth proxy.

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Chapter 7

Company Size and Return

One of the most remarkable discoveries of modern finance is the finding of a relationship between company size and return.¹ Historically on average, small companies have higher returns than those of large ones. Earlier chapters of this book document this phenomenon for the smallest stocks on the New York Stock Exchange, or NYSE. The relationship between company size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks. This chapter examines returns across the entire range of company size.

Construction of the Size Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices, or CRSP, at the University of Chicago's Booth 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.

The NYSE universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depositary 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 NYSE, the NYSE MKT LLC (formerly known as the American Stock Exchange, or AMEX), and the NASDAQ Stock Market (formerly the NASDAQ National Market) 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.

In October 2008, NYSE Euronext acquired the American Stock Exchange and rebranded the index as NYSE Amex. Later, in May 2012, it was renamed NYSE MKT LLC. For the sake of continuity, we refer to this index as AMEX, its historical name.

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 value weighted average of the returns for the individual stocks in the portfolio. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Aspects of the Company Size Effect

The company size phenomenon is remarkable in several ways. First, the greater risk of small-cap 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-cap stock returns have exceeded those implied by their betas.

Second, the calendar annual return differences between small- and large-cap 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-cap stocks and in most other equity markets but is evident in the size premium series.

Table 7-5: Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Number of Companies, Historical and Recent Market Capitalization

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in Thousands)	Recent Percentage of Total Capitalization
1-Largest	64.03%	185	14,808,784,274	64.25%
2	14.04	199	3,247,447,914	14.09
3	6.88	194	1,579,432,904	6.85
4	4.56	221	1,042,428,212	4.52
5	3.03	215	694,147,086	3.01
6	2.56	265	585,657,120	2.54
7	1.99	317	449,325,255	1.95
8	1.51	417	333,731,801	1.45
9	0.80	395	173,673,205	0.75
10-Smallest	0.61	948	135,401,288	0.59
Mid-Cap 3-5	14.47	630	3,316,008,202	14.39
Low-Cap 6-8	6.05	999	1,368,714,176	5.94
Micro-Cap 9-10	1.41	1,343	309,074,493	1.34

Data from 1926-2014. Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Used with permission.

Historical average percentage of total capitalization shows the average, over the last 89 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 Sept. 30, 2014.

Decile	Recent Market Capitalization (in Thousands)	Company Name
1-Largest	\$591,015,721	Apple Inc
2	24,272,837	Cummins Inc
3	10,105,622	Murphy Oil Corp
4	5,844,592	Alaska Airgroup Inc
5	3,724,186	Great Plains Energy Inc
6	2,542,913	Wolverine World Wide Inc
7	1,686,860	Wesco Aircraft Holdings Inc
8	1,010,634	First Bancorp P R
9	548,839	G P Strategies Corp
10-Smallest	300,725	M V Oil Trust

Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Used with permission. Market capitalization and name of largest company in each decile are as of Sept. 30, 2014.

Long-Term Returns in Excess of Systematic Risk

The capital asset pricing model, or CAPM, does not fully account for the higher returns of small-cap stocks. Table 7-6 shows the returns in excess of the riskless rate over the past 89 years for each decile of the NYSE/AMEX/NASDAQ.

The CAPM can be expressed as follows:

$$k_s = r_f + (\beta_s \times ERP)$$

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.

Table 7-6 uses the CAPM to estimate the return in excess of the riskless rate and compares this estimate to historical performance. According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by β (beta). The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk). Beta measures the extent to which a security or portfolio is exposed to systematic risk. The beta of each decile indicates the degree to which the decile's return moves with that of the overall market.

A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk. Yet, Table 7-6 illustrates that the smaller deciles have had returns that are not fully explained by their higher betas. This return in excess of that predicted by CAPM increases 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, which includes a size premium.

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Chapter 6: Alternative Asset Pricing Models

The model is analogous to the standard CAPM, but with the return on a minimum risk portfolio that is unrelated to market returns, R_z , replacing the risk-free rate, R_f . The model has been empirically tested by Black, Jensen, and Scholes (1972), who find a flatter than predicted SML, consistent with the model and other researchers' findings. An updated version of the Black-Jensen-Scholes study is available in Brealey, Myers, and Allen (2006) and reaches similar conclusions.

The zero-beta CAPM cannot be literally employed to estimate the cost of capital, since the zero-beta portfolio is a statistical construct difficult to replicate. Attempts to estimate the model are formally equivalent to estimating the constants, a and b , in Equation 6-2. A practical alternative is to employ the Empirical CAPM, to which we now turn.

6.3 Empirical CAPM

As discussed in the previous section, several finance scholars have developed refined and expanded versions of the standard CAPM by relaxing the constraints imposed on the CAPM, such as dividend yield, size, and skewness effects. These enhanced CAPMs typically produce a risk-return relationship that is flatter than the CAPM prediction in keeping with the actual observed risk-return relationship. The ECAPM makes use of these empirical findings. The ECAPM estimates the cost of capital with the equation:

$$K = R_f + \alpha + \beta \times (\text{MRP} - \alpha) \quad (6-5)$$

where α is the "alpha" of the risk-return line, a constant, and the other symbols are defined as before. All the potential vagaries of the CAPM are telescoped into the constant α , which must be estimated econometrically from market data. Table 6-2 summarizes¹⁰ the empirical evidence on the magnitude of alpha.¹¹

¹⁰ The technique is formally applied by Litzenberger, Ramaswamy, and Sosin (1980) to public utilities in order to rectify the CAPM's basic shortcomings. Not only do they summarize the criticisms of the CAPM insofar as they affect public utilities, but they also describe the econometric intricacies involved and the methods of circumventing the statistical problems. Essentially, the average monthly returns over a lengthy time period on a large cross-section of securities grouped into portfolios are related to their corresponding betas by statistical regression techniques; that is, Equation 6-5 is estimated from market data. The utility's beta value is substituted into the equation to produce the cost of equity figure. Their own results demonstrate how the standard CAPM underestimates the cost of equity capital of public utilities because of utilities' high dividend yield and return skewness.

¹¹ Adapted from Vilbert (2004).

TABLE 6-2 EMPIRICAL EVIDENCE ON THE ALPHA FACTOR	
Author	Range of alpha
Fischer (1993)	-3.6% to 3.6%
Fischer, Jensen and Scholes (1972)	-9.61% to 12.24%
Fama and McBeth (1972)	4.08% to 9.36%
Fama and French (1992)	10.08% to 13.56%
Litzenberger and Ramaswamy (1979)	5.32% to 8.17%
Litzenberger, Ramaswamy and Sosin (1980)	1.63% to 5.04%
Pettengill, Sundaram and Mathur (1995)	4.6%
Morin (1989)	2.0%

For an alpha in the range of 1%–2% and for reasonable values of the market risk premium and the risk-free rate, Equation 6-5 reduces to the following more pragmatic form:

$$K = R_F + 0.25 (R_M - R_F) + 0.75 \beta(R_M - R_F) \quad (6-6)$$

Over reasonable values of the risk-free rate and the market risk premium, Equation 6-6 produces results that are indistinguishable from the ECAPM of Equation 6-5.¹²

An alpha range of 1%–2% is somewhat lower than that estimated empirically. The use of a lower value for alpha leads to a lower estimate of the cost of capital for low-beta stocks such as regulated utilities. This is because the use of a long-term risk-free rate rather than a short-term risk-free rate already incorporates some of the desired effect of using the ECAPM. That is, the

¹² Typical of the empirical evidence on the validity of the CAPM is a study by Morin (1989) who found that the relationship between the expected return on a security and beta over the period 1926–1984 was given by:

$$\text{Return} = 0.0829 + 0.0520 \beta$$

Given that the risk-free rate over the estimation period was approximately 6% and that the market risk premium was 8% during the period of study, the intercept of the observed relationship between return and beta exceeds the risk-free rate by about 2%, or 1/4 of 8%, and that the slope of the relationship is close to 3/4 of 8%. Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:

$$K = R_F + x(R_M - R_F) + (1 - x)\beta(R_M - R_F)$$

where x is a fraction to be determined empirically. The value of x that best explains the observed relationship $\text{Return} = 0.0829 + 0.0520 \beta$ is between 0.25 and 0.30. If $x = 0.25$, the equation becomes:

$$K = R_F + 0.25(R_M - R_F) + 0.75\beta(R_M - R_F)$$

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long-term risk-free rate version of the CAPM has a higher intercept and a flatter slope than the short-term risk-free version which has been tested. Thus, it is reasonable to apply a conservative alpha adjustment. Moreover, the lowering of the tax burden on capital gains and dividend income enacted in 2002 may have decreased the required return for taxable investors, steepening the slope of the ECAPM risk-return trade-off and bring it closer to the CAPM predicted returns.¹³

To illustrate the application of the ECAPM, assume a risk-free rate of 5%, a market risk premium of 7%, and a beta of 0.80. The Empirical CAPM equation (6-6) above yields a cost of equity estimate of 11.0% as follows:

$$\begin{aligned} K &= 5\% + 0.25 (12\% - 5\%) + 0.75 \times 0.80 (12\% - 5\%) \\ &= 5.0\% + 1.8\% + 4.2\% \\ &= 11.0\% \end{aligned}$$

As an alternative to specifying alpha, see Example 6-1.

Some have argued that the use of the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and, since Value Line betas are already adjusted for such trend, an ECAPM analysis results in double-counting. This argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary. Moreover, recall from Chapter 3 that the use of adjusted betas compensates for interest rate sensitivity of utility stocks not captured by unadjusted betas.

¹³ The lowering of the tax burden on capital gains and dividend income has no impact as far as non-taxable institutional investors (pension funds, 401K, and mutual funds) are concerned, and such investors engage in very large amounts of trading on security markets. It is quite plausible that taxable retail investors are relatively inactive traders and that large non-taxable investors have a substantial influence on capital markets.



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Betas and Their Regression Tendencies

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BETAS AND THEIR REGRESSION TENDENCIES

MARSHALL E. BLUME*

I. INTRODUCTION

A PREVIOUS STUDY [3] showed that estimated beta coefficients, at least in the context of a portfolio of a large number of securities, were relatively stationary over time. Nonetheless, there was a consistent tendency for a portfolio with either an extremely low or high estimated beta in one period to have a less extreme beta as estimated in the next period. In other words, estimated betas exhibited in that article a tendency to regress towards the grand mean of all betas, namely one. This study will examine in further detail this regression tendency.¹

The next section presents evidence showing the existence of this regression tendency and reviews the conventional reasons given in explanation [1], [4], [5]. The following section develops a formal model of this regression tendency and finds that the conventional analysis of this tendency is, if not incorrect, certainly misleading. Accompanying this theoretical analysis are some new empirical results which show that a major reason for the observed regression is real non-stationarities in the underlying values of beta and that the so-called "order bias" is not of dominant importance.

II. THE CONVENTIONAL WISDOM

If an investor were to use estimated betas to group securities into portfolios spanning a wide range of risk, he would more than likely find that the betas estimated for the very same portfolios in a subsequent period would be less extreme or closer to the market beta of one than his prior estimates. To illustrate, assume that the investor on July 1, 1933, had at his disposal an estimate of beta for each common stock which had been listed on the NYSE (New York Stock Exchange) for the prior seven years, July 1926-June 1933. Assume further that each estimate was derived by regressing the eighty-four monthly relatives covering this seven-year period upon the corresponding values for the market portfolio.²

If this investor, say, desired equally weighted portfolios of 100 securities, he might group those 100 securities with the smallest estimates of beta together to form a portfolio. Such a portfolio would of all equally

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1. Quite apart from this regression tendency, it is reasonable to suppose that betas do change over time in systematic ways in response to certain changes in the structure of companies.

2. Such regressions were calculated only for securities with complete data. The relative for the market portfolio was measured by Fisher's Combination Link Relative [6].

weighted portfolios have the smallest possible estimated portfolio beta since an estimate of such a portfolio beta can be shown to be an average of the estimates for the individual securities [2, p. 169]. To cover a wide range of portfolio betas, this investor might then form a second portfolio consisting of the 100 securities with the next smallest estimates of beta, and so on.

Using the securities available as of June 1933, this investor could thus obtain four portfolios of 100 securities apiece with no security in common. Estimated over the same seven-year period, July 1926-June 1933, the betas for these portfolios³ would have ranged from 0.50 to 1.53. Similar portfolios can be constructed for each of the next seven-year periods through 1954 and their portfolio betas calculated. Table 1 contains these estimates under the heading "Grouping Period."

The betas for these same portfolios, but reestimated using the monthly portfolio relatives adjusted for delistings from the seven years following the grouping period, illustrate the magnitude of the regression tendency.⁴ Whereas the portfolio betas as estimated, for instance, in the grouping period 1926-33 ranged from 0.50 to 1.53, the betas as estimated for these same portfolios in the subsequent seven-year period 1933-40 ranged only from 0.61 to 1.42. The results for the other periods display a similar regression tendency.

An obvious explanation of this regression tendency is that for some unstated economic or behavioral reasons, the underlying betas do tend to regress towards the mean over time.⁵ Yet, even if the true betas were constant over time, it has been argued that the portfolio betas as estimated in the grouping period would as a statistical artifact tend to be more extreme than those estimated in a subsequent period. This bias has sometimes been termed an order or selection bias.

The frequently given intuitive explanation of this order bias [1], [4], [5], parallels the following: Consider the portfolio formed of the 100 securities with the lowest estimates of beta. The estimated portfolio beta might be expected to understate the true beta or equivalently be expected to be measured with negative error. The reason the measurement error might

3. These portfolio betas were derived by averaging the 100 estimates for the individual securities. Alternatively, as [2] shows, the same number would be obtained by regressing the monthly portfolio relatives upon the market index where the portfolio relatives are calculated assuming an equal amount invested in each security at the beginning of each month.

4. These portfolio betas were calculated by regressing portfolio relatives upon the market relatives. The portfolio relatives were taken to be the average of the monthly relatives of the individual securities for which relatives were available. These relatives represent those which would have been realized from an equally-weighted, monthly rebalancing strategy in which a delisted security is sold at the last available price and the proceeds reinvested equally in the remaining securities. This rather complicated procedure takes into account delisted securities and therefore avoids any survivorship bias. In [3], the securities analyzed were required to be listed on the NYSE throughout both the grouping period and the subsequent period, so that there was a potential survivorship bias. Nonetheless, the results reported there are in substantive agreement with the results in Table 1.

5. If the betas are continually changing over time, an estimate of beta as provided by a simple regression must be interpreted with considerable caution. For example, if the true beta followed a linear time trend, it is easily shown that the estimated beta can be interpreted as an unbiased estimate of the beta in the middle of the sample period. A similar interpretation would not in general hold if, for instance, the true beta followed a quadratic time trend.

Betas and Their Regression Tendencies

TABLE 1
BETA COEFFICIENTS FOR PORTFOLIOS
OF 100 SECURITIES

Portfolio	Grouping Period	First Subsequent Period
	7/26-6/33	7/33-6/40
1	0.50	0.61
2	0.85	0.96
3	1.15	1.24
4	1.53	1.42
	7/33-6/40	7/40-6/47
1	0.38	0.56
2	0.69	0.77
3	0.90	0.91
4	1.13	1.12
5	1.35	1.31
6	1.68	1.69
	7/40-6/47	7/47-6/54
1	0.43	0.60
2	0.61	0.76
3	0.73	0.88
4	0.86	0.99
5	1.00	1.10
6	1.21	1.21
7	1.61	1.36
	7/47-6/54	7/54-6/61
1	0.36	0.57
2	0.61	0.71
3	0.78	0.88
4	0.91	0.96
5	1.01	1.03
6	1.13	1.13
7	1.26	1.24
8	1.47	1.32
	7/54-6/61	7/61-6/68
1	0.37	0.62
2	0.56	0.68
3	0.72	0.85
4	0.86	0.85
5	0.99	0.95
6	1.11	0.98
7	1.23	1.07
8	1.43	1.25

be expected to be negative may best be explored by analyzing how a security might happen to have one of the 100 lowest estimates of beta. First, if the true beta were in the lowest hundred, the estimated beta would fall in the lowest 100 estimates only if the error in measuring the beta were not too large which roughly translates into more negative than positive errors. Second, if the true beta were not in the lowest 100, the

estimated beta might still be in the lowest 100 estimates if it were measured with a sufficiently large negative error.⁶

Thus, the negative errors in the 100 smallest estimates of beta might be expected to outweigh the positive errors. The same argument except in reverse would apply to the 100 largest estimates. Indeed, it would seem that any portfolio of securities stratified by estimates of beta for which the average of these estimates is not the grand mean of all betas, namely 1.0, would be subject to some order bias. It would also seem that the absolute magnitude of this order bias should be greater, the further the average estimate is from the grand mean. The next section formalizes this intuitive argument and suggests that, if it is not incorrect, it is certainly misleading as to the source of the bias.

III. A FORMAL MODEL

The intuitive explanation of the order bias just given would seem to suggest that the way in which the portfolios are formed caused the bias. This section will argue that the bias is present in the estimated betas for the individual securities and is not induced by the way in which the portfolios are selected. Following this argument will be an analysis of the extent to which this order bias accounts for the observed regression tendency in portfolio betas over time.

A numerical example will serve to illustrate the logic of the subsequent argument and to introduce some required notation.⁷ Assume for the moment that the possible values of beta for an individual security i in period t , β_{it} , are 0.8, 1.0 and 1.2 and that each of these values is equally likely. Assume further that in estimating a beta for an individual security, there is a 0.6 probability that the estimate $\hat{\beta}_{it}$ contains no measurement error, a 0.2 probability that it understates the true β_{it} by 0.2, and a 0.2 probability that it overstates the true value by 0.2. Now in a sample of ten securities whose true betas were all say 0.8, one would expect two estimates of beta to be 0.6, six to be 0.8, and two to be 1.0. These numbers have been transcribed to the first row of Table 2. The second and third rows are similarly constructed by first assuming that the ten securities all had a true value of 1.0 and then of 1.2.

The rows of Table 2 thus correspond to the distribution of the estimated beta, $\hat{\beta}_{it}$, conditional on the true value, β_{it} . It might be noted that the expectation of $\hat{\beta}_{it}$ conditional on β_{it} , $E(\hat{\beta}_{it} | \beta_{it})$, is β_{it} . However, in a sampling situation, an investigator would be faced with an estimate of beta and would want to assess the distribution of the true β_{it} conditional on the estimated $\hat{\beta}_{it}$. Such conditional distributions correspond to the columns of Table 2. It is easily verified that the expectation of β_{it} conditional on $\hat{\beta}_{it}$, $E(\beta_{it} | \hat{\beta}_{it})$ is generally not $\hat{\beta}_{it}$. For example, if $\hat{\beta}_{it}$ were

6. It is theoretically possible that the estimated beta for a security whose true beta does not fall into the lowest 100 to be in the lowest 100 estimates with a positive measurement error if the betas for some of the improperly classified securities are measured with sufficiently large positive errors.

7. The author is indebted to Harry Markowitz for suggesting this numerical example as a way of clarifying the subsequent formal development.

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TABLE 2
 NUMBER OF SECURITIES CROSS
 CLASSIFIED BY β_{it} AND $\hat{\beta}_{it}$

		$\hat{\beta}_{it}$				
		.6	.8	1.0	1.2	1.4
β_{it}	.8	2	6	2		
	1.0		2	6	2	
	1.2			2	6	2

0.8, $E(\beta_{it} | \hat{\beta}_{it} = 0.8)$ would be 0.85 since with this estimate the true beta would be 0.8 with probability 0.75 or 1.0 with probability 0.25.⁸

The estimate $\hat{\beta}_{it}$, therefore, would typically be biased, and it is biased whether or not portfolios are formed. The effect of forming large portfolios is to reduce the random component in the estimate, so that the difference between the estimated portfolio beta and the true portfolio beta can be ascribed almost completely to the magnitude of the bias.

In the spirit of this example, the paper will now develop explicit formulae for the order bias and real non-stationarities over time. Let it be assumed that the betas for individual securities in period t, β_{it} , can be thought of as drawings from a normal distribution with a mean of 1.0 and variance $\sigma^2(\beta_{it})$. The corresponding assumption for the numerical example just discussed would be a trinomial distribution with equal probabilities for each possible value of β_{it} .

Let it additionally be assumed that the estimate, $\hat{\beta}_{it}$, measures β_{it} with error η_{it} , a mean-zero independent normal variate, so that $\hat{\beta}_{it}$ is given by the sum of β_{it} and η_{it} . It immediately follows that β_{it} and $\hat{\beta}_{it}$ are distributed by a bivariate normal distribution. It might be noted that, as formulated, $\sigma^2(\eta_{it})$ need not equal $\sigma^2(\eta_{jt})$, $i \neq j$. Since the empirical work will assume equality, the subsequent theoretical work will also make this assumption even though for the most part it is not necessary. The final assumption is that β_{it} and β_{it+1} are distributed as bivariate normal variates. Because η_{it} is independently distributed, $\hat{\beta}_{it}$ and β_{it+1} will be distributed by a bivariate normal distribution.

That $\hat{\beta}_{it}$ and β_{it+1} are bivariate normal random variables, each with a mean of 1.0, implies the following regression

$$E(\beta_{it+1} | \hat{\beta}_{it}) - 1 = \frac{\text{Cov}(\beta_{it+1}, \hat{\beta}_{it})}{\sigma^2(\hat{\beta}_{it})} (\hat{\beta}_{it} - 1). \tag{1}$$

This regression is similar to the procedure proposed in Blume [3] to adjust the estimated betas for the regression tendency. That procedure was to regress estimates of beta for individual securities from a later period on estimates from an earlier period and to use the coefficients from this regression to adjust future estimates.⁹ The empirical evidence

8. For further and more detailed discussion of the distinction between $E(\beta_{it} | \hat{\beta}_{it})$ and $E(\hat{\beta}_{it} | \beta_{it})$, the reader is referred to Vasicek [7].

9. That the regression of estimated betas from a later period on estimates from an earlier period is similar to (1) follows from noting that $E(\beta_{it+1} | \hat{\beta}_{it})$ equals $E(\beta_{it+1} | \beta_{it})$ and that $\text{Cov}(\beta_{it+1}, \hat{\beta}_{it})$ equals $\text{Cov}(\beta_{it+1}, \beta_{it})$. In [3], the grand mean of all betas was estimated in each period and was not assumed equal to 1.0.

presented there indicated that this procedure did improve the accuracy of estimates of future betas, though no claim was made that there might not be better ways to adjust for the regression tendency.

The coefficient of $(\hat{\beta}_{it} - 1)$ in (1) can be broken down into two components: one of which would correspond to the so-called order bias and the other to a true regression tendency. To achieve this result, note that the covariance of β_{it+1} and $\hat{\beta}_{it}$ is given by $\text{Cov}(\beta_{it+1}, \beta_{it} + \eta_{it})$, which because of the assumed independence of the errors, reduces to the covariance of β_{it+1} and β_{it} . Making this substitution and replacing $\text{Cov}(\beta_{it+1}, \beta_{it})$ by $\rho(\beta_{it+1}, \beta_{it})\sigma(\beta_{it+1})\sigma(\beta_{it})$, (1) becomes

$$E(\beta_{it+1} | \hat{\beta}_{it}) - 1 = \frac{\rho(\beta_{it+1}, \beta_{it})\sigma(\beta_{it+1})\sigma(\beta_{it})}{\sigma^2(\hat{\beta}_{it})} (\hat{\beta}_{it} - 1). \quad (2)$$

The ratio of $\sigma(\beta_{it})\sigma(\beta_{it+1})$ to $\sigma^2(\hat{\beta}_{it})$ might be identified with the order bias and the correlation of β_{it} and β_{it+1} with a true regression.

If the underlying values of beta are stationary over time, the correlation of successive values will be 1.0 and the standard deviations of β_{it} and β_{it+1} will be the same. Assuming such stationarity and noting then that β_{it+1} equals β_{it} , equation (2) can be rewritten as¹⁰

$$\begin{aligned} E(\beta_{it+1} | \hat{\beta}_{it}) - 1 &= E(\beta_{it} | \hat{\beta}_{it}) - 1 \\ &= \frac{\sigma^2(\beta_{it})}{\sigma^2(\hat{\beta}_{it})} (\hat{\beta}_{it} - 1). \end{aligned} \quad (3)$$

Since $\sigma^2(\beta_{it})$ would be less than $\sigma^2(\hat{\beta}_{it})$ if beta is measured with any error, the coefficient of $(\hat{\beta}_{it} - 1)$ would be less than 1.0. This means that the true beta for a security would be expected to be closer to one than the estimated value. In other words, an estimate of beta for an individual security except for an estimate of 1.0 is biased.¹¹

10. Equation (3) can be derived alternatively from the assumption that β_{it} and $\hat{\beta}_{it}$ are bivariate normal variables and under the assumption of stationarity β_{it} will equal β_{it+1} . Vasicek [7] has developed using Bayes' Theorem, an expression for $E(\beta_{it} | \hat{\beta}_{it})$ which can be shown to be mathematically identical to the right hand side of (3): He observed that the procedure used by Merrill Lynch, Pierce, Fenner and Smith, Inc. in their Security Risk Evaluation Service is similar to his expression if $\sigma^2(\eta_{it})$ is assumed to be the same for all securities. Merrill Lynch's procedure, as he presented it, is to use the coefficient of the cross-sectional regression of $(\hat{\beta}_{it+1} - 1)$ on $(\beta_{it} - 1)$ to adjust future estimates. This adjustment mechanism is in fact the same as (1) or (2) which shows that such a cross sectional regression takes into account real changes in the underlying betas. Only if betas were stationary over time would his formula be similar to Merrill Lynch's.

11. The formula for order bias given by (3) is similar to that which measures the bias in the estimated slope coefficient in a regression on one independent variable measured with error. Explicitly, consider the regression, $y = bx + \epsilon$, where ϵ is an independent mean-zero normal disturbance and both y and x are measured in deviate form. Now if x is measured with independent mean-zero error η and y is regressed on $x + \eta$, it is well known that the estimated coefficient, \hat{b} , will be biased toward zero and the probability limit of \hat{b} is $\frac{b}{1 + \frac{\sigma^2(\eta)}{\sigma^2(x)}}$. This expression can be

rewritten as $\frac{\sigma^2(x)}{\sigma^2(x + \eta)} b$. Interpreting x as the true beta less 1.0, the correspondence to (3) is obvious. In this type of regression, one could either adjust the independent variables themselves for bias and thus obtain an unbiased estimate of the regression coefficient or run the regression on the unadjusted variables and then adjust the regression coefficient. The final coefficient will be the same in either case.

Betas and Their Regression Tendencies

In light of this discussion, the paper now reexamines the results of the previous section. The initial task will be to adjust the portfolio betas in the grouping periods for the order bias. After making this adjustment, it will be apparent that much of the regression tendency observed in Table 1 remains. Thus, if (2) is valid, the value of the correlation coefficient is probably not 1.0. The statistical properties of estimates of the portfolio betas in both the grouping and subsequent periods will be examined. The section ends with an additional test that gives further confirmation that much of the regression tendency stems from true non-stationarities in the underlying betas.

To adjust the estimates of beta in the grouping periods for the order bias using (3) would require estimates of the ratio of $\sigma^2(\beta_{it})$ to $\sigma^2(\hat{\beta}_{it})$. The sample variance calculated from the estimated betas for all securities in a particular cross-section provides an estimate of $\sigma^2(\hat{\beta}_{it})$. An estimate of $\sigma^2(\beta_{it})$ can be derived as the difference between estimates of $\sigma^2(\hat{\beta}_{it})$ and $\sigma^2(\eta_{it})$. If the variance of the error in measuring an individual beta is the same for every security, $\sigma^2(\eta_{it})$ can be estimated as the average over all securities of the squares of the standard error associated with each estimated beta.

In conformity with these procedures, estimates of the ratio of $\sigma^2(\beta_{it})$ to $\sigma^2(\hat{\beta}_{it})$ for the five seven-year periods from 1926 through 1961 were respectively 0.92, 0.92, 0.89, 0.82, and 0.75. In other words, an unbiased estimate of the underlying beta for an individual security should be some eight to twenty-five per cent closer to 1.0 than the original estimate. For instance, if $\sigma^2(\beta_{it})/\sigma^2(\hat{\beta}_{it})$ were 0.9 and if $\hat{\beta}_{it}$ were 1.3, an unbiased estimate would be 1.27.

To determine whether the order bias accounted for all of the regression, the estimated betas for the individual securities were adjusted for the order bias using (3) and the appropriate value of the ratio. For the same portfolios of 100 securities examined in the previous section, portfolio betas for the grouping period were recalculated as the average of these adjusted betas. It might be noted that these adjusted portfolio betas could alternatively be obtained by adjusting the unadjusted portfolio betas directly. These adjusted portfolio betas are given in Table 3. For the reader's convenience, the unadjusted portfolio betas and those estimated in the subsequent seven years are reproduced from Table 1.

Before comparing these estimates, let us for the moment consider the statistical properties of the portfolio betas, first in the grouping period and then in the subsequent period. Though unadjusted estimates of the portfolio betas in the grouping period may be biased, they would be expected to be highly "reliable" as that term is used in psychometrics. Thus, regardless of what these estimates measure, they measure it accurately or more precisely their values approximate those which would be expected conditional on the underlying population and how they are calculated. For equally-weighted portfolios, the larger the number of securities, the more reliable would be the estimate.

Specifically, for an equally-weighted portfolio of 100 securities, the standard deviation of the error in the portfolio beta would be one-tenth

TABLE 3
BETA COEFFICIENTS FOR PORTFOLIOS OF 100 SECURITIES

Portfolio	Grouping Period		First Subsequent Period	Second Subsequent Period
	Unadjusted for Order Bias	Adjusted for Order Bias		
		7/26-6/33	7/33-6/40	7/40-6/47
1	0.50	.54	0.61	0.73
2	0.85	.86	0.96	0.92
3	1.15	1.14	1.24	1.21
4	1.53	1.49	1.42	1.47
		7/33-6/40	7/40-6/47	7/47-6/54
1	0.38	.43	0.56	0.53
2	0.69	.72	0.77	0.86
3	0.90	.91	0.91	0.96
4	1.13	1.12	1.12	1.11
5	1.35	1.32	1.31	1.29
6	1.68	1.63	1.69	1.40
		7/40-6/47	7/47-6/54	7/54-6/61
1	0.43	.50	0.60	0.73
2	0.61	.65	0.76	0.88
3	0.73	.76	0.88	0.93
4	0.86	.88	0.99	1.04
5	1.00	1.00	1.10	1.12
6	1.21	1.19	1.21	1.14
7	1.61	1.54	1.36	1.20
		7/47-6/54	7/54-6/61	7/61-6/68
1	0.36	.48	0.57	0.72
2	0.61	.68	0.71	0.79
3	0.78	.82	0.88	0.88
4	0.91	.93	0.96	0.92
5	1.01	1.01	1.03	1.04
6	1.13	1.10	1.13	1.02
7	1.26	1.21	1.24	1.08
8	1.47	1.39	1.32	1.15
		7/54-6/61	7/61-6/68	
1	0.37	.53	0.62	
2	0.56	.67	0.68	
3	0.72	.79	0.85	
4	0.86	.89	0.85	
5	0.99	.99	0.95	
6	1.11	1.08	0.98	
7	1.23	1.17	1.07	
8	1.43	1.32	1.25	

the standard error of the estimated betas for individual securities providing the errors in measuring these individual betas were independent of each other. During the 1926-33 period, the average standard error of betas for individual securities was 0.12 so that the standard error of the portfolio beta would be roughly 0.012. The average standard error for individual securities increased gradually to 0.20 in the period July 1954-June 1961. For the next seven-year period ending June 1968, the average declined to 0.17.

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As pointed out, standard errors for portfolio betas calculated from those for individual securities assume independence of the errors in estimates. The standard error for a portfolio beta can however be calculated directly without making this assumption of independence by regressing the portfolio returns on the market index. The standard error for the portfolio of the 100 securities with the lowest estimates of beta in the July 1926-June 1933 period was for instance, 0.018, which compares to 0.012 calculated assuming independence. The average standard error of the estimated betas for the four portfolios in this period was also 0.018. The average standard errors of the betas for the portfolios of 100 securities in the four subsequent seven-year periods ending June 1961 were respectively 0.025, 0.027, 0.024, and 0.027. Although these standard errors, not assuming independence, are about 50 per cent larger than before, they are still extremely small compared to the range of possible values for portfolio betas.

For the moment, let us therefore assume that the portfolio betas as estimated in the grouping period before adjustment for order bias are extremely reliable numbers in that whatever they measure, they measure it accurately. In this case, adjusting these portfolio betas for the order bias will give extremely reliable and unbiased estimates of the underlying portfolio beta and therefore these adjusted betas can be taken as very good approximations to the underlying, but unknown, values. The greater the number of securities in the portfolio, the better the approximation will be.

The numerical example in Table 2 gives an intuitive feel for what is happening. Consider a portfolio of a large number of securities whose estimated betas were all 0.8 in a particular sample. It will be recalled that such an estimate requires that the true beta be either 0.8 or 1.0. As the number of securities with estimates of 0.8 increases, one can be more and more confident that 75 per cent of the securities have true betas of 0.8 and 25 per cent have true betas of 1.0 or equivalently that an equally-weighted portfolio of these securities has a beta of 0.85.

The heuristic argument in the prior section might lead some to believe that, contrary to the estimates in the grouping period, there are no order biases associated with the portfolio betas estimated in the subsequent seven years. This belief, however, is not correct. Formally, the portfolios formed in the grouping period are being treated as if they were securities in the subsequent period. To estimate these portfolio betas, portfolio returns were calculated and regressed upon some measure of the market. In this paper so far, these portfolio returns were calculated under an equally-weighted monthly revision strategy in which delisted securities were sold at the last available price and the proceeds reinvested equally in the remaining. Other strategies are, of course, possible.

Since these portfolios are being treated as securities, formula (3) applies, so that there is still some "order bias" present. However, in determining the rate of regression, the appropriate measure of the variance of the errors in the estimates is the variance for the portfolio betas and not for the betas of individual stocks. This fact has the important effect of making the ratio of $\sigma^2(\beta_{it})$ to $\sigma^2(\hat{\beta}_{it})$ much closer to one than for

individual securities. Estimating $\sigma^2(\hat{\beta}_{it})$ and $\sigma^2(\eta_{it})$ for the portfolios formed on the immediately prior period, the value of this ratio for each of the four seven-year periods from 1933 to 1961 was in excess of 0.99 and for the last seven-year period in excess of 0.98. Thus, for most purposes, little error is introduced by assuming that these estimated portfolio betas contain no "order bias" or equivalently that these estimates measure accurately the true portfolio beta.

A comparison of the portfolio betas in the grouping period, even after adjusting for the order bias, to the corresponding betas in the immediately subsequent period discloses a definite regression tendency. This regression tendency is statistically significant at the five per cent level for each of the last three grouping periods, 1940-47, 1947-54, 1954-61.¹² Thus, this evidence strongly suggests that there is a substantial tendency for the underlying values of beta to regress towards the mean over time. Yet, it could be argued that this test is suspect because the formula used in adjusting for the order bias was developed under the assumption that the distributions of beta were normal. This assumption is certainly not strictly correct and it is not clear how sensitive the adjustment is to violations of this assumption.

A more robust way to demonstrate the existence of a true regression tendency is based upon the observation that the portfolio betas estimated in the period immediately subsequent to the grouping period are measured with negligible error and bias. These estimated portfolio betas can be compared to betas for the same portfolios estimated in the second seven years subsequent to the grouping period. These betas, which have been estimated in the second subsequent period and are given in Table 3, disclose again an obvious regression tendency. This tendency is significant at the five per cent level for the last three of the four possible comparisons.¹³

IV. SUMMARY

Beginning with a review of the conventional wisdom, the paper showed that estimated beta coefficients tend to regress towards the grand mean of all betas over time. The next section presented two kinds of empirical analyses which showed that part of this observed regression tendency represented real nonstationarities in the betas of individual securities and that the so-called order bias was not of overwhelming importance.

In other words, companies of extreme risk—either high or low—tend to have less extreme risk characteristics over time. There are two logical

12. This test of significance was based upon the regression $(\hat{\beta}_{it+1} - 1) = b(\hat{\beta}_{it} - 1) + \epsilon_{it}$ where $\hat{\beta}_{it}$ has been adjusted for order bias. The estimated coefficients with the t-value measured from 1.0 in parentheses were for the five seven-years chronologically 0.86 (-1.14), 0.94 (-0.88), 0.71 (-3.84), 0.86 (-3.23), and 0.81 (-2.57). Note that even if β_{it} were measured with substantial independent error contrary to fact, the estimated b would not be biased towards zero because, as footnote 10 shows, the adjustment for the order bias has already corrected for this bias.

13. Using the same regression as in the previous footnote, the estimated coefficient b with the t-value measured from 1.0 in parentheses were for the four possible comparisons in chronological order 0.92 (-0.69), 0.74 (-2.67), 0.62 (-6.86), and 0.58 (-5.51).

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explanations. First, the risk of existing projects may tend to become less extreme over time. This explanation may be plausible for high risk firms, but it would not seem applicable to low risk firms. Second, new projects taken on by firms may tend to have less extreme risk characteristics than existing projects. If this second explanation is correct, it is interesting to speculate on the reasons. For instance, is it a management decision or do limitations on the availability of profitable projects of extreme risk tend to cause the riskiness of firms to regress towards the grand mean over time? Though one could continue to speculate on the forces underlying this tendency of risk—as measured by beta coefficients—to regress towards the grand mean over time, it remains for future research to determine the explicit reasons.

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Cost of Capital Estimation

The Risk Premium Approach to Measuring a Utility's Cost of Equity

Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson

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■ In the mid-1960s, Myron Gordon and others began applying the theory of finance to help estimate utilities' costs of capital. Previously, the standard approach in cost of equity studies was the "comparable earnings method," which involved selecting a sample of unregulated companies whose investment risk was judged to be comparable to that of the utility in question, calculating the average return on book equity (ROE) of these sample companies, and setting the utility's service rates at a level that would permit the utility to achieve the same ROE as comparable companies. This procedure has now been thoroughly discredited (see Robichek [15]), and it has been replaced by three market-oriented (as opposed to accounting-oriented) approaches: (i) the DCF method, (ii) the bond-yield-plus-risk-premium method, and (iii) the CAPM, which is a specific version of the generalized bond-yield-plus-risk-premium approach.

Our purpose in this paper is to discuss the risk-premium approach, including the market risk premium that is used in the CAPM. First, we critique the various procedures that have been used in the past to estimate risk premiums. Second, we present some data on esti-

mated risk premiums since 1965. Third, we examine the relationship between equity risk premiums and the level of interest rates, because it is important, for purposes of estimating the cost of capital, to know just how stable the relationship between risk premiums and interest rates is over time. If stability exists, then one can estimate the cost of equity at any point in time as a function of interest rates as reported in *The Wall Street Journal*, the *Federal Reserve Bulletin*, or some similar source.¹ Fourth, while we do not discuss the CAPM directly, our analysis does have some important implications for selecting a market risk premium for use in that model. Our focus is on utilities, but the methodology is applicable to the estimation of the cost of

¹For example, the Federal Energy Regulatory Commission's Staff recently proposed that a risk premium be estimated every two years and that, between estimation dates, the last-determined risk premium be added to the current yield on ten-year Treasury bonds to obtain an estimate of the cost of equity to an average utility (Docket RM 80-36). Subsequently, the FCC made a similar proposal ("Notice of Proposed Rulemaking," August 13, 1984, Docket No. 84-800). Obviously, the validity of such procedures depends on (i) the accuracy of the risk premium estimate and (ii) the stability of the relationship between risk premiums and interest rates. Both proposals are still under review.

equity for any publicly traded firm, and also for non-traded firms for which an appropriate risk class can be assessed, including divisions of publicly traded corporations.²

Alternative Procedures for Estimating Risk Premiums

In a review of both rate cases and the academic literature, we have identified three basic methods for estimating equity risk premiums: (i) the *ex post*, or historic, yield spread method; (ii) the survey method; and (iii) an *ex ante* yield spread method based on DCF analysis.³ In this section, we briefly review these three methods.

Historic Risk Premiums

A number of researchers, most notably Ibbotson and Sinquefeld [12], have calculated historic holding period returns on different securities and then estimated risk premiums as follows:

$$\text{Historic Risk Premium} = \left(\begin{array}{c} \text{Average of the} \\ \text{annual returns on} \\ \text{a stock index for} \\ \text{a particular} \\ \text{past period} \end{array} \right) - \left(\begin{array}{c} \text{Average of the} \\ \text{annual returns on} \\ \text{a bond index for} \\ \text{the same} \\ \text{past period} \end{array} \right) \quad (1)$$

Ibbotson and Sinquefeld (I&S) calculated both arithmetic and geometric average returns, but most of their risk-premium discussion was in terms of the geometric averages. Also, they used both corporate and Treasury bond indices, as well as a T-bill index, and they analyzed all possible holding periods since 1926. The I&S study has been employed in numerous rate cases in two ways: (i) directly, where the I&S historic risk premium is added to a company's bond yield to obtain an esti-

²The FCC is particularly interested in risk-premium methodologies, because (i) only eighteen of the 1,400 telephone companies it regulates have publicly-traded stock, and hence offer the possibility of DCF analysis, and (ii) most of the publicly-traded telephone companies have both regulated and unregulated assets, so a corporate DCF cost might not be applicable to the regulated units of the companies.

³In rate cases, some witnesses also have calculated the differential between the yield to maturity (YTM) of a company's bonds and its concurrent ROE, and then called this differential a risk premium. In general, this procedure is unsound, because the YTM on a bond is a *future expected* return on the bond's *market value*, while the ROE is the *past realized* return on the stock's *book value*. Thus, comparing YTM's and ROE's is like comparing apples and oranges.

mate of its cost of equity, and (ii) indirectly, where I&S data are used to estimate the market risk premium in CAPM studies.

There are both conceptual and measurement problems with using I&S data for purposes of estimating the cost of capital. Conceptually, there is no compelling reason to think that investors expect the same relative returns that were earned in the past. Indeed, evidence presented in the following sections indicates that relative expected returns should, and do, vary significantly over time. Empirically, the measured historic premium is sensitive both to the choice of estimation horizon and to the end points. These choices are essentially arbitrary, yet they can result in significant differences in the final outcome. These measurement problems are common to most forecasts based on time series data.

The Survey Approach

One obvious way to estimate equity risk premiums is to poll investors. Charles Benore [1], the senior utility analyst for Paine Webber Mitchell Hutchins, a leading institutional brokerage house, conducts such a survey of major institutional investors annually. His 1983 results are reported in Exhibit 1.

Exhibit 1. Results of Risk Premium Survey, 1983*

Assuming a double A, long-term utility bond currently yields 12½%, the common stock for the same company would be fairly priced relative to the bond if its expected return was as follows:

Total Return	Indicated Risk Premium (basis points)	Percent of Respondents	
over 20½%	over 800	}	
20½%	800		
19½%	700		
18½%	600		10%
17½%	500		8%
16½%	400		29%
15½%	300		35%
14½%	200	16%	
13½%	100	0%	
under 13½%	under 100	1%	
Weighted average	358	100%	

*Benore's questionnaire included the first two columns, while his third column provided a space for the respondents to indicate which risk premium they thought applied. We summarized Benore's responses in the frequency distribution given in Column 3. Also, in his questionnaire each year, Benore adjusts the double A bond yield and the total returns (Column 1) to reflect current market conditions. Both the question above and the responses to it were taken from the survey conducted in April 1983.

Benore's results, as measured by the average risk premiums, have varied over the years as follows:

Year	Average RP (basis points)
1978	491
1979	475
1980	423
1981	349
1982	275
1983	358

The survey approach is conceptually sound in that it attempts to measure investors' expectations regarding risk premiums, and the Benore data also seem to be carefully collected and processed. Therefore, the Benore studies do provide one useful basis for estimating risk premiums. However, as with most survey results, the possibility of biased responses and/or biased sampling always exists. For example, if the responding institutions are owners of utility stocks (and many of them are), and if the respondents think that the survey results might be used in a rate case, then they might bias upward their responses to help utilities obtain higher authorized returns. Also, Benore surveys large institutional investors, whereas a high percentage of utility stocks are owned by individuals rather than institutions, so there is a question as to whether his reported risk premiums are really based on the expectations of the "representative" investor. Finally, from a pragmatic standpoint, there is a question as to how to use the Benore data for utilities that are not rated AA. The Benore premiums can be applied as an add-on to the own-company bond yields of any given utility only if it can be assumed that the premiums are constant across bond rating classes. *A priori*, there is no reason to believe that the premiums will be constant.

DCF-Based *Ex Ante* Risk Premiums

In a number of studies, the DCF model has been used to estimate the *ex ante* market risk premium, RP_M . Here, one estimates the average expected future return on equity for a group of stocks, k_M , and then subtracts the concurrent risk-free rate, R_F , as proxied by the yield to maturity on either corporate or Treasury securities:⁴

$$RP_M = k_M - R_F \quad (2)$$

Conceptually, this procedure is exactly like the I&S approach except that one makes direct estimates of future expected returns on stocks and bonds rather than

assuming that investors expect future returns to mirror past returns.

The most difficult task, of course, is to obtain a valid estimate of k_M , the expected rate of return on the market. Several studies have attempted to estimate DCF risk premiums for the utility industry and for other stock market indices. Two of these are summarized next.

Vandell and Kester. In a recently published monograph, Vandell and Kester [18] estimated *ex ante* risk premiums for the period from 1944 to 1978. R_F was measured both by the yield on 90-day T-bills and by the yield on the Standard and Poor's AA Utility Bond Index. They measured k_M as the average expected return on the S&P's 500 Index, with the expected return on individual securities estimated as follows:

$$k_i = \left(\frac{D_t}{P_0} \right)_i + g_i \quad (3)$$

where,

- D_t = dividend per share expected over the next twelve months,
- P_0 = current stock price,
- g = estimated long-term constant growth rate, and
- i = the i^{th} stock.

To estimate g_i , Vandell and Kester developed fifteen forecasting models based on both exponential smoothing and trend-line forecasts of earnings and dividends, and they used historic data over several estimating horizons. Vandell and Kester themselves acknowledge that, like the Ibbotson-Sinquefield premiums, their analysis is subject to potential errors associated with trying to estimate expected future growth purely from past data. We shall have more to say about this point later.

⁴In this analysis, most people have used yields on long-term bonds rather than short-term money market instruments. It is recognized that long-term bonds, even Treasury bonds, are not risk free, so an RP_M based on these debt instruments is smaller than it would be if there were some better proxy to the long-term riskless rate. People have attempted to use the T-bill rate for R_F , but the T-bill rate embodies a different average inflation premium than stocks, and it is subject to random fluctuations caused by monetary policy, international currency flows, and other factors. Thus, many people believe that for cost of capital purposes, R_F should be based on long-term securities.

We did test to see how debt maturities would affect our calculated risk premiums. If a short-term rate such as the 30-day T-bill rate is used, measured risk premiums jump around widely and, so far as we could tell, randomly. The choice of a maturity in the 10- to 30-year range has little effect, as the yield curve is generally fairly flat in that range.

Malkiel. Malkiel [14] estimated equity risk premiums for the Dow Jones Industrials using the DCF model. Recognizing that the constant dividend growth assumption may not be valid, Malkiel used a nonconstant version of the DCF model. Also, rather than rely exclusively on historic data, he based his growth rates on Value Line's five-year earnings growth forecasts plus the assumption that each company's growth rate would, after an initial five-year period, move toward a long-run real national growth rate of four percent. He also used ten-year maturity government bonds as a proxy for the riskless rate. Malkiel reported that he tested the sensitivity of his results against a number of different types of growth rates, but, in his words, "The results are remarkably robust, and the estimated risk premiums are all very similar." Malkiel's is, to the best of our knowledge, the first risk-premium study that uses analysts' forecasts. A discussion of analysts' forecasts follows.

Security Analysts' Growth Forecasts

Ex ante DCF risk premium estimates can be based either on expected growth rates developed from time series data, such as Vandell and Kester used, or on analysts' forecasts, such as Malkiel used. Although there is nothing inherently wrong with time series-based growth rates, an increasing body of evidence suggests that primary reliance should be placed on analysts' growth rates. First, we note that the observed market price of a stock reflects the consensus view of investors regarding its future growth. Second, we know that most large brokerage houses, the larger institutional investors, and many investment advisory organizations employ security analysts who forecast future EPS and DPS, and, to the extent that investors rely on analysts' forecasts, the consensus of analysts' forecasts is embodied in market prices. Third, there have been literally dozens of academic research papers dealing with the accuracy of analysts' forecasts, as well as with the extent to which investors actually use them. For example, Cragg and Malkiel [7] and Brown and Rozeff [5] determined that security analysts' forecasts are more relevant in valuing common stocks and estimating the cost of capital than are forecasts based solely on historic time series. Stanley, Lewellen, and Schlarbaum [16] and Linke [13] investigated the importance of analysts' forecasts and recommendations to the investment decisions of individual and institutional investors. Both studies indicate that investors rely heavily on analysts' reports and incorporate analysts' forecast information in the formation of their

expectations about stock returns. A representative listing of other work supporting the use of analysts' forecasts is included in the References section. Thus, evidence in the current literature indicates that (i) analysts' forecasts are superior to forecasts based solely on time series data, and (ii) investors do rely on analysts' forecasts. Accordingly, we based our cost of equity, and hence risk premium estimates, on analysts' forecast data.⁵

Risk Premium Estimates

For purposes of estimating the cost of capital using the risk premium approach, it is necessary either that the risk premiums be time-invariant or that there exists a predictable relationship between risk premiums and interest rates. If the premiums are constant over time, then the constant premium could be added to the prevailing interest rate. Alternatively, if there exists a stable relationship between risk premiums and interest rates, it could be used to predict the risk premium from the prevailing interest rate.

To test for stability, we obviously need to calculate risk premiums over a fairly long period of time. Prior to 1980, the only consistent set of data we could find came from Value Line, and, because of the work involved, we could develop risk premiums only once a year (on January 1). Beginning in 1980, however, we began collecting and analyzing Value Line data on a monthly basis, and in 1981 we added monthly estimates from Merrill Lynch and Salomon Brothers to our data base. Finally, in mid-1983, we expanded our analysis to include the IBES data.

Annual Data and Results, 1966–1984

Over the period 1966–1984, we used Value Line data to estimate risk premiums both for the electric utility industry and for industrial companies, using the companies included in the Dow Jones Industrial and Utility averages as representative of the two groups. Value Line makes a five-year growth rate forecast, but it also gives data from which one can develop a longer-term forecast. Since DCF theory calls for a truly long-term (infinite horizon) growth rate, we concluded that it was better to develop and use such a forecast than to

⁵Recently, a new type of service that summarizes the key data from most analysts' reports has become available. We are aware of two sources of such services, the Lynch, Jones, and Ryan's Institutional Brokers Estimate System (IBES) and Zack's Icarus Investment Service. IBES and the Icarus Service gather data from both buy-side and sell-side analysts and provide it to subscribers on a monthly basis in both a printed and a computer-readable format.

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Exhibit 2. Estimated Annual Risk Premiums, Nonconstant (Value Line) Model, 1966-1984

January 1 of the Year Reported	Dow Jones Electrics			Dow Jones Industrials			(3) ÷ (6)
	k_{Avg}	R_F	RP	k_{Avg}	R_F	RP	
	(1)	(2)	(3)	(4)	(5)	(6)	
1966	8.11%	4.50%	3.61%	9.56%	4.50%	5.06%	0.71
1967	9.00%	4.76%	4.24%	11.57%	4.76%	6.81%	0.62
1968	9.68%	5.59%	4.09%	10.56%	5.59%	4.97%	0.82
1969	9.34%	5.88%	3.46%	10.96%	5.88%	5.08%	0.68
1970	11.04%	6.91%	4.13%	12.22%	6.91%	5.31%	0.78
1971	10.80%	6.28%	4.52%	11.23%	6.28%	4.95%	0.91
1972	10.53%	6.00%	4.53%	11.09%	6.00%	5.09%	0.89
1973	11.37%	5.96%	5.41%	11.47%	5.96%	5.51%	0.98
1974	13.85%	7.29%	6.56%	12.38%	7.29%	5.09%	1.29
1975	16.63%	7.91%	8.72%	14.83%	7.91%	6.92%	1.26
1976	13.97%	8.23%	5.74%	13.32%	8.23%	5.09%	1.13
1977	12.96%	7.30%	5.66%	13.63%	7.30%	6.33%	0.89
1978	13.42%	7.87%	5.55%	14.75%	7.87%	6.88%	0.81
1979	14.92%	8.99%	5.93%	15.50%	8.99%	6.51%	0.91
1980	16.39%	10.18%	6.21%	16.53%	10.18%	6.35%	0.98
1981	17.61%	11.99%	5.62%	17.37%	11.99%	5.38%	1.04
1982	17.70%	14.00%	3.70%	19.30%	14.00%	5.30%	0.70
1983	16.30%	10.66%	5.64%	16.53%	10.66%	5.87%	0.96
1984	16.03%	11.97%	4.06%	15.72%	11.97%	3.75%	1.08

use the five-year prediction.⁶ Therefore, we obtained data as of January 1 from Value Line for each of the Dow Jones companies and then solved for k , the expected rate of return, in the following equation:

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+k)^t} + \left(\frac{D_n(1+g_n)}{k-g_n} \right) \left(\frac{1}{1+k} \right)^n \quad (4)$$

Equation (4) is the standard nonconstant growth DCF model; P_0 is the current stock price; D_t represents the forecasted dividends during the nonconstant growth period; n is the years of nonconstant growth; D_n is the first constant growth dividend; and g_n is the constant, long-run growth rate after year n . Value Line provides D_t values for $t = 1$ and $t = 4$, and we interpolated to obtain D_2 and D_3 . Value Line also gives estimates for

⁶This is a debatable point. Cragg and Malkiel, as well as many practicing analysts, feel that most investors actually focus on five-year forecasts. Others, however, argue that five-year forecasts are too heavily influenced by base-year conditions and/or other nonpermanent conditions for use in the DCF model. We note (i) that most published forecasts do indeed cover five years, (ii) that such forecasts are typically "normalized" in some fashion to alleviate the base-year problem, and (iii) that for relatively stable companies like those in the Dow Jones averages, it generally does not matter greatly if one uses a normalized five-year or a longer-term forecast, because these companies meet the conditions of the constant-growth DCF model rather well.

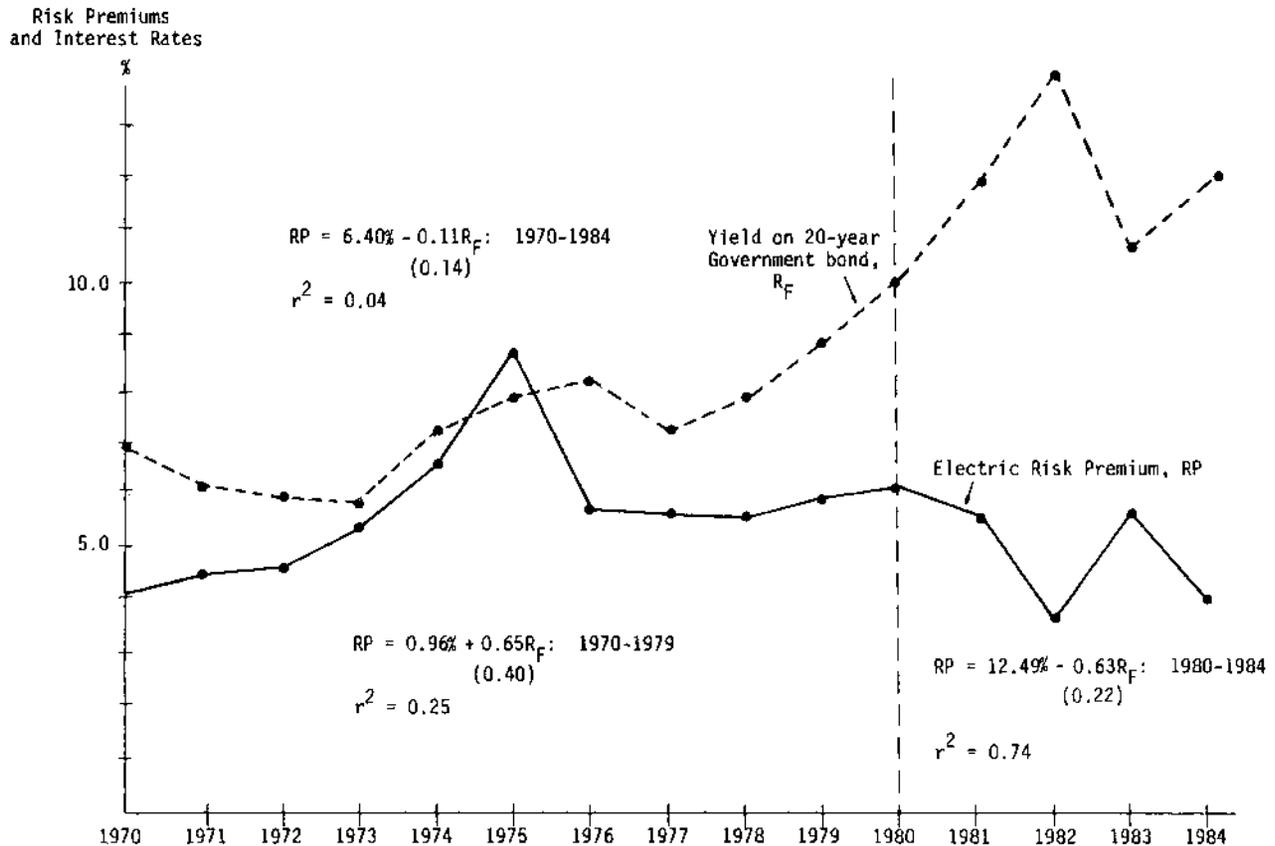
ROE and for the retention rate (b) in the terminal year, n , so we can forecast the long-term growth rate as $g_n = b(\text{ROE})$. With all the values in Equation (4) specified except k , we can solve for k , which is the DCF rate of return that would result if the Value Line forecasts were met, and, hence, the DCF rate of return implied in the Value Line forecast.⁷

Having estimated a k value for each of the electric and industrial companies, we averaged them (using market-value weights) to obtain a k value for each group, after which we subtracted R_F (taken as the December 31 yield on twenty-year constant maturity Treasury bonds) to obtain the estimated risk premiums shown in Exhibit 2. The premiums for the electrics are plotted in Exhibit 3, along with interest rates. The following points are worthy of note:

1. Risk premiums fluctuate over time. As we shall see in the next section, fluctuations are even wider when measured on a monthly basis.
2. The last column of Exhibit 2 shows that risk premi-

⁷Value Line actually makes an explicit price forecast for each stock, and one could use this price, along with the forecasted dividends, to develop an expected rate of return. However, Value Line's forecasted stock price builds in a forecasted change in k . Therefore, the forecasted price is inappropriate for use in estimating current values of k .

Exhibit 3. Equity Risk Premiums for Electric Utilities and Yields on 20-Year Government Bonds, 1970-1984*



*Standard errors of the coefficients are shown in parentheses below the coefficients.

ums for the utilities increased relative to those for the industrials from the mid-1960s to the mid-1970s. Subsequently, the perceived riskiness of the two groups has, on average, been about the same.

3. Exhibit 3 shows that, from 1970 through 1979, utility risk premiums tended to have a positive association with interest rates: when interest rates rose, so did risk premiums, and vice versa. However, beginning in 1980, an inverse relationship appeared: rising interest rates led to declining risk premiums. We shall discuss this situation further in the next section.

Monthly Data and Results, 1980-1984

In early 1980, we began calculating risk premiums on a monthly basis. At that time, our only source of analysts' forecasts was Value Line, but beginning in 1981 we also obtained Merrill Lynch and Salomon Brothers' data, and then, in mid-1983, we obtained

IBES data. Because our focus was on utilities, we restricted our monthly analysis to that group.

Our 1980-1984 monthly risk premium data, along with Treasury bond yields, are shown in Exhibits 4 and 5 and plotted in Exhibits 6, 7, and 8. Here are some comments on these Exhibits:

1. Risk premiums, like interest rates and stock prices, are volatile. Our data indicate that it would not be appropriate to estimate the cost of equity by adding the current cost of debt to a risk premium that had been estimated in the past. Current risk premiums should be matched with current interest rates.
2. Exhibit 6 confirms the 1980-1984 section of Exhibit 3 in that it shows a strong inverse relationship between interest rates and risk premiums; we shall discuss shortly why this relationship holds.
3. Exhibit 7 shows that while risk premiums based on Value Line, Merrill Lynch, and Salomon Brothers

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Exhibit 4. Estimated Monthly Risk Premiums for Electric Utilities Using Analysts' Growth Forecasts, January 1980–June 1984

Beginning of Month	Value Line	Merrill Lynch	Salomon Brothers	Average Premiums	20-Year Treasury Bond Yield, Constant Maturity Series	Beginning of Month	Value Line	Merrill Lynch	Salomon Brothers	Average Premiums	20-Year Treasury Bond Yield, Constant Maturity Series
Jan 1980	6.21%	NA	NA	6.21%	10.18%	Apr 1982	3.49%	3.61%	4.29%	3.80%	13.69%
Feb 1980	5.77%	NA	NA	5.77%	10.86%	May 1982	3.08%	4.25%	3.91%	3.75%	13.47%
Mar 1980	4.73%	NA	NA	4.73%	12.59%	Jun 1982	3.16%	4.51%	4.72%	4.13%	13.53%
Apr 1980	5.02%	NA	NA	5.02%	12.71%	Jul 1982	2.57%	4.21%	4.21%	3.66%	14.48%
May 1980	4.73%	NA	NA	4.73%	11.04%	Aug 1982	4.33%	4.83%	5.27%	4.81%	13.69%
Jun 1980	5.09%	NA	NA	5.09%	10.37%	Sep 1982	4.08%	5.14%	5.58%	4.93%	12.40%
Jul 1980	5.41%	NA	NA	5.41%	9.86%	Oct 1982	5.35%	5.24%	6.34%	5.64%	11.95%
Aug 1980	5.72%	NA	NA	5.72%	10.29%	Nov 1982	5.67%	5.95%	6.91%	6.18%	10.97%
Sep 1980	5.16%	NA	NA	5.16%	11.41%	Dec 1982	6.31%	6.71%	7.45%	6.82%	10.52%
Oct 1980	5.62%	NA	NA	5.62%	11.75%	Annual Avg.	4.00%	4.54%	5.01%	4.52%	13.09%
Nov 1980	5.09%	NA	NA	5.09%	12.33%	Jan 1983	5.64%	6.04%	6.81%	6.16%	10.66%
Dec 1980	5.65%	NA	NA	5.65%	12.37%	Feb 1983	4.68%	5.99%	6.10%	5.59%	11.01%
Annual Avg.	5.35%			5.35%	11.31%	Mar 1983	4.99%	6.89%	6.43%	6.10%	10.71%
Jan 1981	5.62%	4.76%	5.63%	5.34%	11.99%	Apr 1983	4.75%	5.82%	6.31%	5.63%	10.84%
Feb 1981	4.82%	4.87%	5.16%	4.95%	12.48%	May 1983	4.50%	6.41%	6.24%	5.72%	10.57%
Mar 1981	4.70%	3.73%	4.97%	4.47%	13.10%	Jun 1983	4.29%	5.21%	6.16%	5.22%	10.90%
Apr 1981	4.24%	3.23%	4.52%	4.00%	13.11%	Jul 1983	4.78%	5.72%	6.42%	5.64%	11.12%
May 1981	3.54%	3.24%	4.24%	3.67%	13.51%	Aug 1983	3.89%	4.74%	5.41%	4.68%	11.78%
Jun 1981	3.57%	4.04%	4.27%	3.96%	13.39%	Sep 1983	4.07%	4.90%	5.57%	4.85%	11.71%
Jul 1981	3.61%	3.63%	4.16%	3.80%	13.32%	Oct 1983	3.79%	4.64%	5.38%	4.60%	11.64%
Aug 1981	3.17%	3.05%	3.04%	3.09%	14.23%	Nov 1983	2.84%	3.77%	4.46%	3.69%	11.90%
Sep 1981	2.11%	2.24%	2.35%	2.23%	14.99%	Dec 1983	3.36%	4.27%	5.00%	4.21%	11.83%
Oct 1981	2.83%	2.64%	3.24%	2.90%	14.93%	Annual Avg.	4.30%	5.37%	5.86%	5.17%	11.22%
Nov 1981	2.08%	2.49%	3.03%	2.53%	15.27%	Jan 1984	4.06%	5.04%	5.65%	4.92%	11.97%
Dec 1981	3.72%	3.45%	4.24%	3.80%	13.12%	Feb 1984	4.25%	5.37%	5.96%	5.19%	11.76%
Annual Avg.	3.67%	3.45%	4.07%	3.73%	13.62%	Mar 1984	4.73%	6.05%	6.38%	5.72%	12.12%
Jan 1982	3.70%	3.37%	4.04%	3.70%	14.00%	Apr 1984	4.78%	5.33%	6.32%	5.48%	12.51%
Feb 1982	3.05%	3.37%	3.70%	3.37%	14.37%	May 1984	4.36%	5.30%	6.42%	5.36%	12.78%
Mar 1982	3.15%	3.28%	3.75%	3.39%	13.96%	Jun 1984	3.54%	4.00%	5.63%	4.39%	13.60%

Exhibit 5. Monthly Risk Premiums Based on IBES Data

Beginning of Month	Average of Merrill Lynch, Salomon Brothers, and Value Line Premiums for Dow Jones Electrics	IBES Premiums for Dow Jones Electrics	IBES Premiums for Entire Electric Industry	Beginning of Month	Average of Merrill Lynch, Salomon Brothers, and Value Line Premiums for Dow Jones Electrics	IBES Premiums for Dow Jones Electrics	IBES Premiums for Entire Electric Industry
Aug 1983	4.68%	4.10%	4.16%	Feb 1984	5.19%	5.00%	4.36%
Sep 1983	4.85%	4.43%	4.27%	Mar 1984	5.72%	5.35%	4.45%
Oct 1983	4.60%	4.31%	3.90%	Apr 1984	5.48%	5.33%	4.23%
Nov 1983	3.69%	3.36%	3.36%	May 1984	5.36%	5.26%	4.30%
Dec 1983	4.21%	3.86%	3.54%	Jun 1984	4.39%	4.47%	3.40%
Jan 1984	4.92%	4.68%	4.18%	Average Premiums	4.83%	4.56%	4.01%

Exhibit 6. Utility Risk Premiums and Interest Rates, 1980-1984

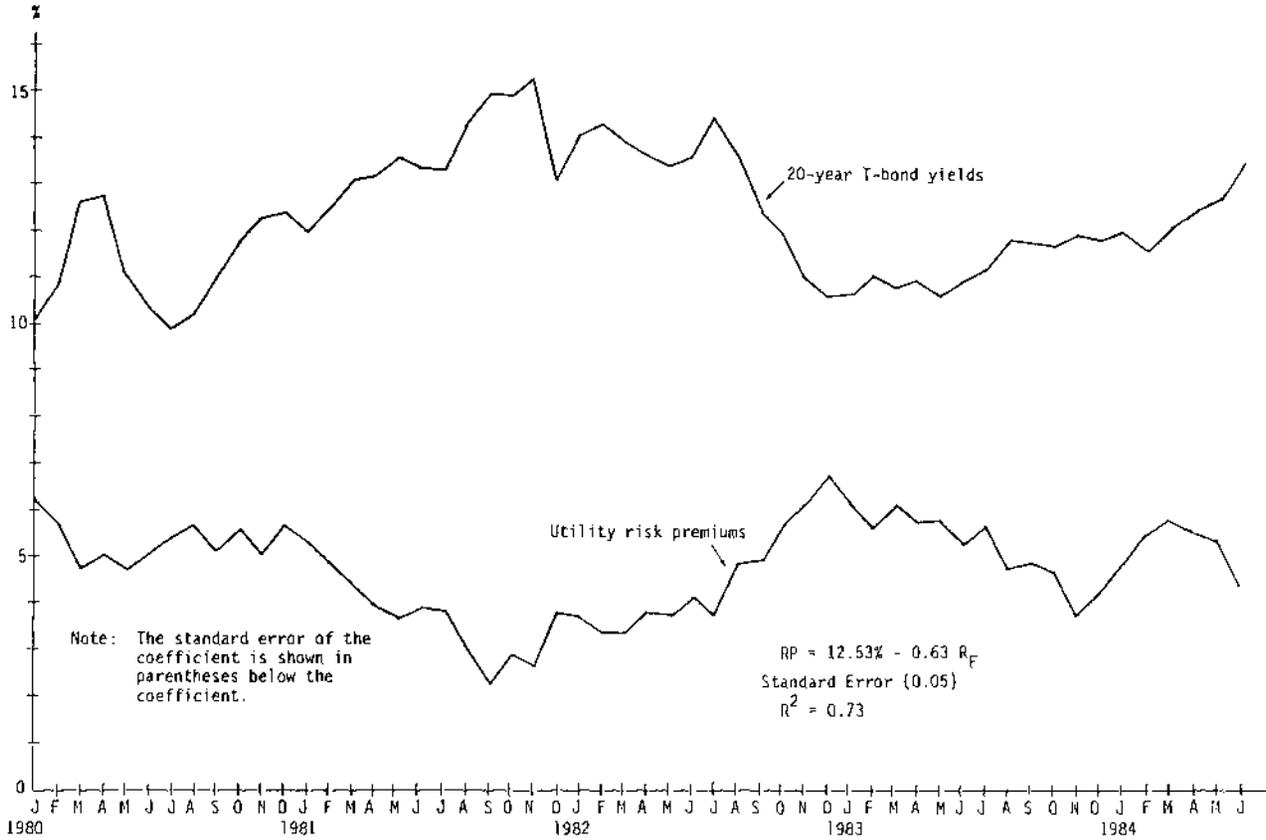


Exhibit 7. Monthly Risk Premiums, Electric Utilities, 1981-1984 (to Date)

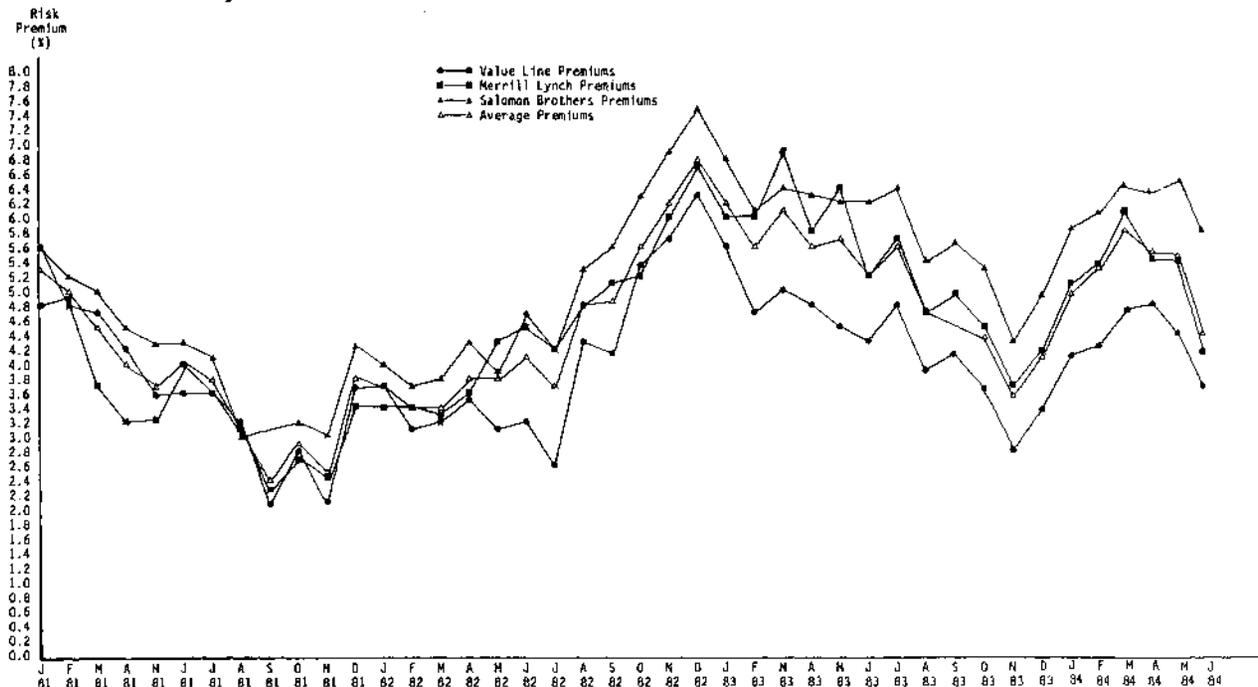
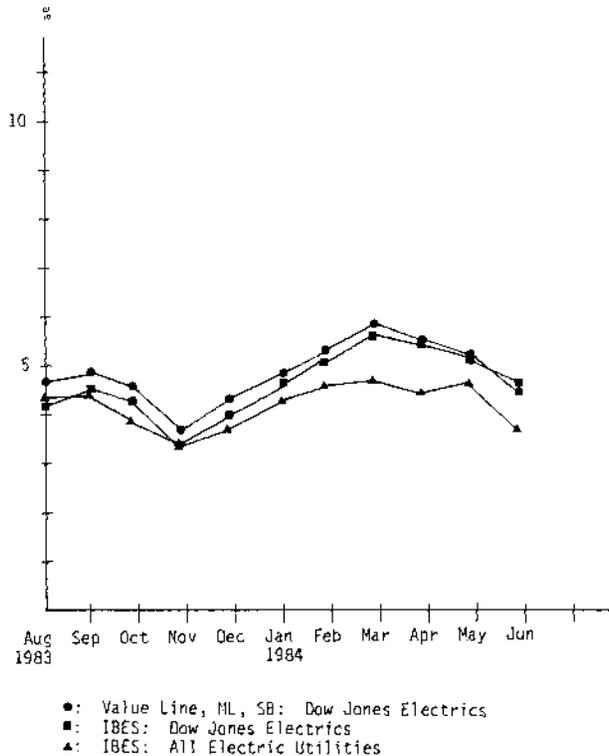


Exhibit 8. Comparative Risk Premium Data



do differ, the differences are not large given the nature of the estimates, and the premiums follow one another closely over time. Since all of the analysts are examining essentially the same data and since utility companies are not competitive with one another, and hence have relatively few secrets, the similarity among the analysts' forecasts is not surprising.

- The IBES data, presented in Exhibit 5 and plotted in Exhibit 8, contain too few observations to enable us to draw strong conclusions, but (i) the Dow Jones Electrics risk premiums based on our three-analyst data have averaged 27 basis points above premiums based on the larger group of analysts surveyed by IBES and (ii) the premiums on the 11 Dow Jones Electrics have averaged 54 basis points higher than premiums for the entire utility industry followed by IBES. Given the variability in the data, we are, at this point, inclined to attribute these differences to random fluctuations, but as more data become available, it may turn out that the differences are statistically significant. In particular, the 11 electric utilities included in the Dow

Jones Utility Index all have large nuclear investments, and this may cause them to be regarded as riskier than the industry average, which includes both nuclear and non-nuclear companies.

Tests of the Reasonableness of the Risk Premium Estimates

So far our claims to the reasonableness of our risk-premium estimates have been based on the reasonableness of our variable measures, particularly the measures of expected dividend growth rates. Essentially, we have argued that since there is strong evidence in the literature in support of analysts' forecasts, risk premiums based on these forecasts are reasonable. In the spirit of positive economics, however, it is also important to demonstrate the reasonableness of our results more directly.

It is theoretically possible to test for the validity of the risk-premium estimates in a CAPM framework. In a cross-sectional estimate of the CAPM equation,

$$(k - R_F)_i = \alpha_0 + \alpha_1 \beta_i + u_i, \quad (5)$$

we would expect

$$\hat{\alpha}_0 = 0 \text{ and } \hat{\alpha}_1 = k_M - R_F = \text{Market risk premium.}$$

This test, of course, would be a joint test of both the CAPM and the reasonableness of our risk-premium estimates. There is a great deal of evidence that questions the empirical validity of the CAPM, especially when applied to regulated utilities. Under these conditions, it is obvious that no unambiguous conclusion can be drawn regarding the efficacy of the premium estimates from such a test.⁸

A simpler and less ambiguous test is to show that the risk premiums are higher for lower rated firms than for higher rated firms. Using 1984 data, we classified the

⁸We carried out the test on a monthly basis for 1984 and found positive but statistically insignificant coefficients. A typical result (for April 1984) follows:

$$(k - R_F)_i = 3.1675 + 1.8031 \beta_i$$

(0.91) (1.44)

The figures in parentheses are standard errors. Utility risk premiums do increase with betas, but the intercept term is not zero as the CAPM would predict, and α_1 is both less than the predicted value and not statistically significant. Again, the observation that the coefficients do not conform to CAPM predictions could be as much a problem with CAPM specification for utilities as with the risk premium estimates.

A similar test was carried out by Friend, Westerfield, and Granito [9]. They tested the CAPM using expectational (survey) data rather than *ex post* holding period returns. They actually found their coefficient of β_i to be negative in all their cross-sectional tests.

Exhibit 9. Relationship between Risk Premiums and Bond Ratings, 1984^{*}

Month	Aaa/AA	AA	Aa/A	A	A/BBB	BBB	Below BBB
January [†]	—	2.61%	3.06%	3.70%	5.07%	4.90%	9.45%
February	2.98%	3.17%	3.36%	4.03%	5.26%	5.14%	7.97%
March	2.34%	3.46%	3.29%	4.06%	5.43%	5.02%	8.28%
April	2.37%	3.03%	3.29%	3.88%	5.29%	4.97%	6.96%
May	2.00%	2.48%	3.42%	3.72%	4.72%	6.64%	8.81%
June	0.72%	2.17%	2.46%	3.16%	3.76%	5.00%	5.58%
Average	2.08%	2.82%	3.15%	3.76%	4.92%	5.28%	7.84%

^{*}The risk premiums are based on IBES data for the electric utilities followed by both IBES and Salomon Brothers. The number of electric utilities followed by both firms varies from month to month. For the period between January and June 1984, the number of electric utilities followed by both firms ranged from 96 to 99 utilities.

[†]In January, there were no Aaa/AA companies. Subsequently, four utilities were upgraded to Aaa/AA.

utility industry into risk groups based on bond ratings. For each rating group, we estimated the average risk premium. The results, presented in Exhibit 9, clearly show that the lower the bond rating, the higher the risk premiums. Our premium estimates therefore would appear to pass this simple test of reasonableness.

Risk Premiums and Interest Rates

Traditionally, stocks have been regarded as being riskier than bonds because bondholders have a prior claim on earnings and assets. That is, stockholders stand at the end of the line and receive income and/or assets only after the claims of bondholders have been satisfied. However, if interest rates fluctuate, then the holders of long-term bonds can suffer losses (either realized or in an opportunity cost sense) even though they receive all contractually due payments. Therefore, if investors' worries about "interest rate risk" versus "earning power risk" vary over time, then perceived risk differentials between stocks and bonds, and hence risk premiums, will also vary.

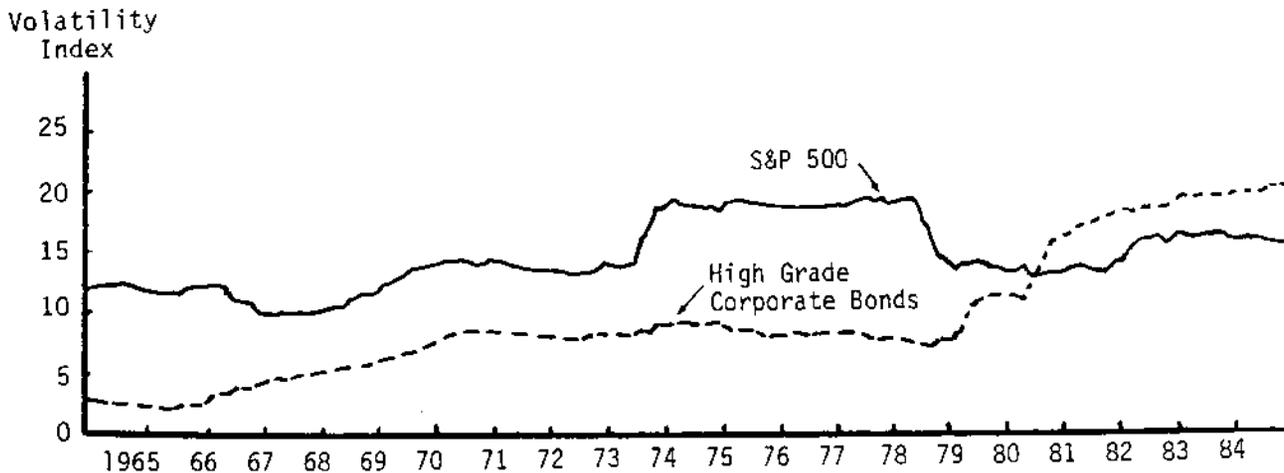
Any number of events could occur to cause the perceived riskiness of stocks versus bonds to change, but probably the most pervasive factor, over the 1966–1984 period, is related to inflation. Inflationary expectations are, of course, reflected in interest rates. Therefore, one might expect to find a relationship between risk premiums and interest rates. As we noted in our discussion of Exhibit 3, risk premiums were positively correlated with interest rates from 1966 through 1979, but, beginning in 1980, the relationship turned negative. A possible explanation for this change is given next.

1966–1979 Period. During this period, inflation heated up, fuel prices soared, environmental problems

surfaced, and demand for electricity slowed even as expensive new generating units were nearing completion. These cost increases required offsetting rate hikes to maintain profit levels. However, political pressure, combined with administrative procedures that were not designed to deal with a volatile economic environment, led to long periods of "regulatory lag" that caused utilities' earned ROEs to decline in absolute terms and to fall far below the cost of equity. These factors combined to cause utility stockholders to experience huge losses: S&P's Electric Index dropped from a mid-1960s high of 60.90 to a mid-1970s low of 20.41, a decrease of 66.5%. Industrial stocks also suffered losses during this period, but, on average, they were only one third as severe as the utilities' losses. Similarly, investors in long-term bonds had losses, but bond losses were less than half those of utility stocks. Note also that, during this period, (i) bond investors were able to reinvest coupons and maturity payments at rising rates, whereas the earned returns on equity did not rise, and (ii) utilities were providing a rising share of their operating income to debtholders versus stockholders (interest expense/book value of debt was rising, while net income/common equity was declining). This led to a widespread belief that utility commissions would provide enough revenues to keep utilities from going bankrupt (barring a disaster), and hence to protect the bondholders, but that they would not necessarily provide enough revenues either to permit the expected rate of dividend growth to occur or, perhaps, even to allow the dividend to be maintained.

Because of these experiences, investors came to regard inflation as having a more negative effect on utility stocks than on bonds. Therefore, when fears of inflation increased, utilities' measured risk premiums

Exhibit 10. Relative Volatility* of Stocks and Bonds, 1965–1984



*Volatility is measured as the standard deviation of total returns over the last 5 years.
 Source: Merrill Lynch, *Quantitative Analysis*, May/June 1984.

also increased. A regression over the period 1966–1979, using our Exhibit 2 data, produced this result:

$$RP = 0.30\% + 0.73 R_{Ft}; \quad r^2 = 0.48. \\ (0.22)$$

This indicates that a one percentage point increase in the Treasury bond rate produced, on average, a 0.73 percentage point increase in the risk premium, and hence a $1.00 + 0.73 = 1.73$ percentage point increase in the cost of equity for utilities.

1980–1984 Period. The situation changed dramatically in 1980 and thereafter. Except for a few companies with nuclear construction problems, the utilities' financial situations stabilized in the early 1980s, and then improved significantly from 1982 to 1984. Both the companies and their regulators were learning to live with inflation; many construction programs were completed; regulatory lags were shortened; and in general the situation was much better for utility equity investors. In the meantime, over most of the 1980–1984 period, interest rates and bond prices fluctuated violently, both in an absolute sense and relative to common stocks. Exhibit 10 shows the volatility of corporate bonds very clearly. Over most of the eighteen-year period, stock returns were much more volatile than returns on bonds. However, that situation changed in October 1979, when the Fed began to focus

on the money supply rather than on interest rates.⁴

In the 1980–1984 period, an increase in inflationary expectations has had a more adverse effect on bonds than on utility stocks. If the expected rate of inflation increases, then interest rates *will increase* and bond prices *will fall*. Thus, uncertainty about inflation translates directly into risk in the bond markets. The effect of inflation on stocks, including utility stocks, is less clear. If inflation increases, then utilities should, in theory, be able to obtain rate increases that would offset increases in operating costs and also compensate for the higher cost of equity. Thus, with "proper" regulation, utility stocks would provide a better hedge against unanticipated inflation than would bonds. This hedge did not work at all well during the 1966–1979 period, because inflation-induced increases in operating and capital costs were not offset by timely rate increases. However, as noted earlier, both the utilities and their regulators seem to have learned to live better with inflation during the 1980s.

Since inflation is today regarded as a major investment risk, and since utility stocks now seem to provide a better hedge against unanticipated inflation than do

⁴Because the standard deviations in Exhibit 10 are based on the last five years of data, even if bond returns stabilize, as they did beginning in 1982, their reported volatility will remain high for several more years. Thus, Exhibit 10 gives a rough indication of the current relative riskiness of stocks versus bonds, but the measure is by no means precise or necessarily indicative of future expectations.

bonds, the interest-rate risk inherent in bonds offsets, to a greater extent than was true earlier, the higher operating risk that is inherent in equities. Therefore, when inflationary fears rise, the perceived riskiness of bonds rises, helping to push up interest rates. However, since investors are today less concerned about inflation's impact on utility stocks than on bonds, the utilities' cost of equity does not rise as much as that of debt, so the observed risk premium tends to fall.

For the 1980–1984 period, we found the following relationship (see Exhibit 6):

$$RP = 12.53\% - 0.63 R_{pi}; \quad r^2 = 0.73.$$

(0.05)

Thus, a one percentage point increase in the T-bond rate, on average, caused the risk premium to fall by 0.63%, and hence it led to a $1.00 - 0.63 = 0.37$ percentage point increase in the cost of equity to an average utility. This contrasts sharply with the pre-1980 period, when a one percentage point increase in interest rates led, on average, to a 1.73 percentage point increase in the cost of equity.

Summary and Implications

We began by reviewing a number of earlier studies. From them, we concluded that, for cost of capital estimation purposes, risk premiums must be based on expectations, not on past realized holding period returns. Next, we noted that expectational risk premiums may be estimated either from surveys, such as the ones Charles Benore has conducted, or by use of DCF techniques. Further, we found that, although growth rates for use in the DCF model can be either developed from time-series data or obtained from security analysts, analysts' growth forecasts are more reflective of investors' views, and, hence, in our opinion are preferable for use in risk-premium studies.

Using analysts' growth rates and the DCF model, we estimated risk premiums over several different periods. From 1966 to 1984, risk premiums for both electric utilities and industrial stocks varied widely from year to year. Also, during the first half of the period, the utilities had smaller risk premiums than the industrials, but after the mid-1970s, the risk premiums for the two groups were, on average, about equal.

The effects of changing interest rates on risk premiums shifted dramatically in 1980, at least for the utilities. From 1965 through 1979, inflation generally had a more severe adverse effect on utility stocks than on bonds, and, as a result, an increase in inflationary expectations, as reflected in interest rates, caused an

increase in equity risk premiums. However, in 1980 and thereafter, rising inflation and interest rates increased the perceived riskiness of bonds more than that of utility equities, so the relationship between interest rates and utility risk premiums shifted from positive to negative. Earlier, a 1.00 percentage point increase in interest rates had led, on average, to a 1.73% increase in the utilities' cost of equity, but after 1980 a 1.00 percentage point increase in the cost of debt was associated with an increase of only 0.37% in the cost of equity.

Our study also has implications for the use of the CAPM to estimate the cost of equity for utilities. The CAPM studies that we have seen typically use either Ibbotson-Sinquefeld or similar historic holding period returns as the basis for estimating the market risk premium. Such usage implicitly assumes (i) that *ex post* returns data can be used to proxy *ex ante* expectations and (ii) that the market risk premium is relatively stable over time. Our analysis suggests that neither of these assumptions is correct; at least for utility stocks, *ex post* returns data do not appear to be reflective of *ex ante* expectations, and risk premiums are volatile, not stable.

Unstable risk premiums also make us question the FERC and FCC proposals to estimate a risk premium for the utilities every two years and then to add this premium to a current Treasury bond rate to determine a utility's cost of equity. Administratively, this proposal would be easy to handle, but risk premiums are simply too volatile to be left in place for two years.

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Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts

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■ One of the most widely used concepts in finance is that shareholders require a risk premium over bond yields to bear the additional risks of equity investments. While models such as the two-parameter capital asset pricing model (CAPM) or arbitrage pricing theory offer explicit methods for varying risk premia across securities, the models are invariably linked to some underlying market (or factor-specific) risk premium. Unfortunately, the theoretical models provide limited practical advice on establishing empirical estimates of such a benchmark market risk premium. As a result, the typical advice to practitioners is to estimate the market risk premium based on historical realizations of share and bond returns (see Brealey and Myers [3]).

In this paper, we present estimates of shareholder required rates of return and risk premia which are derived

using forward-looking analysts' growth forecasts. We update, through 1991, earlier work which, due to data availability, was restricted to the period 1982-1984 (Harris [12]). Using stronger tests, we also reexamine the efficacy of using such an expectational approach as an alternative to the use of historical averages. Using the S&P 500 as a proxy for the market portfolio, we find an average market risk premium (1982-1991) of 6.47% above yields on long-term U.S. government bonds and 5.13% above yields on corporate bonds. We also find that required returns for individual stocks vary directly with their risk (as proxied by beta) and that the market risk premium varies over time. In particular, the equity market premium over government bond yields is higher in low interest rate environments and when there is a larger spread between corporate and government bond yields. These findings show that, in addition to fitting the theoretical requirement of being forward-looking, the utilization of analysts' forecasts in estimating return requirements provides reasonable empirical results that can be useful in practical applications.

Section I provides background on the estimation of equity required returns and a brief discussion of related

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literature on financial analysts' forecasts (FAF). In Section II, models and data are discussed. Following a comparison of the results to historical risk premia, the estimates are subjected to economic tests of both their time-series and cross-sectional characteristics in Section III. Finally, conclusions are offered in Section IV.

I. Background and Literature Review

In establishing economic criteria for resource allocation, it is often convenient to use the notion of a shareholder's required rate of return. Such a rate (k) is the minimum level of expected return necessary to compensate the investor for bearing risks and receiving dollars in the future rather than in the present. In general, k will depend on returns available on alternative investments (e.g., bonds or other equities) and the riskiness of the stock. To isolate the effects of risk, it is useful to work in terms of a risk premium (rp), defined as

$$rp = k - i, \quad (1)$$

where i = required return for a zero risk investment.¹

Lacking a superior alternative, investigators often use averages of historical realizations to estimate a benchmark "market" risk premium which then may be adjusted for the relative risk of individual stocks (e.g., using the CAPM or a variant). The historical studies of Ibbotson Associates [13] have been used frequently to implement this approach.² This historical approach requires the assumptions that past realizations are a good surrogate for future expectations and, as typically applied, that risk premia are constant over time. Carleton and Lakonishok [5] demonstrate empirically some of the problems with such historical premia when they are disaggregated for different time periods or groups of firms.

As an alternative to historical estimates, the current paper derives estimates of k , and hence, implied values of rp , using publicly available expectational data. This expectational approach employs the dividend growth model (hereafter referred to as the discounted cash flow or DCF model) in which a consensus measure of financial analysts' forecasts (FAF) of earnings is used as a proxy for investor expectations. Earlier works by Malkiel [17], Brigham,

Vinson, and Shome [4], and Harris [12] have used FAF in DCF models, and this approach has been employed in regulatory settings (see Harris [12]) and suggested by consultants as an alternative to use of historical data (e.g., Ibbotson Associates [13, pp. 127, 128]). Unfortunately, the published studies use data extending to 1984 at the latest. Our paper draws on this earlier work but extends it through 1991.³ Our work is closest to that done by Harris [12], who reviews literature showing a strong link between equity prices and FAF and supporting the use of FAF as a proxy for investor expectations. Using data from 1982 to 1984, Harris' results suggest that this expectational approach to estimating equity risk premia is an encouraging alternative to the use of historical averages. He also demonstrates that such risk premia vary both cross-sectionally with the riskiness of individual stocks and over time with financial market conditions.

II. Models and Data

A. Model for Estimation

The simplest and most commonly used version of the DCF model to estimate shareholders' required rate of return, k , is shown in Equation (2):

$$k = \left(\frac{D_1}{P_0} \right) + g, \quad (2)$$

where D_1 = dividend per share expected to be received at time one, P_0 = current price per share (time 0), and g = expected growth rate in dividends per share. The limitations of this model are well known, and it is straightforward to derive expressions for k based on more general specifications of the DCF model.⁴ The primary difficulty in using the DCF model is obtaining an estimate of g , since it should reflect market expectations of future perfor-

³See Harris [12] for a discussion of the earlier work and a detailed discussion of the approach employed here.

⁴As stated, Equation (2) requires expectations of either an infinite horizon of dividend growth at a rate g or a finite horizon of dividend growth at rate g and special assumptions about the price of the stock at the end of that horizon. Essentially, the assumption must ensure that the stock price grows at a compound rate of g over the finite horizon. One could alternatively estimate a nonconstant growth model, although the proxies for multistage growth rates are even more difficult to obtain than single stage growth estimates. Marston, Harris, and Crawford [19] examine publicly available data from 1982-1985 and find that plausible measures of risk are more closely related to expected returns derived from a constant growth model than to those derived from multistage growth models. These findings illustrate empirical difficulties in finding empirical proxies for multistage growth models for large samples.

¹Theoretically, i is a risk-free rate, though empirically its proxy (e.g., yield to maturity on a government bond) is only a "least risk" alternative that is itself subject to risk. In this development, the effects of tax codes on required returns are ignored.

²Many leading texts in financial management use such historical risk premia to estimate a market return. See, for example, Brealey and Myers [3]. Often a market risk premium is adjusted for the observed relative risk of a stock.

mance. Without a ready source for measuring such expectations, application of the DCF model is fraught with difficulties. This paper uses published FAF of long-run growth in earnings as a proxy for g .

B. Data

FAF for this research come from IBES (Institutional Broker's Estimate System), which is a product of Lynch, Jones, and Ryan, a major brokerage firm.⁵ Representative of industry practice, IBES contains estimates of (i) EPS for the upcoming fiscal years (up to five separate years), and (ii) a five-year growth rate in EPS. Each item is available at monthly intervals.

The mean value of individual analysts' forecasts of five-year growth rate in EPS will be used as a proxy for g in the DCF model.⁶ The five-year horizon is the longest horizon over which such forecasts are available from IBES and often is the longest horizon used by analysts. IBES requests "normalized" five-year growth rates from analysts in order to remove short-term distortions that might stem from using an unusually high or low earnings year as a base.

Dividend and other firm-specific information come from COMPUSTAT. Interest rates (both government and corporate) are gathered from Federal Reserve Bulletins and *Moody's Bond Record*. Exhibit 1 describes key variables used in the study. Data collected cover all dividend paying stocks in the Standard & Poor's 500 stock (S&P 500) index, plus approximately 100 additional stocks of regulated companies. Since five-year growth rates are first available from IBES beginning in 1982, the analysis covers the 113-month period from January 1982 to May 1991.

III. Risk Premia and Required Rates of Return

A. Construction of Risk Premia

For each month, a "market" required rate of return is calculated using each dividend paying stock in the S&P 500 index for which data are available. The DCF model in

⁵Harris [12] provides a discussion of IBES data and its limitations. In more recent years, IBES has begun collecting forecasts for each of the next five years. Since this work was completed, the FAF used here have become available from IBES Inc., now a subsidiary of CitiBank.

⁶While the model calls for expected growth in dividends, no source of data on such projections is readily available. In addition, in the long run, dividend growth is sustainable only via growth in earnings. As long as payout ratios are not expected to change, the two growth rates will be the same.

Exhibit 1. Variable Definitions

k	=	Equity required rate of return.
P_0	=	Average daily price per share.
D_1	=	Expected dividend per share measured as current indicated annual dividend from COMPUSTAT multiplied by $(1 + g)$. ^a
g	=	Average financial analysts' forecast of five-year growth rate in earnings per share (from IBES).
i_{tt}	=	Yield to maturity on long-term U.S. government obligations (source: Federal Reserve Bulletin, constant maturity series).
i_c	=	Yield to maturity on long-term corporate bonds: Moody's average. ^b
rp	=	Equity risk premium calculated as $rp = k - i$.
β	=	beta, calculated from CRSP monthly data over 60 months.

Notes:

^aSee footnote 7 for a discussion of the $(1 + g)$ adjustment.

^bThe average corporate bond yield across bond rating categories as reported by Moody's. See *Moody's Bond Survey* for a brief description and the latest published list of bonds included in the bond rating categories.

Equation (2) is applied to each stock and the results weighted by market value of equity to produce the market required return.⁷ The return is converted to a risk premium

⁷The construction of D_1 is controversial since dividends are paid quarterly and may be expected to change during the year; whereas, Equation (2), as is typical, is being applied to annual data. Both the quarterly payment of dividends (due to investors' reinvestment income before year's end, see Linke and Zumwalt [15]) and any growth during the year require an upward adjustment of the current annual rate of dividends to construct D_1 . If quarterly dividends grow at a constant rate, both factors could be accommodated straightforwardly by applying Equation (2) to quarterly data with a quarterly growth rate and then annualizing the estimated quarterly required return. Unfortunately, with lumpy changes in dividends, the precise nature of the adjustment depends on both an individual company's pattern of growth during the calendar year and an individual company's required return (and hence reinvestment income in the risk class).

In this work, D_1 is calculated as $D_0(1 + g)$. The full g adjustment is a crude approximation to adjust for both growth and reinvestment income. For example, if one expected dividends to have been raised, on average, six months ago, a "1/2 g " adjustment would allow for growth, and the remaining "1/2 g " would be justified on the basis of reinvestment income. Any precise accounting for both reinvestment income and growth would require tracking each company's dividend change history and making explicit judgments about the quarter of the next change. Since no organized "market" forecast of such a detailed nature exists, such a procedure is not possible. To get a feel for the magnitudes involved, during the sample period the dividend yield (D_1/P_0) and growth (market value weighted) for the S&P 500 were typically 4% to 6% and 11% to 13%, respectively. As a result, a "full g " adjustment on average increases the required return by 60 to 70 basis points (relative to no g adjustment).

Exhibit 2. Bond Market Yields, Equity Required Return, and Equity Risk Premium,^a 1982-1991

Year	Bond Market Yields ^b		Equity Market Required Return ^c	Equity Risk Premium	
	(1) U.S. Gov't	(2) Moody's Corporates	(3) S&P 500	U.S. Gov't (3) - (1)	Moody's Corporates (3) - (2)
1982	12.92	14.94	20.08	7.16	5.14
1983	11.34	12.78	17.89	6.55	5.11
1984	12.48	13.49	17.26	4.78	3.77
1985	10.97	12.05	16.32	5.37	4.28
1986	7.85	9.71	15.09	7.24	5.38
1987	8.58	9.84	14.71	6.13	4.86
1988	8.96	10.18	15.37	6.41	5.19
1989	8.46	9.66	15.06	6.60	5.40
1990	8.61	9.77	15.69	7.08	5.92
1991 ^d	8.21	9.41	15.61	7.40	6.20
Average ^e	9.84	11.18	16.31	6.47	5.13

Notes:

^aValues are averages of monthly figures in percent.

^bYields to maturity.

^cRequired return on value weighted S&P 500 index using Equation (1).

^dFigures for 1991 are through May.

^eMonths weighted equally.

over government bonds by subtracting i_{lt} , the yield to maturity on long-term government bonds. A risk premium over corporate bond yields is also constructed by subtracting i_c , the yield on long-term corporate bonds. Exhibit 2 reports the results by year (averages of monthly data).

The results are quite consistent with the patterns reported earlier (i.e., Harris [12]). The estimated risk premia in Exhibit 2 are positive, consistent with equity owners demanding additional rewards over and above returns on debt securities. The average expectational risk premium (1982 to 1991) over government bonds is 6.47%, only slightly higher than the 6.16% average for 1982 to 1984 reported earlier (Harris [12]). Furthermore, Exhibit 2 shows the estimated risk premia change over time, suggesting changes in the market's perception of the incremental risk of investing in equity rather than debt securities.

For comparison purposes, Exhibit 3 contains historical returns and risk premia. The average expectational risk premium reported in Exhibit 2 falls roughly midway between the arithmetic (7.5%) and geometric (5.7%) long-term differentials between returns on stocks and long-term government bonds. Note, however, that the expectational risk premia appear to change over time. In the following

sections, we examine the estimated risk premia to see if they vary cross-sectionally with the risk of individual stocks and over time with financial market conditions.

B. Cross-Sectional Tests

Earlier, Harris [12] conducted crude tests of whether expectational equity risk premia varied with risk proxied by bond ratings and the dispersion of analysts' forecasts and found that required returns increased with higher risk. Here we examine the link between these premia and beta, perhaps the most commonly used measure of risk for equities.⁸ In keeping with traditional work in this area, we adopt the methodology introduced by Fama and Macbeth [9] but replace realized returns with expected returns from Equation (2) as the variable to be explained. For this portion of our tests, we restrict our sample to 1982-1987

⁸For other efforts using expectational data in the context of the two-parameter CAPM, see Friend, Westerfield, and Granito [10], Cragg and Malkiel [7], Marston, Crawford, and Harris [19], Marston and Harris [20], and Linke, Kannan, Whitford, and Zumwalt [16]. For a more complete treatment of the subject, see Marston and Harris [20] from which we draw some of these results. Marston and Harris also investigate the role of unsystematic risk and the difference in estimates found when using expected versus realized returns.

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Exhibit 3. Average Historical Returns on Bonds, Stocks, Bills, and Inflation in the U.S., 1926-1989

Historical Return Realizations	Geometric	Arithmetic
Common stock	10.3%	12.4%
Long-term government bonds	4.6%	4.9%
Long-term corporate bonds	5.2%	5.5%
Treasury bills	3.6%	3.7%
Inflation rate	3.1%	3.2%

Source: Ibbotson Associates, Inc., *1990 Stocks, Bonds, Bills and Inflation*, 1990 Yearbook.

and in any month include firms that have at least three forecasts of earnings growth to reduce measurement error associated with individual forecasts.⁹ This restricted sample still consists of, on average, 399 firms for each of the 72 months (or 28,744 company months).

For a given company in a given month, beta is estimated via the market model (using ordinary least squares) on the prior 60 months of return data taken from CRSP. Beta estimates are updated monthly and are calculated against an equally weighted index of all NYSE securities. For each month, we aggregate firms into 20 portfolios (consisting of approximately 20 securities each). The advantage of grouped data is the reduction in potential measurement error inherent in independent variables at the company level. Portfolios are formed based on a ranking of beta estimated from a prior time period ($t = -61$ to $t = -120$). Portfolio expected returns and beta are calculated as the simple averages for the individual securities.

Using these data, we estimate the following model for each of the 72 months:

$$R_p = \alpha_0 + \alpha_1 \beta_p + u_p, \quad p = 1 \dots 20, \quad (3)$$

where:

- R_p = Expected return for portfolio p in the given month,
- β_p = Portfolio beta, estimated over 60 prior months, and
- u_p = A random error term with mean zero.

As a result of estimating regression (3) for each month, 72 estimates of each coefficient (α_0 and α_1) are obtained.

⁹Firms for which the standard deviation of individual FAF exceeded 20 in any month were excluded since we suspect some of these involve errors in data entry. This screen eliminated very few companies in any month. The 1982-1987 period was chosen due to the availability of data on betas.

Using realized returns as the dependent variable, the traditional approach (e.g., Fama and Macbeth [9]) is to assume that realized returns are a fair game. Given this assumption, the mean of the 72 values of each coefficient is an unbiased estimate of the mean over that same time period if one could have actually used expected returns as the dependent variable. Note that if expected returns are used as the dependent variable the fair-game assumption is not required. Making the additional assumption that the true value of the coefficient is constant over the 72 months, a test of whether the mean coefficient is different from zero is performed using a t -statistic where the denominator is the standard error of the 72 values of the coefficient. This is the technique employed by Fama and Macbeth [9]. If one assumes the CAPM is correct, the coefficient α_1 is an empirical estimate of the market risk premium, which should be positive.

To test the sensitivity of the results, we also repeat our procedures using individual security returns rather than portfolios. To account, at least in part, for differences in precision of coefficient estimates in different months we also report results in which monthly parameter estimates are weighted inversely by the standard error of the coefficient estimate rather than being weighted equally (following Chan, Hamao, and Lakonishok [6]).

Exhibit 4 shows that there is a significant positive link between expectational required returns and beta. For instance, in Panel A, the mean coefficient of 2.78 on beta is significantly different from zero at better than the 0.001 level ($t = 35.31$), and each of the 72 monthly coefficients going into this average is positive (as shown by that 100% positive figure). Using individual stock returns, the significant positive link between beta and expected return remains, though it is smaller in magnitude than for portfolios.¹⁰ Comparison of Panels A and B shows that the results are not sensitive to the weighting of monthly coefficients.

While the findings in Exhibit 4 suggest a strong positive link between beta and risk premia (a result often not supported when realized returns are used as a proxy for expectations; e.g., see Tinic and West [22]), the results do not support the predictions of a simple CAPM. In particular, the intercept is higher than a proxy for the risk-free rate over the sample period and the coefficient of beta is well below estimates of a market risk premium obtained from either expectational (Exhibit 2) or historical data (Exhibit

¹⁰The smaller coefficients on beta using individual stock portfolio returns are likely due in part to the higher measurement error in measuring individual stock versus portfolio betas.

Exhibit 4. Mean Values of Monthly Parameter Estimates for the Relationship Between Required Returns and Beta for Both Portfolios and Individual Securities (Figures in Parentheses are *t* Values and Percent Positive), 1982-1987

<i>Panel A. Equal Weighting^a</i>				
	Intercept	B	Adjusted R^2 ^c	F ^c
Portfolio returns	14.06 (54.02, 100)	2.78 (35.31, 100)	0.503	25.4
Security returns	14.77 (58.10, 100)	1.91 (16.50, 99)	0.080	39.0
<i>Panel B. Weighted by Standard Errors^b</i>				
Portfolio returns	13.86 (215.6, 100)	2.67 (35.80, 100)	0.503	25.4
Security returns	14.63 (398.9, 100)	1.92 (47.3, 99)	0.080	39.0

^aEqually weighted average of monthly parameters estimated using cross-sectional data for each of the 72 months, January 1982 - December 1987.

^bIn obtaining the reported means, estimates of the monthly intercept and slope coefficients are weighted inversely by the standard error of the estimate from the cross-sectional regression for that month.

^cValues are averages for the 72 monthly regressions.

3).¹¹ Nonetheless, the results show that the estimated risk premia conform to the general theoretical relationship between risk and required return that is expected when investors are risk-averse.

C. Time Series Tests — Changes in Market Risk Premia

A potential benefit of using ex ante risk premia is the estimation of changes in market risk premia over time. With changes in the economy and financial markets, equity investments may be perceived to change in risk. For instance, investor sentiment about future business conditions likely affects attitudes about the riskiness of equity investments compared to investments in the bond markets. Moreover, since bonds are risky investments themselves, equity risk premia (relative to bonds) could change due to changes in perceived riskiness of bonds, even if equities displayed no shifts in risk. For example, during the high interest rate period of the early 1980s, the high level of interest rate volatility made fixed income investments more risky holdings than they were in a world of relatively stable rates.

¹¹Estimation difficulties confound precise interpretation of the intercept as the risk-free rate and the coefficient on beta as the market risk premium (see Miller and Scholes [21], and Black, Jensen, and Scholes [2]). The higher than expected intercept and lower than expected slope coefficient on beta are consistent with the prior studies of Black, Jensen, and Scholes [2], and Fama and MacBeth [9] using historical returns. Such results are consistent with Black's [1] zero beta model, although alternative explanations for these findings exist as well (as noted by Black, Jensen, and Scholes [2]).

Studying changes in risk premia for utility stocks, Brigham, et al [4] conclude that, prior to 1980, utility risk premia increased with the level of interest rates, but that this pattern reversed thereafter, resulting in an inverse correlation between risk premia and interest rates. Studying risk premia for both utilities and the equity market generally, Harris [12] also reports that risk premia appear to change over time. Specifically, he finds that equity risk premia decreased with the level of government interest rates, increased with the increases in the spread between corporate and government bond yields, and increased with increases in the dispersion of analysts' forecasts. Harris' study is, however, restricted to the 36-month period, 1982 to 1984.

Exhibit 5 reports results of analyzing the relationship between equity risk premia, interest rates, and yield spreads between corporate and government bonds. Following Harris [12], these bond yield spreads are used as a time series proxy for equity risk. As the perceived riskiness of corporate activity increases, the difference between yields on corporate bonds and government bonds should increase. One would expect the sources of increased riskiness to corporate bonds to also increase risks to shareholders. All regressions in Exhibit 5 are corrected for serial correlation.¹²

¹²Ordinary least squares regressions showed severe positive autocorrelation in many cases, with Durbin Watson statistics typically below one. Estimation used the Prais-Winsten method. See Johnston [14, pp. 321-325].

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Exhibit 5. Changes in Equity Risk Premia Over Time — Entries are Coefficient (*t*-value); Dependent Variable is Equity Risk Premium

Time period	Intercept	i_{it}	$i_c - i_{it}$	R^2
A. May 1991-1992 8	0.131 (19.82)	-0.651 (-11.16)		0.53
	0.092 (14.26)	-0.363 (-6.74)	0.666 (5.48)	0.54
B. 1982-1984	0.140 (8.15)	-0.637 (-5.00)		0.43
	0.064 (3.25)	-0.203 (-1.63)	1.549 (4.84)	0.60
C. 1985-1987	0.131 (7.73)	-0.739 (-9.67)		0.74
	0.110 (12.53)	-0.561 (-7.30)	0.317 (1.87)	0.77
D. 1988-1991	0.136 (16.23)	-0.793 (-8.29)		0.68
	0.130 (8.71)	-0.738 (-4.96)	0.098 (0.40)	0.68

Note: All variables are defined in Exhibit 1. Regressions were estimated using monthly data and were corrected for serial correlation using the Prais-Winsten method. For purposes of this regression, variables are expressed in decimal form, e.g., 14% = 0.14.

For the entire sample period, Panel A shows that risk premia are negatively related to the level of interest rates — as proxied by yields on government bonds, i_{it} . This negative relationship is also true for each of the subperiods displayed in Panels B through D. Such a negative relationship may result from increases in the perceived riskiness of investment in government debt at high levels of interest rates. A direct measure of uncertainty about investments in government bonds would be necessary to test this hypothesis directly.

For the entire 1982 to 1991 period, the addition of the yield spread risk proxy to the regressions dramatically lowers the magnitude of the coefficient on government bond yields, as can be seen by comparing Equations 1 and 2 of Panel A. Furthermore, the coefficient of the yield spread (0.666) is itself significantly positive. This pattern suggests that a reduction in the risk differential between investment in government bonds and in corporate activity is translated into a lower equity market risk premium. Further examination of Panels B through D, however, suggests that the yield spread variable is much more important in explaining changes in equity risk premia in the early portion of the 1980s than in the 1988 to 1991 period.

In summary, market equity risk premia change over time and appear inversely related to the level of government interest rates but positively related to the bond yield spread, which proxies for the incremental risk of investing in equities as opposed to government bonds.

IV. Conclusions

Shareholder required rates of return and risk premia are based on theories about investors' expectations for the future. In practice, however, risk premia are often estimated using averages of historical returns. This paper applies an alternate approach to estimating risk premia that employs publicly available expectational data. At least for the decade studied (1982 to 1991), the resultant average market equity risk premium over government bonds is comparable in magnitude to long-term differences (1926 to 1989) in historical returns between stocks and bonds. There is strong evidence, however, that market risk premia change over time and, as a result, use of a constant historical average risk premium is not likely to mirror changes in investor return requirements. The results also show that the expectational risk premia vary cross-sectionally with the relative risk (beta) of individual stocks.

The approach offers a straightforward and powerful aid in establishing required rates of return either for corporate investment decisions or in the regulatory arena. Since data are readily available on a wide range of equities, an investigator can analyze various proxy groups (e.g., portfolios of utility stocks) appropriate for a particular decision as well as analyze changes in equity return requirements over time.

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**NEW
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Roger A. Morin, PhD

**2006
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New Regulatory Finance

Any forward-looking cost of capital calculation already embodies tax effects since investors price securities on the basis of after-tax returns. Besides, a very large proportion of trading is conducted by tax-exempt financial institutions (pension funds, mutual funds, 401K, etc.) for whom tax issues are largely immaterial.

The existence of a negative risk premium is highly unlikely, as it is at serious odds with the basic tenets of finance, economics, and law. Using proper definitions for expected rates of return of equity and debt, the preponderance of the evidence indicates that the negative risk premium does not exist. Several risk premium studies cited in this chapter have found positive risk premiums well in excess of 5% over the last decade. Risk premiums do narrow during unusually turbulent and volatile interest rate environments, but then return to normal levels. They are most unlikely to ever become negative.

4.7 Risk Premium Determinants

Fundamentally, the primary determinant of expected returns is risk. To wit, the various paradigms of financial theory, including the Capital Asset Pricing Model and the Arbitrage Pricing Model covered in subsequent chapters, posit fundamental relationships between return and risk. There are also secondary influences on the relative magnitude of the risk premium, however, including the level of interest rates, default risk, and taxes.

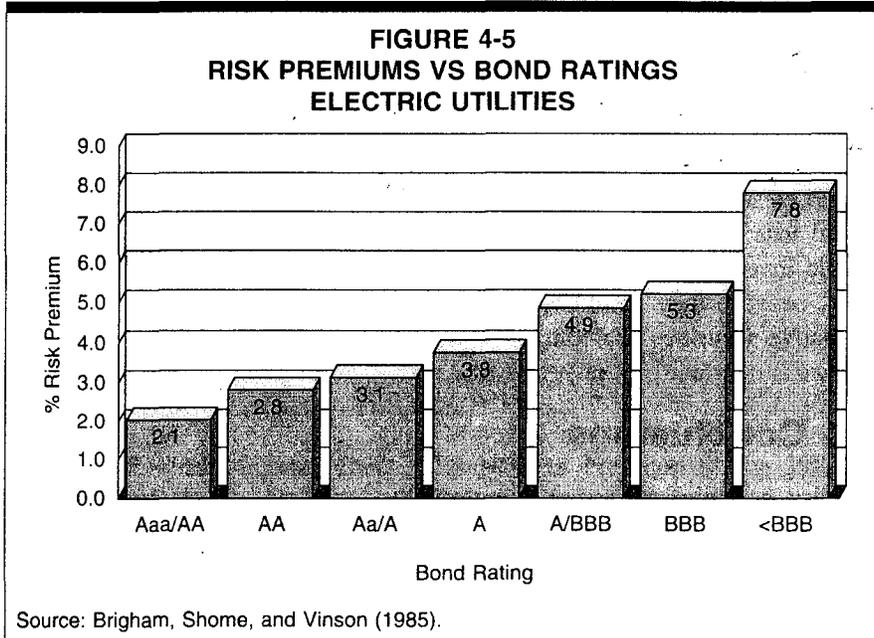
Interest Rates

Published studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin, (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates—rising when rates fell and declining when interest rates rose. The reason for this relationship is that when interest rates rise, bondholders suffer a capital loss. This is referred to as interest rate risk. Stockholders, on the other hand, are more concerned with the firm's earning power. So, if bondholders' fear of interest rate risk exceeds shareholders' fear of loss of earning power, the risk differential will narrow and hence the risk premium will shrink. This is particularly true in high inflation environments. Interest rates rise as a result of accelerating inflation, and the interest rate risk of bonds intensifies more than the earnings risk of common stocks, which are partially hedged from the ravages of inflation. This phenomenon has been termed as a "lock-in" premium. Conversely in low interest rate environments, when bondholders' interest rate fears subside and shareholders' fears of loss of earning power dominate, the risk differential will widen and hence the risk premium will increase.

Harris (1986) showed that for every 100 basis point change in government bond yields, the equity risk premium for utilities changes 51 basis points in the opposite direction, for a net change in the cost of equity of 49 basis points. For example, a 100 basis point decline in government bond yields would lead to a 51 basis point increase in the equity risk premium and therefore an overall decrease in the cost of equity of 49 basis points, a result almost identical to the estimate reported in Morin (2005). As discussed earlier, similar results were uncovered by McShane (2005), who examined the statistical relationship between DCF-derived risk premiums and interest rates using a sample of natural gas distribution utilities.

The gist of the empirical research on this subject is that the cost of equity has changed only half as much as interest rates have changed in the past. The knowledge that risk premiums vary inversely to the level of interest rates can be used to adjust historical risk premiums to better reflect current market conditions. Thus, when interest rates are unusually high (low), the appropriate current risk premium is somewhat below (above) that long-run average. The empirical research cited above provides guidance as to the magnitude of the adjustment.

Risk premiums also tend to fluctuate with changes in investor risk aversion. Such changes can be tracked by observing the yield spreads between different bond rating categories over time. Brigham, Shome, and Vinson (1985) examined the relationship between risk premium and bond rating and found, unsurprisingly, that the risk premiums are higher for lower rated firms than for higher rated firms. Figure 4-5 shows the results graphically.



to the DCF method, which may be sluggish in detecting changes in return requirements, especially when based on historical data.

One advantage of risk premium over DCF is that the former is a period-by-period (time-series) study of the cost of equity over the cost of debt, in contrast to the latter which is a point-in-time cross-sectional estimate. In other words, the risk premium approach takes a broader time-series perspective rather than a snapshot point-in-time viewpoint, and is therefore less vulnerable to the vagaries of any one particular capital market environment. A prospective risk premium test relies on a succession of DCF observations over long periods, and is not as vulnerable to a given capital market environment as a spot DCF test.

Of course, the estimation of the appropriate risk premium for either the equity market as a whole or for a specific utility company, is not an exact science. Therefore, it is necessary to evaluate a broad spectrum of data and apply alternative risk premium estimation approaches in order to derive a fair and reasonable estimate of the required equity risk premium. Equal emphasis should be accorded to risk premium results based on history and those based on prospective data. Each proxy for expected risk premium brings information to the judgment process from a different light. Neither proxy is without blemish, each has advantages and shortcomings. Historical risk premiums over long periods are available and verifiable, but may no longer be applicable if structural shifts have occurred. Prospective risk premiums may be more relevant since they encompass both history and current changes, but are nevertheless imperfect proxies and are subject to measurement error and to the vagaries of the DCF input proxies.

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Common Equity Flotation Costs and Rate Making

By EUGENE F. BRIGHAM, DANA ABERWALD, and LOUIS C. GAPENSKI

The proper treatment of common stock flotation costs is an issue in almost every utility rate case, and becomes increasingly important – for reasons shown in this article – as new stock offerings decline. The article provides clarification of the issue and offers a reasonable solution.

Incorrect statements have been made about the proper treatment of common equity flotation costs in the financial literature, and this has contributed to incorrect rate case testimony and to several improper decisions. The problem seems to have arisen for two reasons: (1) During the 1970s, when most utilities were raising large amounts of equity, the case for an equity cost adjustment was generally based on the need to sell common stock at prices greater than book value so as to avoid dilution when new stock was sold, but the proper rationale for the adjustment, and the argument that should have been made, is that an adjustment is necessary to recover actual incurred costs. (2) A number of academic writers [1, 2, 3, 6, 7, 8, 11]¹ have attempted to deal with the problem algebraically, and while a mathematical approach has merit, the different authors based their models on different and somewhat obscure assumptions, with the result that the academic research has actually done more to confuse than to clarify the issue.

As we see it, there are two questions which need answers:

- 1) Is an adjustment needed even if a company has no plans to sell new common stock in the foreseeable future?
- 2) If an adjustment is required, should it be applied to common stock only or to total common equity (common stock plus retained earnings)?

The answers are "yes" to the first question and "total common equity" to the second. Specifically, the market-

¹Numbers in brackets correspond to numbers in the list of references at the end of the article.

determined cost of equity should be adjusted (increased) to reflect issuance costs associated with past issues regardless of whether a company plans to issue stock in the future or not, and the adjustment should be applied to the total common equity, including retained earnings. The reasons for these conclusions are set forth in the balance of this article.

Background and Approach

The flotation cost adjustment – whether for bonds, preferred stocks, or common equity – is designed to convert a market rate of return into a fair rate of return on accounting book values. Prior to the 1970s, most utilities were regulated on the basis of the comparable earnings approach. With that method no market return was involved, and hence there was no need for a common equity flotation adjustment. However, as use of market-oriented equity cost approaches, especially the discounted cash flow (DCF) method, became prevalent during the 1970s, a specific flotation adjustment became necessary. The first use of DCF, to the authors' knowledge, was by Professor Myron J. Gordon as a staff witness in an American Telephone and Telegraph Company rate case before the Federal Communications Commission in the mid-1960s. Professors Alexander A. Robichek and Ezra Solomon of Stanford University, testifying for AT&T, proved that if a commission correctly identifies and then allows a *company* to earn its DCF cost of equity, k , on book equity, then *investors* will never be able to earn k on their investment, because the capital that investors have put up will exceed the company's book equity as a result of issuance (or flotation) costs. Thus, in the very first

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case where DCF methodology was used, Robichek and Solomon proved, and Gordon accepted, the idea that the allowed return on equity should exceed the DCF cost. Unfortunately, only the need for an adjustment, not the proper adjustment mechanism itself, was identified in that rate case.

The DCF method's great increase in popularity occurred during the 1970s, just when the companies were raising unprecedented amounts of new equity capital. Witnesses who used the DCF method recognized the need for an adjustment, and they had to provide a rationale to commissioners. Most witnesses gave this explanation:

- 1) If a company were allowed to earn only its DCF cost of equity, then its stock would normally sell at book value.
- 2) When new stock was issued, flotation expenses plus market pressure would drive the price of the stock below book value.
- 3) The issuance of stock at below book value would dilute the book value of the existing shares, and since future earnings and dividends are dependent upon book value, the market value of existing stock would also be diluted.
- 4) This dilution would obviously harm current stockholders; indeed, it would amount to economic confiscation.
- 5) Therefore, fair regulation requires commissioners to set authorized returns high enough to cause utility stocks to sell at prices that exceed book value by an amount sufficient to prevent below-book sales.

This argument was correct, although incomplete, and it was generally accepted during the 1970s, when most utilities were selling new stock every year or two. There were, of course, arguments about the level of flotation costs and the extent of market pressure, and hence about the proper market-to-book ratio, but the logic of some type of adjustment was rarely questioned.

However, as many utilities' construction programs neared completion in the early 1980s, and, accordingly, as new stock offerings slowed, the issue of the need for a flotation adjustment resurfaced. Patterson [6, 7] applied standard corporate finance techniques and concluded that a flotation adjustment is needed irrespective of current equity sales. Richter [11] supported Patterson's position. Arzac and Marcus [1, 2] also concluded that a flotation adjustment is always needed, but their formula produces an almost trivial adjustment factor unless the company is selling very large amounts of stock every year. Patterson and Arzac-Marcus debated in the finance journals, but they reached no reconciliation. Finally, in the latest article, Professors Bierman and Hass [3] derived yet another formula, one which produces an adjustment factor between those recommended by Patterson and Arzac-Marcus.

The issue is important, so it is necessary that we resolve the conflict. Further, since utility executives and regulators, not financial economists, must make decisions in this area, the resolution must be understandable to these decision makers. After studying the

problem, we concluded that the KPSB Case No. 2017-00179 a clear resolution is Commission Staff's First Set of Data Requests reasonable, situations and then to test theories, asking the following question: What results do the several methods produce, and are those results fair to both consumers and investors?
 Date: May 22, 2017
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Bonds and Preferred Stocks

Because the proper treatment of flotation costs on bonds and preferred stocks is well known and not controversial, it helps to begin by examining that treatment as a lead-in to the analysis of common stock. First, note that debt flotation costs can be recovered in either of two ways: (1) They can be expensed and recovered from customers during the year the securities are sold, or (2) They can be capitalized and recovered over the life of the securities. The second method, which is consistent with the theory that those customers who benefit from a cost should pay for it, is generally used. Under this theory, bond flotation expenses are reflected in the embedded cost of the bond and are recovered over the life of the bond. For example, if flotation costs of 5 per cent were incurred on a \$100 million, ten-year, 15 per cent coupon bond issue, they would be handled in the following manner by most federal and state regulators:

$$\begin{aligned} \text{Cost to company} &= \frac{\text{Interest expense} + \text{Amortization of flotation costs}}{\text{Principal value} - \text{Unamortized flotation costs}} \quad (1) \\ &= \frac{\$15,000,000 + (\$5,000,000/10)}{\$100,000,000 - \$5,000,000} \\ &= \frac{\$15,500,000}{\$95,000,000} = 16.3158\% \text{ for the first year} \end{aligned}$$

Return requirements would be calculated as follows:

$$\begin{aligned} \text{Return require-} &= \text{Cost rate}(\text{Principal value} - \text{Unamortized flotation costs}) \quad (2) \\ \text{ments} &= 0.163158(\$100,000,000 - \$5,000,000) \\ &= \$15,500,000. \end{aligned}$$

In this example, the company received \$95 million of cash, which it used to purchase \$95 million of operating assets. To meet its interest expense and flotation amortization requirements, the company must have \$15.5 million in return dollars. This return will only be generated if the company earns 16.3158 per cent on its \$95 million of operating assets. Under this procedure, the percentage cost as calculated in Equation 1 declines each year, but the return dollar amount remains constant.²

²An alternative procedure that produces exactly the same result is to divide interest charges plus flotation amortization by the principal value of the issue, and then to multiply this cost rate by the principal value of the issue:

$$\text{Embedded cost rate} = \frac{\$15,500,000}{\$100,000,000} = 0.155 = 15.5\%.$$

$$\text{Return requirements} = 0.155(\$100,000,000) = \$15,500,000.$$

This procedure in effect includes both flotation costs and operating assets in the rate base.

Preferred stocks are handled similarly. Actually, utilities issue two types of preferred stocks, those with sinking funds and those that are perpetual. The adjustment formula for sinking fund preferred is exactly like that for bonds, but a difference arises in the case of perpetual preferreds. Perpetual preferred stock represents permanent capital; hence its flotation costs are not amortized.³ Assuming again a \$100 million issue and a 5 per cent flotation cost, this formula applies:

$$\text{Cost to company} = \frac{\text{Dividend requirements}}{\text{Net proceeds}} = \frac{\$15,000,000}{\$95,000,000} \quad (3)$$

$$= 15.7895\%$$

Alternatively, we could write the formula as follows:

$$\text{Cost to company} = \frac{\text{Dividend rate}}{1.0 - \text{Flotation}} = \frac{15\%}{0.95} = 15.7895\% \quad (3a)$$

The return dollars can then be calculated as follows:⁴

$$\begin{aligned} \text{Dollars of return} &= 0.157895(\$95,000,000) \\ &= \$15,000,000. \end{aligned}$$

In this example, the preferred stockholders expect and require a return of 15 per cent on *their investment* (\$100 million), but the company must earn 15.7895 per cent on *its operating assets* (\$95 million) to provide this required return.⁵ If the company earned only 15 per cent on the \$95 million, then the company would have after-tax revenues of only \$14,250,000 to meet investors' preferred dividend requirements of \$15 million. Obviously, then, the 15 per cent market value cost of preferred must be adjusted upward to a 15.7895 per cent return on the company's operating assets if investors are to receive the reasonable rate of return they contracted for.

Common Stock

From a conceptual standpoint, it has long been recognized that the situation with common stock is similar to that for bonds and preferred stocks: Issuance costs are incurred; they should not be and are not expensed at the time the stock is sold; and therefore recovery must occur in subsequent years. Further, just as with bonds and preferred stock, the authorized rate of return on rate base equity must be above the rate of return to the investor; that is, the cost to the utility is above the return to the investor. The standard text-

³In effect, the flotation costs of the preferred are amortized over an infinite period, which is to say the amortization per year is zero. Investors have made a *permanent* investment, so the original investors or those who purchase the stock in the secondary market must receive a return on that investment in perpetuity.

⁴Of course, preferred stock dividends are not deductible, so the total revenues required to produce the return dollars is higher for preferred stock than for debt.

⁵Note that the return dollars for the bond exceed those for the perpetual preferred stock - \$15.5 million versus \$15 million. However, these are first-year costs only. The bond's cost rate declines over time due to the amortization of its flotation costs, whereas the cost rate associated with the preferred stock remains constant, and the rates of return to the bondholders and the preferred stockholders are identical.

book formula, which Patterson [6] used is as follows:⁶

$$r = \frac{\text{Expected dividend yield}}{1.0 - F} + g$$

Here:

- r = authorized rate of return on book equity, if stockholders are to earn their required rate of return, k,
- F = percentage flotation cost associated with common stock offerings, and
- g = the expected growth rate in earnings and dividends.

The percentage flotation factor, F, consists of two elements: (1) underwriting costs and (2) "market pressure," which is the decline in the stock price that results when the supply of shares is suddenly increased. Historically, utility underwriting expenses have averaged from 3 to 4 per cent of gross proceeds [9]. Market pressure varies over time, depending on the size of the issue, the condition of the market, and the degree to which investors were surprised by the announcement of the stock sale. Moreover, stock prices change for reasons other than new offerings, so it is difficult to obtain an exact measure of market pressure. However, several careful studies have been reported, and they indicate that market pressure is in the range of one to 3 per cent [10]. Thus, for most utilities, flotation expenses plus pressure have totaled about 5.5 per cent.

To illustrate the flotation cost adjustment process, and following Bierman and Hass for consistency, we assume that a new, start-up utility has the following characteristics:

- 1) Our hypothetical company can sell stock in the market at \$10 per share, and investors expect it to pay a dividend of one dollar and to grow at a rate of 5 per cent. Thus, its DCF cost of equity is $k = D/P + g = 10\% + 5\% = 15\%$, investors' required rate of return.
- 2) To raise initial capital, the company plans to sell an issue of stock, incurring flotation costs of F = 5 per cent.
- 3) Applying Equation 5, we obtain a flotation-adjusted cost of equity (r) of 15.5263 per cent:

$$\begin{aligned} r &= \frac{\text{Expected dividend yield}}{1 - F} + g \\ &= \frac{10.0\%}{0.95} + 5\% \\ &= 10.5263\% + 5\% = 15.5263\% \end{aligned}$$

Thus, the illustrative utility's fair rate of return on book equity according to Equation 5 is approximately 53 basis points above its 15 per cent unadjusted "bare bones DCF cost of equity."

- 4) The company will sell one share of stock and obtain net proceeds of \$9.50. This \$9.50 is also the initial book value, B, and rate base. (Obvi-

⁶This formula is developed in reference citation 5, Chapter 7, as well as in most other corporate finance textbooks.

ously, this amount, which we use for simplicity, could be scaled up without altering the conclusions.)

- 5) After its inception and initial stock offering, all of the company's equity is expected to come from retained earnings. In a later case, we will examine the situation when more stock is sold.
- 6) The company operates in a reasonable and prudent manner, such that by any fairness criteria, investors should be allowed to earn their 15 per cent cost of capital return, no more and no less. For simplicity, we also assume that regulation operates properly, without lags.
- 7) Initially, we assume that the market cost of capital remains constant at 15 per cent, and that the company maintains a constant payout ratio so as to keep the dividend yield and growth components at 10 per cent and 5 per cent, respectively. These assumptions are consistent with the

Now these questions may be asked:

Should the flotation adjustment be applied to all common equity or, once retained earnings appear on the balance sheet, only to common stock?

For how many years should an adjustment be applied: One, two, ten, twenty, or forever?

When we applied Equation 5, the textbook formula which Patterson recommended, we found that it produces results that satisfy the fairness criterion; namely, it permits investors to earn exactly their 15 per cent cost of capital, no more and no less. This result for our initial case is demonstrated in Table 1, which was produced by a simple computer model, and it is analyzed below:

Table 1

Case 1: Company Earns Flotation-adjusted Cost of Equity (r) on All Common Equity

Beginning of Year

Year	Common Stock (1)	Retained Earnings (2)	Total Equity (3)	Stock Price (4)	Market-Book Ratio (5)	EPS (6)	DPS (7)	Payout (8)
1	\$9.50	\$0.0000	\$ 9.5000	\$10.0000	1.0526x	\$1.4750	\$1.0000	67.7966%
2	9.50	0.4750	9.9750	10.5000	1.0526	1.5488	1.0500	67.7966
3	9.50	0.9738	10.4738	11.0250	1.0526	1.6262	1.1025	67.7966
4	9.50	1.4974	10.9974	11.5763	1.0526	1.7075	1.1576	67.7966
5	9.50	2.0473	11.5473	12.1551	1.0526	1.7929	1.2155	67.7966
6	9.50	2.6247	12.1247	12.7628	1.0526	1.8825	1.2763	67.7966
7	9.50	3.2309	12.7309	13.4010	1.0526	1.9766	1.3401	67.7966
8	9.50	3.8675	13.3675	14.0710	1.0526	2.0755	1.4071	67.7966
9	9.50	4.5358	14.0358	14.7746	1.0526	2.1792	1.4775	67.7966
10	9.50	5.2376	14.7376	15.5133	1.0526	2.2882	1.5513	67.7966

NOTES:

1) Assumptions made in this case are as follows:

- a) Issue price = \$10
- b) Flotation cost = 5%
- c) $k = D/P + g = 10\% + 5\% = 15\%$
- d) $r = 15.5263\%$

2) The data in this case, and also the more complex cases, were developed with a Lotus 1-2-3 computer program.

- 1) The company's balance sheet item common stock is shown in Column 1.
- 2) Retained earnings are shown in Column 2. Initially, they are zero, but they build up over time.
- 3) Total equity as shown in Column 3 is the sum of common stock and retained earnings. Total equity grows as retained earnings build up.
- 4) Column 4 shows the stock price as determined by the basic DCF formula. It starts at \$10 and grows at a rate of 5 per cent per year, which is necessary to produce the 5 per cent capital gains yield that investors expect and should receive.⁷

- 5) Column 5 shows the market-to-book (M/B) ratio. Notice that the M/B always exceeds one. The only way the M/B ratio could go to one would be for the stock price to fall below the value shown in Column 4, but if that were to happen, then investors would not receive the capital gains to which they are entitled. Thus, the M/B will exceed one if investors are being treated fairly.
- 6) Earnings per share (EPS) as shown in Column 6 is the product of total equity times 0.155263, the fair rate of return as determined by Equation 5.
- 7) Dividends per share (DPS) as shown in Column 7 begin at one dollar and grow at a rate of 5 per cent per year. This growth rate is a requirement if investors are to earn their DCF cost of capital.
- 8) The payout ratio is shown in Column 8. Under

⁷The DCF valuation equation is

$$P_0 = \frac{D_1}{k - g}$$

This equation, solved for k, produces the standard DCF cost of capital equation, $k = D_1/P_0 + g$. See reference citation 5, Chapter 5, for a derivation and discussion.

the assumptions of the standard DCF constant growth model, the payout must be constant, and it is if r as determined by Equation 5 is used as the allowed return on equity.

- 9) Note also that book value per share as shown in Column 3 is growing at a constant rate, 5 per cent. The retention growth rate, $g = br$, where r is the return on book equity and b is the fraction of earnings, is

$$g = br = (1.0 - 0.677966)(15.5263) = 0.322(15.5263) = 5.0\%, \text{ just as it should be.}$$

Case 1 proves that Equation 5 produces the desired results: namely, returns that exactly cover the cost of equity, no more and no less. Any return on book equity different from that established by Equation 5 would produce inconsistent results. For example, suppose the authorized rate of return were cut from 15.5263 to the DCF return, 15 per cent, in Year 2. This would cause the stock price to drop from \$10.50 to the \$9.9750 book value. Thus, stockholders would suffer a loss, and they would not obtain the capital gains yield to which they are entitled. Any other type of experimentation will show exactly the same thing: If the company is not allowed to earn the cost of equity as determined by Equation 5 on total common equity, stockholders will not receive a 15 per cent return on their invested capital.

Sale of Additional Equity

While the only-one-equity-sale conditions used to develop Case 1 are consistent with Bierman and Hass's example, and also with some actual companies such as Comsat and the Yankee Atomic Power companies, most utilities sell additional common stock from time

to time. Therefore, we modified the KPSO Case No. 2017-00179 to analyze stock sales Commission Staff's First Set of Data Requests Dated May 22, 2017 which the company raises an additional share of new common equity for \$12.1247 at the beginning of Year 6. (Note that the \$12.1247 is calculated as the price of the stock at the beginning of Year 6 less flotation costs.) Earnings, dividends, and common equity all increase in Year 6 as a result of the sale, but investors continue to earn exactly 15 per cent on their investment so long as the company is allowed to earn 15.5263 per cent on its total book equity.

In Case 3, reported in Table 3, we present the results for a company that issues new equity at a flotation cost different from the cost of its original stock issue. Case 3 is similar to Case 2. Just as in Case 2, the company issues new equity at the beginning of Year 6. However, in Case 3, the equity sold at the beginning of Year 6 has a different flotation cost (3 per cent) from that of the original issue (5 per cent). With lower flotation costs, the company nets more common equity in Case 3 than in Case 2. (The dollar amount of new equity raised is calculated as the price of the share of stock at the beginning of Year 6 less the 3 per cent flotation costs incurred.)

In this example, because the new equity is sold at a different flotation cost than the old equity, a new value of r must be calculated and used to determine net income. The new r is a weighted average of r as determined by Equation 5 for each equity issue, with the weights being the fraction of total equity attributable to the new and old stock at the time the new stock is issued. Because of the lower flotation costs on the new equity, there is a corresponding drop in the market-to-book ratio in Year 6. Note, however, that after the transitional Year 6, earnings and dividends continue to grow at the required 5 per cent rate, which is neces-

Table 2

Case 2: Company Sells Additional Stock at the Beginning of Year 6
Beginning of Year

Year	Common Stock (1)	New Issue (1a)	Retained Earnings (2)	Total Equity (3)	Stock Price (4)	Market-Book Ratio (5)	EPS (6)	DPS (7)	Payout Ratio (8)
1	\$ 9.50		\$0.0000	\$ 9.5000	\$10.0000	1.0526x	\$1.4750	\$1.0000	67.7966%
2	9.50		0.4750	9.9750	10.5000	1.0526	1.5488	1.0500	67.7966
3	9.50		0.9738	10.4738	11.0250	1.0526	1.6262	1.1025	67.7966
4	9.50		1.4974	10.9974	11.5763	1.0526	1.7075	1.1576	67.7966
5	9.50		2.0473	11.5473	12.1551	1.0526	1.7929	1.2155	67.7966
6	9.50	\$12.1247	2.6247	24.2493	12.7628	1.0526	1.8825	1.2763	67.7966
7	21.6247		3.8371	25.4618	13.4010	1.0526	1.9766	1.3401	67.7966
8	21.6247		5.1102	26.7349	14.0710	1.0526	2.0755	1.4071	67.7966
9	21.6247		6.4470	28.0717	14.7746	1.0526	2.1792	1.4775	67.7966
10	21.6247		7.8506	29.4752	15.5133	1.0526	2.2882	1.5513	67.7966

NOTES:

Assumptions made in this case are as follows:

- a) Original issue price = \$10
- b) Flotation cost = 5%
- c) $k = D/P + g = 10\% + 5\% = 15\%$
- d) $r = 15.5263\%$
- e) Year 6 issue price = \$12.7628
- f) Year 6 new common stock = $\$12.7628(1 - F)$
 $= \$12.7628(0.95)$
 $= \$12.1247$

Case 3: Company Sells Additional Stock at the Beginning of
Year 6 Incurring Different Flotation Costs

Beginning of Year

Year	Common Stock (1)	New Issue (1a)	Retained Earnings (2)	Total Equity (3)	Stock Price (4)	Market- Book Ratio (5)	EPS (6)	DPS (7)	Payout Ratio (8)
1	\$ 9.5000		\$0.0000	\$ 9.5000	\$10.0000	1.0526x	\$1.4750	\$1.0000	67.7966%
2	9.5000		0.4750	9.9750	10.5000	1.0526	1.5488	1.0500	67.7966
3	9.5000		0.9738	10.4738	11.0250	1.0526	1.6262	1.1025	67.7966
4	9.5000		1.4974	10.9974	11.5763	1.0526	1.7075	1.1576	67.7966
5	9.5000		2.0473	11.5473	12.1551	1.0526	1.7929	1.2155	67.7966
6	9.5000	\$12.3799	2.6247	24.5046	12.7628	1.0526	1.8889	1.2763	67.7566
7	21.8799		3.8499	25.7298	13.4010	1.0526	1.9833	1.3401	67.5676
8	21.8799		5.1364	27.0163	14.0710	1.0526	2.0825	1.4071	67.5676
9	21.8799		6.4872	28.3671	14.7746	1.0526	2.1866	1.4775	67.5676
10	21.8799		7.9056	29.7855	15.5133	1.0526	2.2960	1.5513	67.5676

NOTES:

Assumptions made in this case are as follows:

- Original issue price = \$10
- Year 1 Flotation cost = 5%
- $k = D/P + g = 10\% + 5\% = 15\%$
- $r_1 = 15.5263\%$
- Year 6 issue price = \$12.7628
- Year 6 flotation cost = 3%
- Year 6 new common stock = $\$12.7628(1 - F)$
= $\$12.7628(0.97)$
= \$12.3799
- Additional issue $r = 15.3093\%$

sary if investors are to receive the 15 per cent DCF return on their investment. The stock price grows at 5 per cent throughout the ten-year period.

The fact that the company must continue to earn the flotation-adjusted cost of equity, even as retained earnings build up to a larger and larger proportion of total common equity, is counterintuitive, and so it deserves further discussion. Here are two comments:

1) *Demonstration that a weighted average cost rate is inappropriate.* It has been suggested that the authorized return on equity should be a weighted average of the flotation-adjusted cost rate, $r = 15.5263$ per cent, and the DCF cost rate, $k = 15$ per cent, with the weights being based on common equity and accumulated retained earnings, respectively. When we programmed our model to reflect these conditions, we obtained the results shown in Table 4. A problem obviously exists – if dividends are to grow at the 5 per cent rate that investors expect, and if earnings are based on a weighted average of k and r , then a higher and higher percentage of earnings will have to be paid out. Thus, the payout ratio will rise. In Year 34 the payout ratio will exceed 100 per cent, so retained earnings will start to decline. Retained earnings actually go negative in Year 45, and Total Common Equity goes negative in Year 46, which means the company is officially bankrupt. This example demonstrates, in yet another way, that the flotation-adjusted cost of equity must be earned on all common equity if investors are to receive the DCF return to which they are entitled under prudent management. The example also demonstrates that, if investors were informed that the regulatory treatment implied in Table 4 were going to be

employed, they would not invest in the company in the first place.

2) *Logical explanation.* To understand *why* the Equation 5 value must be applied to all common equity, retained earnings as well as equity raised by selling stock, one must trace through the valuation process. Notice that, in Year 1, investors require a return of 15 per cent on their \$10 investment, or \$1.50. However, the company earns only \$1.4750, of which it pays out one dollar as a dividend and retains 47.5 cents. To give the investor the fifty-cent increase in market value (or capital gain) needed to add to the one dollar dividend to produce the \$1.50, or 15 per cent, total DCF return, the 47.5 cents must earn more than 15 per cent. Specifically, it must earn the flotation adjusted cost of equity, $r = 15.5263$ per cent. This same thought process can be continued in other years, ad infinitum, and the ultimate conclusion is that both the original common equity and all retained earnings must earn $r = 15.5263$ per cent.

If the preceding paragraph is not clear, we can put it another way. The investor expects and is entitled to earn, under prudent management, a return of 15 per cent on his or her investment. Thus, dividends plus capital gains must total 15 per cent, or \$1.50 in the first year. Ten per cent, or one dollar, will come from dividends, so 5 per cent, or 50 cents, must come from capital gains. To obtain a capital gain yield of 50 cents from 47.5 cents of retained earnings, the retained earnings must earn a return greater than $k = 15$ per cent; specifically, the retained earnings must be allowed to earn $r = 15.5263$ per cent. (If the 47.5 cents earned 15 per cent, then it would be worth exactly 47.5 cents, not 50 cents.) In Year 2, retained earnings will rise by

5 per cent from 47.5 cents to 49.875 cents; the capital gains then must rise from 50 cents to $.50(1.05) = 52.5$ cents; the only way this can happen is for the second-year retained earnings to be allowed to earn $r = 15.5263$ per cent; and so on.

The Effect of the Payout Ratio on the Flotation Cost Adjustment

Even though fair regulation requires that retained earnings be allowed to earn the flotation adjusted cost of equity, the level of retained earnings as affected by the payout ratio does have a material effect on the size of the adjustment.

To illustrate this point, assume (1) that two utilities both have a 15 per cent market cost of equity, that is, $k = 15$ per cent; (2) that both companies sell at a price of \$20; but (3) that one company has a policy of paying out 25 per cent of its earnings and retaining 75 per cent, while the other has the reverse dividend policy. Assume further that both companies earn 15 per cent on their \$20 market value, so earnings per share are $.15(\$20) = \3 . The high payout company has a dividend of $.75(\$3) = \2.25 , while the low payout company has a dividend of $.25(\$3) = 75$ cents. At the same time, the low payout company, which plows most of its earnings back into the business, will have a growth rate of $g = .75(15 \text{ per cent}) = 11.25$ per cent, while the high payout company will have $g = .25(15 \text{ per cent}) = 3.75$ per cent.

Under these conditions, the following situation would exist for the two illustrative companies:

Low payout Company: $k = \frac{D_1}{P_0} + g = \frac{\$0.75}{\$20} + 11.25\% = 3.75\% + 11.25\% = 15\%$

High payout Company: $k = \frac{D_1}{P_0} + g = \frac{\$2.25}{\$20} + 3.75\% = 11.25\% + 3.75\% = 15\%$

Applying the adjustment formula,

$$r = \frac{\text{Expected dividend yield}}{1 - F} + g,$$

we find this situation, assuming that issuance costs are 5 per cent:

High payout Company: $r = \frac{11.25\%}{0.95} + 3.75\% = 11.842\% + 3.75\% = 15.592\%$

Low payout Company: $r = \frac{3.75\%}{0.95} + 11.25\% = 3.947\% + 11.25\% = 15.197\%$
Difference = 0.395%

Thus, we see that the company which retains most of its earnings, and which consequently has more retained

Table 4

Case 4: Company Earns Weighted Average k

Year	Common Stock (1)	Retained Earnings (2)	Total Equity (3)	EPS (4)	DPS (5)	Payout Rate (6)	Weighted k (7)
1	\$9.5000	\$ 0.0000	\$ 9.5000	\$1.4750	\$1 0000	67.7966%	0.1553
2	9.5000	0.4750	9.9750	1.5463	1.0500	67.9062	0.1550
3	9.5000	0.9713	10.4713	1.6207	1.1025	68.0267	0.1548
4	9.5000	1.4894	10.9894	1.6984	1.1576	68.1591	0.1545
5	9.5000	2.0302	11.5302	1.7795	1.2155	68.3047	0.1543
.
.
33	9.5000	23.2219	32.7219	4.9583	4.7649	96.1006	0.1515
34	9.5000	23.4152	32.9152	4.9873	5.0032	100.3188	0.1515
35	9.5000	23.3993	32.8993	4.9849	5.2533	105.3852	0.1515
.
.
45	9.5000	-2.3443	7.1557	1.1234	8.2791	736.9935	0.1570
46	The company goes bankrupt.						

NOTES:

1) Assumptions made in this case are as follows:

- a) Issue price = \$10
- b) Flotation cost = 5%
- c) $k = D/P + g = 10\% + 5\% = 15\%$
- d) $r = 15.5263\%$

2) The dividend in Year 45 cannot grow by the 5 per cent growth rate, because if it did total equity would become negative. Therefore, the Year 45 dividend is calculated as the remaining portion of total equity + earnings in Year 45: $\$7.1557 + \$1.1234 = \$8.2791$.

Case 5: Company Sells Additional Stock and k Changes

Beginning of Year

Year	Common Stock (1)	New Issue (1a)	Retained Earnings (2)	Total Equity (3)	Stock Price (4)	Market-Book Ratio (5)	EPS (6)	DPS (7)	Payout Ratio (8)
1	\$ 9.5000		\$0.0000	\$ 9.5000	\$10.0000	1.0526x	\$1.4750	\$1.0000	67.7966%
2	9.5000		0.4750	9.9750	10.5000	1.0526	1.5488	1.0500	67.7966
3	9.5000		0.9738	10.4738	11.0250	1.0526	1.6262	1.1025	67.7966
4	9.5000		1.4974	10.9974	11.5763	1.0526	1.7075	1.1576	67.7966
5	9.5000		2.0473	11.5473	12.1551	1.0526	1.7929	1.2155	67.7966
6	9.5000	\$12.3799	2.6247	24.5046	12.7628	1.0526	1.8889	1.2763	67.5676
7	21.8799		3.8499	25.7298	13.4010	1.0526	1.9833	1.3401	67.5676
8	21.8799		5.1364	27.0163	14.0710	1.0526	1.8123	1.4071	77.6398
9	21.8799		5.9469	27.8268	14.4931	1.0526	1.8667	1.4493	77.6398
10	21.8799		6.7817	28.6616	14.9279	1.0526	1.9227	1.4928	77.6398

NOTES:

Assumptions made in this case are as follows:

- a) Original issue price = \$10
- b) Year 1 flotation cost = 5%
- c) Issue 1 $r = 15.5263\%$
- d) Year 6 issue price = \$12.7628
- e) Year 6 flotation cost = 3%
- f) Year 6 new common stock = $\$12.7628(1 - F)$
 $= \$12.7628(0.97)$
 $= \$12.3799$
- g) Additional issue $r = 15.3093\%$
- h) Years 1-7, $k = D/P + g = 10\% + 5\% = 15\%$
- i) Years 8-10, $k = D/P + g = 10\% + 3\% = 13\%$

Table 6

Case 6: Company Sells Additional Stock and k Changes

Beginning of Year

Year	Common Stock (1)	New Issue (1a)	Retained Earnings (2)	Total Equity (3)	Stock Price (4)	Market-Book Ratio (5)	EPS (6)	DPS (7)	Payout Ratio (8)
1	\$ 9.5000		\$0.0000	\$ 9.5000	\$10.0000	1.0526x	\$1.4750	\$1.0000	67.7966%
2	9.5000		0.4750	9.9750	10.5000	1.0526	1.5488	1.0500	67.7966
3	9.5000		0.9738	10.4738	11.0250	1.0526	1.6262	1.1025	67.7966
4	9.5000		1.4974	10.9974	11.5763	1.0526	1.7075	1.1576	67.7966
5	9.5000		2.0473	11.5473	12.1551	1.0526	1.7929	1.2155	67.7966
6	9.5000	\$12.3799	2.6247	24.5046	12.7628	1.0526	1.8889	1.2763	67.5676
7	21.8799		3.8499	25.7298	13.4010	1.0526	1.9833	1.3401	67.5676
8	21.8799		5.1364	27.0163	14.0710	1.0526	1.8011	1.1257	62.5000
9	21.8799		5.9469	27.3671	14.7746	1.0526	1.8911	1.1820	62.5000
10	21.8799		6.7817	29.7855	15.5133	1.0526	1.9857	1.2411	62.5000

NOTES:

Assumptions made in this case are as follows:

- a) Original issue price = \$10
- b) Year 1 flotation cost = 5%
- c) Issue 1 $r = 15.5263\%$
- d) Year 6 issue price = \$12.7628
- e) Year 6 flotation cost = 3%
- f) Year 6 new common stock = $\$12.7628(1 - F)$
 $= \$12.7628(0.97)$
 $= \$12.3799$
- g) Additional issue $r = 15.3093\%$
- h) Years 1-7, $k = D/P + g = 10\% + 5\% = 15\%$
- i) Years 8-10, $k = D/P + g = 10\% + 3\% = 13\%$

earnings and a smaller dollar amount of flotation costs, also has the lower flotation-adjusted cost of equity. This demonstrates that the issuance cost adjustment formula is itself adjusted to reflect the extent to which a company finances by retaining earnings rather than by selling new common stock.

Changes in the DCF Cost of Equity

We also analyzed the effects of changes in the DCF cost of equity over time. While a change in the DCF k causes a change in earnings, dividends, and the growth rate, the flotation adjustment process is not affected - Equation 5 still produces a fair rate of return on book value. This is demonstrated in Tables 5 and 6. It should be noted that the effects of the adjustment as derived by Equation 5 do vary with the level of the DCF cost and with the split between dividend yield and growth. In Case 5, we analyze the effects of a change in the growth rate with the dividend yield held constant, while in Case 6, reversing them, we analyze the effects of a change in the dividend yield with the growth rate held constant. Both cases use Case 3 as their base case. In each instance, a new value for r , based on Equation 5, can be established, and this return on book value permits investors to earn their new DCF cost of equity.

Capitalizing Flotation Costs

Bierman and Hass, almost as an afterthought toward the end of their article, suggested that utilities should be allowed to record the *gross amount* of equity sales and to earn a DCF return on gross equity capital. This would amount to capitalizing flotation costs. These capitalized costs could then be amortized over some prescribed period or else be kept on the books indefinitely.

to show this, we set up computer models in various cases but capitalizing flotation costs see that earnings, dividends, and stock prices exactly like those shown in our tables. Thus, capitalizing flotation costs produces exactly the same results as Equation 5.

Capitalizing flotation costs has much to recommend it, for it would eliminate the confusion that has existed. However, a fundamental problem exists for any company that has incurred flotation costs in the past, that is, for virtually the entire utility industry: How would the fact that past flotation costs were not capitalized be dealt with? In other words, capitalizing flotation costs would be an excellent procedure for a new, start-up, company, but such a plan would not be feasible for an existing company without somehow adjusting for past costs. Such an adjustment could be made, but a discussion of it goes beyond the scope of this article.

Conclusion

The proper treatment of equity flotation costs has caused much confusion. Had such costs been either capitalized in the past or else expensed on an as-incurred basis, there would be no problem, but since neither of these practices has generally been followed, the DCF return must be adjusted to produce a fair rate of return on book equity.

Further, the adjustment is always required, irrespective of whether or not a company has plans to sell new stock in the future, and the adjusted return must be earned on total equity, including retained earnings. Otherwise, it would be impossible for investors to earn the cost of equity, even under prudent and efficient management.

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Alternative Sources of Equity

A second controversy is whether a flotation cost allowance should be allowed because a company can always obtain equity from sources other than a public issue of common stock, such as a rights issue for example. There are several sources of equity capital available to a firm, including: public common stock issues, conversions of convertible preferred stock, dividend reinvestment plans, employees' savings plans, warrants, and stock dividend programs. Each carries its own set of administrative costs and flotation cost components, including discounts, commissions, corporate expenses, offering spread, and market pressure.

Equity capital raised through a public issue is typically more expensive than alternate sources of equity. Rights issues, when available, are less expensive, but direct costs still would be incurred. Of course, a rights issue assumes that a willing underwriter and a willing market could be found for such offerings in the first place, an unlikely event in public capital markets for small unproven companies. Internal sources of equity, including dividend reinvestment and/or employee stock option plans, are also typically less expensive, unless a discount on the purchase price is inherent in the plan, in which case they are often equivalent to a public issue. Direct costs are also incurred in an employee stock savings plan and/or a shareholder dividend reinvestment plan.

The flotation cost allowance is still warranted, however, because it is a composite factor that reflects the historical mix of all these sources of equity. The flotation cost allowance applicable to all the company's book equity is actually a weighted average of the current allowances required for each past financing, that is, the flotation cost allowance factor is a build-up of historical flotation cost adjustments associated and traceable to each component of equity source. However, it is impractical and prohibitive to start from the inception of a company and source all present equity from various equity vintages and types of equity capital raised by the company. One way of circumventing the problem of vintaging each form of equity is to source book equity by broad categories of equity, such as dividend reinvestment plan equity, stock option equity, and public issue equity, and calculate a weighted average flotation factor. That is also onerous and cumbersome. A practical solution is to rely on the results of the empirical studies discussed earlier that quantify the average flotation cost factor of a large sample of utility stock offerings.

Efficient Markets

A third controversy centers around the argument that the omission of flotation cost is justified on the grounds that, in an efficient market, the stock price already reflects any accretion or dilution resulting from new issuances of securities and that a flotation cost adjustment results in a double counting effect. The simple fact of the matter is that whatever stock price is set by the

Chapter 10: Flotation Cost Adjustment

market, the company issuing stock will always net an amount less than the stock price due to the presence of intermediation and flotation costs. As a result, the company must earn slightly more on its reduced rate base in order to produce a return equal to that required by shareholders.

Existing shareholders are made worse off when a company issues new stock below the market price, irrespective of how "efficient" that stock price may be. As seen in an earlier example, the new issue results in a transfer of wealth from existing to new shareholders. This is true regardless of the degree of efficiency of the market.

It has also been argued that a flotation cost allowance is inequitable since it results in a windfall gain to shareholders. This argument is erroneous. As stated previously, the company's common equity account is credited by an amount less than the market value of the issue, so that the company must earn slightly more on its reduced rate base in order to produce a return equal to that required by shareholders. Moreover, existing shareholders are made worse off when a company issues new stock below the market price.

The suggestion that the flotation cost allowance is unwarranted because investors factor this shortcoming in the stock price implies that it is appropriate to use a deficient model because such a deficiency is reflected in stock prices. In other words, it is appropriate to use a deficient model because investors are aware of this. Such circular reasoning could be used to justify any regulatory policy. For example, under this reasoning, it would be appropriate to authorize a return on equity of 1% because investors reflect this fact in the stock price. This is clearly illogical and erroneous. Any regulatory policy, as irrational as it may be, can be justified using this argument.

Absence of Imminent Stock Issues

Another controversy is whether the flotation cost allowance should still be applied when the utility is not contemplating an imminent common stock issue. Some argue that flotation costs are real and should be recognized in calculating the fair return on equity, but only at the time when the expenses are incurred. In other words, the flotation cost allowance should not continue indefinitely, but should be made in the year in which the sale of securities occurs, with no need for continuing compensation in future years. This argument implies that the company has already been compensated for these costs and/or the initial contributed capital was obtained freely, devoid of any flotation costs, which is an unlikely assumption, and certainly not applicable to most utilities. If the flotation costs of past stock issues have been fully recovered, the argument has merit. If that assumption is not met, the argument is without merit. The flotation cost adjustment cannot be strictly forward-looking unless all past flotation costs associated with past issues have been recovered.

**NEW
REGULATORY
FINANCE**

Roger A. Morin, PhD

**2006
PUBLIC UTILITIES REPORTS, INC.
Vienna, Virginia**

Chapter 10: Flotation Cost Adjustment

(rate base) of \$95 to provide investors with a \$10 return on the money actually invested. This is because only the net proceeds from an equity issue are added to the rate base on which the investor earns.

Here is another example that illustrates the fact that existing shareholders are made worse off when a company issues new stock below the market price. Before the issue, let us say there are 100 shares trading at \$10.00 per share. The company issues an additional 25 shares at \$5.00. Company value must increase by $25 \times \$5 = \125 . Therefore, after the issue each share is worth:

$$\frac{(100 \times \$10) + \$125}{(100 + 25)} = \$1,125/125 = \$9.00$$

New shareholders gain $25 \times \$4.00 = \100 while old shareholders lose $100 \times \$1.00 = \100 . Thus, the new issue results in a transfer of wealth from existing to new shareholders.

10.2 Magnitude of Flotation Costs

The flotation cost allowance requires an estimated adjustment to the return on equity of approximately 5% to 10%, depending on the size and risk of the issue. A more precise figure can be obtained by surveying empirical studies on utility security offerings.²

According to empirical studies by Lee et al. (1996), Borum and Malley (1986), Logue and Jarrow (1978), Pettway (1984), Pettway and Radcliffe (1985), Eckbo and Masulis (1987), Bhagat and Frost (1986), Mikkelsen and Partch (1986) and Smith (1977, 1986), underwriting costs and expenses average 4%–5.5% of gross proceeds for utility stock offerings. The more recent study by Lee et al. (1996) finds an average flotation cost of 4.92% for utility common stock offerings, and finds that flotation costs increase progressively for smaller size issues.

As far as the market pressure effect is concerned, empirical studies clearly show that the market pressure effect is real, tangible, and measurable. All the studies support the idea that the announcement of the sale of large blocks of stock produces a decline in a company's stock price, as one would expect

² The common practice of issuing common equity shares by public utilities is through a firm public underwriting. In recent years, this practice has given way to shelf registrations. Shelf registrations are cheaper than firm underwritings and will over time decrease the average cost of issuing equity, as the lower marginal cost of bought deals gradually lowers the historical average cost of raising equity. "Bought deals," which is a uniquely Canadian practice, bear strong resemblance to the shelf registration procedure in the U.S.

**Application of Yankee Gas Services Company for a Rate Increase, DPUC Docket No. 04-06-01
 Direct Testimony of George J. Eckenroth (Jul. 2, 2004) at Exhibit GJE-11.1**

All Secondary Utility Equity Offerings Since 1/1/2001 \$100MM to \$500MM

Stock Ticker Symbol	Filing date	Pricing date	Issuer	Amount (\$MM)	Gross Spread (%)	Industry	Bookrunner
GXP	04 Jun 2004	08 Jun 2004	Great Plains Energy Inc	150.0	3.50	Utility-Electric Power	ML
WR	17 Mar 2004	25 Mar 2004	Westar Energy Inc	249.3	3.50	Utility-Electric Power	SSB, LEHMAN, WCHV
UGI	22 Jan 2004	18 Mar 2004	UGI Corp	249.7	4.38	Utility-Diversified	CSFB
HE	09 Mar 2004	10 Mar 2004	Hawaiian Electric Industries Inc	103.7	4.00	Utility-Electric Power	ML
PNY	12 Jan 2004	20 Jan 2004	Piedmont Natural Gas Co Inc	180.6	3.51	Utility-Gas Distribution	ML
WPS	13 Nov 2003	19 Nov 2003	WPS Resources Corp	173.1	3.50	Utility-Diversified	AGEDW
SRE	07 Oct 2003	08 Oct 2003	Sempra Energy	462.0	3.00	Utility-Diversified	SSB, JPMHQ, MS
PEG	30 Sep 2003	01 Oct 2003	Public Service Enterprise Group Inc - PSEG	367.1	3.00	Utility-Electric Power	SSB, MS
OGE	19 Aug 2003	21 Aug 2003	OGE Energy Corp	115.0	3.66	Utility-Electric Power	LEHMAN
VVC	31 Jul 2003	07 Aug 2003	Vectren Corp	169.7	3.50	Utility-Diversified	GS
LNT	25 Jun 2003	01 Jul 2003	Alliant Energy Corp	332.1	4.00	Utility-Diversified	BOFA, ML
ATO	17 Jun 2003	18 Jun 2003	Atmos Energy Corp	103.8	4.00	Utility-Gas Distribution	ML
AES	16 Jun 2003	17 Jun 2003	AES Corp	346.2	3.25	Utility-Electric Power	BOFA, LEHMAN
SUG	30 May 2003	05 Jun 2003	Southern Union Co	174.8	3.50	Utility-Gas Distribution	JPMHQ, ML
PPL	14 May 2003	15 May 2003	PPL Corp	270.0	3.25	Utility-Electric Power	MS, SSB, JPMHQ
BKH	21 Apr 2003	24 Apr 2003	Black Hills Corp	124.2	4.75	Utility-Electric Power	CSFB, LEHMAN
ATG	31 Jan 2003	11 Feb 2003	AGL Resources Inc	141.7	3.50	Utility-Gas Distribution	MS, BOFA
AEE	13 Jan 2003	14 Jan 2003	Ameren Corp	222.8	3.26	Utility-Electric Power	GS
PNW	16 Dec 2002	17 Dec 2002	Pinnacle West Capital Corp	206.5	3.50	Utility-Electric Power	SSB, CSFB
POM	09 Dec 2002	09 Dec 2002	Pepco Holdings Inc	110.0	3.90	Utility-Electric Power	ML
GXP	14 Nov 2002	21 Nov 2002	Great Plains Energy Inc	151.8	3.75	Utility-Electric Power	ML
PEG	11 Nov 2002	12 Nov 2002	Public Service Enterprise Group Inc - PSEG	458.0	3.25	Utility-Electric Power	JPMHQ, ML, MS
TE	08 Oct 2002	10 Oct 2002	TECO Energy Inc	213.2	3.00	Utility-Electric Power	MS
SCG	30 Sep 2002	09 Oct 2002	SCANA Corp	150.6	3.25	Utility-Electric Power	UBSW, BOFA
PSC	08 Jul 2002	19 Sep 2002	Philadelphia Suburban Corp	180.4	4.27	Utility-Water Supply	ALEX, UBSW
AEE	03 Sep 2002	04 Sep 2002	Ameren Corp	338.1	3.26	Utility-Electric Power	GS
ILA	19 Jun 2002	27 Jun 2002	Aquila Inc	281.3	3.25	Utility-Electric Power	CSFB
DQE	12 Jun 2002	20 Jun 2002	Duquesne Light Holdings Inc	232.9	3.75	Utility-Electric Power	LEHMAN
DTE	14 Jun 2002	19 Jun 2002	DTE Energy Co	273.6	3.25	Utility-Electric Power	SSB, UBSW
FPL	03 Jun 2002	06 Jun 2002	FPL Group Inc	325.5	3.00	Utility-Electric Power	GS, ML
TE	30 May 2002	04 Jun 2002	TECO Energy Inc	357.1	3.00	Utility-Electric Power	UBSW, CSFB
AEE	19 Feb 2002	26 Feb 2002	Ameren Corp	227.1	3.49	Utility-Electric Power	GS
ILA	22 Jan 2002	24 Jan 2002	Aquila Inc	287.5	3.25	Utility-Electric Power	SSB, UBSW
LNT	25 Oct 2001	08 Nov 2001	Alliant Energy Corp	273.7	3.75	Utility-Diversified	ML
SRP	24 Jul 2001	09 Aug 2001	Sierra Pacific Resources	353.6	3.75	Utility-Electric Power	ML
ORN	11 May 2001	31 May 2001	Orion Power Holdings Inc	355.6	4.25	Utility-Electric Power	GS
ALE	09 May 2001	23 May 2001	ALLETE Inc	153.9	4.00	Utility-Electric Power	UBSW
BKH	22 Mar 2001	18 Apr 2001	Black Hills Corp	175.9	5.50	Utility-Electric Power	CSFB
NRG	16 Feb 2001	07 Mar 2001	NRG Energy Inc	496.8	4.52	Utility-Electric Power	CSFB, ML
TE	20 Feb 2001	06 Mar 2001	TECO Energy Inc	239.3	3.00	Utility-Electric Power	CSFB
ILA	23 Feb 2001	05 Mar 2001	Aquila Inc	342.2	2.76	Utility-Electric Power	ML
VVC	19 Jan 2001	08 Feb 2001	Vectren Corp	134.5	3.48	Utility-Diversified	ML
			Mean	244.16	3.60		
			Median	230.00	3.50		

Notes

1. Source: Equidesk
2. Excludes Block Trades
3. Includes all utility marketed offerings between \$100MM - \$500MM. Offering amount includes proceeds raised through exercise of greenshoe (where applicable)
4. U.S. offerings only

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ATG	15 Nov 2004	18 Nov 2004	AGL Resources Inc	342.4	3.00	Utility - Gas Distribution	MS, JPM
IDA	07 Dec 2004	09 Dec 2004	Idacorp Inc	120.8	4.00	Utility - Electric Power	MS
SUG	07 Feb 2005	07 Feb 2005	Southern Union Co	343.0	3.04	Utility - Gas Distribution	ML, JPM
PNM	18 Mar 2005	23 Mar 2005	PNM Resources Inc	104.6	3.25	Utility - Electric Power	MS, BOFA, WCHV
CMS	28 Mar 2005	30 Mar 2005	CMS Energy Corp	281.8	3.50	Utility - Electric Power	CITI, JPM, DB, WCHV
PNW	26 Apr 2005	27 Apr 2005	Pinnacle West Capital Corp	256.0	3.25	Utility - Electric Power	LEH
Mean				244.68	3.59		

Notes

1. Source: Exhibit GJE-11.1, Equidesk
2. Excludes Block Trades
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Blue Chip Financial Forecasts[®]

**Top Analysts' Forecasts Of U.S. And Foreign Interest Rates, Currency Values
And The Factors That Influence Them**

Vol. 36, No. 6, June 1, 2017

Wolters Kluwer

2 ■ BLUE CHIP FINANCIAL FORECASTS ■ JUNE 1, 2017

Consensus Forecasts Of U.S. Interest Rates And Key Assumptions¹

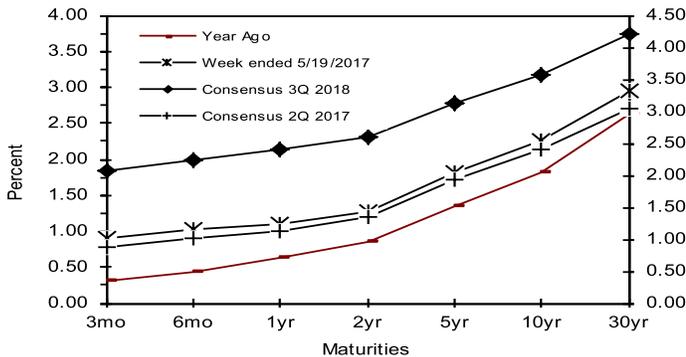
Interest Rates	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month				Latest Qtr	2Q 2017	3Q 2017	4Q 2017	1Q 2018	2Q 2018
	May 19	May 12	May 5	Apr. 28	Apr.	Mar.	Feb.	1Q 2017	2017	2017	2017	2018	2018	2018
Federal Funds Rate	0.91	0.91	0.88	0.91	0.90	0.76	0.66	0.69	1.0	1.2	1.4	1.5	1.7	1.9
Prime Rate	4.00	4.00	4.00	4.00	4.00	3.85	3.75	3.78	4.1	4.2	4.4	4.6	4.8	5.0
LIBOR, 3-mo.	1.18	1.18	1.18	1.17	1.16	1.13	1.04	1.06	1.2	1.4	1.6	1.8	2.0	2.2
Commercial Paper, 1-mo.	0.84	0.83	0.83	0.83	0.83	0.77	0.61	0.67	1.0	1.2	1.4	1.6	1.8	2.0
Treasury bill, 3-mo.	0.91	0.90	0.85	0.81	0.81	0.73	0.53	0.59	0.9	1.1	1.3	1.4	1.6	1.8
Treasury bill, 6-mo.	1.02	1.03	1.00	0.98	0.95	0.87	0.65	0.71	1.0	1.2	1.4	1.6	1.8	2.0
Treasury bill, 1 yr.	1.10	1.13	1.10	1.06	1.04	1.00	0.82	0.88	1.1	1.4	1.6	1.7	1.9	2.1
Treasury note, 2 yr.	1.28	1.34	1.30	1.27	1.24	1.30	1.20	1.24	1.3	1.6	1.8	1.9	2.1	2.3
Treasury note, 5 yr.	1.81	1.91	1.86	1.83	1.83	2.00	1.91	1.94	1.9	2.2	2.3	2.5	2.6	2.8
Treasury note, 10 yr.	2.27	2.39	2.33	2.31	2.30	2.47	2.43	2.44	2.4	2.6	2.8	2.9	3.1	3.2
Treasury note, 30 yr.	2.94	3.02	2.99	2.96	2.94	3.07	3.04	3.04	3.0	3.2	3.4	3.5	3.6	3.7
Corporate Aaa bond	3.94	4.05	4.03	4.00	4.00	4.13	4.10	4.10	4.0	4.3	4.5	4.6	4.7	4.9
Corporate Baa bond	4.52	4.64	4.62	4.60	4.60	4.71	4.68	4.68	4.7	5.0	5.2	5.3	5.5	5.6
State & Local bonds	3.49	3.55	3.56	3.54	3.55	3.72	3.72	3.71	3.7	3.9	4.1	4.2	4.3	4.4
Home mortgage rate	4.02	4.05	4.02	4.03	4.05	4.20	4.17	4.17	4.1	4.3	4.5	4.6	4.8	4.9

Key Assumptions	History								Consensus Forecasts-Quarterly					
	2Q 2015	3Q 2015	4Q 2015	1Q 2016	2Q 2016	3Q 2016	4Q 2016	1Q 2017	2Q 2017	3Q 2017	4Q 2017	1Q 2018	2Q 2018	3Q 2018
Major Currency Index	89.9	91.8	93.1	93.3	89.6	90.3	93.7	94.4	94.0	94.1	94.5	94.6	94.4	94.2
Real GDP	2.6	2.0	0.9	0.8	1.4	3.5	2.1	1.2	3.1	2.4	2.4	2.4	2.5	2.4
GDP Price Index	2.3	1.3	0.8	0.5	2.3	1.4	2.1	2.2	1.5	2.0	2.1	2.2	2.1	2.2
Consumer Price Index	2.4	1.5	0.4	0.1	2.3	1.8	3.0	3.1	1.1	2.2	2.3	2.4	2.2	2.4

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data is sourced from Haver Analytics. Historical data for Fed's Major Currency Index is from FRSR H.10. 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).

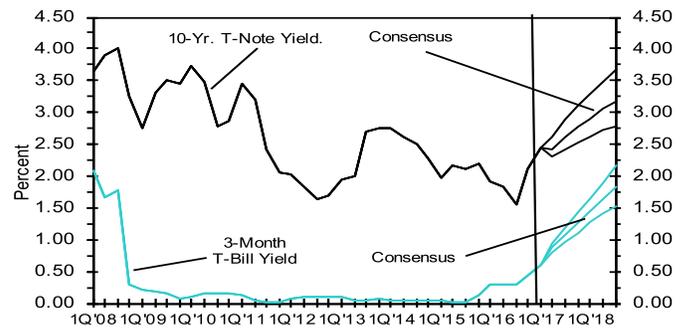
U.S. Treasury Yield Curve

Week ended May 19, 2017 and Year Ago vs. 2Q 2017 and 3Q 2018 Consensus Forecasts



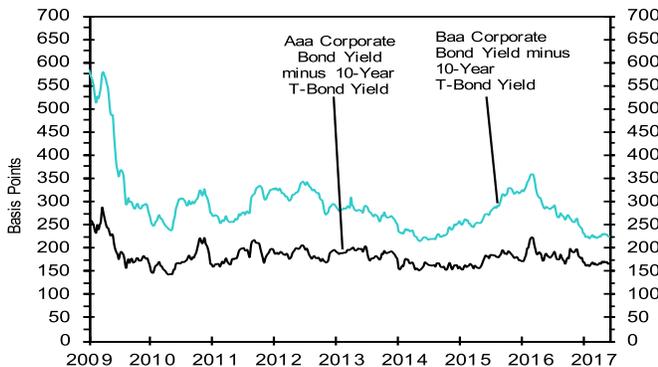
U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield

(Quarterly Average) Forecast



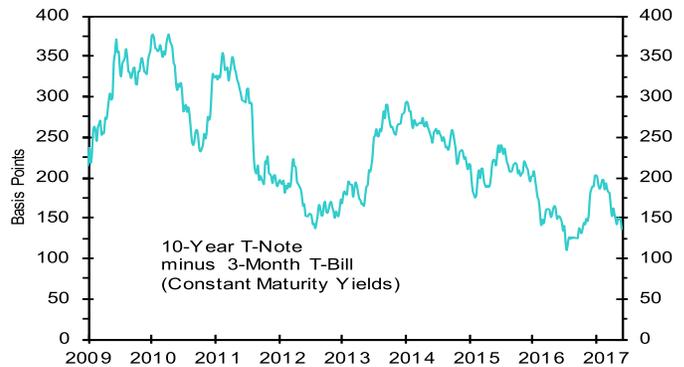
Corporate Bond Spreads

As of week ended May 19, 2017



U.S. Treasury Yield Curve

As of week May 19, 2017



Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2019 through 2023 and averages for the five-year periods 2019-2023 and 2024-2028. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

		Average For The Year					Five-Year Averages	
		2019	2020	2021	2022	2023	2019-2023	2024-2028
Interest Rates								
1. Federal Funds Rate	CONSENSUS	2.6	2.9	2.9	2.9	2.9	2.8	3.0
	Top 10 Average	3.1	3.5	3.4	3.5	3.5	3.4	3.5
	Bottom 10 Average	2.0	2.3	2.3	2.3	2.4	2.3	2.4
2. Prime Rate	CONSENSUS	5.6	5.9	5.9	5.9	5.9	5.8	6.0
	Top 10 Average	6.1	6.5	6.5	6.5	6.5	6.4	6.5
	Bottom 10 Average	5.0	5.3	5.3	5.2	5.3	5.2	5.4
3. LIBOR, 3-Mo.	CONSENSUS	2.9	3.1	3.2	3.1	3.2	3.1	3.2
	Top 10 Average	3.4	3.7	3.7	3.7	3.8	3.7	3.8
	Bottom 10 Average	2.4	2.6	2.6	2.5	2.6	2.5	2.6
4. Commercial Paper, 1-Mo.	CONSENSUS	2.7	3.0	3.0	3.0	3.1	3.0	3.1
	Top 10 Average	3.2	3.5	3.5	3.6	3.6	3.5	3.6
	Bottom 10 Average	2.2	2.5	2.5	2.4	2.5	2.4	2.6
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	2.5	2.8	2.8	2.8	2.9	2.8	2.9
	Top 10 Average	3.1	3.4	3.4	3.4	3.5	3.3	3.5
	Bottom 10 Average	1.9	2.2	2.3	2.2	2.3	2.2	2.3
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	2.6	2.9	3.0	3.0	3.0	2.9	3.0
	Top 10 Average	3.2	3.6	3.5	3.6	3.6	3.5	3.6
	Bottom 10 Average	2.0	2.4	2.4	2.4	2.4	2.3	2.4
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	2.8	3.1	3.1	3.1	3.1	3.0	3.2
	Top 10 Average	3.4	3.7	3.7	3.7	3.7	3.6	3.7
	Bottom 10 Average	2.1	2.5	2.5	2.5	2.5	2.4	2.5
8. Treasury Note Yield, 2-Yr.	CONSENSUS	2.9	3.2	3.3	3.3	3.3	3.2	3.3
	Top 10 Average	3.5	3.9	3.9	3.9	3.9	3.8	4.0
	Bottom 10 Average	2.3	2.6	2.7	2.6	2.6	2.6	2.7
10. Treasury Note Yield, 5-Yr.	CONSENSUS	3.3	3.5	3.5	3.6	3.6	3.5	3.6
	Top 10 Average	3.9	4.2	4.2	4.2	4.2	4.1	4.3
	Bottom 10 Average	2.7	2.9	2.9	3.0	3.0	2.9	3.0
11. Treasury Note Yield, 10-Yr.	CONSENSUS	3.6	3.8	3.8	3.9	3.9	3.8	3.9
	Top 10 Average	4.2	4.5	4.4	4.5	4.5	4.4	4.6
	Bottom 10 Average	2.9	3.1	3.1	3.2	3.3	3.1	3.3
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	4.2	4.3	4.4	4.4	4.4	4.3	4.5
	Top 10 Average	4.9	5.0	5.0	5.0	5.0	5.0	5.1
	Bottom 10 Average	3.5	3.7	3.7	3.8	3.8	3.7	3.8
13. Corporate Aaa Bond Yield	CONSENSUS	5.2	5.4	5.4	5.4	5.5	5.4	5.5
	Top 10 Average	5.7	5.9	5.9	6.0	5.9	5.9	6.0
	Bottom 10 Average	4.7	4.9	4.9	4.9	5.0	4.9	5.1
13. Corporate Baa Bond Yield	CONSENSUS	6.1	6.3	6.3	6.3	6.3	6.3	6.4
	Top 10 Average	6.8	7.0	6.9	7.0	6.9	6.9	7.0
	Bottom 10 Average	5.5	5.6	5.7	5.6	5.8	5.6	5.7
14. State & Local Bonds Yield	CONSENSUS	4.6	4.7	4.7	4.7	4.7	4.7	4.8
	Top 10 Average	5.1	5.3	5.2	5.3	5.3	5.2	5.3
	Bottom 10 Average	4.2	4.2	4.2	4.1	4.1	4.2	4.2
15. Home Mortgage Rate	CONSENSUS	5.3	5.5	5.5	5.5	5.5	5.4	5.6
	Top 10 Average	5.9	6.2	6.1	6.2	6.1	6.1	6.2
	Bottom 10 Average	4.6	4.8	4.8	4.7	4.9	4.8	4.9
A. FRB - Major Currency Index	CONSENSUS	93.8	93.2	93.1	93.0	92.7	93.2	92.5
	Top 10 Average	96.5	96.6	96.9	97.1	97.2	96.9	97.1
	Bottom 10 Average	91.0	89.7	89.2	88.7	88.1	89.3	88.1
		-----Year-Over-Year, % Change-----					Five-Year Averages	
		2019	2020	2021	2022	2023	2019-2023	2024-2028
B. Real GDP	CONSENSUS	2.2	2.0	2.0	2.0	2.0	2.0	2.1
	Top 10 Average	2.6	2.4	2.4	2.4	2.3	2.4	2.3
	Bottom 10 Average	1.7	1.6	1.6	1.6	1.6	1.6	1.8
C. GDP Chained Price Index	CONSENSUS	2.2	2.1	2.1	2.0	2.0	2.1	2.0
	Top 10 Average	2.5	2.3	2.3	2.2	2.2	2.3	2.3
	Bottom 10 Average	1.9	1.9	1.9	1.9	1.7	1.8	1.9
D. Consumer Price Index	CONSENSUS	2.3	2.3	2.3	2.3	2.2	2.2	2.2
	Top 10 Average	2.6	2.6	2.5	2.5	2.4	2.5	2.4
	Bottom 10 Average	1.9	2.0	2.0	2.1	1.8	2.0	2.0

Value Line Forecast for the U.S. Economy

	Actual					Estimated				
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Gross Domestic Product and its Components (2009 Chain Weighted \$) Billions of Dollars										
Final Sales	15292	15521	15882	16263	16585	16985	17454	17855	18248	18649
Total Consumption	10413	10565	10869	11215	11523	11810	12184	12549	12901	13236
Nonresidential Fixed Investment	1964	2033	2156	2201	2190	2317	2451	2549	2638	2718
Structures	423	428	474	452	439	490	500	512	525	540
Equipment & Software	939	982	1036	1073	1042	1084	1148	1206	1254	1292
Residential Fixed Investment	437	488	505	564	592	629	658	678	695	712
Exports	1963	2032	2118	2120	2128	2195	2247	2314	2395	2491
Imports	2410	2436	2544	2661	2692	2803	2938	3085	3208	3337
Federal Government	1214	1143	1114	1114	1120	1120	1115	1104	1093	1082
State & Local Governments	1728	1714	1718	1768	1785	1792	1826	1853	1872	1891
Gross Domestic Product	16155	16692	17393	18037	18569	19373	20362	21330	22322	23338
Real GDP (2009 Chain Weighted \$)	15355	15612	15982	16397	16660	17035	17519	17957	18370	18774
Prices and Wages — Annual Rates of Change										
GDP Deflator	1.8	1.6	1.8	1.1	1.6	2.1	2.3	2.2	2.3	2.3
CPI-All Urban Consumers	2.1	1.5	1.6	0.4	1.8	2.5	2.2	2.4	2.6	2.8
PPI-Finished Goods	1.9	1.2	1.9	-3.2	1.1	3.4	2.0	2.2	2.3	2.5
Employment Cost Index—Total Comp.	1.9	1.9	2.1	1.9	2.2	2.8	3.2	3.4	3.4	3.5
Productivity	0.9	0.0	0.7	0.5	1.1	1.4	1.9	1.6	1.7	1.6
Production and Other Key Measures										
Industrial Prod. (% Change, Annualized)	2.8	1.9	3.7	-1.6	-0.1	2.9	2.9	2.5	2.3	2.2
Factory Operating Rate (%)	74.5	74.1	75.3	75.5	75.1	75.6	75.9	75.5	75.0	75.0
Nonfarm Inven. Change (2009 Chain Weighted \$)	72.7	54.3	65.0	88.1	26.0	19.9	40.0	50.0	50.0	50.0
Housing Starts (Mill. Units)	0.78	0.93	1.00	1.11	1.18	1.27	1.35	1.40	1.43	1.45
Existing House Sales (Mill. Units)	4.66	5.07	4.92	5.23	5.44	5.60	5.49	5.45	5.45	5.40
Total Light Vehicle Sales (Mill. Units)	14.4	15.5	16.4	17.4	17.5	17.4	17.5	17.5	17.4	17.2
National Unemployment Rate (%)	8.1	7.4	6.2	5.3	4.9	4.5	4.2	4.2	4.2	4.3
Federal Budget Surplus (Unified, FY, \$Bill)	-1089	-680	-483	-479	-581	-547	-675	-750	-800	-900
Price of Oil (\$Bbl., U.S. Refiners' Cost)	101.00	100.47	92.23	48.41	40.63	48.06	48.50	51.00	55.00	65.00
Money and Interest Rates										
3-Month Treasury Bill Rate (%)	0.1	0.1	0.1	0.1	0.3	1.0	1.7	2.5	2.7	2.9
Federal Funds Rate (%)	0.1	0.1	0.1	0.1	0.4	1.1	1.7	2.7	3.0	3.2
10-Year Treasury Note Rate (%)	1.8	2.4	2.5	2.2	1.9	2.6	3.2	3.8	4.0	4.2
Long-Term Treasury Bond Rate (%)	2.9	3.5	3.3	2.9	2.6	3.1	3.8	4.0	4.1	4.2
AAA Corporate Bond Rate (%)	3.7	4.2	4.2	3.9	3.7	4.2	4.8	5.2	5.5	5.7
Prime Rate (%)	3.3	3.3	3.3	3.3	3.5	4.2	4.8	5.5	6.0	6.5
Incomes										
Personal Income (Annualized % Change)	5.0	1.1	4.4	3.9	3.7	4.4	4.7	5.0	5.0	4.8
Real Disp. Inc. (Annualized % Change)	3.1	-1.4	2.7	3.1	2.5	2.6	3.5	3.2	3.0	2.8
Personal Savings Rate (%)	7.6	4.8	4.8	5.8	5.9	5.8	6.3	6.8	6.8	6.8
After-Tax Profits (Annualized \$Bill)	1683	1693	1694	1588	1655	1800	2043	2145	2231	2320
Yr-to-Yr % Change	17.9	0.6	0.1	-6.3	4.2	8.7	13.5	5.0	4.0	4.0
Composition of Real GDP-Annual Rates of Change										
Gross Domestic Product	2.2	1.7	2.4	2.6	1.6	2.2	2.8	2.5	2.3	2.2
Final Sales	2.1	1.5	2.3	2.4	2.0	2.4	2.8	2.3	2.2	2.2
Total Consumption	1.5	1.5	2.9	3.2	2.7	2.5	3.2	3.0	2.8	2.6
Nonresidential Fixed Investment	9.0	3.5	6.0	2.1	-0.5	5.8	5.8	4.0	3.5	3.0
Structures	12.9	1.2	10.6	-4.5	-2.9	11.6	2.0	2.5	2.5	2.8
Equipment & Software	10.8	4.6	5.4	3.6	-2.9	4.0	6.0	5.0	4.0	3.0
Residential Fixed Investment	13.5	11.7	3.5	11.6	4.9	6.4	4.6	3.0	2.5	2.5
Exports	3.4	3.5	4.2	0.1	0.4	3.1	2.4	3.0	3.5	4.0
Imports	2.2	1.1	4.4	4.6	1.2	4.1	4.8	5.0	4.0	4.0
Federal Government	-1.9	-5.8	-2.5	0.0	0.6	0.0	-0.4	-1.0	-1.0	-1.0
State & Local Governments	-1.9	-0.8	0.2	2.9	0.9	0.4	1.9	1.5	1.0	1.0

Concept	SeriesType	Last Update	2017	2018	2019	2020	2021	2022	2023	2024
Gross Domestic Product	U.S. Macro - 30 Year Baseline	3/2/2017	19,397.06	20,322.81	21,221.68	22,134.18	23,106.66	24,126.90	25,187.18	26,282.03
Rate On Aa-Rated Public Utility Bonds	U.S. Macro - 30 Year Baseline	3/2/2017	4.35	5.17	5.77	6.03	6.03	6.03	6.03	6.03
Yield On 10-Year Treasury Notes	U.S. Macro - 30 Year Baseline	3/2/2017	2.65	3.15	3.84	4.07	4.07	4.07	4.07	4.07
Yield On 30-Year Treasury Bonds	U.S. Macro - 30 Year Baseline	3/2/2017	3.24	3.78	4.36	4.57	4.57	4.57	4.57	4.57
Yield On Aaa-Rated Corporate Bonds	U.S. Macro - 30 Year Baseline	3/2/2017	4.16	4.82	5.21	5.45	5.45	5.45	5.45	5.45

20. Macroeconomic Indicators

(billion 2009 chain-weighted dollars, unless otherwise noted)

Indicators	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Real Gross Domestic Product	16,397	16,652	17,114	17,499	17,817	18,236	18,734	19,221	19,650	20,127	20,558	20,906
Components of Real Gross Domestic Product												
Real Consumption	11,215	11,522	11,837	12,124	12,391	12,673	13,019	13,380	13,707	14,064	14,402	14,687
Real Investment	2,869	2,816	2,986	3,164	3,221	3,343	3,488	3,610	3,693	3,811	3,913	3,962
Real Government Spending	2,884	2,919	2,945	2,949	2,950	2,953	2,957	2,974	2,995	3,014	3,036	3,056
Real Exports	2,121	2,114	2,204	2,268	2,351	2,489	2,657	2,809	2,946	3,100	3,242	3,366
Real Imports	2,661	2,692	2,831	2,983	3,075	3,197	3,362	3,527	3,665	3,837	4,015	4,149
Energy Intensity												
(thousand Btu per 2009 dollar of GDP)												
Delivered Energy	4.36	4.30	4.23	4.20	4.16	4.07	3.97	3.89	3.81	3.72	3.63	3.56
Total Energy	5.91	5.79	5.69	5.63	5.58	5.47	5.34	5.22	5.12	5.00	4.88	4.78
Price Indices												
GDP Chain-type Price Index (2009=1.000)	1.100	1.116	1.140	1.162	1.187	1.213	1.239	1.267	1.295	1.321	1.350	1.380
Consumer Price Index (1982-84=1.00)												
All-urban	2.37	2.40	2.46	2.51	2.58	2.65	2.71	2.79	2.86	2.93	3.00	3.08
Energy Commodities and Services	2.03	1.87	2.00	2.06	2.21	2.33	2.44	2.57	2.66	2.73	2.84	2.94
Wholesale Price Index (1982=1.00)												
All Commodities	1.90	1.85	1.91	1.96	2.02	2.08	2.13	2.18	2.22	2.26	2.31	2.35
Fuel and Power	1.60	1.44	1.58	1.69	1.84	1.97	2.04	2.13	2.20	2.27	2.35	2.44
Metals and Metal Products	2.00	1.93	2.00	2.07	2.10	2.15	2.19	2.22	2.24	2.25	2.26	2.26
Industrial Commodities excluding Energy	1.94	1.93	1.97	2.00	2.04	2.08	2.12	2.16	2.20	2.23	2.26	2.30
Interest Rates (percent, nominal)												
Federal Funds Rate	0.13	0.42	0.98	1.76	2.59	2.95	3.04	3.09	3.08	3.06	3.07	3.00
10-Year Treasury Note	2.14	1.73	2.28	2.88	3.48	3.75	3.81	3.83	3.81	3.81	3.82	3.79
AA Utility Bond Rate	3.99	3.65	4.42	5.12	5.43	5.71	5.75	5.78	5.78	5.76	5.79	5.76

20. Macroeconomic Indicators

(billion 2009 chain-weighted dollars, unless otherwise noted)

Indicators	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Real Gross Domestic Product	21,284	21,725	22,165	22,585	23,008	23,445	23,953	24,511	25,054	25,590	26,151	26,765
Components of Real Gross Domestic Product												
Real Consumption	14,969	15,294	15,634	15,952	16,271	16,605	16,969	17,365	17,759	18,157	18,569	19,012
Real Investment	4,042	4,138	4,233	4,319	4,409	4,490	4,601	4,753	4,886	5,009	5,128	5,267
Real Government Spending	3,077	3,109	3,146	3,188	3,221	3,257	3,295	3,337	3,379	3,420	3,459	3,500
Real Exports	3,507	3,663	3,811	3,950	4,098	4,255	4,441	4,623	4,803	4,970	5,162	5,370
Real Imports	4,294	4,463	4,647	4,817	4,985	5,158	5,347	5,561	5,766	5,959	6,157	6,367
Energy Intensity												
(thousand Btu per 2009 dollar of GDP)												
Delivered Energy	3.48	3.40	3.33	3.26	3.20	3.14	3.07	3.01	2.96	2.91	2.86	2.81
Total Energy	4.67	4.56	4.46	4.37	4.29	4.20	4.12	4.04	3.96	3.89	3.82	3.75
Price Indices												
GDP Chain-type Price Index (2009=1.000)	1.412	1.443	1.475	1.507	1.540	1.572	1.604	1.634	1.665	1.697	1.728	1.761
Consumer Price Index (1982-84=1.00)												
All-urban	3.16	3.24	3.32	3.40	3.49	3.57	3.65	3.74	3.82	3.90	3.99	4.07
Energy Commodities and Services	3.03	3.10	3.19	3.29	3.39	3.49	3.56	3.65	3.74	3.86	3.94	4.02
Wholesale Price Index (1982=1.00)												
All Commodities	2.40	2.44	2.49	2.53	2.58	2.62	2.66	2.70	2.74	2.78	2.81	2.85
Fuel and Power	2.52	2.59	2.68	2.76	2.85	2.93	2.98	3.04	3.13	3.22	3.28	3.35
Metals and Metal Products	2.26	2.27	2.29	2.30	2.32	2.33	2.35	2.37	2.38	2.39	2.41	2.43
Industrial Commodities excluding Energy	2.33	2.36	2.40	2.44	2.47	2.50	2.54	2.57	2.60	2.63	2.66	2.69
Interest Rates (percent, nominal)												
Federal Funds Rate	2.97	2.97	2.97	2.93	2.91	2.95	2.99	2.98	2.98	2.97	2.96	2.99
10-Year Treasury Note	3.77	3.77	3.78	3.75	3.73	3.76	3.78	3.77	3.76	3.74	3.73	3.75
AA Utility Bond Rate	5.74	5.74	5.75	5.73	5.71	5.73	5.76	5.74	5.73	5.72	5.70	5.72

20. Macroeconomic Indicators

(billion 2009 chain-weighted dollars, unless otherwise noted)

Indicators	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Real Gross Domestic Product	27,324	27,852	28,413	29,001	29,600	30,191	30,782	31,371	31,923	32,468	33,062	33,653
Components of Real Gross Domestic Product												
Real Consumption	19,445	19,851	20,268	20,707	21,152	21,600	22,049	22,504	22,948	23,390	23,861	24,332
Real Investment	5,378	5,477	5,605	5,736	5,876	6,021	6,164	6,304	6,429	6,537	6,674	6,806
Real Government Spending	3,542	3,585	3,618	3,660	3,703	3,744	3,786	3,829	3,871	3,914	3,959	4,013
Real Exports	5,552	5,729	5,928	6,136	6,339	6,534	6,732	6,930	7,109	7,292	7,493	7,685
Real Imports	6,577	6,775	6,985	7,215	7,444	7,684	7,928	8,176	8,423	8,663	8,930	9,200
Energy Intensity												
(thousand Btu per 2009 dollar of GDP)												
Delivered Energy	2.77	2.73	2.68	2.64	2.60	2.57	2.53	2.50	2.47	2.45	2.42	2.40
Total Energy	3.69	3.64	3.58	3.53	3.47	3.42	3.37	3.33	3.29	3.25	3.21	3.17
Price Indices												
GDP Chain-type Price Index (2009=1.000)	1.794	1.829	1.866	1.904	1.944	1.985	2.028	2.072	2.118	2.164	2.211	2.258
Consumer Price Index (1982-84=1.00)												
All-urban	4.16	4.26	4.36	4.46	4.56	4.67	4.78	4.90	5.02	5.15	5.27	5.40
Energy Commodities and Services	4.13	4.23	4.33	4.43	4.54	4.66	4.78	4.90	5.04	5.16	5.29	5.46
Wholesale Price Index (1982=1.00)												
All Commodities	2.90	2.94	2.98	3.03	3.08	3.13	3.18	3.24	3.29	3.35	3.40	3.46
Fuel and Power	3.44	3.52	3.59	3.68	3.79	3.89	4.00	4.11	4.23	4.35	4.47	4.60
Metals and Metal Products	2.45	2.46	2.48	2.51	2.53	2.55	2.57	2.59	2.61	2.62	2.64	2.66
Industrial Commodities excluding Energy	2.73	2.76	2.80	2.83	2.87	2.91	2.95	2.99	3.03	3.07	3.11	3.15
Interest Rates (percent, nominal)												
Federal Funds Rate	3.00	2.99	2.99	3.01	3.03	3.02	3.00	2.96	2.92	2.92	2.98	2.96
10-Year Treasury Note	3.76	3.76	3.76	3.77	3.77	3.78	3.78	3.76	3.75	3.74	3.76	3.74
AA Utility Bond Rate	5.73	5.73	5.71	5.73	5.74	5.76	5.75	5.75	5.73	5.70	5.73	5.71

REGULATORY FOCUS

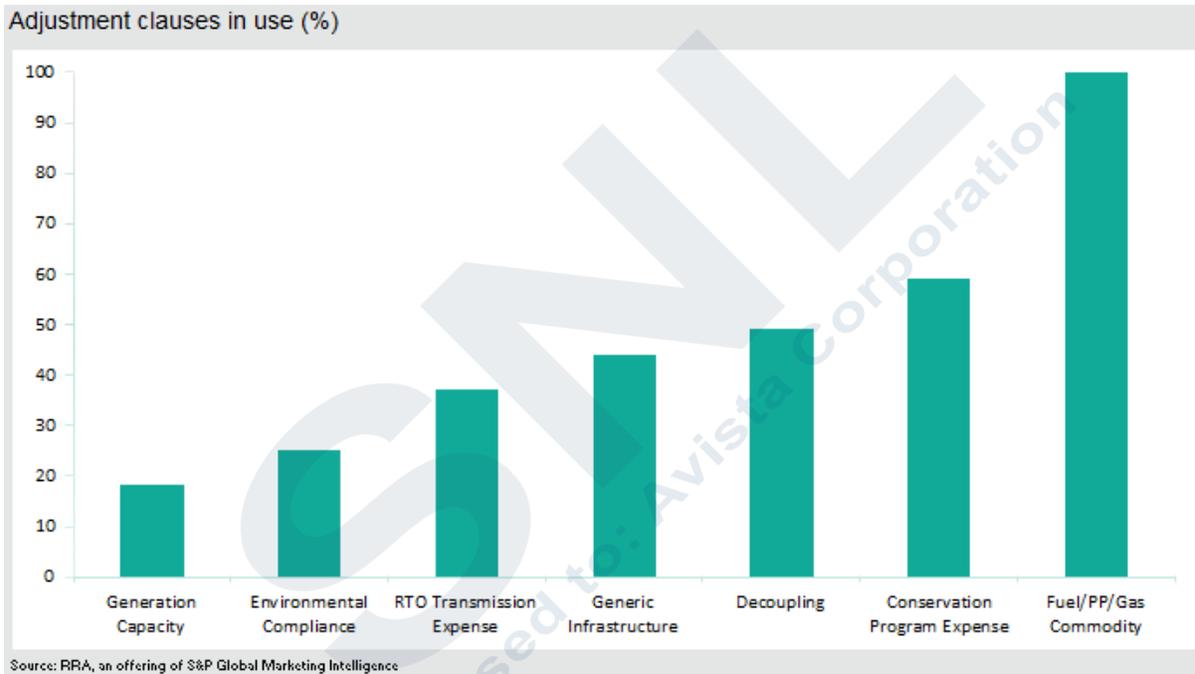
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RRA Topical Special Report

August 22, 2016

ADJUSTMENT CLAUSES ~ A State-by-State Overview ~

In the face of the robust expansion of utility capital expenditures over the last 10 years or so, —CapEx for the 45 companies in the RRA Index is estimated at \$115 billion in 2016, versus \$52 billion in 2006—increases in various expenses and sluggish demand growth in most parts of the U.S., industry stakeholders have developed ever more innovative strategies to achieving timely rate recognition of these factors. A key component of these strategies has been the implementation of adjustment clauses to address these issues. (For additional information concerning capital expenditure trends, refer to the May 13, 2016 [Financial Focus Special Report](#) entitled Capital Expenditure Update--**Projected 2016 capital spending reaches all-time high of \$115B.**)



A defining characteristic of an adjustment clause is that it effectively shifts the risk associated with recovery of the expense in question from shareholders to customers, because if the clause operates as designed, the company is able to change its rates to recover its costs on a current basis, without any negative effect on the bottom line and without the expense and delay that accompanies a rate case filing.

The electric and natural gas utilities' use of adjustment clauses to recover variations in certain costs outside of the traditional rate case process has its origins in the 1973 Arab oil embargo, when fuel costs skyrocketed, leaving the utilities with no way to recover the increased costs in a timely manner. At that time, the only remedy for the utilities was to file a rate case; however, rate proceedings frequently took more than a year to litigate, while fuel prices climbed more rapidly than the utilities could obtain rate recognition of the increased costs. Certain jurisdictions permitted the utilities to have more than one rate case pending simultaneously; however, most did not. During these years, utility earnings were under considerable pressure, a situation that prompted certain jurisdictions to establish a more constructive framework to allow more timely recovery of cost increases that were beyond the control of the utilities.

The result was the creation of the fuel adjustment clause, or FAC, essentially a single-issue ratemaking process, whereby a utility is permitted to implement periodic rate adjustments to reflect changes in its cost of fuel. The utility is generally authorized to defer incremental variations in its fuel costs to offset any effect on earnings from the variation in the cost. The deferred amount is then recovered from, or refunded to,

ratepayers in the next FAC rate adjustment. In some circumstances, the FAC includes a forward looking component that is subject to true up provisions. In addition to fuel costs, most jurisdictions allow the utility to purchase power expense to be included in the FAC.

Over the ensuing years, the use of adjustment clauses expanded greatly. Adjustment clauses are generally reserved for expenses that are outside the control of the utility or are required by law or rule. Some jurisdictions have approved the use of adjustment clauses for environmental compliance costs, conservation costs, or to pass through to customers the margins that the company receives from selling excess power or pipeline capacity in the open market through off system sales. Certain jurisdictions also allow expenses related to renewable energy to be recovered through a separate charge, and others permit the costs associated with the construction of new generation capacity or delivery infrastructure to be reflected in rates through an adjustment clause.

Another type of adjustment clause, a decoupling mechanism, enables utilities to offset the effect on revenues of unexpected sales reductions caused by energy efficiency programs, deviations from "normal" temperature patterns, or economic conditions in their territories. RRA considers a decoupling mechanism that adjusts for all three of these factors to be a "full" decoupling mechanism.

This report covers the key adjustment clauses used by the largest electric and gas utilities in the 53 jurisdictions covered by RRA. This report does not address surcharges that have been approved to enable the utility to recover specific one-time items, e.g., excess storm restoration costs incurred in a given year, because under that scenario, the utility is recovering, over a defined period of time, a fixed amount that has already been incurred. This report also does not include expense trackers, which provide for the deferral of variations in certain costs for potential recovery at a future time, when the commission will consider the net accumulated balance for inclusion in rates. Although an expense tracker is designed to keep the utility's earnings whole, rates and cash flows do not change on a current basis. Expense trackers are sometimes authorized to account for variations in pension-related costs. Although there are similarities between each of these types of ratemaking provisions, only adjustment clauses allow rates to change on an expedited basis in accordance with cost changes.

The accompanying table includes footnotes (denoted by "✓*" or "--*"), beginning on page 14, only where a clarification regarding the specific adjustment clause is necessary. Further details concerning the adjustment clauses included in this report can be found in each of RRA's [Commission Profiles](#). As indicated in the table, all of these jurisdictions employ some type of adjustment clause, with fuel/purchased power clauses being the most prevalent. All electric and gas utilities are permitted to adjust rates, outside of a base rate case, for variations in fuel/purchased power expenses. RRA notes that **roughly two thirds of all utility commissions permit the use of, or are considering the use of, an adjustment clause for new capital investment. In addition, some form of decoupling is in place in the vast majority of the jurisdictions.** Roughly one-third of all jurisdictions have adjustment clauses in place to reflect changes in the costs associated with the utilities' participation in regional transmission organizations.

Regulatory Agency Abbreviations

ACC	- Arizona Corporation Commission
ARC	- Alaska Regulatory Commission
BPU	- Board of Public Utilities (New Jersey)
DPU	- Department of Public Utilities (Massachusetts)
ICC	- Illinois Commerce Commission
IUB	- Iowa Utilities Board
KCC	- Kansas Corporation Commission
NCUC	- North Carolina Utilities Commission
NOCC	- New Orleans City Council
OCC	- Oklahoma Corporation Commission
PRC	- Public Regulation Commission (New Mexico)
PSB	- Public Service Board (Vermont)
PSC	- Public Service Commission
PUC	- Public Utility(ies) Commission
PURA	- Public Utilities Regulatory Authority (Connecticut)
RRC	- Railroad Commission (Texas)
SCC	- State Corporation Commission (Virginia)
TRA	- Tennessee Regulatory Authority
URC	- Utility Regulatory Commission (Indiana)
WUTC	- Washington Utilities and Transportation Commission

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Use of adjustment clauses (as of August 2016)

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause									
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	New Capital		RTO-Related Transmission Expense	Other
					Full	Partial			Generation Capacity	Generic Infrastructure		
<u>ALABAMA</u>												
Alabama Power	SO	Elec.	✓*	--	--	--	--	✓*	✓*	--	--	✓*
Alabama Gas	SR	Gas	✓*	--	--	✓*	--	--	--	--	--	✓*
Mobile Gas	SRE	Gas	✓*	--	--	✓*	--	--	--	--	--	✓*
<u>ALASKA</u>												
Alaska Electric Light & Power	AVA	Elec.	✓	--	--	--	--	--	--	--	--	--
Enstar Natural Gas	--	Gas	✓	--	--	--	--	--	--	--	--	--
<u>ARIZONA</u>												
Arizona Public Service	PNW	Elec.	✓	✓	--	✓*	✓	✓	✓*	--	✓	✓*
Southwest Gas	SWX	Gas	✓	✓	✓*	--	--	--	--	--	--	✓*
Tucson Electric Power	--	Elec.	✓	✓	--	✓*	✓	✓	--	--	--	✓*
UNS Electric	--	Elec.	✓	✓	--	✓*	✓	--	--	--	✓	✓*
UNS Gas	--	Gas	✓	✓	--	✓*	--	--	--	--	--	✓*
<u>ARKANSAS</u>												
Arkansas Oklahoma Gas	--	Gas	✓	✓	✓	--	--	--	--	✓	--	✓*
CenterPoint Energy Resources	CNP	Gas	✓	✓	✓	--	--	--	--	✓	--	✓*
Entergy Arkansas	ETR	Elec.	✓	✓	--	✓*	--	--	✓*	✓*	✓	✓*
Oklahoma Gas & Electric	OGE	Elec.	✓*	✓	--	✓*	✓	✓	✓	--	✓	✓*
SourceGas Arkansas	BKH	Gas	✓	✓	✓	--	--	--	--	✓	--	✓*
Southwestern Electric Power	AEP	Elec.	✓	✓	--	✓*	--	✓	✓	--	--	✓*
<u>CALIFORNIA</u>												
Pacific Gas & Electric	PCG	Elec.	✓	--	✓	--	--	--	--	--	--	--
Pacific Gas & Electric	PCG	Gas	✓	--	✓	--	--	--	--	--	--	--
San Diego Gas & Electric	SRE	Elec.	✓	--	✓	--	--	--	--	--	--	--
San Diego Gas & Electric	SRE	Gas	✓	--	✓	--	--	--	--	--	--	--
Southern California Edison	EIX	Elec.	✓	--	✓	--	--	--	--	--	--	--
Southern California Gas	SRE	Gas	✓	--	✓	--	--	--	--	--	--	--
Southwest Gas	SWX	Gas	✓	--	✓	--	--	--	--	--	--	--
<u>COLORADO</u>												
Black Hills Colorado Electric	BKH	Elec.	✓	✓	--	--	✓	--	✓*	✓*	--	✓*
Public Service Co. of Colorado	XEL	Elec.	✓	✓	--	--	✓	✓*	✓*	✓*	--	✓*
Public Service Co. of Colorado	XEL	Gas	✓	✓	--	✓*	--	--	--	✓*	--	--
Black Hills Gas Distribution	BKH	Gas	✓	✓	--	--	--	--	--	--	--	--

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause								RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	New Capital		Transmission Expense	Other
					Full	Partial			Generation Capacity	Generic Infrastructure		
CONNECTICUT												
Connecticut Lt. & Pwr.	ES	Elec.	--*	✓	✓*	--	--	--	--	--	✓	--
Conn. Natural Gas	--	Gas	✓	✓	✓*	--	--	--	--	✓*	--	--
Southern Conn. Gas	--	Gas	✓	✓	--*	--	--	--	--	✓*	--	--
United Illuminating	--	Elec.	--*	✓	✓*	--	--	--	--	--	✓	--
Yankee Gas Service	ES	Gas	✓	✓	--*	--	--	--	--	✓*	--	--
DELAWARE												
Chesapeake Utilities	CPK	Gas	✓	--	--	--	--	--	--	--	--	✓*
Delmarva Power & Light	EXC	Elec.	--*	--	--	--	--	--	--	--	✓	--
Delmarva Power & Light	EXC	Gas	✓	--	--	--	✓	--	--	--	--	--
DISTRICT OF COLUMBIA												
Potomac Electric Power	EXC	Elec.	--*	--	--	✓*	✓*	--	--	✓*	--	✓*
Washington Gas Light	WGL	Gas	✓	--	--	--	--	--	--	✓*	--	✓*
FLORIDA												
Florida Power & Light	NEE	Elec.	✓	✓	--	--	--	✓	✓*	--	--	✓*
Duke Energy Florida	DUK	Elec.	✓	✓	--	--	--	✓	✓*	--	--	✓*
Florida Public Utilities	CPK	Elec.	✓	✓	--	--	--	✓	✓*	--	--	✓*
Florida Public Utilities	CPK	Gas	✓	✓	--	--	--	✓	--	✓*	--	✓*
Gulf Power	SO	Elec.	✓	✓	--	--	--	✓	✓*	--	--	✓*
Peoples Gas System	--	Gas	✓	✓	--	--	--	✓	--	✓*	--	✓*
Pivotal Utility Holdings	SO	Gas	✓	✓	--	--	--	✓	--	✓*	--	✓*
Tampa Electric	--	Elec.	✓	✓	--	--	--	✓	✓*	--	--	✓*
GEORGIA												
Atlanta Gas Light	SO	Gas	--*	--	--*	--	--	✓*	--	✓*	--	--
Georgia Power	SO	Elec.	✓	--	--	--	--	--	✓*	--	--	--
Liberty Utilities (Peach State Nat. Gas)	--	Gas	✓*	--	✓*	--	--	--	--	--	--	--
HAWAII												
Hawaiian Electric	HE	Elec.	✓	✓	✓	--	✓	--	✓*	✓*	--	✓*
Hawaii Electric Light	HE	Elec.	✓	✓	✓	--	✓	--	✓*	✓*	--	✓*
Maui Electric	HE	Elec.	✓	✓	✓	--	✓	--	✓*	✓*	--	✓*

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause							New Capital		RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	Generation Capacity	Generic Infrastructure	Transmission Expense	Other	
					Full	Partial							
IDAHO													
Avista Corp.	AVA	Elec.	✓*	✓	--	✓*	--	--	--	--	--	--	
Avista Corp.	AVA	Gas	✓	✓	--	✓*	--	--	--	--	--	--	
Idaho Power	IDA	Elec.	✓*	✓	✓*	--	--	--	--	--	--	--	
PacifiCorp	BRK.A	Elec.	✓*	✓	--	--	--	--	--	--	--	--	
ILLINOIS													
Ameren Illinois	AEE	Elec.	--*	✓	--	--	✓	✓*	--	--	✓	✓*	
Ameren Illinois	AEE	Gas	✓	✓	✓	--	--	✓*	--	✓*	--	✓*	
Commonwealth Edison	EXC	Elec.	--*	✓	--	--	✓	✓*	--	✓*	✓	✓*	
MidAmerican Energy	BRK.A	Elec.	✓	✓	--	--	✓	--	--	--	✓	✓*	
MidAmerican Energy	BRK.A	Gas	✓	✓	--	--	--	--	--	--*	--	✓*	
North Shore Gas	WEC	Gas	✓	✓	✓	--	--	✓*	--	--*	--	✓*	
Northern Illinois Gas	SO	Gas	✓	✓	--	--	--	✓*	--	✓*	--	✓*	
Peoples Gas Light & Coke	WEC	Gas	✓	✓	✓	--	--	✓*	--	✓*	--	✓*	
INDIANA													
Duke Energy Indiana	DUK	Elec.	✓	✓	--	✓*	✓	✓*	✓*	✓*	✓	✓*	
Indiana Gas	VVC	Gas	✓	✓	✓	--	--	--	--	✓*	--	✓*	
Indiana Michigan Power	AEP	Elec.	✓	✓	--	✓*	✓	✓*	--	✓*	✓	✓*	
Indianapolis Power & Light	AES	Elec.	✓	✓	--	--*	✓	✓*	--	--*	✓	✓*	
Northern Indiana Public Service	NI	Elec.	✓	✓	--	✓*	✓	✓*	--	✓*	✓	✓*	
Northern Indiana Public Service	NI	Gas	✓	✓	--	--	--	--	--	✓*	--	✓*	
Southern Indiana Gas & Electric	VVC	Elec.	✓	✓	--	✓*	--	--*	--	--*	✓	✓*	
Southern Indiana Gas & Electric	VVC	Gas	✓	✓	✓	--	--	--	--	✓*	--	✓*	
IOWA													
Black Hills Iowa Gas Utility	BKH	Gas	✓	✓	--	--	--	--	--	✓	--	✓*	
Interstate Power & Light	LNT	Elec.	✓	✓	--	--	✓	✓*	--	--	✓	✓*	
Interstate Power & Light	LNT	Gas	✓	✓	--	--	--	--	--	--	--	✓*	
MidAmerican Energy	BRK.A	Elec.	✓	✓	--	--	✓	✓*	--	--	✓	✓*	
MidAmerican Energy	BRK.A	Gas	✓	✓	--	--	--	--	--	--	--	✓*	
KANSAS													
Atmos Energy	ATO	Gas	✓	--*	--	✓*	--	--	--	✓*	--	✓*	
Black Hills/Kansas Gas Utility	BKH	Gas	✓	--*	--	✓*	--	--	--	✓*	--	✓*	
Empire District Electric	EDE	Elec.	✓	✓	--	--	--	✓	--	--	--	✓*	
Kansas City Power & Light	GXP	Elec.	✓	✓	--	--	--	--	--	✓*	✓	✓*	
Kansas Gas & Electric	WR	Elec.	✓	✓	--	✓*	✓	✓	--	--	✓	✓*	
Kansas Gas Service	OGS	Gas	✓	--*	--	✓*	--	--	--	✓*	--	✓*	
Westar Energy	WR	Elec.	✓	✓	--	✓*	✓	✓	--	--	✓	✓*	

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause								RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	New Capital		Transmission Expense	Other
					Full	Partial			Generation Capacity	Generic Infrastructure		
KENTUCKY												
Atmos Energy	ATO	Gas	✓	✓	--	✓*	--	--	--	✓*	--	✓*
Columbia Gas of Kentucky	NI	Gas	✓	✓	--	✓*	--	--	--	✓*	--	✓*
Delta Natural Gas	DGAS	Gas	✓	✓	--	✓*	--	--	--	✓*	--	✓*
Duke Energy Kentucky	DUK	Elec.	✓	✓	--	✓*	✓	--	--	--	--	✓*
Duke Energy Kentucky	DUK	Gas	✓	✓	--	✓*	--	--	--	✓*	--	✓*
Kentucky Power	AEP	Elec.	✓	✓	--	✓*	✓	✓*	✓*	--	--	✓*
Kentucky Utilities	PPL	Elec.	✓	✓	--	✓*	✓	✓*	--	--	--	✓*
Louisville Gas & Electric	PPL	Elec.	✓	✓	--	✓*	✓	✓*	--	--	--	✓*
Louisville Gas & Electric	PPL	Gas	✓	✓	--	✓*	--	--	--	✓*	--	✓*
LOUISIANA-NOCC												
Entergy New Orleans	ETR	Elec.	✓	✓	--	✓*	--	✓*	✓*	--	✓	✓*
Entergy New Orleans	ETR	Gas	✓	--	--	--	--	--	--	--	--	✓*
LOUISIANA PSC												
Atmos Energy	ATO	Gas	✓	--	--	✓*	--	--	--	✓*	--	--
CenterPoint Energy Res. (Arkla)	CNP	Gas	✓	--	--	✓*	--	--	--	--	--	--
Cleco Power	--	Elec.	✓	✓	--	✓*	--	✓*	✓*	✓*	✓*	✓*
Entergy Louisiana	ETR	Elec.	✓	✓	--	✓*	--	✓*	✓*	--	✓*	✓*
Entergy Louisiana	ETR	Gas	✓	--	--	✓*	--	--	--	✓*	--	--
Southwestern Electric Power	AEP	Elec.	✓	✓	--	✓*	--	✓*	--	--	--	✓*
MAINE												
Central Maine Power	--	Elec.	--*	--	✓*	--	--	--	--	--	--	✓*
Emera Maine	--	Elec.	--*	--	--	--	--	--	--	--	--	--
Maine Natural Gas	--	Gas	✓	--	--	--	--	--	--	--	--	--
Northern Utilities	UTL	Gas	✓	--	--	--	--	✓*	--	✓*	--	--
MARYLAND												
Baltimore Gas & Electric	EXC	Elec.	--*	✓*	✓	--	--	--	--	✓*	--	✓*
Baltimore Gas & Electric	EXC	Gas	✓	✓*	✓	--	--	--	--	✓*	--	✓*
Columbia Gas of Maryland	NI	Gas	✓	✓*	--	✓*	--	--	--	✓*	--	✓*
Delmarva Power & Light	EXC	Elec.	--*	✓*	✓	--	--	--	--	✓*	--	--
Potomac Edison	FE	Elec.	--*	✓*	--	--	--	--	--	--	--	✓*
Potomac Electric Power	EXC	Elec.	--*	✓*	✓	--	--	--	--	✓*	--	✓*
Washington Gas Light	WGL	Gas	✓	✓*	--	✓*	--	--	--	✓*	--	✓*

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause								New Capital		RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	Generation Capacity	Generic Infrastructure	Transmission Expense	Other		
					Full	Partial								
MASSACHUSETTS														
Bay State Gas	NI	Gas	✓	✓*	✓	--	--	✓*	--	✓*	--	✓*		
Berkshire Gas	--	Gas	✓	✓*	--	--	--	✓*	--	✓*	--	--		
Boston Gas/Colonial Gas	--	Gas	✓	✓*	✓	--	--	✓*	--	✓*	--	✓*		
Fitchburg Gas & Electric	UTL	Elec.	--*	✓*	✓	--	--	--	--	✓*	✓	✓*		
Fitchburg Gas & Electric	UTL	Gas	✓	✓*	✓	--	--	✓*	--	✓*	--	✓*		
Liberty Utilities (New England Gas)	--	Gas	✓	✓*	✓	--	--	✓*	--	✓*	--	✓*		
Massachusetts Electric	--	Elec.	--*	✓*	✓	--	✓*	--	✓*	✓*	✓	✓*		
NSTAR Electric	ES	Elec.	--*	✓*	--	--	--	--	--	--	✓	✓*		
NSTAR Gas	ES	Gas	✓	✓*	✓	--	--	✓*	--	✓*	--	✓*		
Western Mass. Electric	ES	Elec.	--*	✓*	✓	--	✓*	--	✓*	--	✓	✓*		
MICHIGAN														
Consumers Energy	CMS	Elec.	✓	✓	--*	--	✓	--	--	--	✓*	--		
Consumers Energy	CMS	Gas	✓	✓	--	--*	--	--	--	--	--	--		
DTE Electric	DTE	Elec.	✓	✓	--*	--	✓	--	--	--	✓*	--		
DTE Gas	DTE	Gas	✓	✓	--	✓*	--	--	--	✓*	--	--		
Indiana Michigan Power	AEP	Elec.	✓	✓	--*	--	✓	--	--	--	--	--		
Michigan Gas Utilities	WEC	Gas	✓	✓	--	--*	--	--	--	--	--	--		
SEMCO Energy Gas	--	Gas	✓	✓	--	--	--	--	--	--	--	--		
Upper Peninsula Power	--	Elec.	✓	✓	--*	--	✓	--	--	--	✓*	--		
Wisconsin Electric Power	WEC	Elec.	✓	✓	--*	--	✓	--	--	--	--	--		
MINNESOTA														
Minnesota Power	ALE	Elec.	✓	✓	--	--	✓	✓	--	--	✓	--		
CenterPoint Energy Resources	CNP	Gas	✓	✓	✓*	--	--	--	--	--	--	--		
Minnesota Energy Resources	WEC	Gas	✓	✓	✓*	--	--	--	--	--	--	--		
Northern States Power-Minnesota	XEL	Elec.	✓	✓	✓*	--	✓	✓	--	--	✓	--		
Northern States Power-Minnesota	XEL	Gas	✓	✓	--	--	--	--	--	✓*	--	--		
Otter Tail Power	OTTR	Elec.	✓	✓	--	--	✓	✓	--	--	✓	--		
MISSISSIPPI														
Atmos Energy	ATO	Gas	✓	✓	--	✓*	--	--	--	--	--	--		
Entergy Mississippi	ETR	Elec.	✓	✓	--	✓*	--	✓*	--*	--	✓	✓*		
Mississippi Power	SO	Elec.	✓	✓	--	✓*	--	✓*	--	--	--	✓*		

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause								RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	New Capital		Transmission Expense	Other
					Full	Partial			Generation Capacity	Generic Infrastructure		
MISSOURI												
Empire District Electric	EDE	Elec.	✓	--	--	--	--*	✓*	--	--	✓*	✓*
Empire District Gas	EDE	Gas	✓	--	--	--*	--	--	--	--	--	✓*
Kansas City Power & Light	GXP	Elec.	✓	✓*	--	✓*	--*	--*	--	--	✓*	✓*
KCP&L Greater Missouri Operations	GXP	Elec.	✓	✓*	--	✓*	✓*	✓*	--	✓*	--	✓*
Laclede Gas	SR	Gas	✓	--	--	--*	--	--	--	✓*	--	✓*
Liberty Utilities (Midstates Natural Gas)	--	Gas	✓	--	--	--*	--	--	--	✓*	--	✓*
Missouri Gas Energy	SR	Gas	✓	--	--	--*	--	--	--	✓*	--	✓*
Union Electric	AEE	Elec.	✓	✓*	--	✓*	--*	✓*	--	✓*	✓*	✓*
Union Electric	AEE	Gas	✓	--	--	--*	--	--	--	✓*	--	✓*
MONTANA												
MDU Resources	MDU	Elec.	✓*	✓	--	--	--	--	--	--	--	✓*
MDU Resources	MDU	Gas	✓	✓	--	✓*	--	--	--	--	--	--
NorthWestern Corp.	NWE	Elec.	✓*	✓	--	--*	--	--	--	--	--	✓*
NorthWestern Corp.	NWE	Gas	✓	✓	--	--	--	--	--	--	--	✓*
NEBRASKA												
Black Hills Nebraska Gas Utility	BKH	Gas	✓	--	--	--	--	--	--	✓*	--	✓*
Northwestern Energy	NWE	Gas	✓	--	--	--	--	--	--	--*	--	✓*
Black Hills Gas Distribution	BKH	Gas	✓	--	--	--	--	--	--	✓*	--	✓*
NEVADA												
Nevada Power	BRK.A	Elec.	✓	✓	--	✓*	--	--	--	--	--	--
Sierra Pacific Power	BRK.A	Elec.	✓	✓	--	✓*	--	--	--	--	--	--
Sierra Pacific Power	BRK.A	Gas	✓	--	--	--	--	--	--	--*	--	--
Southwest Gas	SWX	Gas	✓	--	✓*	--	--	--	--	✓*	--	✓*
NEW HAMPSHIRE												
Liberty Util. (EnergyNorth Natural Gas)	--	Gas	✓	--	--	--*	--	--	--	✓*	--	--
Liberty Util. (Granite State Electric)	--	Elec.	--*	--	--	--*	--	--	--	✓*	--	--
Northern Utilities	UTL	Gas	✓	--	--	--*	--	--	--	--	--	--
Public Service Co. of New Hampshire	ES	Elec.	✓*	--	--	--*	--	--	--	✓*	✓	--
Unitil Energy Systems	UTL	Elec.	--*	--	--	--*	--	--	--	✓*	--	--

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause							New Capital		RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	Generation Capacity	Generic Infrastructure	Transmission Expense	Other	
					Full	Partial							
NEW JERSEY													
Atlantic City Electric	EXC	Elec.	--*	✓*	--	--	✓	✓*	--	--*	--	✓*	
Jersey Central Power & Light	FE	Elec.	--*	✓*	--	--	✓	✓*	--	--*	--	✓*	
New Jersey Natural Gas	NJR	Gas	✓	✓*	✓*	--	--	✓*	--	✓*	--	✓*	
Pivotal Utility Holdings	SO	Gas	✓	✓*	--	✓*	--	✓*	--	✓*	--	✓*	
Public Service Electric & Gas	PEG	Elec.	--*	✓*	--	--	✓	✓*	--	✓*	--	✓*	
Public Service Electric & Gas	PEG	Gas	✓	✓*	--	✓*	--	✓*	--	✓*	--	✓*	
Rockland Electric	ED	Elec.	--*	✓*	--	--	✓	--*	--	✓*	--	✓*	
South Jersey Gas	SJI	Gas	✓	✓*	✓*	--	--	✓*	--	✓*	--	✓*	
NEW MEXICO													
El Paso Electric	EE	Elec.	✓	✓	--	--	--	--	--	--	--	✓*	
New Mexico Gas	--	Gas	✓	✓	--	--	--	--	--	--	--	✓*	
Public Service Co. of New Mexico	PNM	Elec.	✓	✓	--	--	✓	✓*	--	✓*	--	✓*	
Southwestern Public Service	XEL	Elec.	✓	✓	--	--	✓	--	--	--	--	✓*	
NEW YORK													
Brooklyn Union Gas	--	Gas	✓	--	✓	--	--	--	--	--	--	--	
Central Hudson Gas & Electric	--	Elec.	--*	--	✓	--	✓	--	--	--	--	--	
Central Hudson Gas & Electric	--	Gas	✓	--	✓	--	--	--	--	--	--	--	
Consolidated Edison of New York	ED	Elec.	--*	--	✓	--	✓	--	--	--	--	--	
Consolidated Edison of New York	ED	Gas	✓	--	✓	--	--	--	--	--	--	--	
KeySpan Gas East	--	Gas	✓	--	✓	--	--	--	--	--	--	--	
National Fuel Gas Distribution	NFG	Gas	✓	--	✓	--	--	--	--	--	--	--	
New York State Electric & Gas	--	Elec.	--*	--	✓	--	✓	--	--	--	--	--	
New York State Electric & Gas	--	Gas	✓	--	✓	--	--	--	--	--	--	--	
Niagara Mohawk Power	--	Elec.	--*	--	✓	--	✓	--	--	--	--	--	
Niagara Mohawk Power	--	Gas	✓	--	✓	--	--	--	--	--	--	--	
Orange & Rockland Utilities	ED	Elec.	--*	--	✓	--	✓	--	--	--	--	--	
Orange & Rockland Utilities	ED	Gas	✓	--	✓	--	--	--	--	--	--	--	
Rochester Gas & Electric	--	Elec.	--*	--	✓	--	✓	--	--	--	--	--	
Rochester Gas & Electric	--	Gas	✓	--	✓	--	--	--	--	--	--	--	
NORTH CAROLINA													
Duke Energy Carolinas	DUK	Elec.	✓	✓*	--	--*	✓*	✓*	--	--	--	--	
Duke Energy Progress	DUK	Elec.	✓	✓*	--	--*	✓*	✓*	--	--	--	--	
Piedmont Natural Gas	PNY	Gas	✓	--	✓*	--	--	--	--	✓*	--	--	
Public Service Co. of North Carolina	SCG	Gas	✓	--	✓*	--	--	--	--	--	--	--	
Virginia Electric & Power	D	Elec.	✓	✓*	--	--*	✓*	✓*	--	--	--	--	

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause								RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	New Capital		Transmission Expense	Other
					Full	Partial			Generation Capacity	Generic Infrastructure		
NORTH DAKOTA												
MDU Resources	MDU	Elec.	✓	--	--	--	--	✓*	✓*	✓*	--	--
MDU Resources	MDU	Gas	✓	--	--	✓*	--	--	--	--	--	--
Northern States Power-Minnesota	XEL	Elec.	✓	--	--	--	✓	--*	--	✓*	--	✓*
Northern States Power-Minnesota	XEL	Gas	✓	--	--*	--	--	--	--	--	--	--
Otter Tail Power	OTTR	Elec.	✓	--	--	--	✓	✓*	--	✓*	--	✓*
OHIO												
Cleve. Elec. Illum./Ohio Ed./Toledo Ed.	FE	Elec.	--*	✓*	--	✓*	✓	--	--	✓*	✓	✓*
Columbia Gas of Ohio	NI	Gas	--*	✓	--*	--	--	--	--	✓*	--	✓*
Dayton Power & Light	AES	Elec.	--*	✓*	--	✓*	✓	--	--	✓*	✓	✓*
Duke Energy Ohio	DUK	Elec.	--*	✓*	--	✓*	✓	--	--	✓*	✓	✓*
Duke Energy Ohio	DUK	Gas	✓	--	--*	--	--	--	--	✓*	--	✓*
East Ohio Gas	D	Gas	--*	✓	--*	--	--	--	--	✓*	--	✓*
Ohio Power	AEP	Elec.	--*	✓*	--	✓*	✓	--	--	✓*	✓	✓*
Vectren Energy Delivery of Ohio	VVC	Gas	--*	✓	--*	--	--	--	--	✓*	--	✓*
OKLAHOMA												
CenterPoint Energy Resources	CNP	Gas	✓	✓*	--	✓*	--	--	--	--	--	✓*
Oklahoma Gas & Electric	OGE	Elec.	✓	✓*	--	✓*	✓	✓*	✓*	✓*	✓	✓*
Oklahoma Natural Gas	OGS	Gas	✓	✓*	--	✓*	--	--	--	--	--	✓*
Public Service Oklahoma	AEP	Elec.	✓	✓*	--	✓*	--	--*	--	✓*	✓	✓*
OREGON												
Avista Corp.	AVA	Gas	✓	--	--	✓*	--	--	--	--	--	--
Cascade Natural Gas	MDU	Gas	✓	--	--	✓*	--	--	--	--	--	--
Idaho Power	IDA	Elec.	✓*	--	--	--	✓*	--	--	--	--	--
Northwest Natural Gas	NWN	Gas	✓	--	--	✓*	--	✓*	--	--	--	--
PacifiCorp	BRK.A	Elec.	✓*	--	--	--	✓*	--	--	--	--	--
Portland General Electric	POR	Elec.	✓*	--	--	✓*	✓*	--	--	--	--	--

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause							New Capital		RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	Generation Capacity	Generic Infrastructure	RTO-Related Transmission Expense	Other	
					Full	Partial							
PENNSYLVANIA													
Columbia Gas of Pennsylvania	NI	Gas	✓*	--*	--*	✓*	--	--	--	✓*	--	✓*	
Duquesne Light	--	Elec.	--*	✓	--*	--	--*	--	--	--*	✓	✓*	
Equitable Gas	--	Gas	✓*	--*	--*	--	--	--	--	✓*	--	✓*	
Metropolitan Edison	FE	Elec.	--*	✓	--*	--	--*	--	--	✓*	✓	✓*	
National Fuel Gas Distribution	NFG	Gas	✓*	--*	--*	--	--	--	--	--*	--	✓*	
PECO Energy	EXC	Elec.	--*	✓	--*	--	--*	--	--	✓*	--	✓*	
PECO Energy	EXC	Gas	✓*	✓	--*	--	--	--	--	✓*	--	✓*	
Pennsylvania Electric	FE	Elec.	--*	✓	--*	--	--*	--	--	✓*	✓	✓*	
Pennsylvania Power	FE	Elec.	--*	✓	--*	--	--*	--	--	✓*	--	✓*	
Peoples Natural Gas	--	Gas	✓*	--*	--*	--	--	--	--	✓*	--	✓*	
PPL Electric Utilities	PPL	Elec.	--*	✓	--*	--	--*	--	--	✓*	✓	✓*	
UGI Central Penn Gas	UGI	Gas	✓*	--*	--*	--	--	--	--	✓*	--	✓*	
UGI Penn Natural Gas	UGI	Gas	✓*	--*	--*	--	--	--	--	✓*	--	✓*	
UGI Utilities	UGI	Elec.	--*	✓	--*	--	--*	--	--	--*	--	✓*	
UGI Utilities	UGI	Gas	✓*	✓	--*	--	--	--	--	--*	--	✓*	
West Penn Power	FE	Elec.	--*	✓	--*	--	--*	--	--	✓*	--	✓*	
RHODE ISLAND													
Narragansett Electric	--	Elec.	--*	--	✓	--	--	--	--	✓*	--	✓*	
Narragansett Electric	--	Gas	✓	✓*	✓	--	--	✓*	--	✓*	--	✓*	
SOUTH CAROLINA													
Duke Energy Progress	DUK	Elec.	✓	--	--	--	--	✓*	--*	--	--	--	
Duke Energy Carolinas	DUK	Elec.	✓	--	--	--	--	✓*	--*	--	--	--	
Piedmont Natural Gas	PNY	Gas	✓	--	--	✓*	--	--	--	--	--	--	
South Carolina Electric & Gas	SCG	Elec.	✓	--	--	--	--	✓*	✓*	--	--	--	
South Carolina Electric & Gas	SCG	Gas	✓	--	--	✓*	--	--	--	--	--	--	
SOUTH DAKOTA													
Black Hills Power	BKH	Elec.	✓	✓*	--	✓*	--	✓	--	--	✓	✓*	
Northern States Power-Minnesota	XEL	Elec.	✓	✓*	--	✓*	--	✓	✓*	✓*	--	✓*	
NorthWestern Corp.	NWE	Elec.	✓	✓	--	--	--	--	--	--	--	--	
TENNESSEE													
Atmos Energy	ATO	Gas	✓	--	--	✓*	--	--	--	--	--	✓*	
Chattanooga Gas	SO	Gas	✓	--	✓*	--	--	--	--	--	--	✓*	
Kingsport Power	AEP	Elec.	✓	--	--	--	--	--	--	--	--	--	
Piedmont Natural Gas	PNY	Gas	✓	--	--	✓*	--	--	--	✓	--	✓*	

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause							New Capital		RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	Generation Capacity	Generic Infrastructure	RTO-Related Transmission Expense	Other	
					Full	Partial							
TEXAS PUC													
AEP Texas Central	AEP	Elec.	--*	✓*	--	--	--	--	--	✓*	✓*	--	
AEP Texas North	AEP	Elec.	--*	✓*	--	--	--	--	--	✓*	✓*	--	
CenterPoint Energy Houston Electric	CNP	Elec.	--*	✓*	--	--	--	--	--	✓*	✓*	✓*	
Cross Texas Transmission	--	Elec.	--	--	--	--	--	--	--	✓*	--	--	
El Paso Electric	EE	Elec.	✓*	✓*	--	--	--	--	--	✓*	--	✓*	
Electric Transmission of Texas	BRK.A/AEF	Elec.	--	--	--	--	--	--	--	✓*	--	--	
Entergy Texas	ETR	Elec.	✓*	✓*	--	--	--	--	--	✓*	--	✓*	
Lone Star Transmission	NEE	Elec.	--	--	--	--	--	--	--	✓*	--	--	
Oncor Electric Delivery	--	Elec.	--*	✓*	--	--	--	--	--	✓*	✓*	--	
Southwestern Electric Power	AEP	Elec.	✓*	✓*	--	--	--	--	--	✓*	--	--	
Southwestern Public Service	XEL	Elec.	✓*	✓*	--	--	--	--	--	✓*	--	✓*	
Texas-New Mexico Power	PNM	Elec.	--*	✓*	--	--	--	--	--	✓*	✓*	✓*	
Wind Energy Transmission of Texas	--	Elec.	--	--	--	--	--	--	--	✓*	--	--	
TEXAS RRC													
Atmos Energy	ATO	Gas	✓*	--	--	✓*	--	--	--	✓*	--	✓*	
CenterPoint Energy Resources	CNP	Gas	✓*	--	--	--	--	--	--	✓*	--	--	
Texas Gas Service	OGS	Gas	✓*	--	--	✓*	--	--	--	✓*	--	--	
UTAH													
PacifiCorp	BRK.A	Elec.	✓	✓	--	--	✓*	--	--	--	--	--	
Questar	STR	Gas	✓	✓	✓*	--	--	--	--	✓*	--	✓*	
VERMONT													
Green Mountain Power	--	Elec.	✓	--	--*	--	--	--	--	--	--	--	
Vermont Gas Systems	--	Gas	✓	--	--*	--	--	--	--	--	--	--	
VIRGINIA													
Appalachian Power	AEP	Elec.	✓*	✓*	--	--	✓	✓*	✓*	--*	✓	✓*	
Columbia Gas of Virginia	NI	Gas	✓	✓*	--	✓*	--	--	--	✓*	--	✓*	
Kentucky Utilities	PPL	Elec.	✓*	--*	--	--	--	--	--*	--*	--	--	
Virginia Electric & Power	D	Elec.	✓*	✓*	--	--	--	✓*	✓*	--*	✓	✓*	
Virginia Natural Gas	SO	Gas	✓	--*	--	✓*	--	--	--	--*	--	--	
Washington Gas	WGL	Gas	✓	--*	--	✓*	--	--	--	✓*	--	✓*	

State/ Company	Ultimate Parent Ticker	Type of Service	Type of Adjustment Clause							New Capital		RTO-Related	
			Electric Fuel/ Gas Commodity/ Purch. Power	Conserv. Program Expense	Decoupling		Renewables Expense	Environmental Compliance	Generation Capacity	Generic Infrastructure	Transmission Expense	Other	
					Full	Partial							
WASHINGTON													
Avista Corp.	AVA	Elec.	✓*	--	✓*	--	--	--	--	--	--	--	
Avista Corp.	AVA	Gas	✓	--	✓*	--	--	--	--	--*	--	--	
Cascade Natural Gas	MDU	Gas	✓	--	--	--	--	--	--	✓*	--	--	
Northwest Natural Gas	NWN	Gas	✓	--	--	--	--	--	--	--*	--	--	
PacifiCorp	BRK.A	Elec.	✓*	--	--	--	--	--	--	--	--	--	
Puget Sound Energy	--	Elec.	✓*	--	--	✓*	--	--	--	--	--	--	
Puget Sound Energy	--	Gas	✓	--	--	✓*	--	--	--	✓*	--	--	
WEST VIRGINIA													
Appalachian Power/Wheeling Power	AEP	Elec.	✓	--*	--	--	--	--*	--*	--*	✓	✓*	
Hope Gas	D	Gas	✓	--	--	--	--	--	--	--	--	✓*	
Monongahela Power	FE	Elec.	✓	--	--	--	--	--	--	✓*	--	✓*	
Mountaineer Gas	--	Gas	✓	--	--	--	--	--	--	✓*	--	✓*	
Potomac Edison	FE	Elec.	✓	--	--	--	--	--	--	✓*	--	✓*	
WISCONSIN													
Madison Gas & Electric	MGEE	Elec.	✓*	--	--	--	--	--	--*	--*	--	✓*	
Madison Gas & Electric	MGEE	Gas	✓	--	--	--	--	--	--*	--*	--	✓*	
Northern States Power-Wisconsin	XEL	Elec.	✓*	--	--	--	--	--	--*	--*	--	✓*	
Northern States Power-Wisconsin	XEL	Gas	✓	--	--	--	--	--	--*	--*	--	✓*	
Wisconsin Electric Power	WEC	Elec.	✓*	--	--	--	--	--	--*	--*	--	✓*	
Wisconsin Electric Power	WEC	Gas	✓	--	--	--	--	--	--*	--*	--	✓*	
Wisconsin Gas	WEC	Gas	✓	--	--	--	--	--	--*	--*	--	✓*	
Wisconsin Power & Light	LNT	Elec.	✓*	--	--	--	--	--	--*	--*	--	✓*	
Wisconsin Power & Light	LNT	Gas	✓	--	--	--	--	--	--*	--*	--	✓*	
Wisconsin Public Service	WEC	Elec.	✓*	--	--	--	--	--	--*	--*	--	✓*	
Wisconsin Public Service	WEC	Gas	✓	--	--	--	--	--	--*	--*	--	✓*	
WYOMING													
Cheyenne Light Fuel & Power	BKH	Elec.	✓	✓	--	✓*	✓*	--	--	--	--	✓*	
Cheyenne Light Fuel & Power	BKH	Gas	✓	✓	--	✓*	--	--	--	--	--	--	
MDU Resources	MDU	Elec.	✓	--	--	--	✓*	--	--	--	--	--	
PacifiCorp	BRK.A	Elec.	✓	✓	--	--	✓*	✓*	--	--	--	--	
Black Hills Gas Distribution	BKH	Gas	✓	--	--	✓*	--	--	--	--	--	--	

* See text for further information.

FOOTNOTES**Alabama**

Electric Fuel/Gas Commodity/Purchased Power—The Certificated New Plant, or Rate CNP, adjustment clause for Alabama Power provides for recovery of the costs, excluding fuel, associated with certified purchased power agreements. Adjustments under the clause are subject to a staff and Alabama PSC review process that includes public hearings. Alabama Gas and Mobile Gas utilize a Competitive Fuel Clause that allows the companies to immediately adjust prices in order to compete with any alternate fuel or gas supply source, with no loss of earnings margin for the companies.

Decoupling—Alabama Gas and Mobile Gas use weather normalization clauses.

Environmental Compliance/Generation Capacity—The Rate CNP adjustment clause used by Alabama Power provides for recovery of costs related to: the commercial operation of certified generating facilities; certified purchased power agreements; and environmental mandates. Recoverable environmental costs include: applicable operation and maintenance expenses; depreciation and a return on capital beginning with 2005 investments; and, a true-up of prior period over/under-recovered amounts. Such costs are generally subject to PSC review, but not a full evidentiary hearing.

Other—The tariffs of the major energy utilities include adjustment provisions to reflect changes in income taxes, and certain general and local taxes.

Arizona

Decoupling—A full decoupling mechanism is in place for Southwest Gas. In adopting the mechanism, the ACC authorized an ROE that was reduced by 25 basis points. Decoupling surcharges are capped at 5% of annual revenue, with amounts above the threshold deferred for future recovery. Recovery of the deferrals is subject to an earnings test.

Arizona Public Service, or APS, utilizes a Lost Fixed Cost Recovery, or LFCR, mechanism designed to make the company whole for contributions to fixed-cost-recovery that are lost due to customer participation in energy efficiency and distributed energy, such as roof-top solar, programs. Residential customers are permitted to opt out of the LFCR provisions if they agree to a rate structure that incorporates a higher basic service fixed monthly charge. The LFCR is capped at 1% of annual revenues, with any excess being deferred with interest to be recovered through a future annual adjustment.

UNS Gas is subject to an incentive-based LFCR plan that allows the company to attain greater amounts of fixed-cost recovery as it meets its commission-defined energy efficiency goals. Residential customers are permitted to opt out of the LFCR provisions if they agree to a rate structure that incorporates a higher basic service fixed monthly charge. The LFCR is capped at 1% of annual revenues, with any excess being deferred with interest to be recovered through a future annual adjustment.

Tucson Electric Power operated under an LFCR mechanism designed to mitigate the revenue impact of lost sales associated with the ACC's energy efficiency standards and the distributed generation requirements under the Commission's renewable energy standards. The annual adjustments are to be capped at 1%, with any amount in excess of 1% to be deferred for future recovery. Residential customers have the option of paying a fixed monthly service charge in lieu of being subject to an LFCR mechanism.

UNS Electric also utilizes an LFCR mechanism, under which the company is permitted to implement annual rate adjustments related to any shortfall in recovery of fixed costs due to energy efficiency and distributed generation. The LFCR is not intended to recover fixed costs due to other factors, such as weather or general economic conditions, and, as such, is not considered a full decoupling mechanism. The annual adjustments are to be capped at 1%, with any amount in excess of 1% to be deferred for future recovery. The LFCR tariff reflects lost fixed costs. Residential customers have the option of paying a fixed monthly service charge in lieu of being subject to an LFCR mechanism.

Generation Capacity—A rider is in place to address the costs associated with APS' acquisition of a 48% share of the coal-fired Four Corners Units 4 and 5 and certain related facilities, and the retirement of Four Corners Units 1, 2, and 3, wholly owned by APS.

Other—All of the utilities recover franchise fees on a current basis through an adjustable line item on the monthly bill.

Arkansas

Electric Fuel/Gas Commodity/Purchased Power—Oklahoma Gas and Electric's, or OG&E's, energy cost recovery rider provides for the flow-through to ratepayers of 100% of the Arkansas-jurisdictional proceeds from the sale of excess SO₂ emissions allowances, as well as a share of the value of "green credits" resulting from the monetized environmental benefits of generation at the company's Centennial Wind Farm equal to the portion of the project dedicated to serving the Arkansas jurisdiction.

Decoupling—A generic framework, effectively a partial decoupling mechanism, is in place that provides for the electric and gas utilities to recover the lost contribution to fixed costs associated with energy efficiency, or EE,-related usage reductions and to retain a portion of the net benefits related to EE programs. The gas utilities have been using full decoupling mechanisms for several years.

Generation Capacity—Entergy Arkansas, or EA, utilizes a capacity acquisition rider to recover costs associated with its investment in certain generation facilities, and a capacity cost recovery rider to flow through the net costs related to the company's purchases of capacity to serve retail customers.

Generic Infrastructure—EA uses a rider to recover costs associated with certain government-mandated investments. The company is also subject to a formula rate plan framework to address annual changes in the cost of service.

Other—EA uses a storm recovery charges rider to collect from ratepayers the amounts required to service its related securitization bonds. OG&E uses a "Smart Grid" rider. Arkansas Oklahoma Gas, CenterPoint Energy Resources, EA, OG&E, SourceGas Arkansas, and Southwestern Electric Power have a mechanism in place to recover variations in certain taxes and franchise fees.

Colorado

Decoupling—An adjustment clause is in place for Public Service Company of Colorado's, or PSCO's, gas operations that includes a provision that provides recovery of lost revenues associated with customer participation in demand-side management programs.

Environmental Compliance—A rider is in place for PSCO that provides for a cash return on construction work in progress, or CWIP, and reflects in rates costs associated with the installation of environmental controls at the coal-fired Pawnee and Hayden facilities.

Generation Capacity—Black Hills Colorado Electric Utility, or BHCE, has a rider in place that provides for the company to earn a cash return on CWIP related to a gas-fired generating unit that is under construction at the Pueblo Airport Generating Station that is expected to achieve commercial operation in early-2017. A similar mechanism is in place for PSCO's Cherokee natural gas combined cycle plants.

Generic Infrastructure—PSCO and BHCE are permitted to recover, through a transmission cost adjustment, or TCA, clause, prudent costs incurred in planning, developing and completing construction or expansion of transmission facilities for which the PUC has granted a certificate of public convenience and necessity or has otherwise determined to be necessary. Through the TCA, the utilities may earn a cash return on construction work in progress for investments in grid reliability or new or upgraded transmission facilities. The TCAs are updated annually.

PSCO operates under a pipeline system integrity adjustment mechanism for its gas operations, through which the company recovers the costs associated with reliability improvements and compliance with certain federal safety regulations. The mechanism is to remain in place through 2018.

Other—PSCO utilizes an adjustment clause for steam service, under which it recovers the difference between its actual cost of fuel and the costs recovered in base rates.

PSCO shares with customers margins from generation-based short-term energy trading and proprietary trading through its fuel and purchased power adjustment mechanism. BHCE uses an off-system sales margin-sharing mechanism as a component of its fuel cost/purchased power expense cost adjustment mechanism.

Connecticut

Electric Fuel/Gas Commodity/Purchased Power—United Illuminating, or UI, and Connecticut Light and Power, or CL&P, no longer own generation, and both are permitted to recover, on a current basis, their full costs of providing generation service to those customers who do not choose an alternative supplier. These costs are flowed through to ratepayers outside of a rate case.

Decoupling—State law mandates the adoption of decoupling mechanisms for the electric and gas utilities. UI, CL&P, and Connecticut Natural Gas, or CNG, currently have decoupling mechanisms in place. Yankee Gas agreed to forgo the implementation of a decoupling mechanism until new base rates going into effect; a base rate freeze is in effect until Jan. 1, 2017.

Generic Infrastructure—A system expansion reconciliation mechanism is in place that permits the gas utilities to reconcile gas-expansion-related revenue annually, between rate cases. CNG also utilizes a Distribution Integrity Management Program, or DIMP, mechanism that allows for recovery, between rate cases, of the costs associated with main replacement activity. Ratepayers do not see a separate charge on their bills. Instead, the DIMP charge is included in base distribution rates.

Delaware

Electric Fuel/Gas Commodity/Purchased Power—In conjunction with the implementation of retail competition, Delmarva Power and Light's electric fuel adjustment was largely eliminated. Power to meet standard-offer-service needs is now procured competitively and reflected in rates on a current basis.

Other—Chesapeake Utilities has a mechanism in place to recover variations in certain taxes and fees.

District of Columbia

Electric Fuel/Purchased Power—Fuel and purchased power adjustment clauses are permitted by law. However, with the onset of electric retail competition, Potomac Electric Power, or Pepco, divested most of its generation assets; the assets that were not divested have since been retired. Pepco purchases the power to meet its standard-offer-service, or SOS, requirements via a competitive bidding process, and prices paid by SOS customers reflect the weighted average of the winning bids; SOS prices are adjusted on a current basis.

Decoupling—A Bill Stabilization Adjustment mechanism, applied monthly, is in place for Pepco that is designed to mitigate the volatility of revenues and customer bills caused by abnormal weather and customer participation in energy efficiency programs.

Renewables Expense—Pepco's rates include a surcharge to fund the Sustainable Energy Trust Fund; amounts collected are remitted to the third-party Sustainable Energy Utility.

Generic Infrastructure—State law provides for the District to issue bonds, to finance, or securitize, a portion of the costs associated with a plan under which Pepco is to relocate certain above-ground distribution facilities below ground. In addition, the bill authorizes the District of Columbia PSC to approve a surcharge mechanism to achieve rate recognition of the unsecuritized portion of the project. The PSC has approved the undergrounding program, known as the DC PLUG initiative, and established a rider for rate recognition of the investment. The commission order was appealed to the D.C. Court of Appeals.

For Washington Gas, or WG, costs associated with PSC-mandated replacement and encapsulation of certain couplings may be recovered through a surcharge on distribution rates. The PSC has approved a \$1 billion, 40-year accelerated pipeline replacement program for WG, and approved a surcharge mechanism related to the first five years of the program.

Other—A gas administrative charge is part of WG's purchased gas charge and provides for recovery of uncollectible expenses related to gas commodity charges, rather than recovering those expenses in base rates. WG is also permitted to recover carrying costs on storage balances and over/undercollected gas costs through separate surcharges. Pepco and WG have a mechanism in place to recover variations in certain taxes and fees.

Florida

Generation Capacity—Electric utilities are permitted to recover all prudently incurred site selection and preconstruction costs, including carrying charges, for nuclear and integrated gasification combined-cycle, or IGCC, power plants through the capacity cost recovery clause, or CCRC. A cash return on construction work in progress for nuclear plant construction and uprates and IGCC construction is also reflected in the CCRC.

Florida Power and Light uses a "generation base rate adjustment," or GBRA, to recover the base revenue requirement associated with each of three approved power plant modernization projects upon their commercial operation. One project achieved commercial operation in 2013, one in 2014, and the third in April 2016. Each generation-related base rate increase will be calculated using a 10.5% ROE and be effectuated through the company's CCRC.

Duke Energy Florida is permitted to increase base rates without a general rate case through a GBRA related to up to 1,800 MW of additional new generation in 2018. Adjustments under the GBRA are to reflect a 10.5% ROE and the most recent capital structure from the company's periodic surveillance reports that are filed with the Florida PSC.

Tampa Electric is to implement a rate increase through a GBRA on the later of Jan. 1, 2017, or the date the conversion of Units 2 through 5 of the Polk Power Station is completed.

Generic Infrastructure—Peoples Gas System utilizes a rider to recover, through an annual surcharge, the costs associated with accelerating the replacement of cast iron and bare steel distribution pipes on its system. The smaller gas utilities, Florida Public Utilities, the Florida division of Chesapeake Utilities, and Pivotal Utility Holdings, use similar riders.

Other—Certain fees and taxes, such as franchise fees and gross receipts taxes, are recovered through a line item on customer bills, with the charge adjusted based on customer usage. The fuel and purchased power cost recovery clause reflects gains from economy energy sales.

Georgia

Electric Fuel/Gas Commodity/Purchased Power—As a result of the restructuring of the natural gas industry in Georgia, Atlanta Gas Light, or ATGL, no longer procures gas for its customers and, thus, is no longer subject to the purchased gas adjustment mechanism, or PGAM. The much smaller Liberty Utilities (Peach State Natural Gas), which is still regulated under a non-restructured framework, utilizes a non-automatic PGAM.

Decoupling—Liberty Utilities (Peach State Natural Gas) is subject to the Georgia Rate Adjustment Mechanism, or GRAM, an alternative regulatory framework. The GRAM provides for a "revenue true-up," under which the company is to compare actual revenues to the previous revenue projection. ATGL operates under a straight fixed-variable rate design.

Environmental Compliance—ATGL is authorized to recover clean-up costs related to former manufactured gas plant sites through an environmental response cost recovery rider, or ERCRR. Costs that are recoverable under the ERCRR include investigation, testing, remediation, and/or litigation costs or other liabilities.

Generation Capacity—A nuclear construction cost recovery, or NCCR, tariff is in place for Georgia Power, or GP. The NCCR tariff enables GP to earn a cash return on construction work in progress related to the Plant Vogtle Units 3 and 4 nuclear units. The NCCR tariff is to be revised annually.

Generic Infrastructure—The Georgia PSC approved a Strategic Infrastructure Development and Enhancement, or STRIDE, program for ATGL in 2009, specifying infrastructure investments for the next ten years. Every three years, ATGL is required to file its proposed program for the next three years for PSC review and approval. The incremental costs associated with the program's investment are included in base rates each Oct. 1.

Hawaii

Generation Capacity/Generic Infrastructure—As part of their alternative regulation frameworks, Hawaiian Electric Company, Hawaii Electric Light Company, and Maui Electric Company are permitted to recognize rate base additions and increases in O&M expenses, and certain depreciation and amortization expenses between rate cases.

Other—An integrated resource planning, or IRP, cost recovery surcharge is in place for the state's utilities to facilitate recovery of the planning costs associated with the IRP process.

Idaho

Electric Fuel/Gas Commodity/Purchased Power—Avista Corporation's power cost adjustment enables the company to defer, in a balancing account, for subsequent recovery/refund to customers, 90% of the difference between actual net power costs and the amount included in retail rates. Idaho Power, or IP, has a similar mechanism in place with a sharing provision under which annual rate adjustments reflect 95% of the cost variations associated with water supply for hydro-electric production, wholesale energy prices and retail load changes. An energy cost adjustment mechanism is in place for PacifiCorp that allows for the recovery of 90% of the difference between actual power costs and those included in rates.

Decoupling—IP operates under a revenue decoupling mechanism, referred to as a Fixed Cost Adjustment, or FCA, which is designed to adjust the company's electric rates to recover fixed costs independent of the volume of energy sales. In 2015, the FCA was modified to replace weather-normalized sales with actual sales in the calculation of the FCA. There is a 3% cap on annual rate increases that may be implemented under the mechanism. Unrecovered balances are to be carried forward to future years, with interest.

Avista Corporation is to operate under an electric and gas revenue decoupling mechanism, referred to as a FCA, for an initial three-year term, Jan. 1, 2016 through Dec. 31, 2018. The mechanism may be extended following a review by the parties following the end of the third year. There is a 3% annual cap on rate increases that may be implemented under the mechanism. Unrecovered balances are to be carried forward to future years, with interest.

Illinois

Electric Fuel/Gas Commodity/Purchased Power—Historically, the large electric utilities, namely Ameren Illinois, or AI, and Commonwealth Edison, or ComEd, were permitted to recover fuel costs and the energy component of purchased power costs through a monthly automatic fuel adjustment clause, or FAC. Their FACs were discontinued in conjunction with the implementation of electric industry restructuring. The power to meet the utilities' standard-offer-service, or SOS, obligations is now procured competitively; SOS costs and revenues are subject to an annual true-up mechanism.

Environmental Compliance—Ameren Illinois, or AI, uses a hazardous materials adjustment clause rider, largely to address asbestos-related litigation and remediation costs. AI, ComEd, Peoples Gas Light and Coke, or Peoples, North Shore Gas, or North Shore, and Northern Illinois Gas, or NI-Gas, use riders to recover costs related to the investigation and cleanup of manufactured gas plants.

Generic Infrastructure—ComEd has a rider in place to recover certain costs associated with relocating infrastructure in accordance with requirements imposed by local governments. In accordance with legislation enacted in 2013, the ICC is permitted to approve adjustment clauses for the local gas distribution companies to recover the costs associated with their infrastructure replacement programs, and the ICC has done so for Peoples, NI-Gas, and AI.

Other—As permitted by state statutes, AI, ComEd, NI-Gas, Peoples, North Shore, and MidAmerican Energy utilize riders to facilitate recovery of variations in bad-debt costs. AI, ComEd, MidAmerican Energy, Peoples, North Shore, and NI-Gas have a mechanism in place to recover variations in certain taxes and franchise fees.

Indiana

Decoupling—Indianapolis Power and Light's, or IP&L's, Indiana Michigan Power's, or IMP's, Duke Energy Indiana's, or DEI's, Northern Indiana Public Service Company's, or NIPSCO's, and Southern Indiana Gas and Electric's electric energy efficiency riders provide for recovery of net lost revenues and shared savings, subject to commission approval. However, IP&L is permitted to defer lost revenues and NIPSCO's mechanism does not include savings sharing.

Environmental Compliance—State law allows the URC to authorize the electric utilities to recover, through a rate adjustment mechanism, 80% of the costs associated with certain federally-mandated emissions-control and transmission/distribution reliability projects. The remaining 20% of such costs are to be deferred for future recovery. Environmental cost recovery riders are in place for DEI, NIPSCO, IP&L, and IMP. Through these riders, the utilities are permitted to recover related O&M costs and depreciation expense after the environmental facilities become operational, as well as a return on the related investment. These riders also provide for recovery of the net costs associated with the purchase of emission allowance credits.

Generation Capacity—With respect to DEI's Edwardsport integrated gasification combined-cycle plant, the company was authorized to earn a cash return on construction work in progress associated with the plant, which commenced commercial operation in 2013, through a rider; the company now recovers the plant's operating costs through the rider.

Generic Infrastructure—State law allows the URC to authorize the utilities to implement a transmission, distribution and storage system improvement charge rider to facilitate recovery of the costs associated with certain electric and gas infrastructure expansion projects, including those intended to improve safety or reliability, modernize the utility's system, or improve an area's economic development prospects. The URC has approved such a rider for DEI, Indiana Gas, Southern Indiana Gas and Electric's gas operations and NIPSCO's electric and gas operations.

IMP and NIPSCO use a rider to recover costs associated with certain government-mandated investments.

Other—DEI, IMP, IP&L and SIGECO are permitted to equally share with ratepayers, through a rider, off-system sales, or OSS, margins that vary from the amount reflected in the companies' base rates. NIPSCO allocates to ratepayers, through a rider, all OSS margins that vary from a base level. IMP uses a rider for recovery of costs associated with the AEP Power Pool capacity cost-sharing arrangement.

SIGECO utilizes a semi-annual Reliability Cost and Revenue Adjustment that reflects: municipal wholesale margins; net emission allowance costs; interruptible sales billing credits; non-fuel purchased power costs; and ratepayers' share of the difference between actual wholesale power margins and the level of such margins included in base rates. SIGECO and IG have riders in place for a portion of the incremental changes in unaccounted-for gas costs and the gas-cost component of bad debts. NIPSCO includes these costs in its gas cost adjustment filings.

Iowa

Environmental Compliance—Incremental revenues and costs associated with sales or purchases of emission allowances may be reflected in Interstate Power and Light's, or IP&L's, and MidAmerican Energy's energy adjustment clauses.

Other—MidAmerican uses a rider to recover certain feasibility study costs related to its analysis of the merits of building a new nuclear plant. Black Hills/Iowa Gas Utility, IP&L, and MidAmerican Energy have a mechanism in place to recover variations in certain taxes and franchise fees.

Kansas

Conservation Program Expense/Decoupling—State law allows the electric and gas utilities to request KCC approval to implement energy efficiency, or EE-related cost recovery mechanisms. Kansas City Power and Light, or KCP&L, and Empire recover the costs associated with energy efficiency programs through an EE rider. Westar Energy and Kansas Gas and Electric, or KG&E, participate in certain EE programs and recover program-related costs and the related lost revenues through the companies' EE cost recovery riders. These mechanisms were in place prior to the legislation. Weather normalization adjustment clauses are in place for Atmos Energy, Black Hills/Kansas Gas Utility, or KGU, and Kansas Gas Service, or KGS.

Generic Infrastructure—Kansas City Power and Light, or KCP&L, has a rider in place to recover the costs associated with certain projects to underground transmission and distribution infrastructure. State law permits the local gas distribution companies to utilize a gas system reliability surcharge, or GSRS, mechanism to recover the costs associated with gas distribution system replacement projects between base rate proceedings, subject to annual true-up. The utilities are prohibited from utilizing GSRS mechanisms for periods exceeding five years; GSRS balances are to be reset to zero, with amounts recovered through the surcharge to be rolled into base rates in the utility's next rate proceeding. In addition, a utility may not request changes in the GSRS rate more often than every 12 months. Atmos, KGS, and KGU have a GSRS in place.

Other—Although not an adjustment clause per se, the KCC is statutorily authorized to permit the utilities to file "abbreviated" rate cases, within 12 months of a commission rate order in the utility's most recent base rate proceeding. Such filings must incorporate all of the regulatory procedures, principles and rate-of-return parameters established by the KCC in that order.

KGU recovers 100% of the gas cost component of bad debt expense through the company's purchased gas adjustment clause filings. KCP&L, Westar, KG&E, and Empire District Electric, or Empire, flow to ratepayers, through their energy cost adjustment mechanisms, off-system sales margins that vary from a base level and the net cost of emissions allowances. KCP&L, Westar/KG&E, Empire, Atmos, KGU, KGS have a mechanism in place to recover variations in certain taxes and franchise fees.

Kentucky

Decoupling—Weather normalization adjustment mechanisms are in place for Atmos Energy, or Atmos, Columbia Gas of Kentucky, or CGK, Delta Natural Gas, or Delta, and Louisville Gas and Electric's, or LG&E's, gas operations. Duke Energy Kentucky, or DEK, LG&E, Atmos, CGK, and Delta utilize energy efficiency riders to facilitate recovery of costs associated with gas energy efficiency programs; these riders include certain incentive provisions and permit recovery of lost revenues related to these programs. LG&E, DEK, Kentucky Utilities, or KU, and Kentucky Power, or KP, also utilize a similar mechanism for their electric businesses.

Environmental Compliance—LG&E, KU, and KP are permitted to recover the costs associated with environmental-related investments, including the cost of emissions allowances, and earn a cash return on the related construction work in progress, through a cost recovery mechanism. Proceedings are conducted every two years to evaluate the operation of the mechanism and to set the level of such charges to be included in base rates.

Generation Capacity—KP utilizes a rider to recover the costs related to the retirement of the coal-fired Big Sandy Unit 1 and 2 plants, and a separate rider for certain non-fuel-related costs associated with operating the Big Sandy Unit 1 plant..

Generic Infrastructure—Atmos, CGK, LG&E, Delta and DEK utilize riders to facilitate recovery of costs associated with their infrastructure replacement programs.

Other—Off-system sales, or OSS, sharing mechanisms are in place for DEK's electric operations and for KP. 100% of DEK's emission allowance sales margins flow to ratepayers through the OSS mechanism. LG&E and KU allocate a portion of their off-system sales margins to ratepayers through the fuel adjustment clause proceedings. Atmos, CGK, Delta, DEK, KP, LG&E, and KU have a mechanism in place to recover variations in certain taxes and franchise fees.

Louisiana - NOCC

Decoupling—Entergy New Orleans, or ENO, had been recovering lost revenues (excluding the effects of weather) associated with conservation/efficiency programs through its now-expired electric formula rate plan, or FRP. ENO's fuel clause includes (for legacy Entergy Louisiana, or EL, Algiers service territory customer only) a provision that provides for the recovery of the "Lost Contribution to Fixed Costs" associated with customer participation in energy efficiency programs.

Environmental Compliance—An environmental adjustment clause rider is in place for ENO, through which the company recovers costs associated with the purchase and use of emission allowances.

Generation Capacity—As part of its FRP, EL may recover certain costs associated with its investment in the Ninemile unit 6 facility through a rider. As per a settlement adopted by the NOCC in the context of a reorganization in which EL was absorbed by affiliate ENO, recovery of the interim Ninemile 6 costs was transferred to a separate mechanism for ENO.

Other—ENO uses a storm-reserve rider for both its electric and gas operations.

Louisiana PSC

Decoupling—Energy efficiency, or EE, riders are in place for the state's electric utilities through which the companies recover costs associated with administering their EE programs and the "Lost Contribution to Fixed Costs" associated with customer participation in the programs. CenterPoint Energy Resources, Atmos Energy divisions Louisiana Gas Service, or LGS, and TransLouisiana Gas, or TLG, and the gas operations of Entergy Louisiana utilize weather normalization adjustment mechanisms.

Environmental Compliance—The state's electric utilities may use an environmental adjustment clause, or EAC, to recover from ratepayers the costs associated with the acquisition of emissions credits to comply with federal, state, and local environmental standards. In addition, the utilities credit ratepayers through the EAC any revenues associated with the sale or transfer of emission allowances.

Generation Capacity—A component of Entergy Louisiana's, or EL's, formula rate plan, or FRP, provides for the recovery of costs associated with new generation and capacity additions, including the Ninemile 6 facility. Cleco Power's FRP includes provisions to reflect in rates certain capacity additions.

Generic Infrastructure— Cleco's FRP includes provisions to reflect in rates certain infrastructure costs. As part of their rate stabilization clauses, LGS and TLG have a mechanism in place that provides for the deferred recovery of costs associated with system integrity management programs. An infrastructure investment recovery rider is in place for EL's gas operations.

RTO-Related Transmission Expense—EL and Cleco recover certain transmission-related costs through their FRPs.

Other—Customers' share of Southwestern Electric Power's off-system sales margins flow through the company's fuel adjustment clause. Cleco Power and EL have securitization-related riders in place.

Maine

Fuel Costs/Purchased Power Costs—Electric fuel adjustment clauses are no longer utilized due to the implementation of retail choice. For the most part, the state's electric utilities no longer own generation, and by law are not allowed to provide standard offer service, or SOS. SOS providers are selected through a bidding process conducted by the Maine PUC. The full cost of SOS is recovered from ratepayers.

Decoupling—Central Maine Power, or CMP, is subject to a full revenue decoupling mechanism, with any related annual adjustments capped at 2% of distribution revenues, and any undercollections in excess of the capped to be deferred for future recovery. No cap applies to the amount of over-collections to be returned to ratepayers.

Environmental Compliance—Northern Utilities, or NU, recovers manufactured gas site remediation expenses through an environmental remediation charge that is adjusted on a semi-annual basis.

Generic Infrastructure—NU utilizes a targeted infrastructure replacement adjustment, or TIRA, which is to be in place through 2016. The TIRA provides for recovery of the company's investments in targeted operational and safety-related infrastructure replacement and upgrade projects.

Other—CMP is permitted to recover variations in storm costs versus the levels included in base rates through a rider.

Maryland

Electric Fuel/Purchased Power—Historically, electric utilities were permitted to recover the fuel and energy portion of purchased power costs through the electric fuel rate, or EFR. The EFR was eliminated, coincident with the implementation of competition in the provision of electric supply. The utilities continue to provide electric supply service to customers who do not select an alternative generation supplier; the power to meet these requirements is obtained via competitive bids and the costs are recovered from ratepayers on a current basis.

Conservation Program Expense—Maryland's electric and gas utilities have riders in place, which are adjusted annually, to reflect recovery of electric and gas energy efficiency and demand-side program costs that are not included in base rates.

Decoupling—Columbia Gas of Maryland, or CGM and Washington Gas, or WG, have revenue normalization adjustment mechanisms in place for residential customers only. However, the companies have separate weather normalization mechanisms in place that apply to all customer classes.

Generic Infrastructure—Potomac Electric Power, or Pepco, uses a grid resiliency charge to recover the costs associated with its accelerated-feeder-replacement program. A similar program and rider are in place for Delmarva Power and Light. A reliability improvement plan and an associated rider are in place for Baltimore Gas and Electric, or BGE. The company is required to file for approval of its incremental plans on an annual basis. Court review of the program is pending.

State law permits the Maryland PSC to authorize the gas utilities to implement surcharges to recover costs associated with approved accelerated infrastructure replacement programs, establishing the Strategic Infrastructure Development and Enhancement, or STRIDE, Program. The PSC has approved a gas STRIDE program and an associated rider for BGE, WG, and CGM.

Other—BGE, CGM, Potomac Edison, Pepco and WG have a mechanism in place to recover variations in certain taxes and fees.

Massachusetts

Electric Fuel/Gas Commodity/Purchased Power—Quarterly electric fuel and purchased power adjustments were eliminated coincident with the start of retail competition. Rates for basic service, known as default service, are market-based; such rates reflect the competitive contracts for basic service supply entered into by the distribution utility. The utilities are not at risk for fluctuations in market prices.

Conservation Program Expense/Environmental Compliance/Other—The DPU has adopted energy efficiency reconciliation factors, or EERF, for the state's electric utilities. The EERF is a fully-reconciling funding mechanism designed to recover the costs associated with the state's electric energy efficiency investments that are in excess of the level collected from other funding sources, including the systems benefits charge, proceeds from the forward capacity market, and proceeds from the Regional Greenhouse Gas Initiative.

Local gas distribution adjustment clauses, or LDACs, are in place, with rate changes implemented on a semi-annual basis to reflect recovery of reconcilable gas-distribution-related costs that are not included in base rates. Such expenses include demand-side management costs, environmental response costs associated with manufactured gas plants, residential arrearage management programs, low income discounts, pension and related costs, the revenue requirement on targeted infrastructure recovery factors, or TIRF, and gas system enhancement programs, or GSEP, investment, and attorney general expenses. LDACs are applicable to all firm customers.

Renewables Expense/Generation Capacity—A cost adjustment tariff is in place for Western Massachusetts Electric Company's, or WMECO's, and Massachusetts Electric's, or ME's, investments in certain solar generation facilities.

Generic Infrastructure—Under state law, each LDC is permitted to file with the DPU a "Gas System Safety Enhancement Program," or GSEP, to address aging or leaking natural gas infrastructure. Initially, LDCs that seek to participate in the program must file a plan that is designed to remove leak-prone cast iron and unprotected steel piping from the LDC's system over a 20-year period. Each year, participating LDCs file a list of projects the utility plans to complete during the upcoming construction season, as well as related adjustments to distribution rates. The filings also reconcile the estimated costs that were approved for recovery in the prior year to the actual costs incurred, and adjustments to distribution rates are made accordingly. The ROE authorized in the company's most recent rate case is utilized in its GSEP rider. Annual changes in the revenue requirement eligible for recovery may not exceed 1.5% of the company's most recent calendar year total firm revenues, including gas revenues attributable to sales and transportation customers. Any revenue requirement approved by the DPU in excess of the cap may be deferred for recovery in the following year. Previously, some of the state's gas utilities used targeted infrastructure replacement mechanisms. GSEPs are in place for all the state's gas utilities.

ME's decoupling mechanism includes a tracking mechanism to reflect capital investment of up to \$170 million. Amounts over the cap are to be addressed in the company's next general rate proceeding. A capital cost adjustment mechanism is in place for Fitchburg Gas and Electric's, or FG&E's, electric division that permits the company to recover costs associated with post-test-year capital additions. The mechanism contains an annual spending cap of \$5.7 million and a cap on annual rate increases under the mechanism of 1% of total revenues, with any amounts above the 1% cap to be deferred for future recovery with carrying charges. To the extent that FG&E's capital expenditures exceed the amount it is allowed to recover through the mechanism, the company can seek to include such investment in rate base in its next base distribution rate proceeding.

Other—Recovery mechanisms for pension and post-employment-benefits-other-than-pensions are in place for ME, WMECO, NSTAR Electric, NSTAR Gas, Fitchburg Gas and Electric, Liberty Utilities (New England Gas), Boston Gas, Colonial Gas, and Bay State Gas. The utilities file annually for recovery of pension and post-employment-benefits-other-than-pensions not currently reflected in rates. Such costs are to be recovered through the LDAC reconciliation mechanism for gas utilities and a separate rate component for electric utilities.

Michigan

Decoupling—The Michigan PSC had approved the implementation of electric revenue decoupling mechanisms, or RDMs, for Consumers Energy, or CE, Upper Peninsula Power, or UPP, and DTE Electric, or DTE-E; however, the Michigan Court of Appeals has ruled that the PSC does not have statutory authority to approve RDMs for electric utilities.

State law permits a gas utility that spends at least 0.5% of its revenue on energy efficiency programs to institute an RDM. A gas RDM is currently in place for DTE Gas, or DTE-G, and CE has been authorized to implement an RDM in 2017, replacing one that was previously terminated. Michigan Gas Utilities, or MGU does not currently have an RDM in place.

Generic Infrastructure—DTE-G utilizes an Infrastructure Recovery Mechanism that enables it to earn a return on, and on, the costs associated with capital investment in the company's meter move-out, accelerated replacement and pipeline integrity programs.

RTO-Related Transmission Expense—CE, DTE-E, and UPP recover transmission costs through the power supply cost-recovery mechanism.

Minnesota

Decoupling—Minnesota Energy Resources, or MER, is operating under a pilot, three-year full revenue decoupling mechanism, or RDM, that applies to the company's residential and small commercial/industrial rate classes. There is a 10% symmetrical cap on revenue changes generated through the application of the RDM, and the mechanism utilizes per-customer distribution revenues for each rate group. Rate changes required by the operation of the RDM are implemented annually. The pilot is to expire at year-end 2016, but in a pending rate case, MER is requesting PUC approval to continue the RDM.

CenterPoint Energy Resources, or CER, is operating under a pilot, three-year, full RDM that expires in 2018. The RDM applies to all customer classes except market-rate customers, subject to a cap on annual adjustments under the mechanism that is equal to 10% of non-gas margin revenue, after removing conservation costs, for decoupling adjustments due to revenue under-recovery by CER.

Northern States Power-Minnesota, or NSP-M, utilizes a pilot, three-year full electric RDM with a 3% cap on base revenues for the residential, small commercial, and small industrial classes, that is to be in place through 2018. NSP-M may seek to recover amounts over the cap provided it can show that its demand-side management and/or other initiatives were a substantial contributing factor to the declining energy consumption and that other non-conservation factors were not the primary factors for the under-recovery.

Generic Infrastructure—NSP-M uses a Gas Utility Infrastructure Cost Rider to recover the costs associated with certain gas infrastructure upgrades, especially those that are safety-related, outside of a general rate case.

Mississippi

Decoupling—Atmos Energy utilizes a weather normalization adjustment rider that is in place during the months of November through April and is adjusted monthly during that time. Entergy Mississippi, or EM, Mississippi Power, or MP, and Atmos have energy efficiency, or EE, riders in place that provide for recovery of EE program costs and the lost contributions to fixed costs associated with such programs.

Environmental Compliance—EM and MP are permitted to recover emissions allowance expenses through their fuel adjustment clauses. MP utilizes an Environmental Compliance Overview, or ECO, plan. The ECO plan establishes procedures to facilitate the Mississippi Public Service Commission's, or PSC's, review of the company's environmental compliance strategy and provides for rate recovery of costs, including the cost of capital, associated with PSC-approved environmental projects, on an annual basis, outside of a base rate case.

Generation Capacity—Until late-2014, EM had been recovering the costs associated with the gas-fired Attala power plant and the Hinds Energy Center through a temporary power management rider. However, these amounts have been rolled into base rates, and removed from the rider. The rider remains in place.

Other—EM and MP have riders in place related to the securitization of storm costs. On June 17, 2016, EM was authorized to implement an ad valorem tax adjustment rider. A similar mechanism has been in place for MP for many years.

Missouri

Conservation Program Expense/Decoupling—The local gas distribution companies may request Missouri PSC approval of a mechanism to reflect the impact of changes in customer usage due to variations in weather and/or conservation. Kansas City Power and Light, or KCP&L, has in place a demand-side programs investment mechanism that provides for recovery of program-related costs and the related lost revenues. KCP&L-Greater Missouri Operations, or GMO, and UE have similar mechanisms in place for their electric operations.

Renewable Energy—The PSC's rules specify that the electric utilities may file for a Renewable Energy Standards rate adjustment mechanism, or RESRAM, to reflect prudently incurred costs or a pass-through of benefits received, as a result of compliance with the state's renewable energy standards. The RESRAM is to be capped at a 1% annual rate impact. GMO has a RESRAM in place.

Environmental Compliance—The PSC's rules pertaining to Environmental Cost Recovery Mechanisms, or ECRMs, specify that a portion of the utility's environmental costs may be recovered through an ECRM and a portion may be recovered through base rates; the annual recovery of these costs is to be capped at 2.5% of the utility's Missouri gross jurisdictional revenues, less certain taxes. None of the utilities currently have an ECRM in place; however, Empire District Electric, or Empire, GMO, and UE recover emissions allowance costs through their FACs.

Generic Infrastructure—GMO and UE use a rider to recover costs associated with certain government-mandated investments. Liberty Utilities (Midstates Natural Gas), Laclede Gas, Missouri Gas Energy, or MGE, and UE utilize an infrastructure system replacement surcharge to recover costs associated with certain gas distribution system replacement projects.

RTO-Related Transmission Expense—Empire's, KCP&L's and UE's FACs reflect variations in certain transmission-related costs.

Other—Off-system sales margins that vary from the levels included in base rates flow through the FACs of Empire, KCP&L, GMO and UE. Liberty Utilities (Midstates Natural Gas), Empire, KCP&L, GMO, Laclede, MGE and UE have a mechanism in place to recover variations in certain taxes and franchise fees.

Montana

Electric Fuel/Gas Commodity/Purchased Power—In accordance with the state's restructuring statutes, NorthWestern Corp. sold its generation assets and entered into purchased power contracts with competitive suppliers to serve provider-of-last-resort customers. NorthWestern recovers supply costs through a cost recovery mechanism, adjusted monthly, under which rates are based on estimated loads and electricity costs for the upcoming tracking period. The Montana PSC reviews and adjusts rates for differences between estimates and actual results. MDU Resources Group, or MDU, utilizes a monthly-adjusted fuel and purchased power cost recovery mechanism.

Decoupling— MDU utilizes a mechanism to recover the costs associated with gas conservation programs, as well as to recoup revenues lost as a result of the programs.

NorthWestern's lost revenue adjustment mechanism, or LRAM, was discontinued effective Dec. 1, 2015. The LRAM had permitted the company to recoup revenues lost as a result of demand-side management programs in the context of its annual default supply cost recovery filings.

Other—A competitive transition charge mechanism is in place for NorthWestern through which the company recovers electric-restructuring-related out-of-market costs associated with certain purchased power contracts. A similar transition charge is in place for the company's gas operations. NorthWestern is also currently reflecting, in its gas commodity mechanism on an interim basis, costs related to certain natural gas production assets it recently acquired, pending a review by the PSC. For MDU, off-system sales margins are shared by ratepayers and shareholders on a 90%/10% basis through the fuel clause.

Nebraska

Generic Infrastructure—The gas utilities are allowed to apply for approval to use an infrastructure system replacement cost recovery, or ISRCCR, rider. The ISRCCR rider is to provide for timely recovery of certain capital investments outside of a general rate case and is to be capped at 10% of a utility's Nebraska-jurisdictional annual base revenue level. Following Nebraska PSC approval, an ISRCCR rider is to expire upon the earlier of: the implementation of new rates stemming from the conclusion of a general rate case filed subsequent to the PSC's approval of the ISRCCR rider; or, 60 months. Black Hills Nebraska Gas Utility has an ISRCCR rider in place. Black Hills Gas Distribution, or BHGD, has a forward-looking system safety and integrity rider tariff and system and integrity rider charge in place.

Other—BHGD uses a surcharge through which the company recovers external rate case expenses of the Office of the Public Advocate and the PSC that are assessed to the utility. All of the utilities have line items on their bills through which variations in franchise fees are recovered.

Nevada

Decoupling—The lost revenues associated with energy efficiency and conservation programs for Sierra Pacific Power, or SPP, and Nevada Power, or NP, are recovered using a periodically adjusted balancing account, referred to as the lost revenue adjustment mechanism.

State law and Nevada PUC rules include provisions, including revenue decoupling, to address disincentives to gas company participation in energy conservation programs. Southwest Gas has a decoupling mechanism in place. Attachment 67 Page 197 of 428

Generic Infrastructure—PUC rules allow for the establishment of a gas infrastructure replacement mechanism that will permit the utilities to recover, between rate cases, the revenue requirement associated with their gas infrastructure replacement projects. Southwest Gas currently has such a rider in place.

Other—Southwest Gas utilizes a mechanism designed to allow the company to recover from, or refund to, ratepayers the difference between actual bad debt expenses and the level reflected in base rates.

New Hampshire

Electric Fuel/Gas Commodity/Purchased Power—Fuel and purchased power adjustment clauses had been utilized prior to the implementation of retail choice in the early 2000s. Public Service Company of New Hampshire, or PSNH, now recovers its power costs through a periodically-adjusted default service rate, which reflects the revenue requirements of its generating assets and the cost of power purchases. It also includes a reconciliation of the difference between the company's costs and revenues for the previous period.

Liberty Utilities (Granite State Electric) and Unitil Energy Systems sold their generation as part of their restructuring agreements. These distribution-only companies supply default energy service through a request-for-proposals process supervised by the New Hampshire PUC.

Decoupling—On Aug. 2, 2016, the PUC established an energy efficiency resource standard, or EERS, for New Hampshire's electric and gas utilities. The EERS is to become effective Jan. 1, 2018. The utilities are to implement lost revenue adjustment mechanisms, or LRAMs, beginning on Jan. 1, 2017, to recover lost revenue due to the installation of energy efficiency measures. The PUC ordered the utilities to seek approval of a decoupling mechanism or other lost-revenue recovery mechanism as an alternate to the LRAM in their first distribution rate cases after the first EERS triennium, if not before.

Generic Infrastructure —A cast iron/bare steel rate adjustment mechanism is in effect for Liberty Utilities (EnergyNorth Natural Gas). Reliability enhancement and vegetation management programs and accompanying riders are in effect for Liberty Utilities (Granite State Electric), PSNH, and Unitil Energy Systems. The programs provide for recovery of both the capital investment and increases to operation and maintenance expense necessary for ongoing system reliability and vegetation management efforts.

New Jersey

Electric Fuel/Purchased Power/Gas Commodity—Historically, the utilities were permitted to reflect variations in fuel and purchased power costs through the Levelized Energy Adjustment Clause, or LEAC; however, the LEAC was suspended with the onset of retail competition. The utilities now procure power to meet customer requirements in the wholesale market and are permitted to flow these costs to ratepayers on a current basis.

Conservation Program Expense— Costs associated with the NJ Clean Energy Program, a legislatively mandated initiative to encourage the initiation of energy efficiency and renewable energy programs, are included for recovery through the non-bypassable societal benefits charge on customer bills. The BPU periodically reviews each company's programs and sets the statewide amount to be recovered through the charge. In addition, the utilities were permitted to recover through the charge, costs, including a return on the related investment, associated with participation in the Regional Greenhouse Gas Initiative, including energy efficiency, demand response, and solar initiatives. Participation in the Initiative was suspended by Gov. Christie in 2011, but the utility provisions of the state law remain in place, which has sparked a considerable amount of controversy. Legislation is pending that would exclude demand-side management costs from the charge. Certain utilities have incremental energy efficiency/conservation programs in place, the costs of which may be recovered through rider mechanisms. These utilities include Pivotal Utility Holdings, or PUH, d/b/a Elizabethtown Gas, New Jersey Natural Gas, or NJNG, South Jersey Gas, or SJG, and Public Service Electric and Gas, or PSEG.

Decoupling—Weather normalization clauses are in place for PUH and the gas operations of PSEG. A version of a revenue decoupling mechanism is in place for NJNG and SJG. Operation of the mechanisms is contingent on the companies achieving certain capacity-reduction targets and earnings tests as specified in their BPU-approved conservation incentive programs.

Environmental Compliance—The electric and gas utilities were permitted to recover through a charge, costs, including a return on the related investment, associated with participation in the Regional Greenhouse Gas Initiative, including energy efficiency, demand response and solar initiatives. Participation in the Initiative was

suspended by Gov. Christie in 2011, but the utility provisions of the state law remain in place, which has sparked a considerable amount of controversy. A bill was introduced in the New Jersey legislature in February 2016 that would exclude demand-side management costs from the charge utilities could pass through to customers. JCPL, PUH, PSEG, NJNG, and SJG are permitted to recover costs associated with former manufactured gas plant site cleanup outside of base rates through an adjustment mechanism. Such expenses are deferred and recovered over rolling seven-year periods, including carrying costs on the unamortized balance.

Generic Infrastructure—Following Hurricane Sandy, the BPU directed the utilities to develop mitigation and hardening infrastructure modernization plans, and indicated that it would be open to innovative cost-recovery mechanisms for such plans. The BPU subsequently approved modernization plans and related recovery mechanisms for several utilities—PSEG's "Energy Strong" infrastructure investment program for electric and gas operations, NJNG's New Jersey Reinvestment in System Enhancement program, and SJG's accelerated resiliency improvement program. An accelerated infrastructure investment program was approved for PUH, but the related costs are to be deferred for recovery in base rates.

In 2015, the BPU rejected Jersey Central Power and Light's request for approval of an accelerated reliability enhancement program and a related recovery mechanism. In November 2015, the BPU approved an incremental three-year accelerated gas pipeline replacement plan and a related recovery rider for PSEG's gas operations. In December 2015, the BPU approved a 10-year pipeline replacement plan for PUH, and an associated rider to reflect costs associated with the plan.

In January 2016, the BPU approved a three-year storm hardening program and related rider recovery mechanism for Rockland Electric.

Pending is a request by SJG to extend its accelerated infrastructure replacement program for seven years. The company proposes to recover the capital investment and expenses through annual adjustments outside of a general base rate case.

Other—All of the utilities have a mechanism in place to recover variations in certain taxes and fees. In addition, the electric utilities recover certain costs associated with low-income customer assistance programs and other public policy driven initiatives through a societal benefits charge; costs associated with the restructuring-related buyout/by-down of electric non-utility generation contracts and other regulatory asset balances are recovered through non-by-passable charges.

New Mexico

Environmental Compliance—An SO₂ rider is in place for Public Service Co. of New Mexico, or PSNM, through which customers are credited with their share of revenues from allowance sales.

Generic Infrastructure—PSNM has riders in place that are designed to recover costs associated with undergrounding distribution projects in Rio Rancho and Albuquerque.

Other—All of the utilities have a mechanism in place to recover variations in certain taxes and franchise fees.

New York

Electric Fuel/Gas Commodity/Purchased Power—Historically, all energy utilities used an electric fuel adjustment clause, or FAC. With electric industry restructuring, however, generation was divested, and the electric companies have largely transitioned from the FAC to a market power adjustment clause, or MAC, or a commodity adjustment clause, or CAC. The MAC/CAC allows the distribution utilities to flow through the costs of power procured to serve customers who have not selected an alternative supplier.

North Carolina

Conservation Program Expense—State law authorizes the NCUC to approve an annual rider outside of a general rate case for electric utilities to recover all reasonable and prudent costs incurred for the adoption and implementation of demand-side management, or DSM, and energy efficiency, or EE, programs. The NCUC has authorized the major electric utilities to retain a percentage of the net savings associated with their DSM/EE programs.

Decoupling—Piedmont Natural Gas utilizes a Margin Decoupling Mechanism/Tracker that decouples the recovery of authorized margins from sales levels. Public Service Company of North Carolina also has such a mechanism in place.

Renewables Expense—Costs incurred by electric utilities to procure renewable energy are recoverable through the fuel clause and the renewable energy portfolio standard, or REPS, rider subject to certain caps. The avoided cost is recoverable through the fuel adjustment clause, or FAC, and payments in excess of the avoided cost are recoverable through the annual REPS rider. Incremental O&M costs and annual research and development expenses up to \$1 million are also recoverable through the REPS rider. The cost of utility-owned renewable generating facilities is recovered through a combination of the FAC, the REPS rider, and base rates.

Environmental Compliance—The costs of certain re-agents, such as limestone, used in reducing or treating electric power plant emissions may be recovered through the fuel adjustment clause.

Generic Infrastructure—Piedmont Natural Gas uses an integrity management rider, or IMR, that allows the company to track and recover capital expenditures incurred to comply with federal pipeline safety and integrity requirements outside of a general rate case. As a result of the NCUC's November 2015 adoption of a settlement, the IMR filings are to occur semi-annually and not annually.

North Dakota

Decoupling—MDU Resources', or MDU's, gas operations are subject to a weather normalization adjustment mechanism that is in effect for the winter heating season from Nov. 1 through May 1. Northern States Power-Minnesota, or NSP-M, operates under straight fixed-variable gas rates.

Generation Capacity—MDU operates under a generation resource recovery rider through which it recovers costs associated with the 88-MW, simple cycle gas turbine Heskett III facility.

Environmental Compliance/Generic Infrastructure—The electric utilities are permitted to earn a cash return on construction work in progress through a separate rate adjustment mechanism for investments in transmission infrastructure and for federally-mandated environmental compliance projects. Once the facilities achieve commercial operation, they are reflected in rate base as part of a general rate proceeding, and the surcharge terminates. MDU and Otter Tail Power, or OTP, are operating under separate transmission and environmental cost recovery riders. NSP is operating under a transmission cost recovery rider.

Other—Through NSP-M's fuel and purchased power adjustment, or FPPA, clause, the company shares equally with ratepayers prospective "non-asset-based" wholesale power margins, or WPMs. Through its FPPA clause, OTP allocates asset-based WPMs on an 85%/15% basis to ratepayers and shareholders, respectively.

Ohio

Electric Fuel/Gas Commodity/Purchased Power/Generic Infrastructure/Other—As a result of electric industry restructuring, the utilities operate under electric security plans, or ESPs, that provide for the pass through of the utilities' cost of power to serve standard-service-offer customers.

The current ESPs for Cleveland Electric Illuminating, or CEI, Ohio Edison, or OE, and Toledo Edison, or TE, include delivery capital recovery riders that reflect a return of, and on, incremental distribution, sub-transmission, and general plant-in-service investments not already included in the companies' base rates.

Under Duke Energy Ohio's, or DEO's, current ESP, the company's generation requirements for non-switching customers are procured and priced through a competitive bid process, or CBP. The related riders are fully bypassable for switching customers.

Ohio Power's, or OP's, ESP allows the company to utilize riders for costs related to distribution investment, enhanced service reliability and storm damage recovery.

Dayton Power and Light's, or DP&L's, ESP, includes a Service Stability Rider to permit the company to maintain its financial health and to have an opportunity to earn a reasonable return on equity. DP&L also uses an Infrastructure Investment Rider for recovery of costs related to advanced meter infrastructure and/or SmartGrid deployment.

East Ohio Gas, or EOG, Columbia Gas of Ohio, or CGO, and Vectren Energy Delivery of Ohio, or Vectren, conduct auctions for competitive suppliers to bid to directly serve customers. The companies had previously obtained their gas supplies through negotiated bilateral contracts, but under the current plan, the companies conduct an auction that allows suppliers to compete to supply portions of the gas supply requirements. Customers who do not choose a specific competitive supplier are randomly assigned a supplier based on the auction results. DEO is the only major gas utility in the state to continue to use the gas cost recovery clause.

Decoupling/Conservation Program Expense—The ESPs for each of the Ohio electric utilities include a rider that allows for recovery of energy efficiency program costs and lost distribution margin associated with these programs. OP has a full pilot decoupling mechanism in place for residential and small commercial customers. Ohio's gas distribution companies, namely EOG, CGO, Vectren, and DEO all operate under straight fixed-variable prices.

Generic Infrastructure—The current ESPs in place for CEI/OE/TE and DEO include a delivery capital recovery rider that reflects a return of, and on, incremental distribution related investments not already included in the company's base rates. OP's ESP allows the company to utilize riders for costs related to distribution investment. CGO has a rider in place for infrastructure replacement costs. Vectren has a rider in place through which it recovers the costs associated with an accelerated main and service line replacement program. EOG has riders in place to recover costs related to its pipeline infrastructure replacement program and its installation of automated meter reading equipment. DEO uses an Accelerated Main Replacement Program rider to recover the costs associated with its gas delivery infrastructure improvement program.

Other—All of the utilities have a mechanism in place to recover variations in certain taxes and fees. DEO uses Rider Manufactured Gas Plant, or MGP, to recover PUC-approved costs associated with the company's environmental remediation of MGP sites. CEI/OE/TE, OP, DEO, EOG, CGO and Vectren have riders in place to recover variations in uncollectible expense. DEO has a storm cost rider in place.

Oklahoma

Conservation Program Expense/Decoupling—Oklahoma Gas and Electric, or OG&E, and Public Service Oklahoma, or PSO, utilize riders to recover the costs associated with energy efficiency programs, the related "lost revenues," and certain "incentives." CenterPoint Energy Resources, or CER, and Oklahoma Natural Gas, or ONG, recover the costs associated with energy efficiency programs through their performance-based ratemaking plans; however, ONG is not authorized to recover the related lost revenues. CER and ONG also utilize weather normalization mechanisms.

Environmental Compliance/Other—OCC rules permit the commission to approve requests to recover costs associated with environmental compliance costs through a rate rider. OG&E has such a rider in place. OG&E's storm cost recovery rider includes provisions that require a credit to ratepayers for the Oklahoma-jurisdictional portion of net revenues received from the sale of SO₂ credits.

Generation Capacity—OG&E utilizes a rider to recover the revenue requirement associated with the company's Crossroads Wind Farm; the rider is to remain in place until new base rates are implemented. A pending rate case for OG&E is expected to be decided in the near future. While the rider remains in effect, OG&E is to flow through to ratepayers 100% of the proceeds associated with the sale of the renewable energy credits that accrue from the plant's operation.

Generic Infrastructure—OG&E utilizes a rider to recover the costs associated with the company's Smart Grid program. In addition, OG&E is permitted to recover both capital- and expense-related costs associated with the company's "system hardening" and "vegetation management" programs, through a rider. OG&E also recovers, through a rider, costs associated with certain transmission projects it constructs. PSO utilizes a rider for recovery of incremental vegetation management, under-grounding costs and system-hardening/grid resiliency costs. PSO also uses an automated metering infrastructure, or AMI, rider to recover the costs associated with its three-year plan, which expires at the end of 2016, to install AMI equipment in its service territory.

Other—OG&E uses a storm-cost recovery rider to reflect any differences between the level of storm costs reflected in base rates and the level of such costs actually incurred in a given year. Ratepayers' share of OSS margins flow through PSO's fuel cost adjustment rider. OCC rules permit the Commission to allow utilities to recover security/safety-related costs through a surcharge/rate rider, and OG&E has such a rider in place. OG&E, PSO, CER, and ONG have a mechanism in place to recover variations in certain taxes and franchise fees. ONG has a rider in place for costs related to lost, used and unaccounted-for gas.

Oregon

Electric Fuel/Gas Commodity/Purchased Power—Portland General Electric, or PGE, PacifiCorp, and Idaho Power, or IP, are permitted to annually adjust rates to reflect forecasted power costs. PGE's and IP's power cost adjustment mechanisms include a component under which a portion of the difference between actual and forecasted power costs is deferred for future recovery or refund.

Decoupling—An electric revenue decoupling mechanism is to be in effect for PGE until year-end 2016. The mechanism is designed to provide for the recovery of the revenue shortfall resulting from reduced consumption patterns associated with residential and certain commercial customers' conservation efforts. Northwest Natural Gas, or NWNG, uses a decoupling mechanism designed to counteract the impact on revenues of changes in average residential and commercial customers' consumption patterns due to conservation efforts. The company has a separate weather-adjusted rate mechanism, or WARM, in place for these customers.

Cascade Natural Gas, or CNG's, decoupling mechanism, which adjusts for both conservation-related-demand reductions and deviations from normal weather, is to be in place until Jan. 1, 2020.

A partial decoupling mechanism is in place for Avista. Under the mechanism, customers are to be divided into residential and commercial rate groups. The mechanism will compare actual decoupled revenues, by rate group, to the allowed decoupled revenues determined on a per-customer basis, with any differences deferred for later disposition. The amount subject to deferral is to be based on the difference between actual sales, compared with the rate case forecast. There will be a 3% cap on the annual rate increases that may be implemented under the mechanism. The approved settlement calls for the decoupling mechanism to be subject to review by September 2019.

Renewables Expense—In accordance with state law, renewable resource adjustment clauses are utilized by the electric utilities for the recovery of prudently incurred costs associated with meeting the state's renewable energy standards. The mechanism allows for cost recovery, without filing a general rate case, of renewable resources that are expected to be placed into service in the current year.

Environmental Compliance—NWNG utilizes a site remediation and recovery mechanism to provide for recovery of costs incurred, and that continue to be incurred, for environmental remediation of legacy manufactured gas plant operations.

Pennsylvania

Electric Fuel/Purchased Power/Gas Commodity/Renewables Expense—Historically, electric utilities were permitted to recover fuel and purchased power costs through a semi-automatic adjustment mechanism, the Energy Cost Rate, or ECR; however, in conjunction with electric industry restructuring, the ECR was eliminated. Generation required to meet provider-of-last-resort, or POLR, obligations for each company is competitively procured and priced. Renewable resource requirements are included in this process. Prices for POLR service are adjusted on a current basis as each procurement occurs.

A non-automatic procedure is in place for recovery of fluctuations in gas costs. Tariff changes must be filed for PUC review six months prior to the proposed effective date. The companies may recover the difference in actual costs versus those projected, if the actual costs were reasonably incurred. Such filings may be made no more often than once every 12 months; however, quarterly updates to reflect unrecovered gas costs from the prior quarter are permitted.

Decoupling—Columbia Gas of Pennsylvania, or CGP, has a weather normalization adjustment in place for residential customers. In January 2016, the PUC opened a generic investigation into alternative ratemaking strategies including revenue decoupling mechanisms. En banc hearings were held in March. The proceeding is ongoing.

Generic Infrastructure—State law allows the Pennsylvania PUC to approve automatic adjustment clauses to recognize, between general rate cases, utility investments in certain infrastructure projects. Distribution System Improvement Charges, or DSICs have been approved for CGP, PECO Energy's, or PECO's gas and electric operations, PPL Electric Utilities, or PPL-E, Peoples Natural Gas, Equitable Gas, UGI Central Penn Gas, UGI Penn Natural Gas, Metropolitan Edison, or MetEd, Pennsylvania Electric, or Penelec, Pennsylvania Power, or PPC and West Penn Power, or WPP.

Duquesne Light has filed for approval of a long-term infrastructure improvement plan. Duquesne proposes to accelerate the repair/replacement of aging infrastructure for the six-year period 1/1/17 to 12/31/22. Assuming the plan is approved, Duquesne would seek to reflect the related expenditures in rates through a DSIC.

MetEd, Penelec, PPC and WPP recover costs associated with smart-meter-deployment plans through a rider between rate cases.

Conservation Program Expense—State law and PUC rules allow the electric and gas distribution utilities to recover, on an expedited basis through an adjustment clause, outside of a rate case, the costs associated with legislatively mandated/PUC-approved energy conservation programs. In 2011, the PUC approved demand reduction requirements for Duquesne, MetEd, Penelec, PPC, WPP, PECO, PPL-E. The PUC subsequently approved related compliance plans and cost-recovery mechanisms. On June 9, 2016, the PUC approved a voluntary plan proposed by UGI Utilities, or UGIU.

Other—All of the utilities have a mechanism in place to recover variations in certain taxes and franchise fees. PECO recovers nuclear decommissioning costs through a rider. PPL-E recovers universal service program costs through a rider. MetEd, Penelec, PPC and WPP also have riders in place for universal service and uncollectibles costs.

Rhode Island

Electric Fuel/Gas Commodity/Purchased Power—Prior to the implementation of electric industry restructuring automatic electric fuel adjustment clauses were used by the utilities. In accordance with the restructuring law and Rhode Island PUC-approved restructuring plans, investor-owned utilities are to provide standard offer service to customers who do not select an alternative provider through 2020. The cost of providing this service is fully recoverable, with such rates reset on a periodic basis.

Conservation Program Expense/Environmental Compliance—Narragansett Electric, or NE, utilizes an annual distribution adjustment clause, or DAC, for its gas operations to recover costs associated with demand-side management and environmental response.

Generic Infrastructure—State law permits NE to submit, for PUC approval, annual infrastructure spending plans for its electric and gas operations, and recovery of expenses associated with an inspection and maintenance program and vegetation management program.

Other—A pension adjustment mechanism is in place for NE's electric and gas operations that reconciles actual pension and other-post-employment-benefits expense to the level reflected in base rates. NE recovers electric commodity-related uncollectibles, including associated administrative costs, through its standard offer service rate. In addition, the company recovers transmission-related bad debt through a transmission-related uncollectible mechanism. NE reflects credits associated with margins from non-firm sales and transportation, earnings sharing and service quality adjustments through the DAC.

South Carolina

Decoupling—Weather normalization adjustments are in place for the gas operations of South Carolina Electric and Gas, or SCE&G, and Piedmont Natural Gas that apply only to residential and small commercial customers.

Environmental Compliance—Emissions allowance costs and the cost of certain materials used in reducing or treating electric power plant emissions are reflected in the fuel clause.

Generation Capacity—Statutes allow the South Carolina PSC to issue a base load review act, or BLRA, order, which constitutes an upfront determination that a plant is "used and useful," and that associated proposed capital expenditures are prudent and ultimately should be reflected in rates as long as the plant is constructed within the estimated construction schedule, including contingencies, and capital budget. For nuclear plants only, if requested by a utility, the BLRA order is to specify initial revised rates reflecting the utility's pre-construction and development costs. At least one year after its filing of a BLRA application, and no more frequently than annually thereafter, the utility is permitted to file for PSC approval of revised rates reflecting a cash return on a nuclear plant's construction work in progress, or CWIP. The PSC has issued a BLR order for SCE&G's two-unit expansion of its V.C. Summer nuclear plant, and the company is currently earning a cash return on the plant's CWIP.

South Dakota

Conservation Program Expense/Decoupling—A demand-side management, or DSM, cost adjustment mechanism is in place for Northern States Power-Minnesota, or NSP-M, through which the company recovers costs associated with DSM/efficiency programs. The mechanism includes a 30% bonus to account for lost margins related to DSM/efficiency measures. Black Hills Power, or BHP, operates under an efficiency adjustment rider through which the company recovers the cost of its energy efficiency programs, as well as any lost revenues associated with the programs. Weather impacts are not reflected in the mechanism.

Generation Capacity/Generic Infrastructure—NSP-M utilizes an infrastructure rider to recover costs associated with certain generation, transmission and distribution capital additions once the related facilities have achieved commercial operation and to reflect certain changes in property taxes.

Other—Through its fuel and purchased power adjustment clause, or FPPAC, BHP credits ratepayers a portion of the margins from renewable energy credit sales and power marketing income. NSP-M operates under certain wholesale power margin sharing provisions, and allocates ratepayers' share of any such margins through its fuel clause. NSP-M also credits ratepayers a portion of revenues generated from renewable energy credit sales through its fuel clause.

Tennessee

Decoupling—Weather normalization adjustment, or WNA, clauses are in place for Atmos Energy and Piedmont Natural Gas, or PNG. A full revenue decoupling mechanism in place for Chattanooga Gas', or CG's, residential and small commercial customers was to expire in May 2013; however, in June 2013, the TRA authorized CG to continue operating under the mechanism while it reviews the company's petition to extend the rider. A WNA rider is also in place for CG's industrial, commercial, and other customers that do not operate under the decoupling mechanism.

Other—Atmos Energy, PNG, and CG utilize riders related to capacity management and release, off-system sales and capacity assignment.

Atmos and CG operate under riders through which the companies share with ratepayers gross profit margin reductions associated with large industrial or commercial customers that are served under negotiated contracts and are able to bypass the utilities' distribution system. Through its purchased gas adjustment rider, PNG recovers margin losses associated with bypassable customers being served under negotiated contracts.

Texas PUC

Electric Fuel/Purchased Power—For companies that implemented retail competition, i.e., within the Electric Reliability Council of Texas, or ERCOT, the transmission and distribution utilities do not have provider-of-last-resort/standard-offer-service obligations. Retail electric providers offer generation service at marked-based rates.

For electric utilities that have not implemented retail competition, fuel and purchased power costs are recovered through a separate fuel factor, the level of which is established in base rate cases. Between base rate cases, the fuel factor may be adjusted, following hearings, based on projected fuel costs for the period the fuel factor will be in effect, subject to true-up.

Conservation Program Expense—Electric distribution utilities are permitted to request recovery of costs associated with legislatively mandated energy efficiency programs through a streamlined adjustment mechanism. The following utilities have such mechanisms in place: AEP Texas Central, or TXC; AEP Texas North, or TXN; CenterPoint Energy Houston, or CEHE; El Paso Electric, or EPE; Entergy Texas, or ETI; Oncor Electric Delivery; Southwestern Electric Power, or SWEPCO); Southwestern Public Service, or SWPS; and Texas-New Mexico Power, or TNMP.

Generic Infrastructure—The PUC may approve periodic distribution cost recovery factors, or DCRFs for both vertically integrated and transmission and distribution-only electric utilities. The PUC may prohibit a utility from implementing a rate change under the mechanism if the Commission determines that the utility is earning in excess of its authorized return prior to the adjustment. Amounts approved for recovery under the DCRF are to be rolled into base rates in the utility's subsequent rate case. DCRFs have been approved for ETI and CEHE. Requests for DCRFs filed by SWEPCO, TCC, TNC and SWPS are pending.

State law permits the utilities to recover costs associated with deployment of advanced metering technology through a separate surcharge, and the PUC has for the most part approved such mechanisms when requested. Advanced metering surcharges are in place for TXC, TXN, CEHE, Oncor and TNMP.

For the service territories in which retail competition has been implemented, i.e., within ERCOT, transmission service providers are permitted to file up to twice annually, outside of a base rate case, to implement rate changes to reflect new transmission facilities through an interim transmission cost-of-service mechanism, or TCOS. TCOS mechanisms have been approved for TXC, TXN, CEHE, Oncor, and TNMP, as well as transmission-only entities such as Cross Texas Transmission, Electric Transmission Texas, Lone Star Transmission and Wind Energy Transmission of Texas.

Utilities that have not implemented retail competition, i.e., EPE, ETI, SWEPCO and SWPS, may file once annually between rate cases (for adjustments to reflect new investment in transmission facilities. This procedure is known as a transmission cost recovery factor, or TCRF, mechanism.

RTO-Related Transmission Expense—Transmission revenue requirements established through either base rates or the TCOS procedure are allocated among the distribution service providers, or DSPs, within ERCOT based on PUC-approved, load-based allocation factors, established under the Commission's "transmission matrix." The DSPs are permitted to adjust rates charged to REPs twice annually to reflect changes in wholesale transmission costs assigned to the DSP by ERCOT. These changes flow through a mechanism also known as a TCRF, which is in place for CEHE, Oncor, TNMP, TXC and TXN.

Other—A rider is in place for ETI that allows for recovery of variations in storm costs versus the level included in base rates. CEHE, ETI and TNMP have adjustment clauses in place to reflect changes in municipal franchise fees. EPE has a rider in place to recover lost revenue associated with the provision of discounted service to military bases, while SWPS recovers lost revenue associated with the provision of discounts to state universities through a rider.

Texas RRC

Gas Commodity Costs—Purchased gas cost adjustment clauses may be implemented under certain circumstances. Specifically, the RRC must consider: (1) the ability of the pipeline or local distribution company to control prices for gas purchased, in light of competition and relative competitive advantage; (2) the probability of frequent price changes; and (3) the availability of alternative gas supply resources. In the context of a 2004 rate decision for Atmos Energy, the RRC approved the implementation of a gas cost recovery factor to reflect gas commodity cost changes that occur between rate cases. A similar mechanism is in place for Texas Gas Service, or TGS, and CenterPoint Energy Resources, or CERS. However, uncollectibles are not included in the GCRF for CERS.

Decoupling—Weather normalization adjustments are in place for Atmos and TGS.

Generic Infrastructure—Surcharge mechanisms for gas reliability infrastructure program, or GRIP, costs are in place for CERS' Houston, South Texas, Beaumont/East Texas and Texas Coast Divisions. A similar mechanism is in place for most of the cities served by Atmos' Mid-Tex and West Texas Divisions. Operations in the City of Dallas and its environs, which are part of the Mid-Tex Division, are subject to a "Dallas Annual Rate Review Mechanism" that takes into account several factors including new infrastructure investment. The remaining Mid-Tex Division is subject to an annual formula ratemaking tariff, known as the annual Rate Review Mechanism, or RRM, which takes into account several factors including new infrastructure investment. Certain cities within the West Texas division are subject to a similar tariff, while others, such as Amarillo and Lubbock, operate with annually-updated GRIP mechanisms. An annual cost-of-service adjustment mechanism, similar to the Rate Review Mechanism, is in place for TGS.

Other—Gas-commodity-related uncollectibles are recovered through Atmos' GCRF.

Utah

Decoupling—A weather normalization adjustment, or WNA, is in place for Questar Gas; however, customers may elect not to participate in the WNA. Questar Gas also utilizes a conservation-enabling tariff, or CET, which decouples non-gas revenues from the volume of gas used by general service, or GS customers. Under the CET, a margin-per-customer target is specified for each month, with non-weather-related differences to be deferred and recovered from, or refunded to, GS customers via periodic rate adjustments. Annual CET accruals are limited to 5% of base distribution non-gas, or DNG, revenues, and the amortization of CET accruals is limited to 2.5% of total Utah-jurisdictional base DNG GS revenues. Together, the WNA and CET act as a full revenue decoupling mechanism.

Renewables Expense—PacifiCorp operates under a renewable energy credit, or REC, mechanism that tracks variations in REC revenues from a base level established in the most recent general rate case, with any differences to flow to customers via an annual credit or surcharge. Separately, an adjustment mechanism is in place for PacifiCorp through which the company recovers costs associated with its solar program.

Generic Infrastructure—A pilot infrastructure replacement adjustment mechanism is in place for Questar Gas that permits the company to recover, between rate cases, the incremental costs associated with the replacement of high-pressure natural gas feeder lines. The mechanism is to be adjusted at least annually, and has an annual budget cap of \$65 million.

Other—Questar Gas flows ratepayers' share of its capacity release revenue to customers via its semi-annual gas-cost pass-through proceedings.

Vermont

Decoupling—Alternative regulation plans in place for Green Mountain Power and Vermont Gas Systems somewhat obviate the need for revenue decoupling mechanisms, as the plans allow for annual rate adjustments based on the company's forecast of sales and costs, and contain earnings-sharing provisions that minimize losses if sales fall significantly from forecast.

Virginia

Electric Fuel/Purchased Power—Energy and capacity charges for "economy" purchases are included in the electric fuel factor calculation. Energy charges associated with reliability purchases may flow through the fuel factor; but capacity charges are recovered through base rates.

Conservation Program Expense—State law permits the SCC to approve rider mechanisms for the recovery of utilities' conservation and energy efficiency program costs. Such mechanisms are in place for Virginia Electric Power, or VEPCO, Appalachian Power, or APCO, and Columbia Gas of Virginia, or CGV.

Decoupling—A Weather Normalization Adjustment, or WNA, rider is in place for Virginia Natural Gas, or VNG and Washington Gas, or WG. A separate revenue normalization adjustment, or decoupling, mechanism is in place that is designed to mitigate the impact on WG and CGV's revenues of customers' participation in energy conservation programs.

Environmental Compliance/Generation Capacity—APCO has an environmental compliance rate adjustment clause in place. State law allows the SCC to approve riders to achieve rate recognition of investment in new generation facilities, including a cash return on construction work in progress and an incentive ROE premium for certain types of facilities for a portion of their useful lives. The SCC has approved such riders for both VEPCO and APCO.

Generic Infrastructure—The SCC may approve annually adjusted riders for the recovery of cost/investments, including a cash return on construction work in progress, associated with utility projects to replace existing overhead distribution facilities of 69 kilovolts or less located within the Commonwealth with underground facilities. Investments recognized through an approved rider would be capped at 5% of the utility's total distribution rate base as determined in the most recently decided a biennial review proceeding at the time the adjustment is requested. Investment excluded from the rider would be deferred and would be eligible for recovery through a base rate proceeding. The rider's revenue requirement would reflect the rate of return approved in the company's most recent base rate case or biennial review proceeding. VEPCO filed for approval of such a rider, to be known as Rider U, in 2014, and the proposal was initially rejected by the SCC. VEPCO filed an updated proposal on Dec. 1, 2015, and that proceeding is pending.

The SCC may also allow a natural gas utility that invests in natural gas facility replacement projects to recover, in the form of a rider, a return on investment, a revenue conversion factor, depreciation, property taxes and carrying costs on over/under recovery of the related costs. Eligible infrastructure replacement is defined as natural gas facility replacement projects that (i) enhance safety or reliability by reducing system integrity risks associated with customer outages, corrosion, equipment failures, material failures, or natural forces; (ii) do not increase revenues by directly connecting the infrastructure replacement to new customers; (iii) reduce or have the potential to reduce greenhouse gas emissions; (iv) are commenced on or after Jan. 1, 2010; and (v) are not included in the natural gas utility's rate base in its most recent rate case. Such riders have been approved for WG and CGV.

Other—WG and CGV are permitted to recover carrying charges on storage gas balances and over/under-collected gas costs, hexane costs and commodity-related uncollectibles expense through an adjustment mechanism. APCO and VEPCO have a mechanism in place to recover variations in certain taxes and franchise fees.

Washington

Electric Fuel/Gas Commodity/Purchased Power—An Energy Recovery Mechanism, or ERM, is in place for Avista that allows the company to adjust electric rates to reflect changes in power supply-related costs, with a graduated sharing of differences from a benchmark level. Power cost adjustment mechanisms are in place for Puget Sound Energy, or PSE, and PacifiCorp that allows for variations in power costs to be apportioned, on a graduated scale, between the company and customers.

Decoupling—Revenue decoupling mechanisms are in place for PSE's electric and gas operations, in conjunction with a rate plan that is to provide for annual increases in allowed revenue per customer for the duration of the rate-plan period. The rate plan is to be in effect through until December 2017, when new rates are to become effective in the company's 2017 general rate case.

Full decoupling mechanisms in place for Avista's electric and gas operations are to: be in place through 2019; be evaluated every three years; and, incorporate an earnings test and demand-reduction targets. In addition, surcharge increases under the mechanisms are capped at 3%, with unrecovered balances carried forward to future years; decoupling surcredits are not subject to a cap.

Generic Infrastructure—Pipeline replacement plans are in place for PSE, Avista, Cascade Natural Gas, or CNG, and Northwest Natural Gas, or NNG. The plans are in place through 2017. CNG and PSE utilize riders for the costs associated with their plans. Avista and NNG do not have such a mechanism.

West Virginia

Conservation Program Expense—APCO/Wheeling have filed for approval of riders for recovery of certain demand-response-related costs. The proceedings are pending.

Environmental Compliance/Generation Capacity/Generic Infrastructure—In the past, the PSC has approved temporary riders to provide recognition between rate cases of certain electric generation and infrastructure investments. No such mechanisms are currently in place.

Mountaineer Gas is permitted to recover costs associated with its Infrastructure Replacement and Expansion Program through a rider, which is updated annually.

In February 2015, the PSC adopted a settlement authorizing Monongahela Power and Potomac Edison to implement a vegetation management rider that is to be updated twice per year, and is to remain in place for five years. In that same case, the companies also agreed to withdraw their request for an environmental projects surcharge mechanism for costs related to compliance with the U.S. Environmental Protection Agency's Mercury and Air Toxics Standards, as well as related state requirements. However, MonPower/PotEd are to establish a regulatory asset for compliance-related investments made between Jan. 1, 2016 and Dec. 31, 2017. Recovery of the regulatory asset will be subject to a prudence review.

Other—The utilities have mechanisms in place to recover variations in certain taxes and franchise fees.

Wisconsin

Electric Fuel/Gas Commodity/Purchased Power—Under the Wisconsin PSC's electric fuel rules, which apply to the state's five largest investor-owned utilities, each utility forecasts monthly and annual fuel and purchased power costs on a prospective basis. If a company's actual fuel and purchased power costs are outside a monthly or cumulative monthly variance range around the forecasts, and the utility can demonstrate that these costs will likely be outside the annual range, the PSC may conduct a hearing to establish new rates. Currently, the annual variance range is plus or minus 2%. An electric utility is permitted to defer any fuel costs that are outside of its annual, symmetrical variance range for subsequent recovery or refund. However, the utility is prohibited from recovering deferrals if the company is found to be earning in excess of its authorized equity return.

Generation Capacity/Generic Infrastructure/Other—At times, the PSC has authorized the utilities to file a limited issue reopener, or LIR, of a previously completed base rate case instead of a full rate case. The LIR provides for recognition of certain specified investments and/or expenses, and does not involve the re-determination of rate of return.

Other—All of the utilities have a mechanism in place to recover variations in certain taxes and franchise fees.

Wyoming

Decoupling—Black Hills Gas Distribution has a partial decoupling mechanism in place for small and medium general service class distribution customers. The mechanism does not address revenue variations due to weather. Cheyenne Light Fuel and Power's, or CLF&Ps, demand side management, or DSM, mechanisms for its electric and gas operations include provisions that provide for the recovery of "lost margins" associated with customer participation in the DSM programs.

Renewables Expense/Environmental Compliance—Optional renewable energy riders are in place for CLF&P, MDU Resources, and PacifiCorp. PacifiCorp operates under an adjustment mechanism that is designed to recover from or refund to ratepayers 100% of the difference between actual renewable energy and SO₂ emissions allowance credit revenue levels and the levels reflected in base rates.

Other—Through an incentive provision of its fuel clause, CLF&P allocates a portion of off-system sales margins to ratepayers.

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Alternative Regulation for Emerging Utility Challenges: 2015 Update

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I. Introduction

Investor-owned electric utilities in the United States are buffeted today by varied and rapid changes in the business conditions they face. For vertically integrated electric utilities (“VIEUs”) and utility distribution companies (“UDCs”) alike, the traditional cost of service approach to rate regulation is often not ideal for helping utilities cope with these changes. Alternative approaches to regulation (“Altreg”) can often help utilities secure better outcomes for their customers and shareholders.

The changing business climate stems primarily from three root causes. One is pressure, from policymakers and many customers, for the power industry to lighten its environmental footprint. In addition to evolving renewable portfolio standards at the state level, utilities must comply with an array of federal initiatives such as the Environmental Protection Agency’s Clean Power Plan. Demand-side management (“DSM”) programs and tightening building codes and appliance standards encourage energy efficiency. Some customers seek power from greener sources than the increasingly clean portfolios of utilities. Self generation from rooftop solar is one means to this end, and its cost is falling. Customer-sited distributed generation (“DG”) must be accommodated, and utilities must purchase power surpluses that these facilities generate at regulated rates.

A second force for change is technological progress in metering and distribution. Advanced metering infrastructure and other smart grid technologies can improve reliability and facilitate integration of intermittent renewables. Time-sensitive pricing can encourage customers to use the grid in less costly ways. New value-added optional products and services can be offered which benefit customers.

A third force for change is increased concern about the reliability and resiliency of grid service. Some facilities are approaching advanced age, and some need more protection from severe weather. Many customers seek better quality service.

These forces are having important practical effects on utilities. Growth in the demand for their traditional services has slowed, and utilities face competition from distributed energy resources (“DERs”). Nevertheless, some utilities need capital expenditures (“capex”) for cleaner generating capacity, smart grid facilities, increased resiliency, and replacement of aging assets. Many new facilities don’t automatically trigger revenue growth. Increased marketing flexibility is needed to meet competitive challenges and complex, changing customer needs.

Under traditional regulation, the base rates that compensate utilities for costs of non-energy inputs are reset only in general rate cases with historical test years. These lengthy proceedings require a detailed review of all costs and their allocation amongst the utility’s retail services. Revenue from secondary sources (e.g., off-system sales) is imputed against the revenue requirement.

Most base rate revenue is drawn from volumetric and other usage charges. Since the cost of base rate inputs is driven more by capacity than system use in the short run, a utility’s finances are sensitive between rate

cases to the gap between growth in system use and capacity. A convenient proxy for this gap is the growth in use per customer (aka “average use”). The need for rate cases increases when average use declines.

Traditional regulation is ill-suited for addressing many of today’s challenges. Growth in average use was once positive, and the resulting incremental revenues helped utilities finance rising cost without rate cases. Today, growth in the average use of residential and commercial customers is typically static and often negative. Utilities needing normal or high capital expenditures are then compelled to file rate cases more frequently. These involve high regulatory cost and are nonetheless frequently uncompensatory when they involve historical test years. Frequent rate cases also reduce utility opportunities to increase earnings from improved cost containment and marketing. Traditional regulation also does not allow for many value-added or optional rates and services. Improved utility performance is thus discouraged at a time when it is increasingly needed to respond to competitive pressures.

Increased financial attrition has been a factor in the long-term decline of average credit ratings among investor-owned electric utilities. This is illustrated in Figure 1. Higher risk raises financing costs and can discourage needed investments.

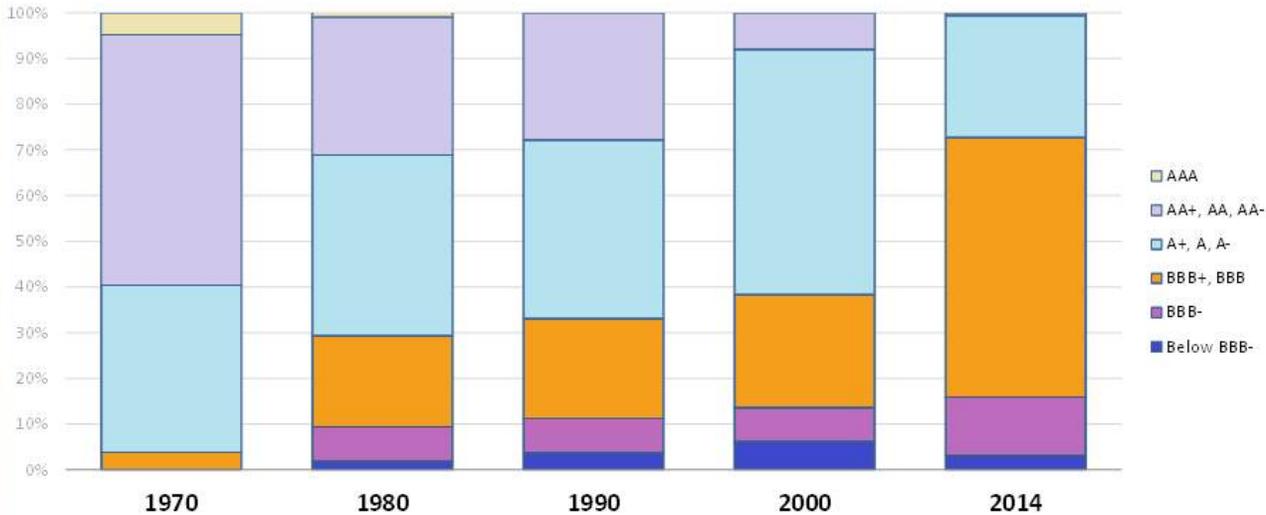
Alternative approaches to regulation have been developed which handle today’s business conditions better. Some, such as multiyear rate plans, formula rates, and fully-forecasted test years, can involve sweeping regulatory change. Others, like revenue decoupling and cost trackers, target specific challenges.

This survey, now updated to include precedents through mid-2015, explains Atrég options and details precedents in the regulation of retail electric utility rates. A summary of states that currently use these approaches is featured in Table 1. Information is also provided on precedents for gas and water distributors and for energy utilities in Australia, Canada, and Britain. This year’s survey also discusses marketing flexibility, a new Atrég area of growing interest to EEI members.

Figure 1

U.S. Electric IOUs Rating History

1970 – 2014



The current average company rating is BBB+, improved from the BBB average rating in 2000



Source: EEI Finance Department, Standard & Poor's, Macquarie Capital, SNL Financial

Table 1

Alternative Regulation Tools: An Overview of Current Precedents

State	Capital Cost Trackers	Measures that Relax the Use/Revenue Link			Multiyear Rate Plans ¹	Retail Formula Rate Plans	Forward Test Years
		Decoupling True Up Plans	Lost Revenue Adjustment Mechanisms	Fixed Variable Retail Pricing			
Alabama	Electric & Gas					Electric & Gas	Yes
Alaska							
Arizona	Electric, Gas, & Water	Gas only	Electric & Gas		Electric only		
Arkansas	Electric & Gas	Gas only	Electric & Gas				
California	Electric & Gas	Electric & Gas			Electric & Gas		Yes
Colorado	Electric & Gas				Electric only		
Connecticut	Electric, Gas, & Water	Electric & Gas	Gas only	Electric & Gas			Yes
Delaware	Electric, Gas, & Water						
District of Columbia	Electric & Gas	Electric only					
Florida	Electric & Gas			Gas only	Electric only		Yes
Georgia	Electric & Gas	Gas only		Gas only	Electric only	Gas only	Yes
Hawaii	Electric only	Electric only			Electric only		Yes
Idaho	Electric only	Electric only					
Illinois	Gas & Water	Gas only		Electric & Gas		Electric only	Yes
Indiana	Electric, Gas, & Water	Gas only	Electric only		Gas only		
Iowa	Gas only			Gas only	Electric only		
Kansas	Gas only		Electric only	Gas only			
Kentucky	Electric & Gas		Electric & Gas	Gas only			Yes
Louisiana	Electric only		Electric only		Electric only	Electric & Gas	Yes
Maine	Electric, Gas, & Water	Electric only		Gas only	Gas only		Yes
Maryland	Electric & Gas	Electric & Gas					
Massachusetts	Electric & Gas	Electric & Gas	Electric & Gas		Gas only		
Michigan	Gas only	Gas only					Yes

Table 1 continued

State	Capital Cost Trackers	Measures that Relax the Use/Revenue Link			Multiyear Rate Plans ¹	Retail Formula Rate Plans	Forward Test Years
		Decoupling True Up Plans	Lost Revenue Adjustment Mechanisms	Fixed Variable Retail Pricing			
Minnesota	Electric & Gas	Electric & Gas					Yes
Mississippi	Electric & Gas		Electric & Gas	Electric only		Electric & Gas	Yes
Missouri	Gas & Water			Gas only			
Montana	Electric & Gas		Gas only				
Nebraska	Gas only			Gas only			
Nevada	Gas only	Gas only	Electric only				
New Hampshire	Electric, Gas, & Water			Gas only	Electric & Gas		
New Jersey	Electric, Gas, & Water	Gas only					
New Mexico							Yes
New York	Gas & Water	Electric & Gas	Gas only	Electric & Gas	Electric & Gas		Yes
North Carolina	Gas & Water	Gas only	Electric only				
North Dakota	Electric only			Gas only	Electric only		Yes
Ohio	Electric, Gas, & Water	Electric only	Electric only	Gas only	Electric only		
Oklahoma	Electric only		Electric only	Electric & Gas		Gas only	
Oregon	Electric & Gas	Electric & Gas	Electric & Gas				Yes
Pennsylvania	Electric, Gas, & Water			Gas only			Yes
Rhode Island	Electric & Gas	Electric & Gas					Yes
South Carolina	Electric only		Electric only			Gas only	
South Dakota	Electric only						
Tennessee	Gas only	Gas only		Gas only		Gas only	Yes
Texas	Electric & Gas			Gas only		Gas only	
Utah	Gas only	Gas only					Yes
Vermont				Gas only			
Virginia	Electric & Gas	Gas only		Gas only	Electric only		
Washington	Gas only	Electric & Gas			Electric & Gas		
West Virginia	Electric only						
Wisconsin				Gas only			Yes
Wyoming	Electric only	Gas only	Electric & Gas	Electric & Gas			Yes

¹ This column excludes plans involving rate freezes without extensive supplemental funding from trackers.

II. Cost Trackers

A cost tracker is a mechanism for expedited recovery of specific utility cost (e.g., outside of a rate case). Balancing accounts are typically used to track unrecovered costs. Cost recovery is often implemented using tariff sheet provisions called riders.

Trackers are used in various situations where they are more practical than rate cases for addressing particular costs. Utilities usually recover fuel and purchased power costs via trackers because the volatility and substantial size of these costs would otherwise lead to frequent rate cases and materially impact utility risk. Other volatile expenses that are sometimes addressed with trackers include those for pensions, severe storms, and uncollectible bills.

A second use of trackers is for costs incurred due to policies of government agencies. Examples here include franchise fees and certain taxes. Tracking costs like these is fair to utilities and encourages government agencies to consider the impact of their policies on customer bills.

Trackers are also used to compensate utilities for costs that are rapidly rising and don't otherwise trigger new revenue, whether or not they are volatile or mandated. This encourages needed expenditures and reduces risk and the frequency of rate cases. Examples of operation and maintenance ("O&M") expenses that are sometimes tracked due in large measure to their rapid growth include those for health care.

Trackers for some costs have multiple rationales. DSM expenses, for example, are often sizable and sometimes grow rapidly.¹ Utility DSM programs are often mandated. Additionally, DSM can slow growth in the average use of power and reduce the need for plant additions, important sources of earnings growth for utilities. Tracking DSM expenses helps to balance utility incentives to embrace DSM.

Capital cost trackers typically address the accumulating depreciation, return on asset value, and taxes that result from the capex.² Capital costs can qualify for tracker treatment on several grounds. Major plant additions are volatile. Capex might be necessitated by highway construction or changes in government safety, reliability, or environmental standards. Capex is sometimes large enough to cause brisk cost growth that would otherwise occasion frequent rate cases.

An early use of capital cost trackers in the electric utility industry was to address construction costs of large power plants. These plants can take years to construct. An allowance in rates for a return on funds used during construction was traditionally not permitted until assets were used and useful and a rate case was filed. Deferred recovery of the allowance strains utility cash flow, increases financing expenses, and induces more rate "shock" when the value of the plant and construction financing is finally added to the rate base.

¹ This survey only documents capital cost trackers. Trackers for DSM expenses are ubiquitous so that there is less need for documentation.

² Recovery is sometimes achieved by keeping a rate case open beyond the date of a final decision for the limited purpose of adding assets to the revenue requirement.

Many commissions have addressed these problems by making a return on construction work in progress (“CWIP”) eligible for immediate recovery. Capital cost trackers have often been used in lieu of frequent rate cases to obtain CWIP recovery.

Capital costs of distribution system modernization are sometimes recovered using trackers for somewhat different reasons. The annual expenditure may not be as large as that for large generation units, and construction of specific assets usually takes less than a year. However, the capex can still be sizable and doesn't automatically trigger new revenue when completed. A tracker for accelerated modernization costs can help a company modernize its grid and improve its services without frequent rate cases.

Capital costs of generation emissions controls are often accorded tracker treatment. These controls are occasioned by the emissions policies of state and federal agencies. Additionally, the facilities do not produce revenue and some facilities typically become used and useful each year over a series of years.

There are varied treatments of costs in approved capital trackers. Regulators often approve tracked capex budgets in advance, usually after considerable deliberation. Procedures for reviewing the need for generation plant additions are especially well established. Once a budget is set, the treatment of variances between actual and budgeted cost becomes an issue. Some trackers permit conventional prudence review treatment of cost overruns. In other cases, no adjustments are subsequently made if cost exceeds the budget. In between these extremes are mechanisms in which deviations, of prescribed magnitude, from budgeted amounts are shared formulaically (e.g., 50-50) between the utility and its customers. Utilities are also permitted sometimes to share in the benefits of capex underspends. The prudence of tracked capex is often subject to a final review when the cost is added to rate base, a step that usually occurs in the next rate case.

Recent precedents for capital cost trackers are listed in Table 2 and Figures 2 and 3. It can be seen that the precedents are numerous and continue to grow. This is the most widely used Altreg tool in the United States. For electric utilities, trackers for emissions controls, generation capacity, advanced metering infrastructure, and general system modernization have been especially common in recent years. Trackers for gas distributors typically address the cost of replacing old cast iron and bare steel mains. Trackers for water utilities, sometimes called distribution system improvement charges, are also common for accelerated modernization.

Figure 2: Recent Capital Cost Tracker Precedents by State: Energy Utilities

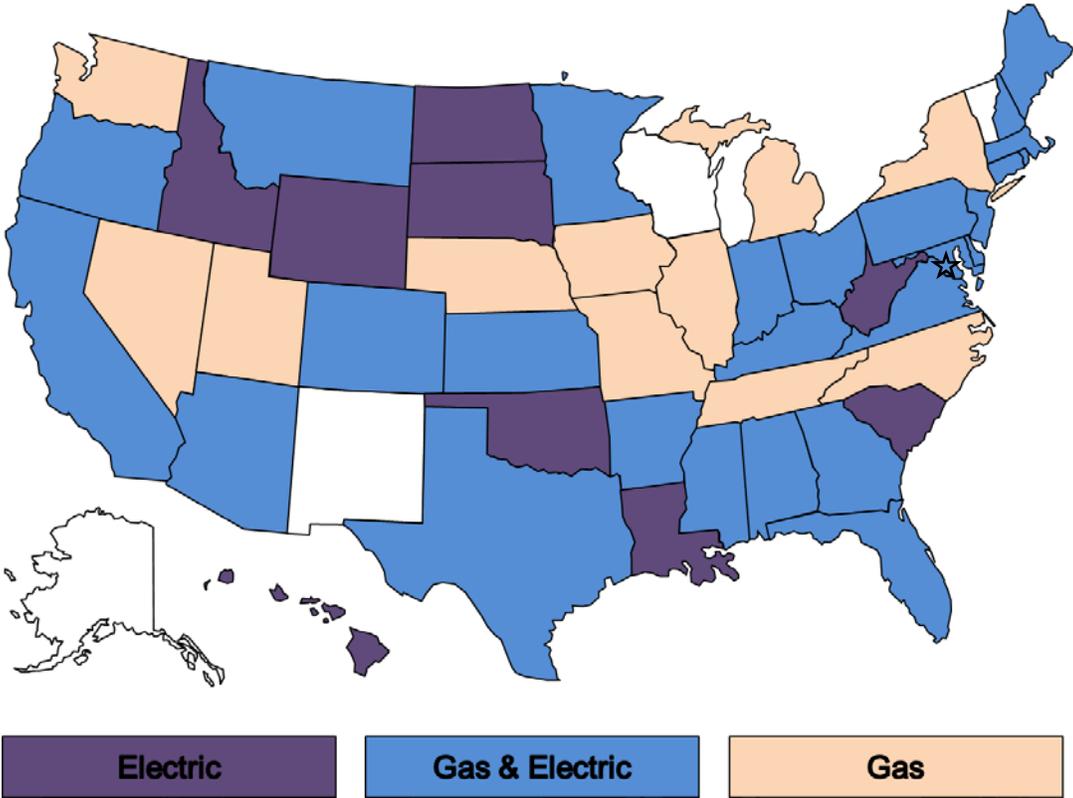


Figure 3: Recent Capital Cost Tracker Precedents by State: Water Utilities

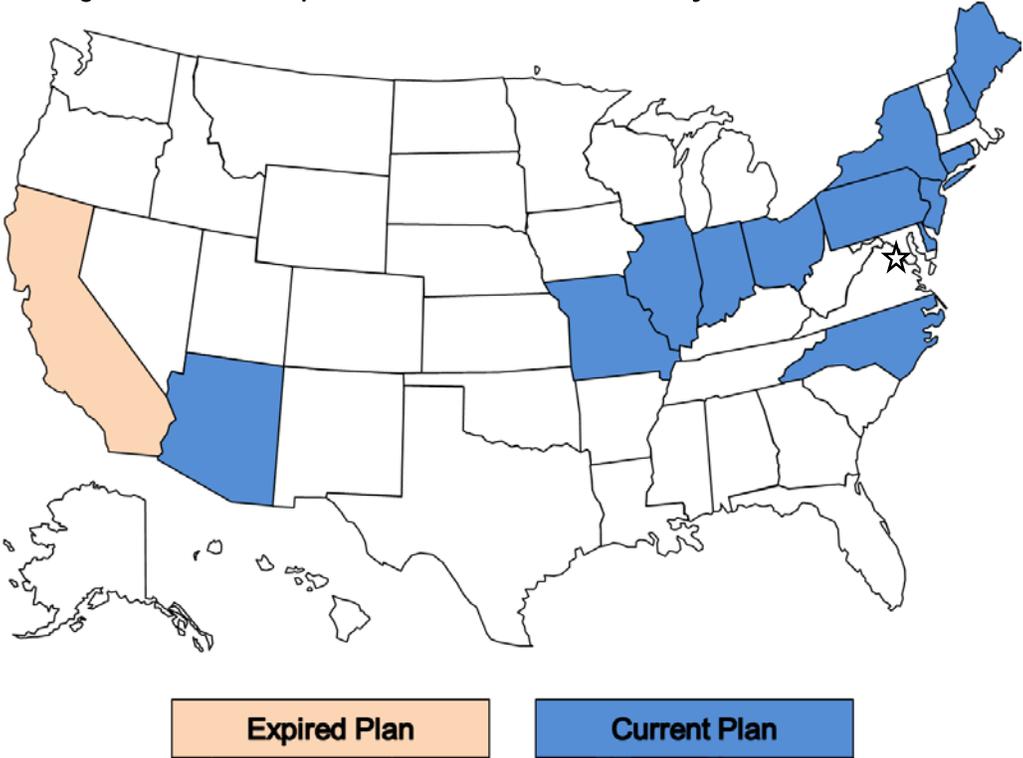


Table 2

Recent Capital Cost Tracker Precedents

Jurisdiction	Company Name	Services Included	Tracker Name	Eligible Investments	Case Reference
AL	Alabama Power	Electric	Rate Certificated New Plant	Any approved by Commission through CPCN	Dockets 18117 and 18416 (November 1982)
AL	Mobile Gas Service	Gas	Cast Iron Replacement Factor	Replacement of cast iron mains	Docket 24794 (November 1995)
AR	Arkansas Oklahoma Gas	Gas	Act 310 Surcharge	Relocations of pipelines mandated by government agencies	Docket 12-088-U (July 2013)
AR	Arkansas Oklahoma Gas	Gas	System Safety Enhancement Rider	Replacement of bare steel mains, mains on low pressure systems, mains that are subject of an advisory notice by government that company deems to be unsatisfactory	Docket 13-078-U (July 2014)
AR	CenterPoint Energy Arkla	Gas	Main Replacement Rider	Replacement of cast iron and bare steel mains and services	Docket 06-161-U (October 2007)
AR	CenterPoint Energy Arkla	Gas	Government Mandated Expenditure Surcharge Rider	Replacements resulting from highway and street rebuilding	Docket 10-108-U (March 2011)
AR	Empire District Electric	Electric	Alternative Generation Environmental Recovery Rider	Environmental	Docket 15-010-U (August 2015)
AR	Oklahoma Gas & Electric	Electric	Smart Grid Rider	Systemwide smart grid implementation	Docket 10-109-U (August 2011)
AR	SourceGas Arkansas	Gas	At-Risk Meter Relocation Program Rider	Installation of new services for meters relocated due to motor vehicle collision risk	Docket 13-079-U (July 2014)
AR	SourceGas Arkansas	Gas	Main Replacement Program Rider	Replacement of bare steel and coated steel mains, mains that are subject of an advisory notice by government that company deems to be unsatisfactory, and associated services	Docket 13-079-U (July 2014)
AR	SourceGas Arkansas	Gas	Act 310 Surcharge	Bare steel and cast iron pipeline replacement, in-line inspection project, emissions controlling catalysts for compressor station engines, greenhouse gas monitoring of some regulator stations, highway relocation projects	Docket 13-072-U (April 2014)
AR	SWEPSCO	Electric	Alternative Generation Recovery Rider	New generation	Docket 09-008-U (November 2009)
AR	SWEPSCO	Electric	Rider Environmental Compliance Surcharge	Environmental	Docket 15-021-U (October 2015)
AZ	Arizona Public Service	Electric	Renewable Energy Standard Adjustment Schedule	Renewables not recovered in base rates	Docket E-01345A-08-0172
AZ	Arizona Public Service	Electric	Environmental Improvement Surcharge	Environmental improvement projects	Docket E-01345A-11-0224 (May 2012)
AZ	Arizona Public Service	Electric	Four Corners Rate Rider Surcharge	Generation	Docket E-01345A-11-0224 (December 2014)
AZ	Arizona Water Company	Water	Arsenic Cost Recovery Mechanism	Investments to reduce arsenic in water supply	Various (operating regions have separate decisions approving ACRMs)
AZ	Arizona Water Company - Eastern Group	Water	System Improvement Benefits Mechanism	Replacement of leak prone mains and related services, meters, and hydrants, replace meters that do not have lead free brass, other replacements for mains, services, meters, and hydrants that are at the end of their useful life	Decision 73938 (June 2013)
AZ	Southwest Gas	Gas	Customer Owned Yard Line Cost Recovery Mechanism	Replacement and ownership of customer-owned yard lines that have been shown to be leaking	Docket G-01551A-10-0458 (January 2012)
AZ	Tucson Electric Power	Electric	Environmental Compliance Adjustor	Miscellaneous environmental projects	Decision 73912 (June 2013)
CA	Pacific Gas & Electric	Electric	Smart Grid Memorandum Account	Smart grid projects that received DOE matching funds	Decision 09-09-029 (September 2009)
CA	Pacific Gas & Electric	Gas Transmission	Pipeline Safety Implementation Plan	Pipeline replacement, automated valve installation, and upgrades to pipeline	Decision 12-12-030 (December 2012)
CA	Pacific Gas & Electric	Electric	Smart Grid Pilot Deployment Project Balancing Account	Pilot programs for smart grid line sensors, volt/VAR optimization, detection and location of distribution line outages and faulted circuits, and information technology investments to improve short term demand forecasting for power procurement	Decision 13-03-032 (March 2013)
CA	San Diego Gas & Electric	Electric & Gas	Advanced Metering Infrastructure Balancing Account	AMI	Decision 07-04-043 (April 2007)
CA	San Diego Gas & Electric	Electric	Energy Storage Balancing Account	Projects to store solar energy	Decision 13-05-010 (May 2013)
CA	San Diego Gas & Electric	Gas	Post-2011 Distribution Integrity Management Program Balancing Account	DIMP related costs	Decision 13-05-010 (May 2013)
CA	San Diego Gas & Electric	Gas	Transmission Integrity Management Program Balancing Account	TIMP related costs	Decision 13-05-010 (May 2013)
CA	San Diego Gas & Electric	Gas Transmission	Safety Enhancement Capital Cost Balancing Account	Replacement of mains that fail pressure tests or that cannot be pressure tested	Decision 14-06-007 (June 2014)
CA	Southern California Edison	Electric	SmartConnect Balancing Account	Advanced metering infrastructure project	Decision 08-09-039 (September 2008)
CA	Southern California Edison	Electric	Solar PV Balancing Account	Solar generation	Decision 09-06-049 (June 2009)
CA	Southern California Gas	Gas	Advanced Metering Infrastructure Balancing Account	AMI	Decision 10-04-027 (April 2010)
CA	Southern California Gas	Gas	Post-2011 Distribution Integrity Management Program Balancing Account	DIMP related costs	Decision 13-05-010 (May 2013)
CA	Southern California Gas	Gas	Transmission Integrity Management Program Balancing Account	TIMP related costs	Decision 13-05-010 (May 2013)
CA	Southern California Gas	Gas Transmission	Safety Enhancement Capital Cost Balancing Account	Replacement of mains that fail pressure tests or that cannot be pressure tested	Decision 14-06-007 (June 2014)
CO	Black Hills Colorado Electric	Electric	Transmission Cost Adjustment Rider	Transmission projects	Docket 09-014E, Decision C09-0271 (March 2009)
CO	Black Hills Colorado Electric	Electric	Clean Air Clean Jobs Act Rider	Gas-fired generation	Docket 14AL-0393E, Decision C14-1504 (December 2014)
CO	Public Service Company of Colorado	Electric	Transmission Cost Adjustment	Transmission projects	Docket 07A-339E, Decision C07-1085 (December 2007)
CO	Public Service Company of Colorado	Gas	Pipeline Safety Integrity Adjustment	Gas distribution and transmission integrity management programs, main replacement, partial recovery of two large pipeline replacements	Docket 10-AL-963G (August 2011)

Table 2 continued

Jurisdiction	Company Name	Services Included	Tracker Name	Eligible Investments	Case Reference
CO	Public Service Company of Colorado	Electric	Clean Air Clean Jobs Act Rider	Miscellaneous environmental projects including gas-fired generation, scrubbers	Proceeding 14A-680E, Decision C15-0292 (March 2015)
CO	Rocky Mountain Gas	Gas Transmission	System Safety and Integrity Rider	TIMP, DIMP, and other safety regulatory compliance projects	Docket 13AL-0046G, Decision R14-0114 (February 2014)
CT	Aquarion Water Company of Connecticut	Water	Water Infrastructure and Conservation Adjustment	Replacement of infrastructure including mains, valves, services, meters, and hydrants that have reached the end of their useful life or are no longer able to function as intended	Docket 08-06-21W101 (December 2008)
CT	Connecticut Light & Power	Electric	System Resiliency Plan	Structural hardening	Docket 12-07-06 (January 2013)
CT	Connecticut Natural Gas	Gas	System Expansion Reconciliation Mechanism	System expansion	Docket 13-06-02 (November 2013)
CT	Connecticut Natural Gas	Gas	DIMP True-Up Mechanism	Cast iron and bare steel main replacement	Docket 13-06-08; (January 2014)
CT	Connecticut Water	Water	Water Infrastructure and Conservation Adjustment	Replacement of infrastructure including mains, valves, services, meters, and hydrants that have reached the end of their useful life or are no longer able to function as intended	Docket 08-10-15W101 (March 2009)
CT	Southern Connecticut Gas	Gas	System Expansion Reconciliation Mechanism	System expansion	Docket 13-06-02 (November 2013)
CT	Torrington Water	Water	Water Infrastructure and Conservation Adjustment	Replacement of infrastructure including mains, valves, services, meters, and hydrants that have reached the end of their useful life or are no longer able to function as intended	Docket 09-06-17W101 (December 2009)
CT	United Water Connecticut	Water	Water Infrastructure and Conservation Adjustment	Replacement of infrastructure including mains, valves, services, meters, and hydrants that have reached the end of their useful life or are no longer able to function as intended	Docket 09-06-17W101 (December 2009)
CT	Yankee Gas Services	Gas	System Expansion Reconciliation Mechanism	System expansion	Docket 13-06-02 (November 2013)
DC	Potomac Electric Power	Electric	Underground Project Charge	Undergrounding of specific feeders	Formal Case 1116 (November 2014)
DC	Washington Gas Light	Gas	Plant Recovery Adjustment	Remediation/replacement of mechanical couplings	Formal Case 1027 (December 2009)
DC	Washington Gas Light	Gas	Accelerated Pipe Replacement Plan Adjustment	Replacement of cast iron mains, bare steel mains and services and "black plastic" services	Formal Case 1115 (January 2015)
DE	Artesian Water	Water	Distribution System Improvement Charge	Replacement of infrastructure (e.g., existing mains, services, meters, and hydrants)	Docket 01-474 (December 2001)
DE	Delmarva Power & Light	Gas	Utility Facility Relocation Charge	Replacements due to mandated relocations that are not otherwise reimbursed	Docket 12-546 (October 2013)
DE	Delmarva Power & Light	Electric	Utility Facility Relocation Charge	Replacements due to mandated relocations that are not otherwise reimbursed	Docket 13-115 (August 2014)
DE	Sussex Shores Water	Water	Distribution System Improvement Charge	Replacement of infrastructure (e.g., existing mains, services, meters, and hydrants)	Docket 01-470 (December 2001)
DE	Tidewater Utilities	Water	Distribution System Improvement Charge	Replacement of infrastructure (e.g., existing mains, services, meters, and hydrants)	Docket 03-210 (May 2003)
DE	United Water Delaware	Water	Distribution System Improvement Charge	Replacement of infrastructure (e.g., existing mains, services, meters, and hydrants)	Docket 01-481 (December 2001)
FL	Chesapeake Utilities	Gas	Gas Reliability Infrastructure Program Tariff	Replacement of bare steel mains and services	Docket 120036-GU (September 2012)
FL	Florida City Gas	Gas	Safety and Access Verification Expedited Program	Replacement of unprotected steel mains, relocation of certain gas mains in rear lot easements	Docket 150116-GU (September 2015)
FL	Florida Power and Light	Electric	Environmental Cost Recovery Clause	Miscellaneous environmental projects	Docket 080281-EI (August 2008)
FL	Florida Power and Light	Electric	Capacity Cost Recovery Clause	Nuclear power	Docket 090009-EI (November 2009)
FL	Florida Power and Light	Electric	Generation Base Rate Adjustment	Generation	Docket 120015-EI (December 2012)
FL	Florida Public Utilities	Gas	Gas Reliability Infrastructure Program Tariff	Replacement of bare steel mains and services	Docket 120036-GU (September 2012)
FL	Gulf Power	Electric	Environmental Cost Recovery Clause	Miscellaneous environmental projects	Docket 930613-EI (January 1994)
FL	Peoples Gas System	Gas	Cast Iron/Bare Steel Replacement Rider	Replacement of bare steel and cast iron pipes	Docket 110320-GU (September 2012)
FL	Progress Energy Florida	Electric	Environmental Cost Recovery Clause	Miscellaneous environmental projects	Docket 050078-EI (September 2005)
FL	Progress Energy Florida	Electric	Capacity Cost Recovery Clause	Nuclear power	Docket 090009-EI (November 2009)
FL	Progress Energy Florida	Electric	Generation Base Rate Adjustment	Generation	Docket 130208 (November 2013)
FL	Tampa Electric	Electric	Environmental Cost Recovery Clause	Miscellaneous environmental projects	Docket 960688-EI (August 1996)
GA	Atlanta Gas Light	Gas	Pipeline Replacement Program Cost Recovery Rider	Replacement of cast iron and bare steel pipe	Docket 29950 as STRIDE tracker in 2009
GA	Atlanta Gas Light	Gas	Strategic Infrastructure Development and Enhancement Surcharge	Pre-1985 plastic mains and services replacement, planned customer expansions, and infrastructure improvements that sustain reliability and operational flexibility	Docket 8516-U and 29950 (October 2009 and August 2013)
GA	Atmos Energy (now Liberty Utilities)	Gas	Pipe Replacement Surcharge	Replace cast iron and bare steel pipe	Docket 12509-U (December 2000)
GA	Georgia Power Company	Electric	Environmental Compliance Cost Recovery	Miscellaneous environmental projects	Docket 25060-U (December 2007)
GA	Georgia Power Company	Electric	Nuclear Construction Cost Recovery	Nuclear generation	Docket 27800, Senate Bill 31
HI	Hawaii Electric Light	Electric	Renewable Energy Infrastructure Program Surcharge	Renewable energy infrastructure	Docket 2007-0416 (December 2009)
HI	Hawaiian Electric Company	Electric	Renewable Energy Infrastructure Program Surcharge	Renewable energy infrastructure	Docket 2007-0416 (December 2009)
HI	Maui Electric	Electric	Renewable Energy Infrastructure Program Surcharge	Renewable energy infrastructure	Docket 2007-0416 (December 2009)
IA	Black Hills Energy	Gas	System Safety Maintenance Adjustment	Replacement of steel and pvc pipe, relocations mandated by local governments	Docket RPU-2012-0004 (March 2013)
ID	PacifiCorp	Electric	Energy Cost Adjustment Mechanism	Lake Side II generation facility	Case PAC-E-13-04 (October 2013)

Table 2 continued

Jurisdiction	Company Name	Services Included	Tracker Name	Eligible Investments	Case Reference
IL	Ameren Illinois	Gas	Rider Qualifying Infrastructure Plant	Replacement of prone to leak distribution and transmission pipe, installation of AMI and communications infrastructure, replacing or installing transmission or distribution facilities to establish over-pressure protection, replacement of difficult to locate mains and services, replacement of high pressure transmission pipelines without a recorded maximum allowable operating pressure, replacements to facilitate an upgrade from a low pressure system to a high pressure system	Docket 14-0573 (January 2015)
IL	Consumers Illinois Water Company (Kankakee, Vermilion, Woodhaven Districts)	Water	Qualifying Infrastructure Plant Surcharge Rider	Replacement of non-revenue producing infrastructure (e.g., existing mains, services, meters, and hydrants)	Docket 01-0561 (December 2001)
IL	Illinois-American Water (Chicago Metro Division)	Water	Qualifying Infrastructure Plant Surcharge Rider	Replacement of non-revenue producing infrastructure (e.g., existing mains, services, meters, and hydrants)	Docket 09-0251 (March 2010)
IL	Illinois-American Water (Single Tariff Pricing Zone)	Water	Qualifying Infrastructure Plant Surcharge Rider	Replacement of non-revenue producing infrastructure (e.g., existing mains, services, meters, and hydrants)	Docket 04-0336 (December 2004)
IL	Northern Illinois Gas	Gas	Rider Qualifying Infrastructure Plant	Replacement of cast iron pipe, non-cast iron pipe, and copper services; relocation of meters from inside customers' premises; upgrading of system from low pressure to medium pressure; replacement or installation of regulator stations, regulators, valves and associated facilities to establish over-pressure protection	Docket 14-0292 (July 2014)
IL	Peoples Gas Light & Coke	Gas	Rider Qualifying Infrastructure Plant	Replacement of cast and ductile iron, relocation of meters from inside customers' premises, upgrading of system from low pressure to medium pressure, replacement of high pressure transmission pipelines at higher risk of failure or lacking records, installation of regulator stations to establish over-pressure protection	Docket 13-0534 (January 2014)
IN	Duke Energy Indiana	Electric	Qualified Pollution Control Property	Miscellaneous environmental projects	Cause 41744 (February 2001)
IN	Duke Energy Indiana	Electric	Integrated Coal Gasification Combined Cycle Generating Facility Revenue Recovery Adjustment	Integrated gasification combined cycle generating plant	Docket 43114 (November 2007)
IN	Indiana Michigan Power	Electric	Clean Coal Technology Rider	Miscellaneous environmental projects	Cause 43636 (June 2009)
IN	Indiana Water Service	Water	Distribution System Improvement Charge	Replacement of non-revenue producing infrastructure (e.g., existing mains, services, meters, and hydrants)	Cause 42743 DSIC-1 (December 2004)
IN	Indiana-American Water	Water	Distribution System Improvement Charge	Replacement of non-revenue producing infrastructure (e.g., existing mains, services, meters, and hydrants)	Cause 42351 DSIC-1 (February 2003)
IN	Indianapolis Power & Light	Electric	Environmental Compliance Cost Recovery	Miscellaneous environmental projects	Cause 42170 (November 2002)
IN	Northern Indiana Public Service	Electric	Environmental Cost Recovery Mechanism	Miscellaneous environmental projects	Cause 42150 (November 2002)
IN	Northern Indiana Public Service	Electric	Transmission, Distribution & Storage System Improvement Charge	Investments to maintain the capacity deliverability of system and replacement of aging infrastructure, economic development	Cause 44370 and 44371 (February 2014)
IN	Northern Indiana Public Service	Gas	Distribution System Improvement Charge	Gas system deliverability and system integrity projects, rural main extensions	Cause 44403 TDSIC 1 (January 2015)
IN	Utility Center Inc.	Water	Distribution System Improvement Charge	Replacement of non-revenue producing infrastructure (e.g., existing mains, services, meters, and hydrants)	Docket 42416 DSIC-1 (June 2003)
IN	Vectren Energy Delivery (Indiana Gas and Southern Indiana Gas & Electric)	Gas	Compliance and System Improvement Adjustment	System and pressure improvements, storage operations, instrumentation and communications equipment, public improvement projects, service replacements, and economic development	Cause 44429 (August 2014)
KS	Atmos Energy	Gas	Gas System Reliability Surcharge	Replacement of mains, valves, service lines, regulator stations, vaults, other pipeline components or relocations	Docket 10-ATMG-133-TAR (December 2009)
KS	Black Hills Energy (Aquila)	Gas	Gas System Reliability Surcharge	Replacement of mains, valves, service lines, regulator stations, vaults, other pipeline components or relocations	Docket 08-AQLG-852-TAR (July 2008)
KS	Kansas Gas Service	Gas	Gas System Reliability Surcharge	Replacement of mains, valves, service lines, regulator stations, vaults, other pipeline components or relocations	Docket 10-KGSG-155-TAR (December 2009)
KS	Midwest Energy	Gas	Gas System Reliability Surcharge	Replacement of mains, valves, service lines, regulator stations, vaults, other pipeline components or relocations	Docket 09-MDWE-722-TAR (May 2009)
KY	Atmos Energy	Gas	Pipe Replacement Program Rider	Replacement of bare steel service lines, curb valves, meter loops, and mandated relocations	Docket 2009-00354 (May 2010)
KY	Columbia Gas	Gas	Advanced Main Replacement Rider	Replacement of cast iron and bare steel mains and services	Docket 2009-00141 (September 2009)
KY	Delta Natural Gas	Gas	Pipe Replacement Program Surcharge	Replacement of bare steel pipe, service lines, curb valves, meter loops, and mandated pipe relocations	Case 2010-00116 (October 2010)
KY	Kentucky Power	Electric	Environmental Cost Recovery Surcharge	Miscellaneous environmental projects	Docket 2002-00169 (March 2003)
KY	Kentucky Utilities	Electric	Environmental Cost Recovery Surcharge	Miscellaneous environmental projects	Case 93-465 (July 1994)
KY	Louisville Gas & Electric	Electric	Environmental Cost Recovery Surcharge	Miscellaneous environmental projects	Case 94-332 (April 1995)
KY	Louisville Gas & Electric	Gas	Gas Line Tracker	Replacement and transfer of ownership of customer owned service risers	Case 2012-00222 (December 2012)
LA	Cleco Power	Electric	Infrastructure and Incremental Costs Recovery	Projects to be determined in subsequent filings to Commission	Docket U-30689 and U-32779 (October 2010 and June 2014)
LA	Entergy Gulf States Louisiana	Electric	Formula Rate Plan-3	Acquisition of generating facility, new generating facility or refurbishment of existing generating facility if the revenue requirement related to the project exceeds \$10 million	Docket U-32707 (December 2013)
LA	Entergy Louisiana	Electric	Formula Rate Plan 7	Cost of Ninemile 6 natural gas generating facility; New generating facility, acquisition of a generating facility, or refurbishment of existing generating facility if the revenue requirement related to the project exceeds \$10 million	Docket U-32708 and 31971 (January 2014 and April 2012)
MA	Bay State Gas	Gas	Targeted Infrastructure Recovery Factor	Replacement of bare steel mains and services	DPU 09-30
MA	Bay State Gas	Gas	Gas System Enhancement Adjustment Factor	Replacement of non-cathodically protected steel, cast iron, and wrought iron mains and associated services, service tie-ins, encroached pipe, and meters	DPU 14-134
MA	Berkshire Gas	Gas	Gas System Enhancement Adjustment Factor	Replacement of non-cathodically protected steel, cast iron mains and associated services, encroached pipe, and meter sets composed of non-cathodically protected steel, cast iron or copper	DPU 14-131
MA	Fitchburg Gas & Electric Light	Gas	Gas System Enhancement Adjustment Factor	Replacement of cast main and unprotected steel mains and services and encroached pipe	DPU 14-130

Table 2 continued

Jurisdiction	Company Name	Services Included	Tracker Name	Eligible Investments	Case Reference
MA	Massachusetts Electric	Electric	Net CapEx Factor	Potentially all distribution investments	DPU 09-39
MA	Massachusetts Electric	Electric	Solar Cost Adjustment Provision	Solar generation	DPU 09-38
MA	Massachusetts Electric	Electric	Smart Grid Adjustment Provision	Pilot smart grid investments including AMI, high speed communications network, in-home energy management devices, distribution automation, advanced capacitor control, advanced grid monitoring, remote fault indicators	DPU 11-129
MA	Nantucket Electric	Electric	Solar Cost Adjustment Provision	Solar generation	DPU 09-38
MA	Nantucket Electric	Electric	Smart Grid Adjustment Provision	Pilot smart grid investments including AMI, high speed communications network, in-home energy management devices, distribution automation, advanced capacitor control, advanced grid monitoring, remote fault indicators	DPU 11-129
MA	National Grid (Boston-Essex Gas and Colonial Gas)	Gas	Targeted Infrastructure Recovery Factor	Replacement of bare steel, cast iron, and wrought iron mains, services, meters, meter installations, and house regulators	DPU 10-55
MA	National Grid (Boston-Essex Gas and Colonial Gas)	Gas	Gas System Enhancement Adjustment Factor	Replacement of non-cathodically protected steel, cast iron, and wrought iron mains and associated services, inside services, service tie-ins, encroached pipe, and meters	DPU 14-132
MA	New England Gas	Gas	Targeted Infrastructure Recovery Factor	Replacement of non-cathodically protected steel mains and services and small diameter cast-iron and wrought iron	DPU 10-114
MA	New England Gas	Gas	Gas System Enhancement Adjustment Factor	Replacement of non-cathodically protected steel, cast iron, and wrought iron mains and associated services, inside services, service tie-ins, encroached pipe, and meters	DPU 14-133
MA	NSTAR Electric	Electric	Capital Projects Scheduling List	Stray voltage inspection survey and remediation program; double pole inspections, replacements, and restorations; and manhole inspection, repair, and upgrade	DTE 05-85 and DPU 10-70-B
MA	NSTAR Electric	Electric	Smart Grid Adjustment Factor	Smart grid pilot	DPU-09-33
MA	Western Massachusetts Electric	Electric	Solar Program Cost Adjustment	Solar generation	DPU 09-05
MD	Baltimore Gas & Electric	Electric	Electric Reliability Investment Surcharge	Upgrades to improve poorest performing feeders, selective undergrounding, expanded recloser development on 13kV and 34 kV lines, diverse routing of 34 kV supply circuits	Case 9326 (December 2013)
MD	Baltimore Gas & Electric	Gas	Strategic Infrastructure Development and Enhancement Program	Replacement of bare steel mains and services, cast iron mains, copper services, and pre-1982 plastic "Ski Bar" risers	Case 9331 (January 2014)
MD	Columbia Gas of Maryland	Gas	Strategic Infrastructure Development and Enhancement Program	Replacement of bare steel and cast iron mains and bare steel services	Case 9332 (August 2014)
MD	Delmarva Power & Light	Electric	Grid Resiliency Charge	Feeder hardening	Case 9317 (September 2013)
MD	Potomac Electric Power	Electric	Grid Resiliency Charge	Feeder hardening	Case 9311 (July 2013)
MD	Washington Gas Light	Gas	Strategic Infrastructure Development and Enhancement Program Rider	Replacement of bare and unprotected steel mains and services, targeted copper and pre-1975 plastic services, mechanically coupled pipe main and services, and cast iron mains	Case 9335 (May 2014)
ME	Central Maine Power	Electric	Customer Relationship Management & Billing Rate Adjustment	Customer relationship management & billing system replacement	Docket 2015-00040 (October 2015)
ME	Maine Water Company	Water	Water Infrastructure Charge	Replacement of stationary physical plant assets needed to operate a water system	Various orders separately issued for operating divisions
ME	Northern Utilities	Gas	Targeted Infrastructure Recovery Adjustment	Cast iron, bare steel, and unprotected coated steel mains and services replacements, replacement of farm tap regulators	Docket 2013-00133 (December 2013)
MI	Consumers Energy	Gas	Enhanced Infrastructure Replacement Program	Cast iron replacements	Case U-17643 (January 2015)
MI	Michigan Consolidated Gas (now DTE Gas)	Gas	Infrastructure Recovery Mechanism	Replacement of cast iron mains, replacement of indoor meters with outdoor meters, pipeline integrity projects designed to comply with federal and state safety standards	Case U-16999 (April 2013)
MI	SEMCO Gas	Gas	Main Replacement Rider	Replacement of cast iron and unprotected steel mains and service lines	Case U-16169 and U-17824 (January 2011 and June 2015)
MN	Interstate Power & Light	Electric	Renewable Energy Recovery Adjustment	Renewable generation	Docket M-10-312 (December 2013)
MN	Minnesota Power	Electric	Arrowhead Regional Emission Abatement Rider	Miscellaneous environmental projects	Docket M-05-1678 (June 2006)
MN	Minnesota Power	Electric	Transmission Cost Recovery Rider	Incremental transmission investment	Docket M-07-965 (December 2007)
MN	Minnesota Power	Electric	Renewable Resource Rider	Renewable generation	Docket M-10-273 (July 2010)
MN	Minnesota Power	Electric	Rider for Boswell Unit 4 Emission Reduction	Miscellaneous environmental projects	Docket M-12-920 (November 2013)
MN	Northern States Power (Xcel Energy)	Electric	Metropolitan Emissions Reduction Project (later called Environmental Improvement Rider)	Miscellaneous environmental projects	Docket M-02-633 (March 2004)
MN	Northern States Power (Xcel Energy)	Electric	Transmission Cost Recovery Rider	Incremental transmission investment	Docket M-06-1103 (November 2006)
MN	Northern States Power (Xcel Energy)	Electric	Renewable Energy Standard Cost Recovery Rider	Renewable generation	M-07-872 (March 2008)
MN	Northern States Power (Xcel Energy)	Gas	State Energy Policy Rider	Cast iron replacements	Docket M-08-261 (November 2008)
MN	Northern States Power (Xcel Energy)	Electric	Mercury Cost Recovery Rider	Miscellaneous environmental projects	Docket M-09-847 (November 2009)
MN	Otter Tail Power	Electric	Renewable Resource Cost Recovery Rider	Renewable generation	Docket M-08-119 (August 2008)
MN	Otter Tail Power	Electric	Transmission Cost Recovery Rider	Incremental transmission investment	Docket M-09-881 (January 2010)
MO	AmerenUE	Gas	Infrastructure System Replacement Surcharge	Replacement of mains, valves, service lines, regulator stations, vaults, other pipeline components or relocations	Case GT-2008-0184 (February 2008)
MO	Atmos Energy	Gas	Infrastructure System Replacement Surcharge	Replacement of mains, valves, service lines, regulator stations, vaults, other pipeline components or relocations	Docket GO-2009-0046 (October 2008)
MO	Laclede Gas	Gas	Infrastructure System Replacement Surcharge	Replacement of mains, valves, service lines, regulator stations, vaults, other pipeline components or relocations	Docket GR-2007-0208 (July 2007)
MO	Missouri American Water	Water	Infrastructure System Replacement Surcharge	Replacement of mains, associated valves and hydrants, main cleaning and refining projects	Case WO-2004-0116 (December 2003)
MO	Missouri Gas Energy	Gas	Infrastructure System Replacement Surcharge	Replacement of mains, valves, service lines, regulator stations, vaults, other pipeline components or relocations	Docket GR-2009-0355 (February 2010)

Table 2 continued

Jurisdiction	Company Name	Services Included	Tracker Name	Eligible Investments	Case Reference
MS	Atmos Energy	Gas	Supplemental Growth Rider	Extraordinary service expansions to new industrial customers for economic development	Docket 2013-UN-23 (July 2013)
MS	Centerpoint Energy	Gas	Supplemental Growth Rider	Extraordinary service expansions to new commercial and industrial customers for economic development	Docket 13-UN-214 (October 2013)
MS	Mississippi Power	Electric	Environmental Compliance Overview Plan Rate	Miscellaneous environmental projects	Docket 92-UA-0058 and 92-UN-0059 (July 1992)
MT	Northwestern Energy	Electric	NA - Amounts recovered through electric supply service rates	Generation	Docket D.2008.6.69 (November 2008)
MT	Northwestern Energy	Gas	Natural Gas Supply Tracker	Battle Creek natural gas production resources	Docket D2012.3.25 (November 2012)
NC	Aqua North Carolina	Water	Water System Improvement Charge	Replacement of distribution system mains, valves, services, meters, and hydrants, main extensions, projects to comply with primary drinking water standards, unreimbursed facility relocation costs due to highways	Docket W-218, Sub 363 (May 2014)
NC	Aqua North Carolina	Water	Sewer System Improvement Charge	Replacement of pumps, motors, blowers, and other mechanical equipment, collection main extensions designed to implement solutions to wastewater problems, improvements necessary to reduce inflow and infiltration to the collection systems as required by state and federal law and regulations, unreimbursed costs of highway relocations	Docket W-218, Sub 363 (May 2014)
NC	Carolina Water Service	Water	Water System Improvement Charge	Replacement of distribution system mains, valves, services, meters, and hydrants, main extensions, projects to comply with primary drinking water standards, unreimbursed facility relocation costs due to highways	Docket W-354, Sub 336 (March 2014)
NC	Carolina Water Service	Water	Sewer System Improvement Charge	Replacement of pumps, motors, blowers, and other mechanical equipment, collection main extensions designed to implement solutions to wastewater problems, improvements necessary to reduce inflow and infiltration to the collection systems as required by state and federal law and regulations, unreimbursed costs of highway relocations	Docket W-354, Sub 336 (March 2014)
NC	Piedmont Natural Gas	Gas	Integrity Management Rider	Investments driven by federal pipeline safety and integrity requirements	Docket G-9, Sub 631 (December 2013)
ND	Montana-Dakota Utilities	Electric	Environmental Cost Recovery Tariff	Miscellaneous environmental projects	Case PU-13-85 (December 2013)
ND	Montana-Dakota Utilities	Electric	Generation Resource Recovery Rider Tariff	New Generation	Case PU-14-108 (August 2014)
ND	Northern States Power- MN	Electric	Transmission Cost Rider	Transmission projects	Case PU-12-813 (February 2014)
ND	Northern States Power- MN	Electric	Renewable Energy Rider	North Dakota based renewable generation	Case PU-12-813 (February 2014)
ND	Otter Tail Power	Electric	Renewable Resource Rider	Renewables	Case PU-06-466 (May 2008)
ND	Otter Tail Power	Electric	Transmission Facility Cost Recovery Tariff	Transmission investments required to serve retail customers	Case PU-11-682 (April 2012)
ND	Otter Tail Power	Electric	Environmental Cost Recovery Tariff	Miscellaneous environmental projects	Case PU-13-84 (December 2013)
NE	Black Hills Nebraska Gas Utility	Gas	Infrastructure System Replacement Recovery Charge	Non-revenue increasing projects to replace existing assets	Application NG-0074
NE	SourceGas Distribution	Gas	Pipeline Replacement Charge	Projects entering service before May 2014 that are installed to comply with safety requirements as replacements for existing facilities, projects that will extend the useful life of existing assets or enhance pipeline integrity, facility relocations	Application NG-0072 (June 2013)
NE	SourceGas Distribution	Gas	System Safety and Integrity Rider	Projects entering service after April 2014 that comply with federal regulations including transmission and distribution integrity management plans or are facility relocations costing \$20,000 or more	Application NG-0078 (October 2014)
NH	Aquarion Water of New Hampshire	Water	Water Infrastructure and Conservation Adjustment Charge	Projects to upgrade or replace non-revenue producing assets including main, valve, and hydrant replacement, main cleaning and relining, and non-reimbursable relocations	Docket DW 08-098 (September 2009)
NH	Energy North	Gas	Cast Iron/Bare Steel Replacement Program	Replacement of cast iron and bare steel pipe	Docket DG-107 (June 2007)
NH	Granite State Electric	Electric	Reliability Enhancement Plan Capital Investment Allowance	Feeder hardening and asset replacement	Docket DG-107 (June 2007)
NH	Public Service Company of New Hampshire	Electric	Energy Service	Miscellaneous environmental projects	DE 11-250 (April 2012)
NH	Public Service Company of New Hampshire	Electric	Reliability Enhancement Plan Elizabethtown Natural Gas Distribution Utility Reinforcement Effort	Reliability improvements	DE 09-035, DE 11-250, and DE 14-238 (June 2015)
NJ	Elizabethtown Gas	Gas	System Hardening	System hardening	Docket GO13090826 (July 2014)
NJ	New Jersey American Water	Water	Distribution System Improvement Charge	Incremental non-revenue water main replacement, rehabilitation, or mandated relocation projects, service line replacements, valve and hydrant replacement	Docket WR12070669 (October 2012)
NJ	New Jersey Natural Gas	Gas	New Jersey Reinvestment in System Enhancement	Storm hardening projects	Docket GR13090828 (July 2014)
NJ	Public Service Electric and Gas	Electric	Solar Generation Investment Program	Solar generation	Docket EO09020125 (August 2009)
NJ	Public Service Electric and Gas	Electric & Gas	Capital Infrastructure Investment Program	Electric: reliability upgrades & feeder replacement, Gas: replacement of cast iron & bare steel mains and services	Dockets GO09010050, EO11020088, GO10110862 (April 2009 and July 2011)
NJ	Public Service Electric and Gas	Electric & Gas	Energy Strong Adjustment Mechanism	Electric: substation flood mitigation, grid reconfiguration strategies, and smart grid; Gas: Metering and regulating station flood mitigation, replacement of utilization pressure cast iron in flood prone areas	Docket EO13020155, GO13020156 (May 2014)
NJ	South Jersey Gas	Gas	Storm Hardening and Reliability Program	Replacement of low pressure mains and services with high pressure mains and services, removal of regulator stations, installation of excess flow valves in coastal areas	Docket GO13090814 (August 2014)
NJ	United Water New Jersey	Water	Distribution System Improvement Charge	Repair, replace, and/or clean mains, replace valves, hydrants, and service lines	Docket WR12080724 (October 2012)
NV	Southwest Gas	Gas	Gas Infrastructure Replacement Mechanism	Early vintage pipe replacements, conversion of master metered customers to individual meters	Docket 14-10002 (December 2014)

Table 2 continued

Jurisdiction	Company Name	Services Included	Tracker Name	Eligible Investments	Case Reference
NY	Corning Natural Gas	Gas	Safety and Reliability Charge	Replacement of leak prone pipe and ancillary costs to maintain a safe and reliable system	Case 11-G-0280 (October 2015)
NY	Keyspan Energy Long Island	Gas	Leak Prone Pipe Surcharge	Accelerated leak prone pipe removal program	Case 12-G-0214 (December 2014 and March 2015)
NY	Long Island American Water	Water	System Improvement Charge	Iron removal, storage tank rehabilitation, suction well rehabilitation at selected plants, customer information system	Case 11-W-0200 (March 2012)
NY	United Water New Rochelle	Water	Long Term Main Renewal Project	Cleaning and relining of mains	Case 99-W-0948 (August 2000)
NY	United Water New York	Water	Underground Infrastructure Renewal Program	Replacement of infrastructure including mains, valves, services, meters, and hydrants	Case 06-W-0131 (December 2006)
NY	United Water New York	Water	New Water Supply Source Surcharge	Projects to provide new sources of water in the short and long term	Case 06-W-0131 (December 2006)
OH	Aqua Ohio	Water	System Infrastructure Improvement Surcharge	Replacement of service lines, mains, hydrants, valves, main extensions to resolve documented water supply problems	Case 04-1824-WW-SIC (March 2005)
OH	Cleveland Electric Illuminating	Electric	Rider AMI	Ohio Site Deployment	Cases 09-1820-EL-ATA and 12-1230-EL-SSO
OH	Cleveland Electric Illuminating	Electric	Delivery Capital Recovery Rider	Distribution, subtransmission, general, and intangible plant not included in most recent rate case	Case 10-388-EL-SSO (August 2010)
OH	Columbia Gas	Gas	Infrastructure Replacement Program Rider	Replacement of cast iron and bare steel mains & services, AMI	Cases 08-0072-GA-AIR, 08-0073-GA-ALT, 08-0074-GA-AAM, and 08-0075-GA-AAM (December 2008); Case 09-1036-GA-RDR (April 2010)
OH	Duke Energy Ohio	Gas	Accelerated Main Replacement Program Rider	Replacement of bare steel and cast iron mains and services and faulty risers	1478-GA-ALT, and 01-1539-GA-AAM (May 2002); 07-0589-GA-AIR 07-0590-GA-ALT 07-0591-GA-AAM (May 2008)
OH	Duke Energy Ohio	Gas	Advanced Utility Rider	Gas AMI	Cases 07-0589-GA-AIR, 07-0590-GA-ALT, and 07-0591-GA-AAM (May 2008)
OH	Duke Energy Ohio	Electric	Infrastructure Modernization Distribution Rider	Electric AMI	Cases 08-920-EL-SSO and 08-921-EL-AAM and 08-922-EL-UNC and 08-923-EL-ATA (December 2008)
OH	Duke Energy Ohio	Electric	Distribution Capital Investment Rider	Distribution capital investments not recovered through other trackers	Case 14-841-EL-SSO (April 2015)
OH	East Ohio Gas d/b/a Dominion East Ohio	Gas	Pipeline Infrastructure Replacement Rider	Bare steel and cast iron pipelines & faulty riser replacements	Case 08-169-GA-ALT (October 2008)
OH	East Ohio Gas d/b/a Dominion East Ohio	Gas	Automated Meter Reading Charge	AMR	Cases 07-0829-GA-AIR and 06-1453-GA-UNC (October 2008); Case 09-38-GA-UNC (May 2009); Case 09-1875-GA-RDR (May 2010)
OH	Ohio American Water	Water	System Improvement Charge	Non-revenue producing service lines, hydrants, mains, valves, main extensions that improve supply problems, main cleaning	Case 05-577-WW-SIC (August 2005)
OH	Ohio Edison	Electric	Rider AMI	Ohio Site Deployment	Cases 09-1820-EL-ATA and 12-1230-EL-SSO
OH	Ohio Edison	Electric	Delivery Capital Recovery Rider	Distribution, subtransmission, general, and intangible plant not included in most recent rate case (filed in 2007)	Case 10-388-EL-SSO (August 2010)
OH	Ohio Power	Electric	Distribution Investment Rider	Net distribution capital additions since the date certain of most recent rate case not recovered through other riders	Case 11-346-EL-SSO
OH	Ohio Power	Electric	GridSMART Rider (Phase I)	Smart grid	Case 08-917-EL-SSO and 08-918-EL-SSO (March 2009)
OH	Toledo Edison	Electric	Rider AMI	Ohio Site Deployment	Cases 09-1820-EL-ATA and 12-1230-EL-SSO
OH	Toledo Edison	Electric	Delivery Capital Recovery Rider	Power distribution, subtransmission, general, and intangible plant not included in most recent rate case (filed in 2007)	Case 10-388-EL-SSO (August 2010)
OH	Vectren Energy Delivery	Gas	Distribution Replacement Rider	Replacement of cast iron and bare steel mains and services	Cases 07-1081-GA-ALT, 07-1080-GA-AIR and 08-0632-GA-AAM (January 2009)
OK	Oklahoma Gas & Electric	Electric	System Hardening Recovery Rider	Undergrounding and other circuit hardening	Cause PUD 20080387, Order 567670 (May 2009)
OK	Oklahoma Gas & Electric	Electric	Smart Grid Rider	Smart grid	Cause PUD 201000029 (July 2010)
OK	Oklahoma Gas & Electric	Electric	Crossroads Rider	Crossroads Wind Farm	Cause PUD 201000037 (July 2010)
OK	Public Service Company of Oklahoma	Electric	System Reliability Rider	Grid resiliency projects	Cause PUD 201300202 (January 2014)
OK	Public Service Company of Oklahoma	Electric	Advanced Metering Infrastructure Tariff	Advanced metering infrastructure deployment	Cause PUD 201300217 (April 2015)
OR	Northwest Natural Gas	Gas	System Integrity Program	Bare steel replacement, transmission integrity management program, distribution integrity management program	Docket UM 1406, Order 09-067 (March 2009)
OR	PacifiCorp	Electric	Renewable Adjustment Clause	Renewable generation	Docket UM 1330 (December 2007)
OR	PacifiCorp	Electric	Lake Side 2 Tariff Rider	Generation	Docket UE 263, Order 13-474 (December 2013)
OR	PacifiCorp	Electric	M2O Transmission Rider	Mona to Oquirrh transmission line only if line is placed into service within 6 months of May 31, 2013	Docket UE 246, Orders 12-493 and 13-195 (December 2012 and May 2013)
OR	Portland General Electric	Electric	Renewable Adjustment Clause	Renewable generation	Docket UM 1330 (December 2007)
PA	Columbia Gas	Gas	Distribution System Improvement Charge	Replacement of cast iron, bare steel, and first generation plastic mains and services, install excess flow valves, install or relocate automated meters, and replace risers, meter bars, and service regulators	P-2012-2338282 (March 2013)
PA	Columbia Water Company	Water	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-00021979
PA	Duquesne Light	Electric	Smart Meter Charge Rider	AMI	Docket M-2009-2123948 (April 2010)
PA	Equitable Gas	Gas	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-2013-2342745 (July 2013)
PA	Metropolitan Edison	Electric	Smart Meters Technologies Charge	AMI	Docket M-2009-2123950 (April 2010)

Table 2 continued

Jurisdiction	Company Name	Services Included	Tracker Name	Eligible Investments	Case Reference
PA	PECO	Electric	Smart Meter Cost Recovery Rider	AMI	Docket M-2009-2123944 (April 2010)
PA	PECO	Electric	Distribution System Improvement Charge	Storm hardening and resiliency measures, underground cable replacement, substation retirements, and facility relocations	Docket P-2015-2471423 (October 2015)
PA	PECO	Gas	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-2013-2347340 (September 2015)
PA	Pennsylvania Electric	Electric	Smart Meters Technologies Charge	AMI	Docket M-2009-2123950 (April 2010)
PA	Pennsylvania Power	Electric	Smart Meters Technologies Charge	AMI	Docket M-2009-2123950 (April 2010)
PA	Pennsylvania-American Water	Water	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-000961031 (August 1996)
PA	Peoples Natural Gas	Gas	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-2013-2344596 (May 2013)
PA	Peoples TWP	Gas	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-2013-2344595 (May 2013)
PA	Philadelphia Gas Works	Gas	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-2012-2337737 (April 2013)
PA	Philadelphia Suburban Water	Water	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-00961035 (August 1996)
PA	PPL Electric Utilities	Electric	Act 129 Compliance Rider	AMI	Docket M-2009-2123945 (January 2010)
PA	PPL Electric Utilities	Electric	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., poles, wires)	Docket P-2012-2325034 (May 2013)
PA	UGI Central Penn Gas	Gas	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-2013-2398835 (September 2014)
PA	UGI Penn Natural Gas	Gas	Distribution System Improvement Charge	Non-expense reducing, non-revenue producing infrastructure replacement projects (e.g., mains, meters, services)	Docket P-2013-2397056 (September 2014)
PA	West Penn Power	Electric	Smart Meter Surcharge	AMI	Docket M-2009-2123951 (June 2011)
RI	Narragansett Electric (electric operations)	Electric	Electric Infrastructure, Safety, and Reliability Plan Factor	Replacements and load growth	Docket 4218 (December 2011)
RI	Narragansett Electric (gas operations)	Gas	Gas Infrastructure, Safety, and Reliability Plan Factor	Previous accelerated capital replacement program investments plus main and service replacements and reliability investments	Docket 4219 (September 2011)
SC	South Carolina Electric & Gas	Electric	NA	Nuclear generation	Docket 2008-196-E (March 2009)
SD	Black Hills Power	Electric	Environmental Improvement Adjustment tariff	Miscellaneous environmental projects	Docket EL11-001
SD	Black Hills Power	Electric	Phase in plan rate	Gas-fired generation	Docket EL12-062 (September 2013)
SD	Northern States Power- MN	Electric	Environmental Cost Recovery Tariff	Miscellaneous environmental projects	Docket EL07-026 (January 2009)
SD	Northern States Power- MN	Electric	Transmission Cost Recovery Tariff	Transmission	Docket EL07-007 (January 2009)
SD	Northern States Power- MN	Electric	Infrastructure Rider	Generation	Docket EL 12-046 (April 2013)
SD	Otter Tail Power	Electric	Transmission Cost Recovery Tariff	Retail sales portion of specific transmission projects	Docket EL 10-015 (November 2011)
SD	Otter Tail Power	Electric	Environmental Quality Cost Recovery Tariff	Miscellaneous environmental projects	Docket EL 14-082 (December 2014)
TN	Piedmont Natural Gas	Gas	Integrity Management Rider	Distribution and transmission integrity management planning as required by the US Department of Transportation	Docket 13-00118 (May 2014)
TX	AEP Texas Central	Electric	Advanced Metering System Surcharge	AMI	Docket 36928
TX	AEP Texas North	Electric	Advanced Metering System Surcharge	AMI	Docket 36928
TX	Atmos Energy Mid Tex	Gas	Gas Reliability Infrastructure Program	Incremental investment in new and replacement pipe, pipeline integrity including mains replacement	Texas Utilities Code 104.301 and Gas Utilities Docket 9615
TX	Atmos Energy Pipelines	Gas	Gas Reliability Infrastructure Program	Incremental investment in new and replacement pipe, pipeline integrity including mains replacement	Gas Utilities Dockets 9615 and 10640
TX	Atmos Energy West Texas Division	Gas	Gas Reliability Infrastructure Program	Incremental investment in new and replacement pipe, pipeline integrity including mains replacement	Texas Utilities Code 104.301 and Gas Utilities Docket 9608
TX	Centerpoint Energy Entex - Houston Division	Gas	Gas Reliability Infrastructure Program	Incremental investment in new and replacement pipe, pipeline integrity including mains replacement	Texas Utilities Code 104.301 and Gas Utilities Docket 10067
TX	Centerpoint Energy Houston Electric	Electric	Advanced Metering System Surcharge	AMI	Docket 35620 (August 2008)
TX	Centerpoint Energy Houston Electric	Electric	Distribution Cost Recovery Factor	Change in net distribution rate base since last rate case	Docket 44572 (August 2015)
TX	Oncor Electric Delivery	Electric	Advanced Metering System Surcharge	AMI	Docket 35718 (August 2008)
TX	Texas-New Mexico Power	Electric	Advanced Metering System Surcharge	AMI	Docket 38306 (July 2011)
UT	Questar Gas	Gas	Infrastructure Rate Adjustment Tracker	Replacement of aging high-pressure feeder lines	Docket 09-057-16 (June 2010)
VA	Appalachian Power	Electric	Environmental & Reliability Cost Recovery Surcharge	Miscellaneous environmental & reliability projects	Docket PUE-2007-00069 (December 2007)
VA	Appalachian Power	Electric	Environmental Rate Adjustment Clause	Miscellaneous environmental projects	Case PUE-2011-00035 (November 2011)
VA	Appalachian Power	Electric	Generation Rate Adjustment Clause	Dresden plant	Docket PUE-2011-00036 (January 2012)
VA	Atmos Energy	Gas	Infrastructure Reliability and Replacement Adjustment	Replacement of first generation plastic pipe and service lines and bare steel mains and services	Case PUE-2012-00049 (August 2012)
VA	Columbia Gas of Virginia	Gas	SAVE Rider	Replacement of bare steel and cast iron mains, some early plastic pipe, isolated bare steel services, and risers prone to failure	Case PUE-2011-00049 (November 2011)
VA	Roanoke Gas Company	Gas	SAVE Rider	Replacement of cast iron mains, bare steel mains and services and pre-1973 plastic pipe	Case PUE-2012-00030 (August 2012)
VA	Virginia Electric Power	Electric	Rider S	Virginia City Hybrid Energy Center	Case PUE-2007-00066 (March 2008)
VA	Virginia Electric Power	Electric	Rider R	Bear Garden Generating Station	Case PUE-2009-00017 (March 2010)
VA	Virginia Electric Power	Electric	Rider W	Warren County Power Station	Case PUE-2011-00042 (February 2012)
VA	Virginia Electric Power	Electric	Rider B	Biomass conversions	Case PUE-2011-00073 (March 2012)
VA	Virginia Electric Power	Electric	Rider BW	Brunswick County Power Station (natural gas combined cycle generating station)	Case PUE-2012-00128 (August 2013)

Table 2 continued

Jurisdiction	Company Name	Services Included	Tracker Name	Eligible Investments	Case Reference
VA	Virginia Natural Gas	Gas	SAVE Rider	Replacement of first generation plastic mains, cast and wrought iron mains, bare and ineffectively coated steel mains, and service lines installed prior to 1971	Case PUE-2012-00012 (June 2012)
VA	Washington Gas Light	Gas	SAVE Rider	Replacement of bare and unprotected steel services and mains, mechanically coupled pipe, copper services, cast iron main, and pre-1975 plastic services	Cases PUE-2010-00087 and PUE-2012-00096 (April 2011 and November 2012)
WA	Cascade Natural Gas	Gas	Pipeline Replacement Program Cost Recovery Mechanism	Replacement of bare steel and poorly coated pipelines and distribution systems	Docket PG-131838 (October 2013)
WV	Appalachian Power	Electric	Construction/765kW Surcharge	Generation, environmental	Case 11-0274-E-GI (June 2011)
WV	Monongahela Power	Electric	Vegetation Management Surcharge	Capitalized distribution vegetation management expenses	Case 14-0702-E-42T (February 2015)
WV	Potomac Edison	Electric	Vegetation Management Surcharge	Capitalized distribution vegetation management expenses	Case 14-0702-E-42T (February 2015)
WV	Wheeling Power	Electric	Construction/765kW Surcharge	Generation, environmental	Case 11-0274-E-GI (June 2011)
WY	Black Hills Power	Electric	Cheyenne Prairie Generating Station rate rider tariff	Construction of Cheyenne Prairie Generating Station	Docket 20002-84-ET-12 (November 2012)
WY	Cheyenne Light, Fuel, & Power	Electric	Cheyenne Prairie Generating Station rate rider tariff	Construction of Cheyenne Prairie Generating Station	Docket 20003-123-ET-12 (November 2012)

III. Relaxing the Link Between Revenue and System Use

Policymakers are increasingly interested in relaxing the link between the revenues utilities realize, and the kWh and kW of system use by customers. This reduces the financial attrition that results from slowing growth in system use (given legacy rate designs) more efficiently than frequent rate cases. In addition, utilities have more incentive to embrace DSM. Three approaches to relaxing the revenue/usage link are well established: lost revenue adjustment mechanisms (“LRAMs”), revenue decoupling, and fixed/variable pricing.

A. Lost Revenue Adjustment Mechanisms

LRAMs keep utilities whole for short-term losses in base rate revenues that are due to their DSM programs (and potentially also DG). Recovery usually is effected through a special rate rider. Estimates of load losses are needed.

LRAMs encourage utilities to embrace DSM that is eligible for LRAM treatment. They do not provide recovery for the revenue impact of external forces, like DSM programs managed by independent agencies, which slow load growth. Estimates of load savings from utility DSM can be complex and are sometimes controversial. The scope of DSM initiatives addressed by LRAMs is therefore frequently limited to those for which load impacts are easier to measure. When usage charges are high, the utility remains at risk for revenue fluctuations in volumes and peak load due to weather, local economic activity, and other volatile demand drivers.

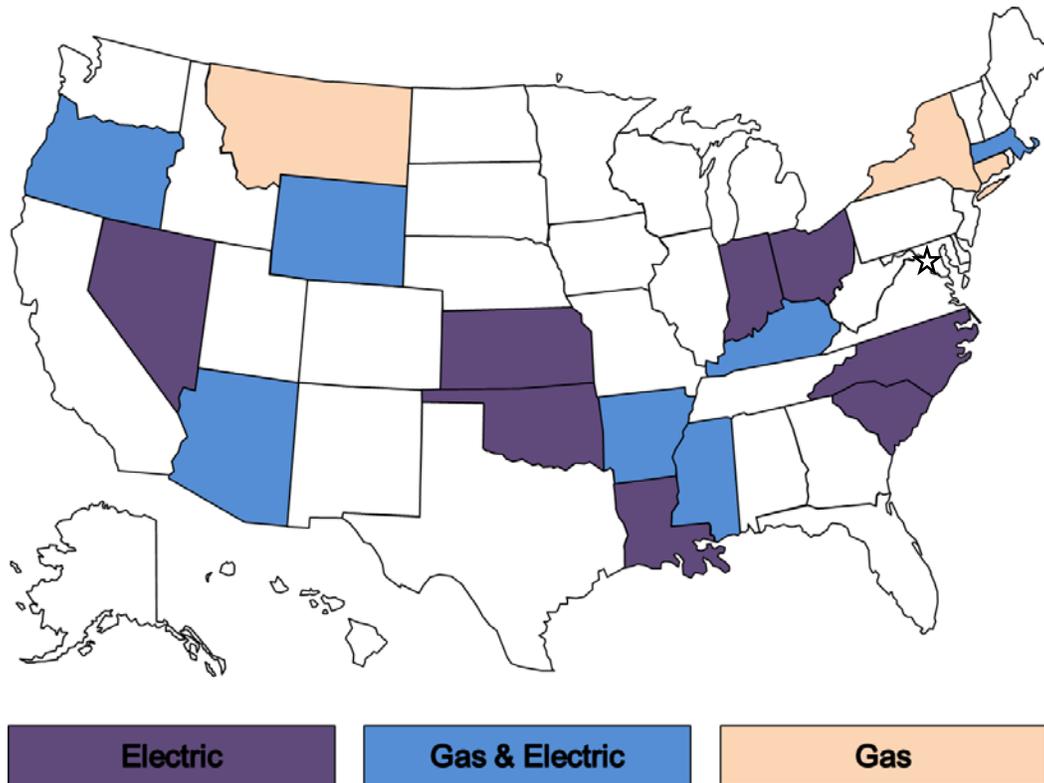
Precedents for LRAMs are detailed in Table 3 and Figure 4 below.³ LRAMs are currently the most popular means of relaxing the link between revenue and system use in the US electric utility industry. Since our 2013 survey, LRAMs have been adopted for electric utilities in Arizona, Louisiana, and Mississippi. A few utilities have LRAMs that address DG. LRAMs are less popular for gas distributors since the declining average use they have typically experienced for many years is due chiefly to external forces that LRAMs don't address. Some utilities have LRAMs for some services and revenue decoupling for others. In New York, for example, some natural gas distributors have decoupling for residential and commercial customers and LRAMs for some large load customers.

B. Revenue Decoupling

Revenue decoupling adjusts a utility's rates periodically to help its actual revenue track its allowed revenue more closely. Most decoupling systems have two basic components: a revenue decoupling mechanism (“RDM”) and a revenue adjustment mechanism (“RAM”). The RDM tracks variances between actual and allowed revenue and adjusts rates to reduce them. The RAM escalates allowed revenue to provide relief for growing cost pressures.

³ Some mechanisms similar to LRAMs are excluded from this survey.

Figure 4: Current LRAMs by State



RDMs can make true ups annually or more frequently. More frequent adjustments cause actual revenue to track allowed revenue more closely so that rate adjustments are smaller. The size of the rate adjustment that is permitted in a given year is sometimes capped. A “soft” cap permits utilities to defer for later recovery account balances that cannot be drawn down immediately. A “hard” cap does not.

RDMs vary in the scope of services to which they apply. Quite commonly, only revenues from residential and commercial business customers are decoupled. These customers account for a high share of a distributor’s base rate revenue and are often the primary focus of DSM programs. RDMs also vary in terms of the services for which revenues are pooled for true up purposes. In some plans all services are placed in the same “basket.” Other plans have multiple baskets, and these insulate customers of services in each basket from changes in revenue for services in other baskets.

Some RDMs are “partial” in the sense that they exclude from decoupling the revenue impact of certain kinds of demand fluctuations. For example, true ups are sometimes allowed only for the difference between allowed revenue and weather normalized actuals. An RDM that instead accounts for *all* sources of demand variance is called a “full” decoupling mechanism.

Table 3

Current LRAM Precedents¹

State	Company	Services	Approval Date	Case Reference
AR	Arkansas Oklahoma Gas	Gas	June 2011	Docket 07-077-TF, Order Number 30
AR	Centerpoint Energy Arkla	Gas	June 2011	Docket 07-081-TF, Order Number 31
AR	Entergy Arkansas	Electric	June 2011	Docket 07-085-TF, Order Number 40
AR	Oklahoma Gas & Electric	Electric	June 2011	Docket 07-075-TF, Order 26
AR	SourceGas Arkansas	Gas	June 2011	Docket 07-078-TF, Order 26
AR	Southwestern Electric Power	Electric	June 2011	Docket 07-082-TF, Orders 35 and 36
AZ	Arizona Public Service	Electric	May 2012	Docket E-01345A-11-0224, Decision 73183
AZ	Tucson Electric Power	Electric	June 2013	Docket E-01933A-12-0291; Decision 73912
AZ	UNS Electric	Electric	September 2013	Docket E-04204A-12-0504; Decision 74235
AZ	UNS Gas	Gas	May 2012	Docket G-04204A-11-0158 Decision 73142
CT	Southern Connecticut Gas	Gas	August 1995	Docket 93-03-09
CT	Yankee Gas Service	Gas	January 2012	Docket 11-10-03
IN	Duke Energy Indiana (PSI)	Electric	February 2010	Cause 43374
IN	Indiana-Michigan Power	Electric	September 2010	Cause 43827
IN	Northern Indiana Public Service	Electric	May 2011	Cause 43618
IN	Southern Indiana Gas & Electric	Electric	August 2011 (large commercial and industrials), June 2012 (residential and small commercial)	Causes 43938 and 43405 DSMA 9 S1
KS	Kansas Gas & Electric	Electric	January 2011	Docket 10-WSEE-775-TAR
KS	Westar Energy	Electric	January 2011	Docket 10-WSEE-775-TAR
KY	Atmos Energy	Gas	September 2009	Case 2008-00499
KY	Columbia Gas of Kentucky	Gas	October 2009	Case 2009-00141
KY	Delta Natural Gas	Gas	July 2008	Docket 2008-00062
KY	Duke Energy Kentucky	Electric	December 1995 and February 2005	Cases 95-321 and 2004-00389
KY	Duke Energy Kentucky	Gas	February 2005	Case 2004-00389
KY	Kentucky Power	Electric	December 1995	Case 95-427
KY	Kentucky Utilities	Electric	May 2001	Case 2000-0459
KY	Louisville Gas & Electric	Electric & Gas	November 1993	Case 93-150
LA	Cleco Power	Electric	October 2014	Docket R-31106
LA	Entergy Gulf States Louisiana	Electric	October 2014	Docket R-31106
LA	Entergy Louisiana	Electric	October 2014	Docket R-31106
LA	Southwestern Electric Power	Electric	October 2014	Docket R-31106
MA	All Electric distributors	Electric	July 2012	D.P.U. 12-01A
MA	Berkshire Gas	Gas	October 1992	D.P.U. 91-154
MA	Commonwealth Gas d/b/a NSTAR Gas	Gas	November 1994	D.P.U. 94-128

Table 3 (cont'd)

State	Company	Services	Approval Date	Case Reference
MA	NSTAR Electric	Electric	April 1992, June 1994, and June 2010	D.P.U. 90-335, D.P.U. 94-2/3-CC, and D.P.U. 10-06
MS	Atmos Energy	Gas	August 2014	Docket 2014-UA-017
MS	Centerpoint Energy	Gas	August 2014	Docket 2014-UA-007
MS	Entergy Mississippi	Electric	September 2014	Docket 2009-UN-064
MS	Mississippi Power	Electric	March 2015	Docket 2014-UN-10
MT	Montana-Dakota Utilities	Gas	October 2006	Docket D2005.10.156; Order 6697c
NC	Duke Energy Carolinas	Electric	February 2010	Docket E-7, Sub 831
NC	Progress Energy Carolinas (Carolina Power & Light)	Electric	November 2009	Docket E-2, Sub 931
NC	Virginia Electric Power	Electric	October 2011	Docket E-22, Sub 464
NV	Nevada Energy	Electric	May 2011	Docket 10-10024
NV	Sierra Pacific Power	Electric	May 2011	Docket 10-10025
NY	Keyspan Long Island	Gas	December 2009	Case 06-G-1186; Currently effective for all customers not in RDM
NY	Keyspan New York	Gas	December 2009	Case 06-G-1185; Currently effective for all customers not in RDM
OH	American Electric Power (Ohio Power, Columbus Southern Power)	Electric	May 2010	Docket 09-1089-EL-POR; Effective for classes not included in RDM
OH	Dayton Power & Light	Electric	June 2009	Docket 08-1094-EL-SSO
OH	Duke Energy Ohio (Cincinnati Gas & Electric)	Electric	July 2007 and August 2012	Dockets 06-0091-EL-UNC and 11-4393-EL-RDR; Effective for classes not included in RDM
OH	First Energy Ohio (Cleveland Electric Illuminating, Toledo Edison, Ohio Edison)	Electric	March 2009	Docket 08-935-EL-SSO
OK	Empire District Electric	Electric	November 2009	Cause 200900146 Order 571326
OK	Oklahoma Gas & Electric	Electric	July 2008	Cause 200800059 Order 556179
OK	Public Service of Oklahoma	Electric	January 2010	Cause PUD 200900196; Order 572836
OR	Cascade Natural Gas	Gas	April 2006	Order 06-191; UG 167 Effective for classes not included in RDM
OR	Portland General Electric	Electric	September 2001	Order 01-836; UE 79 Effective for classes not included in RDM
OR	Avista Utilities	Gas	December 1993	Order 93-1881
SC	Duke Energy Carolinas	Electric	January 2010	Docket 2009-226-E Order 2010-79
SC	Progress Energy Carolinas	Electric	June 2009	Docket 2008-251-E Order 2009-373
SC	South Carolina Electric & Gas	Electric	July 2010	Docket 2009-261-E, Order 2010-472
WY	Cheyenne Light, Fuel, and Power	Electric & Gas	September 2011	Dockets 20003-108-EA-10 and 30005-140-GA-10
WY	Montana-Dakota Utilities	Electric	January 2007	Docket 20004-65-ET-06

¹ LRAMs listed here include only those mechanisms that compensate utilities for actual revenues lost due to DSM and DG.

The great majority of decoupling systems have a RAM since, if allowed revenue is static, the utility will experience financial attrition as its costs inevitably rise. Utilities that do not have RAMs in their decoupling systems often file frequent rate cases or are allowed to use capital cost trackers to address attrition. The more important issue in a proceeding to consider decoupling is therefore the design of the RAM rather than the need for one.

Most RAMs escalate allowed revenue only for customer growth. Escalation for customer growth is sensible because it is an important driver of cost and also highly correlated with other drivers such as peak demand. The need for rate cases is thereby reduced but is rarely eliminated since cost has other drivers such as input price inflation. When RAMs are escalated only for customer growth, utilities usually retain the freedom to file rate cases to address other cost factors and often do. Some RAMs are “broad-based” in the sense that they provide enough revenue growth to compensate the utility for several kinds of cost pressures. This can materially reduce the need for rate cases and provide a foundation for a multiyear rate plan.

Revenue decoupling compensates utilities for declining average use even if it is driven in part by external forces such as independently administered DSM programs. The lost revenue disincentive is removed for a wide array of utility initiatives to encourage DSM without requiring load impact calculations or rate designs that discourage DSM. To the extent that recovery of allowed revenue is ensured, utilities can use rate designs with usage charges more aggressively to foster DSM. This makes environmental intervenors strong supporters of decoupling. Controversy over billing determinants in rate cases with future test years is reduced.

Revenue decoupling is a popular means of relaxing the link between a utility’s revenue and customers’ kWh consumption. States that have tried gas and electric revenue decoupling are indicated on the maps below in Figures 5a and 5b, respectively. Revenue decoupling precedents in the United States and Canada are detailed in Table 4. In the electric utility industry, decoupling has been favored in states that strongly support DSM. Since our 2013 survey, decoupling has been adopted for electric utilities in Connecticut, Maine, Minnesota, and Washington state. Decoupling is the most widespread means of relaxing the revenue/usage link for gas distributors. This reflects the fact that gas distributors often experience declining average use and that this has been driven chiefly by external forces. Table 4 indicates the kinds of RAMs chosen in approved decoupling systems. Note that RAMs for electric utilities are frequently broad-based.

C. Fixed/Variable Pricing

Fixed/variable pricing is an approach to rate design that uses fixed charges (charges that do not vary with the actual sales volume or peak demand) to compensate utilities for fixed costs of service. For residential and small commercial services, customer charges (a flat monthly fee per customer) are the most common fixed charge used. Base revenue thus tends to grow at the gradual pace of customer growth. A *straight* fixed/variable (“SFV”) rate design recovers *all* base revenue through fixed charges. A rate design that recovers a substantial but smaller share of fixed costs through fixed charges is sometimes called *modified* fixed/variable pricing.

Figure 5a: Electric Revenue Decoupling by State

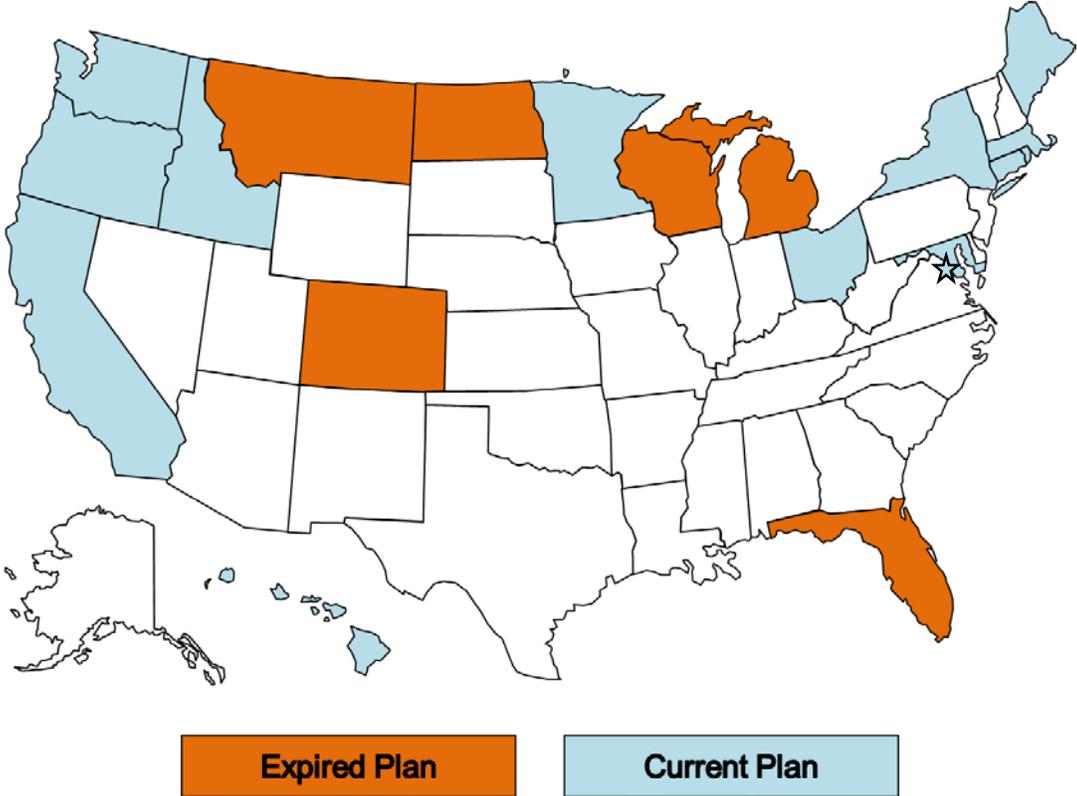


Figure 5b: Gas Revenue Decoupling by State

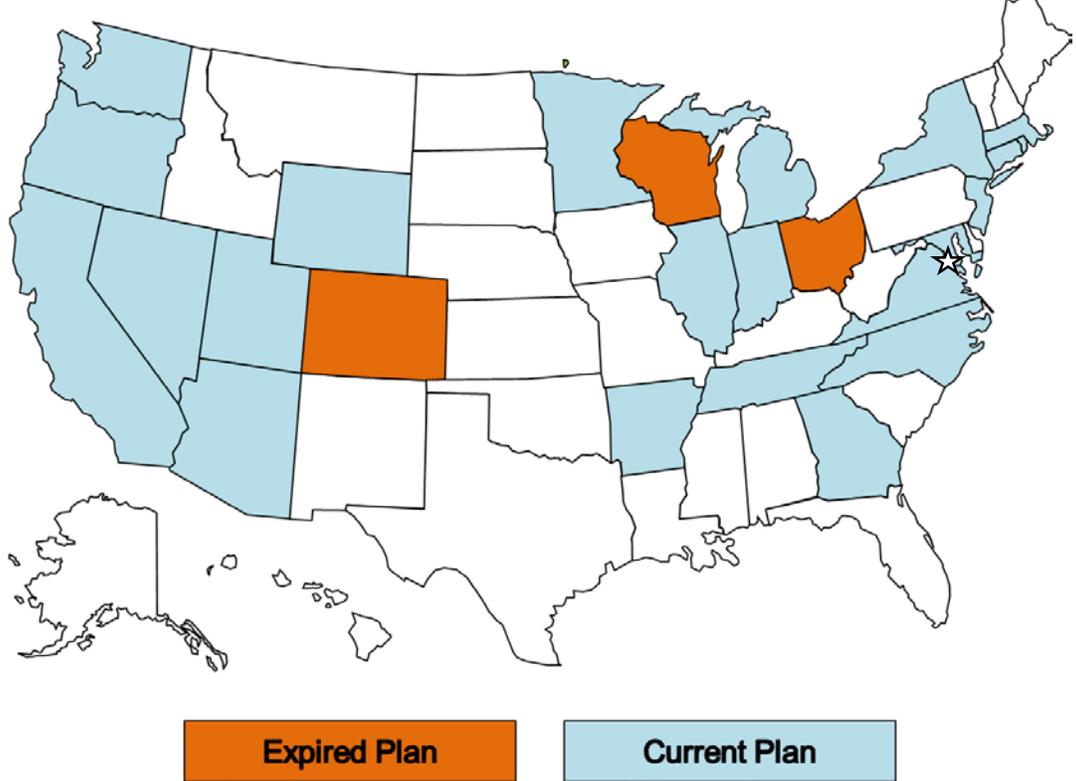


Table 4

Revenue Decoupling Precedents

Jurisdiction	Company Name	Services	Plan Years	Revenue Adjustment Mechanism	Case Reference
Current					
United States					
AR	Arkansas Oklahoma Gas	Gas	2014-open	No RAM but multiple capital cost trackers	Docket 13-078-U
AR	CenterPoint Energy	Gas	2008-2016	No RAM but multiple capital cost trackers	Dockets 06-161-U, 11-088-U, 12-057-TF, and 13-114-TF
AR	SourceGas Arkansas (Arkansas Western)	Gas	2014-open	No RAM but multiple capital cost trackers	Docket 13-079-U
AZ	Southwest Gas	Gas	2012-open	Customers	Docket G-01551A-10-0458
CA	Bear Valley Electric Service	Electric	2013-2016	Stairstep	Decision 14-11-002
CA	California Pacific Electric	Electric	2013-2015	Indexing	Decision 12-11-030
CA	Pacific Gas & Electric	Gas & Electric	2014-2016	Stairstep	Decision 14-08-032
CA	San Diego Gas & Electric	Gas & Electric	2012-2015	Stairstep	Decision 13-05-010
CA	Southern California Edison	Electric	2012-2014	Hybrid	Decision 12-11-051
CA	Southern California Gas	Gas	2012-2015	Stairstep	Decision 13-05-010
CA	Southwest Gas	Gas	2014-2018	Stairstep	Decision 14-06-028
CT	Connecticut Light & Power	Electric	2014-open	No RAM	Docket 14-05-06
CT	Connecticut Natural Gas	Gas	2014-open	No RAM	Docket 13-06-08
CT	United Illuminating	Electric	2013-open	Stairstep until July 2015, No RAM thereafter	Docket 13-01-19
DC	Potomac Electric Power	Electric	2010-open	Customers	Order 15556
GA	Atmos Energy	Gas	2012-open	No RAM but FRP type mechanism also in effect	Docket 34734
HI	Hawaiian Electric Company	Electric	2011-open	Hybrid	Dockets 2008-0274, 2008-0083, 2013-0141
HI	Hawaiian Electric Light Company	Electric	2012-open	Hybrid	Dockets 2008-0274, 2009-0164, 2013-0141
HI	Maui Electric	Electric	2012-open	Hybrid	Dockets 2008-0274, 2009-0163, 2013-0141
ID	Idaho Power	Electric	2012-open	Customers	Cases IPC-E-11-19, IPC-E-14-17
IL	North Shore Gas	Gas	2012-open	No RAM	Case 11-0280
IL	Peoples Gas Light & Coke	Gas	2012-open	No RAM but broad-based capital cost tracker	Case 11-0281
IN	Citizens Gas	Gas	2007-open	Customers	Cause 42767
IN	Indiana Gas	Gas	2011-2015	Customers	Cause 44019
IN	Indiana Gas	Gas	2016-2019	Customers	Cause 44598
IN	Indiana Natural Gas	Gas	2014-open	Customers	Cause 44453
IN	Vectren Southern Indiana	Gas	2011-2015	Customers	Cause 44019
IN	Vectren Southern Indiana	Gas	2016-2019	Customers	Cause 44598
MA	Bay State Gas	Gas	2015-2018	Revenue per Customer Stairstep	DPU 15-50
MA	Boston-Essex Gas	Gas	2010-open	Customers	DPU 10-55
MA	Colonial Gas	Gas	2010-open	Customers	DPU 10-55
MA	Fitchburg Gas & Electric	Gas	2011-open	Customers	DPU 11-02
MA	Fitchburg Gas & Electric	Electric	2011-open	No RAM	DPU 11-01
MA	Massachusetts Electric	Electric	2010-open	No RAM but broad-based capital cost tracker	DPU 09-39
MA	New England Gas	Gas	2011-open	Customers	DPU 10-114
MA	Western Massachusetts Electric	Electric	2011-open	No RAM	DPU 10-70
MD	Baltimore Gas & Electric	Electric	2008-open	Customers	Letter Orders ML 108069, 108061
MD	Baltimore Gas & Electric	Gas	1998-open	Customers	Case 8780
MD	Chesapeake Utilities	Gas	2006-open	Customers	Order 81054
MD	Columbia Gas of Maryland	Gas	2013-open	Customers	Order 85858
MD	Delmarva Power & Light	Electric	2007-open	Customers	Order 81518
MD	Potomac Electric Power	Electric	2007-open	Customers	Order 81517
MD	Washington Gas Light	Gas	2005-open	Customers	Order 80130
ME	Central Maine Power	Electric	2014-open	Customers	Docket 2013-00168

Table 4 (cont'd)

Jurisdiction	Company Name	Services	Plan Years	Revenue Adjustment Mechanism	Case Reference
Current (cont'd)					
United States (cont'd)					
MI	Consumers Energy	Gas	2015-open	No RAM	Case U-17643
MI	Michigan Consolidated Gas	Gas	2013-open	No RAM	Case U-16999
MI	Michigan Gas Utilities	Gas	2015-open	No RAM	Case U-17273
MN	CenterPoint Energy	Gas	2015-2018	Customers	GR-13-316
MN	Minnesota Energy Resources	Gas	2013-2016	Customers	GR-10-977
MN	Northern States Power - MN	Electric	2016-2018	Customers	GR-13-868
NC	Piedmont Natural Gas	Gas	2008-open	Customers	Docket G-9, Sub 550
NC	Public Service Co of NC	Gas	2008-open	Customers	Docket G-5, Sub 495
NJ	New Jersey Natural Gas	Gas	2014-open	Customers	Docket GR13030185
NJ	South Jersey Gas	Gas	2014-open	Customers	Docket GR13030185
NV	Southwest Gas	Gas	2009-open	Customers	D-09-04003
NY	Central Hudson G&E	Gas & Electric	2015-2018	Revenue per Customer Stairstep for Gas, Stairstep for Electric	Cases 14-E-0318, 14-G-0319
NY	Consolidated Edison	Gas	2014-2016	Revenue per Customer Stairstep	Case 13-G-0031
NY	Consolidated Edison	Electric	2014-2016	Stairstep	Case 13-E-0030
NY	Corning Natural Gas	Gas	2015-2017	Customers	Case 11-G-0280
NY	Keyspan Energy Delivery - Long Island	Gas	2010-open	Revenue per Customer Stairstep through 2012, Customers After 2012	Case 06-G-1186
NY	Keyspan Energy Delivery New York	Gas	2013-2014	Revenue per Customer Stairstep through 2014, Customers After 2014	Case 12-G-0544
NY	National Fuel Gas	Gas	2013-2015	Customers	Case 13-G-0136
NY	New York State Electric & Gas	Gas	2010-2013	Revenue per Customer Stairstep through 2013, Customers thereafter	Case 09-E-0715
NY	New York State Electric & Gas	Electric	2010-2013	Stairstep through 2013, No RAM thereafter	Case 09-G-0716
NY	Niagara Mohawk	Gas	2013-2016	Optional Revenue per Customer Stairstep	Case 12-G-0202
NY	Niagara Mohawk	Electric	2013-2016	Optional Stairstep	Case 12-E-0201
NY	Orange & Rockland Utilities	Gas	2015-2018	Revenue per Customer Stairstep	Case 14-G-0494
NY	Orange & Rockland Utilities	Electric	2015-2017	Stairstep	Case 14-E-0493
NY	Rochester Gas & Electric	Gas	2010-2013	Revenue per Customer Stairstep through 2013, Customers thereafter	Case 09-E-0717
NY	Rochester Gas & Electric	Electric	2010-2013	Stairstep through 2013, No RAM thereafter	Case 09-G-0718
NY	St. Lawrence Gas	Gas	2010-open	Revenue per Customer Stairstep through 2012, Customers thereafter	Case 08-G-1392
OH	AEP Ohio	Electric	2012-2018	Customers	Cases 11-351-EL-AIR, 13-2385-EL-SSO
OH	Duke Energy Ohio	Electric	2015-open	Customers	Case 14-841-EL-SSO
OR	Cascade Natural Gas	Gas	2013-2015	Customers	Order 13-079
OR	Northwest Natural Gas	Gas	2012-open	Customers	Order 12-408
OR	Portland General Electric	Electric	2014-2016	Customers	Order 13-459
RI	Narragansett Electric	Electric	2012-open	No RAM but broad-based capital cost tracker	Docket 4206
RI	Narragansett Electric	Gas	2012-open	Customers	Docket 4206
TN	Chattanooga Gas	Gas	2013-open	Customers	Docket 09-0183
UT	Questar Gas	Gas	2010-open	Customers	Docket 09-057-16
VA	Columbia Gas of Virginia	Gas	2013-2015	Customers	Case PUE-2012-00013
VA	Virginia Natural Gas	Gas	2013-2016	Customers	Case PUE-2012-00118
VA	Washington Gas Light	Gas	2013-2016	Customers	Case PUE-2012-00138
WA	Avista	Gas & Electric	2015-2019	Customers	Dockets UE-140188 and UG-140189
WA	Puget Sound Energy	Gas & Electric	2013-2016	Revenue per Customer Stairstep	Dockets UE-121697 and UG-121705
WY	Questar Gas	Gas	2012-open	Customers	Docket 30010-113-GR-11
WY	SourceGas Distribution	Gas	2011-open	Customers	Docket 30022-148-GR-10

Table 4 (cont'd)

Jurisdiction	Company Name	Services	Plan Years	Revenue Adjustment Mechanism	Case Reference
Current (cont'd)					
Canada					
BC	BC Hydro	Electric	2015-2016	Stairstep	Order G-48-14
BC	FortisBC	Electric	2014-2019	Indexing	Order G-139-14
BC	FortisBC Energy	Gas	2014-2019	Indexing	Order G-138-14
BC	Pacific Northern Gas	Gas	2003-open	Customers	N/A
ON	Enbridge Gas Distribution	Gas	2014-2018	Stairstep	EB-2012-0459
ON	Union Gas	Gas	2014-2018	Indexing	EB-2013-0202
Historic					
United States					
AR	Arkansas Oklahoma Gas	Gas	2007-2013	No RAM	Dockets 07-026-U, 07-077-TF
AR	Arkansas Western	Gas	2008-2013	No RAM	Docket 07-078-TF
CA	Bear Valley Electric Service	Electric	2009-2012	Stairstep	Decision 09-10-028
CA	Pacific Gas & Electric	Gas & Electric	1982-1983	Hybrid	Decision 93887
CA	Pacific Gas & Electric	Electric	1984-1985	Hybrid	Decision 83-12-068
CA	Pacific Gas & Electric	Electric	1986-1989	Hybrid	Decision 85-12-076
CA	Pacific Gas & Electric	Electric	1990-1992	Hybrid	Decision 89-12-057
CA	Pacific Gas & Electric	Gas & Electric	1993-1995	Hybrid	Decision 92-12-057
CA	Pacific Gas & Electric	Gas & Electric	2004-2006	Indexing	Decision 04-05-055
CA	Pacific Gas & Electric	Gas & Electric	2007-2010	Stairstep	Decision 07-03-044
CA	Pacific Gas & Electric	Gas & Electric	2011-2013	Stairstep	Decision 11-05-018
CA	Pacific Gas & Electric	Gas	1978-1981	No RAM	Decisions 89316, 91107
CA	PacifiCorp	Electric	1984-1985	Stairstep	Decision 89-09-034
CA	San Diego Gas & Electric	Gas & Electric	1982-1983	Hybrid	Decision 93892
CA	San Diego Gas & Electric	Gas & Electric	1986-1988	Hybrid	Decision 85-12-108
CA	San Diego Gas & Electric	Electric	1989-1993	Hybrid	Decision 89-11-068
CA	San Diego Gas & Electric	Gas & Electric	1994-1999	Hybrid	Decision 94-08-023
CA	San Diego Gas & Electric	Gas & Electric	2005-2007	Indexing	Decision 05-03-025
CA	San Diego Gas & Electric	Gas & Electric	2008-2011	Stairstep	Decision 08-07-046
CA	Southern California Edison	Electric	1983-1984	Hybrid	Decision 82-12-055
CA	Southern California Edison	Electric	1986-1991	Hybrid	Decision 85-12-076
CA	Southern California Edison	Electric	2001-2003	Indexing	Decision 02-04-055
CA	Southern California Edison	Electric	2004-2006	Hybrid	Decision 04-07-022
CA	Southern California Edison	Electric	2006-2008	Hybrid	Decision 06-05-016
CA	Southern California Edison	Electric	2009-2011	Stairstep	Decision 09-03-025
CA	Southern California Gas	Gas	1979-1980	No RAM	Decision 89710
CA	Southern California Gas	Gas	1981-1982	Stairstep	Decision 92497
CA	Southern California Gas	Gas	1983-1984	Hybrid	Decision dated December 8, 1982
CA	Southern California Gas	Gas	1986-1989	Hybrid	Decision 85-12-076
CA	Southern California Gas	Gas	1990-1993	Hybrid	Decision 90-01-016
CA	Southern California Gas	Gas	1998-2002	Indexing	Decision 97-07-054
CA	Southern California Gas	Gas	2005-2007	Indexing	Decision 05-03-025
CA	Southern California Gas	Gas	2008-2011	Stairstep	Decision 08-07-046
CA	Southwest Gas	Gas	2009-2013	Stairstep	Decision 08-11-048
CO	Public Service Company of Colorado	Gas	2008-2011	Customers	Decision C07-0568
CO	Public Service Company of Colorado	Electric	2012-2014	Stairstep	Decision C12-0494
CT	United Illuminating	Electric	2009-2013	Stairstep until 2011/No RAM for 2011 onwards	Docket 08-07-04
FL	Florida Power Corporation	Electric	1995-1997	Customers	Docket 930444
ID	Idaho Power	Electric	2007-2009	Customers	Case IPC-E-04-15
ID	Idaho Power	Electric	2010-2012	Customers	Case IPC-E-09-28
IL	North Shore Gas	Gas	2008-2012	Customers	Case 07-0241
IL	Peoples Gas Light & Coke	Gas	2008-2012	Customers	Case 07-0242
IN	Citizens Gas	Gas	2007-2011	Customers	Cause 42767
IN	Vectren Energy	Gas	2007-2011	Customers	Cause 43046
IN	Vectren Southern Indiana	Gas	2007-2011	Customers	Cause 43046
MA	Bay State Gas	Gas	2009-open	Customers	DPU 09-30
ME	Central Maine Power	Electric	1991-1993	Customers	Docket 90-085
MI	Consumers Energy	Electric	2009-2011	Customers	Case U-15645
MI	Consumers Energy	Gas	2010-2012	Customers	Case U-15986
MI	Detroit Edison	Electric	2010-2011	Customers	Case U-15768
MI	Michigan Consolidated Gas	Gas	2010-2012	Customers	Case U-15985
MI	Michigan Gas Utilities	Gas	2010-2013	Customers	Case U-15990
MI	Upper Peninsula Power	Electric	2010-2011	Customers	Case U-15988
MN	CenterPoint Energy	Gas	2010-2013	Customers	Docket GR-08-1075
MT	Montana Power Company	Electric	1994-1998	Customers	Docket 93.6.24

Table 4 (cont'd)

Jurisdiction	Company Name	Services	Plan Years	Revenue Adjustment Mechanism	Case Reference
Historic (cont'd)					
United States (cont'd)					
NC	Piedmont Natural Gas	Gas	2005-2008	Customers	Docket G-44 Sub 15
ND	Northern States Power - MN	Electric	2012	Not Applicable, plan only 1 year in duration	Case PU-11-55
NJ	New Jersey Natural Gas	Gas	2007-2010	Customers	Docket GR05121020
NJ	New Jersey Natural Gas	Gas	2010-2013	Customers	Docket GR05121020
NJ	South Jersey Gas	Gas	2007-2010	Customers	Docket GR05121019
NJ	South Jersey Gas	Gas	2010-2013	Customers	Docket GR05121019
NY	Central Hudson G&E	Gas	2009-open	Customers	Case 08-E-0888
NY	Central Hudson G&E	Electric	2009	No RAM	Case 08-E-0887
NY	Central Hudson G&E	Gas & Electric	2010-2013	Revenue per Customer Stairstep for Gas, Stairstep for Electric	Case 09-E-0588
NY	Central Hudson G&E	Gas & Electric	2013-open	Customers for Gas, No RAM for Electric	Case 12-M-0192
NY	Consolidated Edison	Electric	1992-1995	Stairstep	Opinion 92-8
NY	Consolidated Edison	Gas	2007-2010	Stairstep	Case 06-G-1332
NY	Consolidated Edison	Electric	2008-open	No RAM	Case 07-E-0523
NY	Consolidated Edison	Gas	2010-2013	Revenue per Customer Stairstep	Case 09-G-0795
NY	Consolidated Edison	Electric	2010-2013	Stairstep	Case 09-E-0428
NY	Corning Natural Gas	Gas	2012-2015	Revenue per Customer Stairstep	Case 11-G-0280
NY	Keyspan Energy Delivery - New York	Gas	2010-open	Revenue per Customer Stairstep	Case 06-G-1185
NY	Long Island Lighting Company	Electric	1992-1994	Stairstep	Opinion 92-8
NY	National Fuel Gas	Gas	2008-open	Customers	Case 07-G-0141
NY	New York State Electric & Gas	Electric	1993-1995	Stairstep	Opinion 93-22
NY	Niagara Mohawk	Electric	1990-1992	Stairstep	Case 94-E-0098
NY	Niagara Mohawk	Gas	2009-open	Customers	Case 08-G-0609
NY	Niagara Mohawk	Electric	2011-open	No RAM	Case 10-E-0050
NY	Orange & Rockland Utilities	Electric	2012-2015	Stairstep	Case 11-E-0408
NY	Orange & Rockland Utilities	Electric	2011-2012	No RAM	Case 10-E-0362
NY	Orange & Rockland Utilities	Electric	2008-2011	Stairstep	Case 07-E-0949
NY	Orange & Rockland Utilities	Electric	1991-1993	Stairstep	Case 89-E-175
NY	Orange & Rockland Utilities	Gas	2012-2015	Customers	Case 08-G-1398
NY	Orange & Rockland Utilities	Gas	2009-2012	Revenue per Customer Stairstep	Case 08-G-1398
NY	Rochester Gas & Electric	Electric	1993-1996	Stairstep	Opinion 93-19
OH	Duke Energy Ohio	Electric	2012-2014	Customers	Case 11-5905-EL-RDR
OH	Vectren Energy	Gas	2007-2009	Customers	Case 05-1444-GA-UNC
OR	Cascade Natural Gas	Gas	2007-2012	Customers	Order 06-191
OR	Northwest Natural Gas	Gas	2002-2005	Customers	Order 02-634
OR	Northwest Natural Gas	Gas	2005-2009	Customers	Order 05-934
OR	Northwest Natural Gas	Gas	2009-2012	Customers	Order 07-426
OR	PacifiCorp	Electric	1998-2001	Indexing	Order 98-191
OR	Portland General Electric	Electric	1995-1996	Stairstep	Order 95-0322
OR	Portland General Electric	Electric	2009-2010	Customers	Order 09-020
OR	Portland General Electric	Electric	2011-2013	Customers	Order 10-478
TN	Chattanooga Gas	Gas	2010-2013	Customers	Docket 09-0183
UT	Questar Gas	Gas	2006-2010	Customers	Docket 05-057-T01
VA	Virginia Natural Gas	Gas	2009-2012	Customers	Case PUE-2008-00060
VA	Washington Gas Light	Gas	2010-2013	Customers	Case PUE-2009-00064
WA	Avista	Gas	2007-2009	Customers	Docket UG-060518
WA	Avista	Gas	2009-2012	Customers	Docket UG-060518
WA	Avista	Gas	2013-2014	Revenue per Customer Stairstep	Docket UG-120437
WA	Cascade Natural Gas	Gas	2005-2010	Customers	Docket UG-060256
WA	Puget Sound & Power	Electric	1991-1995	Customers	Docket UE-901184-P
WI	Wisconsin Public Service	Gas & Electric	2009-2012	Customers	D-6690-UR-119
WI	Wisconsin Public Service	Gas & Electric	2013	Not Applicable, plan only 1 year in duration	Docket 6690-UR-121
WY	Questar Gas	Gas	2009-2012	Customers	Docket 30010-94-GR-08

Table 4 (cont'd)

Jurisdiction	Company Name	Services	Plan Years	Revenue Adjustment Mechanism	Case Reference
Historic (cont'd)					
Canada					
BC	BC Gas	Gas	1994-1995	Hybrid	Order G-59-94
BC	BC Gas	Gas	1996-1997	Hybrid	N/A
BC	BC Gas	Gas	1998-2000	Hybrid	Order G-85-97
BC	BC Gas	Gas	2000-2001	Hybrid	Order G-48-00
BC	BC Hydro	Electric	2009-2010	Hybrid	Order G-16-09
BC	BC Hydro	Electric	2011	Not Applicable, plan only 1 year in duration	Order G-180-10
BC	BC Hydro	Electric	2012-2014	Stairstep	Order G-77-12A
BC	FortisBC	Electric	2012-2013	Stairstep	Order G 110-12
BC	Terasen Gas	Gas	2008-2009	Hybrid	Order G-33-07
BC	Terasen Gas	Gas	2004-2007	Hybrid	Order G-51-03
BC	Terasen Gas	Gas	2010-2011	Hybrid	Order G-141-09
BC	Terasen Gas	Gas	2012-2013	Stairstep	Order G-44-12
ON	Enbridge Gas Distribution	Gas	2008-2012	Revenue per Customer Indexing	Docket EB-2007-0615
ON	Union Gas	Gas	2008-2012	Indexing	Docket EB-2007-0606

Fixed/variable pricing relaxes the revenue/usage link with low administrative cost since it requires neither decoupling true ups nor load impact calculations. When average use is declining, base revenue will grow more rapidly with fixed/variable pricing so that rate cases tend to be less frequent even if the decline is largely driven by external forces. Base revenue grows more slowly than under conventional rate designs if average use is rising. The short term disincentive is removed to embrace various DSM initiatives. However, fixed/variable pricing reduces a utility's ability to use usage charges as a tool for promoting DSM. For example, it does not encourage customers with electric vehicles to charge these vehicles at night. Note also that the principle of rate design gradualism often discourages regulators from immediately adopting SFV pricing.

SFV pricing has been used on a large scale by interstate gas transmission companies since the early 1990s. Precedents for fixed/variable pricing in retail ratemaking are listed below on Table 5 and Figure 6. It can be seen that fixed/variable pricing has to date been considerably more common for gas distributors than electric utilities. This again reflects the greater problem of declining average use that gas distributors have faced, and the fact that the decline has been driven largely by external forces. Since our 2013 survey, fixed/variable pricing has been implemented for an electric utility in Oklahoma.

In addition to the precedents listed here, utilities in Wisconsin and several other states have in recent years made sizable steps in the direction of fixed/variable pricing by redesigning rates for small volume customers to raise customer charges and lower volumetric charges substantially. Investor-owned utilities in Canada are typically permitted to raise a much higher portion of their revenue through fixed charges than are utilities in the United States. Most fixed/variable rate designs feature uniform fixed charges within service classes, but gas utilities in Florida, Georgia, and Oklahoma have fixed charges that vary in some fashion with long term consumption patterns.

Figure 6: Fixed/Variable Pricing Precedents by State

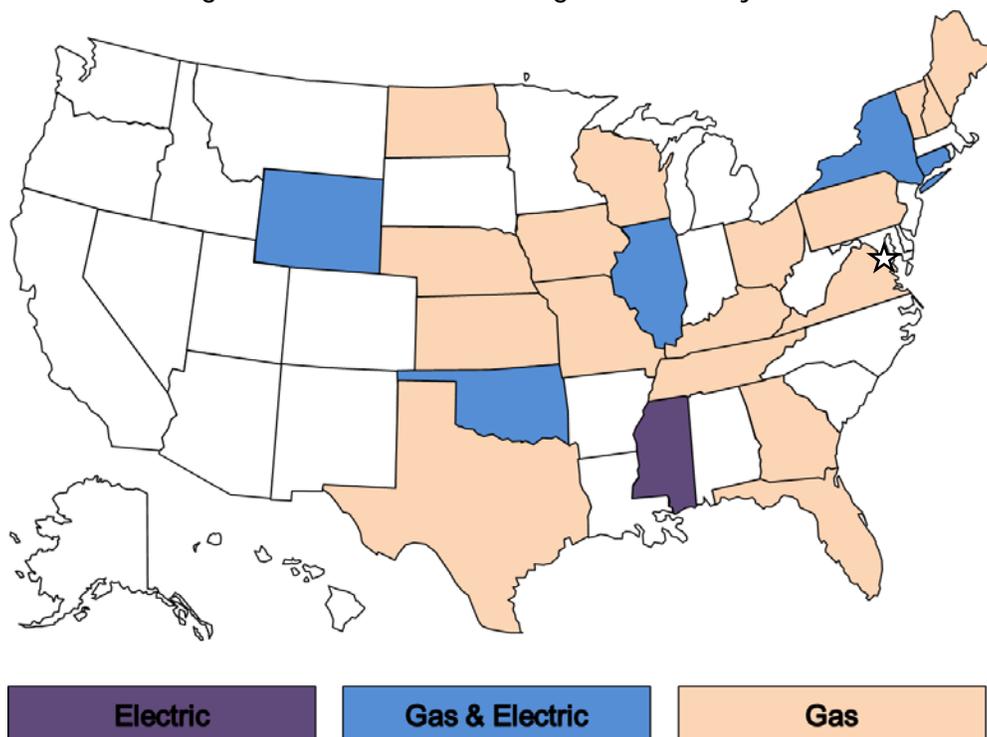


Table 5

Fixed Variable Residential Pricing Precedents¹

Jurisdiction	Company Name	Services	Years in Place	Case Reference
CT	Connecticut Light & Power	Electric	2007-open	Docket 07-07-01
CT	Connecticut Natural Gas	Gas	2014-open	Docket 13-06-08
CT	United Illuminating	Electric	Occurred over period of years	No specific case
CT	Yankee Gas System	Gas	2011-open	Docket 10-12-02
FL	Peoples Gas System	Gas	2009-open	Docket 080318-GU
GA	Liberty Utilities	Gas	2015-open	Docket 34734
IA	Black Hills Energy	Gas	2009-open	Docket RPU-08-3
IL	Ameren CILCO	Gas	2008-2012	Case 07-0588
IL	Ameren CIPS	Gas	2008-2012	Case 07-0589
IL	Ameren IP	Gas	2008-2012	Case 07-0590
IL	Ameren Illinois	Gas	2012-open	Case 11-0282
IL	Ameren Illinois	Electric	Occurred over period of years	No specific case
IL	Commonwealth Edison	Electric	2011-2013	Case 10-0467
IL	Mt. Carmel Public Utilities	Gas	2013-open	Case 13-0079
IL	North Shore Gas	Gas	2008-open	Case 07-0241
IL	Peoples Gas Light & Coke	Gas	2008-open	Case 07-0242
KS	Atmos Energy	Gas	2010-open	Docket 10-ATMG-495-RTS
KS	Black Hills Energy (formerly Aquila)	Gas	2007-open	Docket 07-AQLG-431-RTS
KS	Kansas Gas Service	Gas	2012-open	Docket 12-KGSG-835-RTS
KY	Atmos Energy	Gas	2014-open	Case 2013-00148
KY	Columbia Gas	Gas	2013-open	Case 2013-00167
KY	Delta Natural Gas	Gas	2007-open	Case 2007-00089
KY	Duke Energy Kentucky	Gas	2010-open	Case 2009-00202
ME	Maine Natural Gas	Gas	Occurred over period of years	Docket 2009-00067
ME	Northern Utilities	Gas	2014-open	Docket 2013-00133
MO	AmerenUE	Gas	2007-open	Case GR-2007-0003
MO	Atmos Energy	Gas	2007-2010	Case GR-2006-0387
MO	Atmos Energy	Gas	2010-open	Case GR-2010-0192
MO	Empire District Gas	Gas	2010-open	Case GR-2009-0434
MO	Laclede Gas	Gas	2002-open	Case GR-2002-356
MO	Missouri Gas Energy	Gas	2007-open	Case GR-2006-0422
MS	Mississippi Power	Electric	Occurred over period of years	No specific case
ND	Xcel Energy	Gas	2005-open	Case PU-04-578
NE	SourceGas Distribution	Gas	2012-open	Docket NG-0067
NH	Liberty Utilities (EnergyNorth Natural Gas)	Gas	Occurred over period of years	No specific case
NH	Northern Utilities	Gas	2014-open	DG 13-086
NY	Central Hudson Gas & Electric	Electric & Gas	Occurred over period of years	No specific case
NY	Consolidated Edison	Electric & Gas	Occurred over period of years	No specific case
NY	Corning Gas	Gas	Occurred over period of years	No specific case
NY	Keyspan Energy Delivery - Long Island	Gas	Occurred over period of years	No specific case
NY	Keyspan Energy Delivery - New York	Gas	Occurred over period of years	No specific case
NY	National Fuel Gas	Gas	Occurred over period of years	No specific case

Table 5 (cont'd)

Jurisdiction	Company Name	Services	Years in Place	Case Reference
NY	New York State Electric & Gas	Electric	Occurred over period of years	No specific case
NY	Niagara Mohawk	Electric & Gas	Occurred over period of years	No specific case
NY	Orange & Rockland	Electric & Gas	Occurred over period of years	No specific case
NY	Rochester Gas & Electric	Electric & Gas	Occurred over period of years	No specific case
OH	Columbia Gas	Gas	2008-open	Case 08-0072-GA-AIR
OH	Dominion East Ohio	Gas	2008-2010	Case 07-830-GA-ALT
OH	Duke Energy Ohio (CG&E)	Gas	2008-open	Case 07-590-GA-ALT
OH	Vectren Energy Delivery of Ohio	Gas	2009-open	Case 07-1080-GA-AIR
OK	Arkansas Oklahoma Gas	Gas	2013-open	Cause PUD 201200236
OK	Centerpoint Energy	Gas	2010-open	Cause PUD 201000030
OK	Oklahoma Natural Gas	Gas	2004-open	Causes PUD 200400610, PUD 201000048, PUD 200900110
OK	Public Service Company of Oklahoma	Electric	2015-open	Cause PUD 201300217
PA	Columbia Gas	Gas	2013-open	Docket R-2012-2321748
TN	Atmos Energy	Gas	2012-open	Docket 12-00064
TN	Piedmont Natural Gas	Gas	2012-open	Docket 11-00144
TX	Atmos Energy - Mid-Tex Division	Gas	Occurred over period of years	No specific case
TX	Atmos Energy - West Texas Division	Gas	Occurred over period of years	No specific case
TX	Centerpoint Energy Houston Division	Gas	Occurred over period of years	No specific case
TX	Centerpoint Energy Beaumont/East Texas Division	Gas	Occurred over period of years	No specific case
VA	Columbia Gas of Virginia	Gas	Occurred over period of years	No specific case
VT	Vermont Gas Systems	Gas	Occurred over period of years	No specific case
WI	Madison Gas & Electric	Gas	2015-open	Docket 3270-UR-120
WI	Wisconsin Public Service	Gas	2015-open	Docket 6690-UR-123
WY	SourceGas Distribution	Gas	2011-open	Docket 30022-148-GR-10
WY	PacifiCorp (d/b/a Rocky Mountain Power)	Electric	2009-open	Docket 20000-333-ER-08

¹ Fixed variable pricing precedents include power and gas distributors that have a customer charge equal to or in excess of \$15 (or \$20 for vertically integrated electric utilities).

IV. Forward Test Years

General rate cases involve “test years” in which revenue requirements and billing determinants (e.g., the residential delivery volume) are jointly considered in ratesetting. A historical test year ends before the rate case is filed. A forward (a/k/a “fully forecasted”) test year (“FTY”) begins after the rate case is filed. An FTY typically begins about the time the rate case is expected to end and new rates take effect. Two-year forecasts may be required in this event which span both the year of the rate case and the rate effective year.⁴ In between forward and historical test years is the option of a “partially forecasted” test year in which some months of historical data on utility operations are combined with some months of forecasted data. Under this approach, actual data for all months usually become available during the course of the rate case.

Historical test years tend to be uncompensatory when cost is growing faster than billing determinants. Annual rate cases with historical test years can alleviate but not eliminate underearning under these conditions. The effect on credit metrics can be material.⁵ Where historical test years are used, there are thus added advantages to implementing other Altreg innovations discussed in this survey.

Forward test years can fully compensate utilities when cost growth exceeds growth in billing determinants. If this imbalance is chronic, however, FTYs do not eliminate the problem of frequent rate cases. It is therefore not unusual for regulators to combine FTYs with other Altreg remedies, such as cost trackers or multiyear rate plans.

Many approaches are used to forecast costs in FTY rate cases. Some companies rely on their budgeting process to make cost projections. Others normalize data for an historical reference period, adjusted for known and measurable changes, and then use indexing and other statistical methods to extend projections. A mixture of forecasting methods is common. For example, index-based forecasting may be used only for O&M expenses.

FTYs were adopted in many jurisdictions during the 1970s and 1980s, when rapid inflation and major plant additions coincided with oil shock-induced slowdowns in the growth of average use. Several additional states have recently moved in the direction of FTYs. Some of these states are in the West, where comparatively rapid economic growth has required more rapid buildout of utility infrastructure.

Current state policies concerning test years are summarized below in Figure 7 and Table 6. In many jurisdictions the use of partially or fully-forecasted test years is not standardized. For example, in some jurisdictions, including Illinois and North Dakota, utilities are allowed to select their type of rate case test year. Test year selection may also be made part of the rate case (e.g., Utah). A few jurisdictions allow forward test years to be used in rate cases or formula rate plans, but not both (e.g., Illinois and Arkansas).

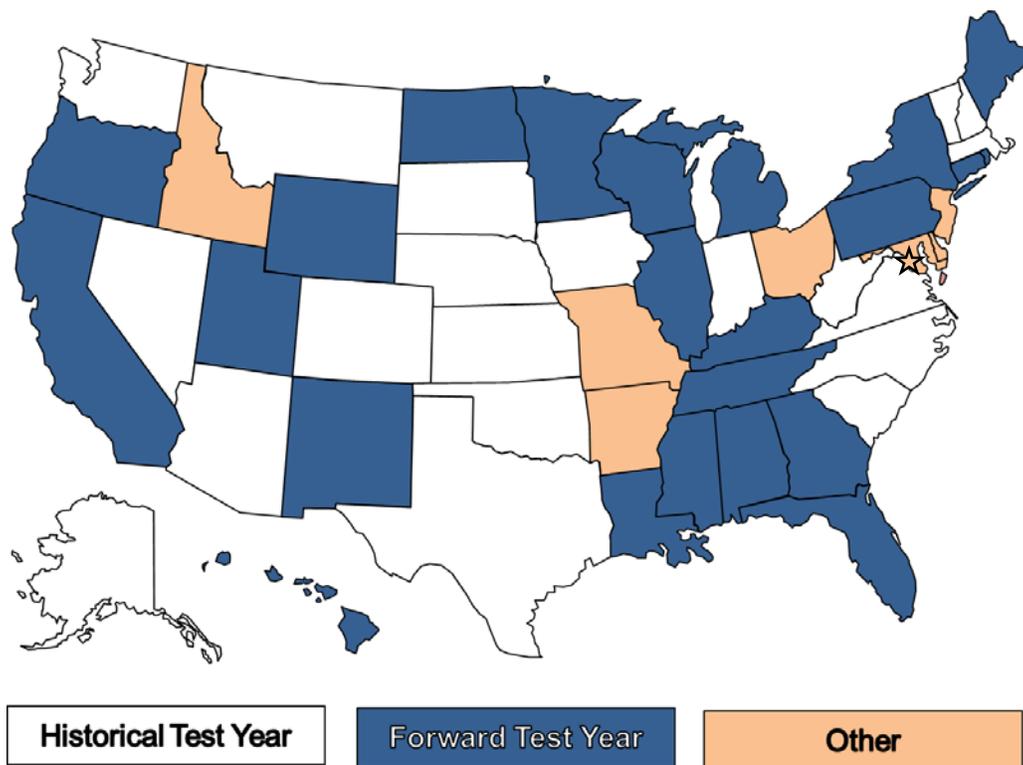
⁴ A forward test year can in principle be the rate case year, and thereby not require two-year forecasts. Proposed rates can be established on an interim basis shortly after the filing.

⁵ For evidence see “Forward Test Years for US Electric Utilities” by Mark Newton Lowry, David Hovde, Lullit Getachew, and Matt Makos, Edison Electric Institute, 2010.

Because of these complications, we have separated Table 6 into separate sections, specifying where FTYs are commonly used or occasionally used. Figure 7 shows jurisdictions where FTYs are commonly or occasionally used. Jurisdictions where partially-forecasted test years are commonly or occasionally used are in the category titled Other, with the remaining jurisdictions counted as historical test years.

The ranks of US jurisdictions that allow the use of forward test years have swollen and now encompass about half of the total. Since our 2013 survey, electric utilities in Pennsylvania have successfully used FTYs and utilities in Arkansas and Indiana have received legislative authorization for their use.⁶⁷ Forward test years are the norm in Canadian regulation.

Figure 7: Test Year Policy by State



⁶ In addition, another electric utility in Mississippi was recently permitted to use a forward-looking formula rate plan.

⁷ FTYs in Arkansas can only be used in formula rate plans.

Table 6

Test Year Approaches of US Jurisdictions

Jurisdiction	Notes
Fully-Forecasted Test Years Commonly Used (15)	
Alabama	Utilities operate under forward-looking formula rate plans
California	
Connecticut	
FERC	Rate cases use forward test years but some formula rate plans use historical test years
Florida	
Georgia	
Hawaii	
Maine	
Michigan	
Minnesota	
New York	
Oregon	
Rhode Island	
Tennessee	
Wisconsin	
Fully-Forecasted Test Years Occasionally Used (9)	
Illinois	Utilities use various test years including forward test years ("FTYs")
Kentucky	Utilities use various test years including FTYs
Louisiana	Utilities use various test years including FTYs
Mississippi	Both electric utilities operate under forward-looking formula rate plans. Gas formula rate plans rely on historical test years ("HTYs").
New Mexico	A recently passed law allows for use of FTYs, and at least one rate increase based on FTY evidence has been approved
North Dakota	Utilities use various test years including FTYs
Pennsylvania	Partially-forecasted test years have traditionally been the norm. However, a law allowing fully-forecasted test years passed in 2012 and several electric utility rate increases based on FTY evidence have been approved.
Utah	Test year selection is part of the rate case and can be contested. Several recent rate cases have used FTYs.
Wyoming	Rocky Mountain Power has recently used FTYs
Partially-Forecasted Test Years Commonly or Occasionally Used (8)	
Arkansas	Utilities have typically used partially forecasted test years in rate cases. However, a recent bill authorized the use of formula rates with either historical or forecasted test periods.
Delaware	Before restructuring FTY filings were common, but companies have used a mix of HTYs and partially-forecasted test years in recent filings
District of Columbia	PEPCO has filed rate cases using both hybrid and historical test years recently
Idaho	
Maryland	Utilities use various test years excluding FTYs
Missouri	Utilities have the option to file partially-forecasted test years
New Jersey	
Ohio	
Historical Test Years Commonly Used (20)	
Alaska	
Arizona	
Colorado	Utilities have filed FTY evidence. However, no FTY rates have yet been approved but a recent case made extraordinary HTY adjustments.
Indiana	A recently passed law allows for use of FTYs, but no rate increase based on FTY evidence has been approved for an energy utility to date
Iowa	
Kansas	
Massachusetts	
Montana	
Nebraska	Nebraska has no electric IOUs. Gas companies are legally authorized to use FTYs but commonly use HTYs.
Nevada	
New Hampshire	
North Carolina	
Oklahoma	
South Carolina	
South Dakota	
Texas	
Vermont	
Virginia	
Washington	
West Virginia	

V. Multiyear Rate Plans

Multiyear rate plans (“MRPs”) are designed to reduce regulatory cost, while increasing the utility incentive for efficient operation. Rate cases are held infrequently, most often at three to five year intervals. Between rate cases, rate escalations are based on a combination of automatic attrition relief mechanisms (“ARMs”) and cost trackers. The rate adjustments provided by ARMs are largely “external” in the sense that they give a utility an *allowance* for cost growth rather than reimbursement for its *actual* growth.

The “externalization” of ratemaking that ARMs and rate case moratoria achieve gives utilities more opportunity to profit from improved performance. Benefits of better performance can be shared between the utility and its customers. Performance incentives are strengthened despite streamlined regulation. Lower regulatory cost has special appeal in jurisdictions where numerous utilities must be regulated.

ARMs can cap growth in rates (e.g., customer charges and cents per kWh) or allowed revenue. Rate caps are favored when and where utilities are encouraged to bolster customer use of the grid. Revenue caps are usually combined with revenue decoupling mechanisms, and are often favored where utilities must cope with declining average use and/or policymakers strongly encourage DSM.

Several approaches to ARM design are well-established. These include multiyear cost forecasts, indexing, and hybrids. Indexing escalates rates (or revenue) automatically for inflation and sometimes also for growth in other cost drivers like the number of customers served. A hybrid approach to ARM design was developed in the US that involves indexing of revenue for O&M expenses and forecasts for capital cost revenue.

The indexing approach to ARM design has been more common for UDCs because their cost growth is relatively gradual and predictable. Hybrid and forecasted ARMs have historically been more common for vertically integrated electric utilities because occasional major plant additions have given their cost trajectories more of a “stairstep” pattern. However, this pattern is becoming less common in an era when demand growth is slower and fewer large power plants are under construction. Some VIEUs operating under MRPs have separate ARMs for generation and distribution.

Cost trackers are often used in MRPs to address changes in business conditions that are difficult to address using ARMs. A tracker that recovers a large portion of a utility’s capex cost can sometimes permit the company to operate under a multiyear freeze on rates for other non-energy costs. MRPs with “tracker/freeze” provisions for vertically integrated utilities often accord tracker treatment to costs of new or refurbished generating plants.⁸ Trackers also address *force majeure* events like severe storms and changes in tax rates that affect costs.

Many MRPs feature earnings sharing mechanisms (“ESMs”) that automatically share earnings surpluses and/or deficits that result when the rate of return on equity (“ROE”) deviates from its regulated target. Some MRPs feature “off-ramps” that permit plan suspension when earnings are unusually high or low.

⁸ A good example is the Generation Base Rate Adjustment in the current MRP of Florida Power & Light.

Plans often feature performance incentive mechanisms that are linked to the utility's service quality. With stronger cost containment incentives, there is a greater need for a link between revenue and service quality. Many MRPs combine revenue decoupling, the tracking of DSM expenses, and performance incentives for DSM. The stronger incentive to contain cost that MRPs provide then becomes a "fourth leg" for the DSM stool.

MRPs have long been used to regulate utilities where market-responsive rates and services are a priority. Infrequent rate cases reduce the regulatory cost of allocating the revenue requirement between a complex and changing mix of market offerings and lessen concerns about cross-subsidization. These benefits of MRPs can be enhanced by designing other plan provisions in ways that insulate core customers from potentially adverse consequences of marketing flexibility.

For example, in the early 1990s, Maine's electric utilities were still vertically integrated and needed flexibility in marketing power to paper and pulp customers, some of whom had cogeneration options. The commission, under the chairmanship of Thomas Welch (a former telecom industry lawyer) approved a succession of price cap plans for Central Maine Power which facilitated marketing flexibility. As a result, the company had more freedom to enter into special contracts. The stronger incentives the company had to offer the right discounts to customers at risk of bypass was acknowledged by the commission when costs were allocated in later rate cases.

MRPs were first widely used in the United States to regulate railroad, oil pipeline, and telecommunications companies. A major attraction was the ability of MRPs to afford utilities flexibility in serving markets with diverse competitive pressures and complex, changing customer needs. US and Canadian precedents for MRPs in the electricity and gas utility industries are indicated in Table 7 and Figures 8a and 8b.⁹ In the US, MRPs have traditionally been most common in California and the Northeast. MRPs have been adopted by well-known VIEUs in Florida, North Dakota, and Virginia since our 2012 survey. A number of states have, additionally, experimented with "mini-MRPs" with terms of only two years. The forecast and tracker/freezer approaches to ARM design are most common currently in the US. The Federal Energy Regulatory Commission ("FERC") uses MRPs with index-based ARMs to regulate oil pipelines.

Canada is moving towards MRPs with index-based ARMs for gas and electric power distribution in all four populous provinces. In advanced economies overseas, MRPs are more the rule than the exception for utility regulation. Australia, Britain, and New Zealand are long time practitioners.

⁹ Rate freezes without extensive supplemental funding from capital cost trackers are excluded from Table 7 and Figures 8a and 8b.

Figure 8a: Recent US Multiyear Rate Plan Precedents by State

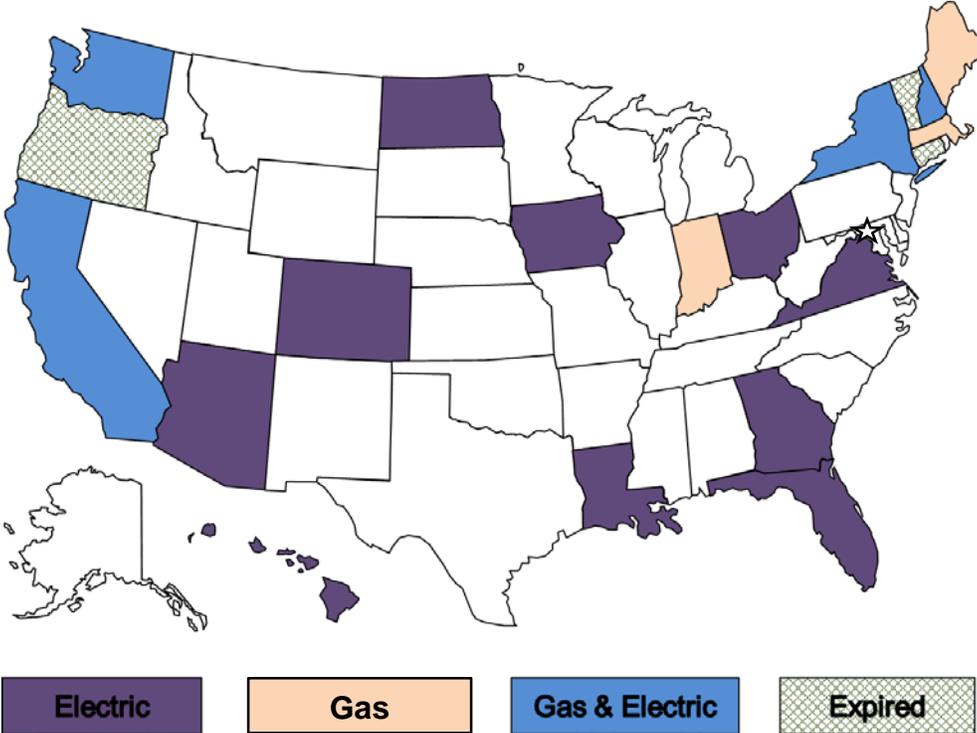


Figure 8b: Recent Canadian Multiyear Rate Plan Precedents by Province

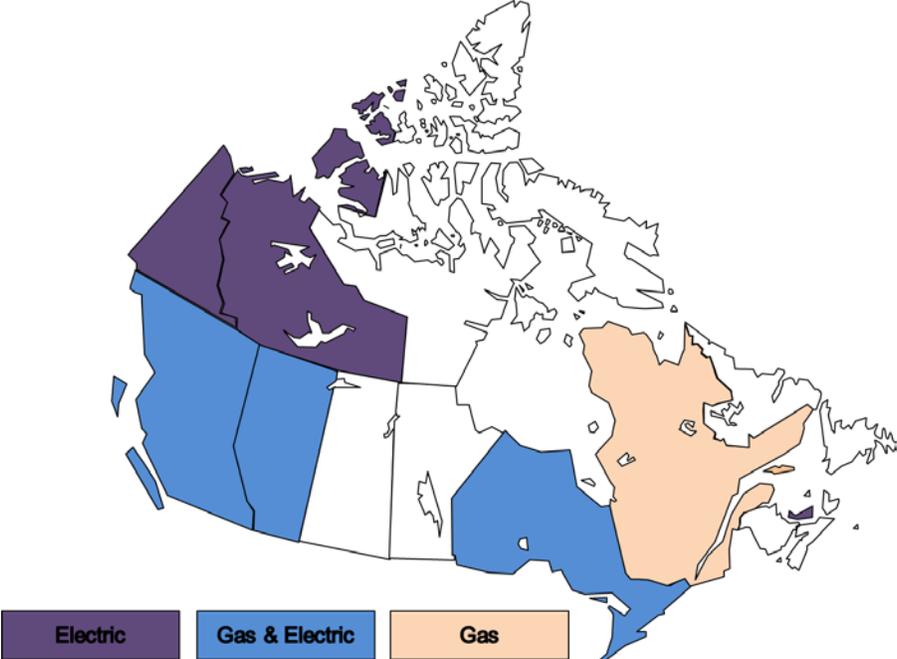


Table 7

Multiyear Rate Plan Precedents ¹

Jurisdiction	Company	Plan Term	Services Covered	Rate Escalation Provisions	Earnings Sharing Provisions	Case Reference
Current						
United States						
AZ	Arizona Public Service	2012-2016	Bundled power service	Rate Freeze with an adjustment to account for purchase of SCE's share of Four Corners generating facility, additional capital and other cost trackers, LRAM	None	Decision 73183; May 2012
CA	Bear Valley Electric Service	2013-2016	Power distribution	Revenue Cap Stairstep	None	Decision 14-11-002; November 2014
CA	California Pacific Electric	2013-2015	Power distribution	Revenue Cap Index	None	Decision 12-11-030; November 2012
CA	Pacific Gas & Electric	2014-2016	Gas & bundled power service	Revenue Cap Stairstep	None	Decision 14-08-032; August 2014
CA	PacifiCorp	2011-2013, extended through 2016	Bundled power service	Price Cap Index: Rates escalated by Global Insight forecast of CPI, less 0.5% productivity factor; supplemental funding for major plant additions can be requested in annual filings	None	Decision 10-09-010; September 2010
CA	San Diego Gas & Electric	2012-2015	Gas & bundled power service	Revenue Cap Stairstep	None	Decision 13-05-010; May 2013
CA	Southern California Gas	2012-2015	Gas	Revenue Cap Stairstep	None	Decision 13-05-010; May 2013
CA	Southwest Gas	2014-2018	Gas	Revenue Cap Stairstep	None	Decision 14-06-028; June 2014
CO	Public Service of Colorado	2015-2017	Bundled power service	Rate Freeze with multiple capital cost trackers	Sharing of overearnings only up to earnings cap	Decision C15-0292; March 2014
FL	Florida Power & Light	2013-2016	Bundled power service	Rate Freeze with multiple capital and other cost trackers	None	Docket 120015-EI; December 2012
FL	Gulf Power	2014-June 2017	Bundled power service	Price Cap Stairstep through 2015, Rate Freeze beyond	None	Docket 130140-EI; December 2013
FL	Duke Energy Florida (formerly Progress Energy Florida)	2012-2016, extended through 2018	Bundled power service	Rate Freeze with one step plus capital and other cost trackers	None	Dockets 120022-EI and 130208-EI; 2012 and November 2013
FL	Tampa Electric	2013-2017	Bundled power service	Revenue Cap Stairstep	None	Docket 130040-EI
GA	Georgia Power	2014-2016	Bundled power service	Revenue Cap Stairstep	Sharing of overearnings only with deadband	Docket 36989; December 2013
HI	Hawaiian Electric Company	2012-open	Bundled power service	Revenue Cap Hybrid	Sharing of overearnings only without deadband, multiple sharing levels	Dockets 2008-0274 & 2008-0083
HI	Hawaiian Electric Light Company	2013-open	Bundled power service	Revenue Cap Hybrid	Sharing of overearnings only without deadband, multiple sharing levels	Dockets 2008-0274 & 2009-0164
HI	Maui Electric	2013-open	Bundled power service	Revenue Cap Hybrid	Sharing of overearnings only without deadband, multiple sharing levels	Dockets 2008-0274 & 2009-0163
IA	MidAmerican Energy	2014-2017	Bundled power service	Revenue Cap Stairstep for 2014-2016, Rate Freeze for 2017	Sharing of overearnings only with deadband up to earnings cap	RPU-2013-0004
IN	Northern Indiana Public Service Company	2015-2020	Gas	Rate Freeze with capital and other cost trackers, possible reopening in 2017	Earnings cap implemented if company overearns since last rate case or prior 59 months, whichever is less	Cause 43894 and 44403 TDSIC 1 (August 2013 and January 2015)
LA	Cleco Power	2014-2017	Bundled power service	Rate Freeze with capital and other cost trackers	Sharing of overearnings only with deadband up to earnings cap	Docket U-32779; June 2014
MA	Bay State Gas	2015-2018	Gas	Revenue Cap Stairstep for 2015, 2016, Revenue Freeze through October 2018	None	DPU 15-150; October 2015
ME	Summit Natural Gas of Maine	2013-2022	Gas	Price Cap Indexing: 75% of change in GDPPPI	None until company has 1,000 or more customers, then sharing of under/overearnings evenly with deadband	Docket 2012-258; January 2013
NH	Northern Utilities	May 2014 - April 2017	Gas	Revenue Cap Stairstep for 2014-2015, Rate Freeze in 2016	Sharing of overearnings only with deadband up to earning cap	DG 13-086; April 2014
NH	Public Service Company of New Hampshire	2010-2015	Power distribution (generation regulated separately)	Revenue Cap Stairstep: Rate increases allowed to account for distribution capital additions in 2010-2013	Sharing of overearnings only with deadband	DE 09-035
NH	Unitil Energy Systems	2011-2016	Power distribution	Revenue Cap Stairstep: Rate increases allowed to account for distribution capital additions in 2011-2013	Sharing of overearnings only with deadband	DE 10-055

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Rate Escalation Provisions	Earnings Sharing Provisions	Case Reference
Current (cont'd)						
United States (cont'd)						
NY	Central Hudson Gas & Electric	2015-2018	Gas & power distribution	Revenue Cap Stairstep	Sharing of overearnings with deadband and multiple sharing bands	Cases 14-E-0318, 14-G-0319
NY	Consolidated Edison	2014-2016	Gas	Revenue Cap Stairstep	Sharing of overearnings only with deadband and multiple bands	Case 13-G-0031
NY	Corning Natural Gas	2012-2015	Gas	Revenue Cap Stairstep	Sharing of overearnings only with deadband and multiple bands	Case 11-G-0280
NY	Orange & Rockland Utilities	November 2015-October 2018	Gas	Revenue Cap Stairstep	Sharing of overearnings only with deadband and multiple sharing bands	Case 14-G-0494
ND	Northern States Power - Minnesota	2013-2016	Bundled power service	Revenue Cap Stairstep for 2013-2015, Rate Freeze in 2016	Sharing of overearnings only without deadband, earnings adjusted for effects of weather	Case PU-12-813
OH	First Energy Ohio	2011-2014, later extended to 2016	Power distribution	Rate Freeze supplemented by capital and other cost trackers	Company subject to Significantly Excessive Earnings Test conducted annually	Cases 11-388-EL-SSO, 12-1230-EL-SSO
US	All	2011-2016	Oil pipelines	Price Cap Index: PPI-Finished Goods + 2.65%	None	Docket RM10-25-000; December 2010
VA	Appalachian Power	2014-2017	Bundled power service	Rate Freeze supplemented by capital and other cost trackers	None	Senate Bill 1349
VA	Virginia Electric Power	2015-2019	Bundled power service	Rate Freeze supplemented by capital and other cost trackers	None	Senate Bill 1349
WA	Puget Sound Energy	2013-2016	Gas & bundled power service	Revenue Cap Stairstep	Sharing of overearnings only without deadband, equal sharing between company and customers	Dockets UE-121697 and UG-121705
Canada						
Alberta	Altgas Utilities and ATCO Gas	2013-2017	Gas	Revenue per Customer Indexing: Input price index - 1.16%, + capital cost trackers	None	Decision 2012-237
Alberta	ATCO Electric, EPCOR, Fortis Alberta	2013-2017	Power distribution	Price Cap Index: Input Price Index - 1.16%, + capital cost trackers	None	Decision 2012-237
British Columbia	FortisBC	2014-2018	Bundled power service	Revenue Cap Index: I-Factor - 1.03%, + capital cost tracker for CPCN projects	Symmetric without deadband	Project #3698719, Decision; September 2014
British Columbia	FortisBC Energy	2014-2018	Gas	Revenue Cap Index: I-Factor - 1.1%, + capital cost tracker for CPCN projects	Symmetric without deadband	Project #3698715, Decision; September 2014
Ontario	All unless company opts out	2014-2018	Power distribution	Price Cap Index: Input price index - (0%+stretch); stretch factor reassigned annually, + capital cost tracker option available	None	EB-2010-0379 Report of the Board; November 2013
Ontario	Horizon Utilities	2015-2019	Power distribution	Revenue Cap Stairstep	Sharing of overearnings only without deadband	EB-2014-0002; December 2014
Ontario	Hydro One Networks	2015-2017	Power distribution	Revenue Cap Stairstep	None	EB-2014-0247; March 2015
Ontario	Enbridge Gas Distribution	2014-2018	Gas	Revenue Cap Stairstep	Sharing of overearnings only without deadband	EB-2012-0459, Decision with Reasons; July 2014
Ontario	Union Gas Limited	2014-2018	Gas	Revenue Cap Index: 40% of growth in GDP-IPI	Sharing of overearnings only with deadband, multiple sharing ranges	EB 2013-0202 Decision; October 2013
Prince Edward Island	Maritime Electric	2013-2016	Bundled power service	Price Cap Stairstep: Bill defines rates for each year.	Earnings cap set at allowed ROE, no floor	Bill 26 (2012) Electric Power (Energy Accord Continuation) Amendment Act
Quebec	Gazifere	2011-2015	Gas distribution	Price Cap Index	Sharing of overearnings only without deadband and multiple sharing bands up to earnings cap	D-2010-112; August 2010
Yukon Territory	Yukon Electrical Company, Limited	2013-2015	Bundled power service	Revenue Cap Stairstep	None	Board Order 2014-06; April 2014

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Rate Escalation Provisions	Earnings Sharing Provisions	Case Reference
Current (cont'd)						
Great Britain						
Great Britain	All	2013-2021	Gas and power transmission	British-Style Hybrid	Not reviewed	RIIO-T1 Final Proposals, April and December 2012
Great Britain	All	2013-2021	Gas distribution	British-Style Hybrid	Not reviewed	RIIO-GD1 Final Proposals, December 2013
Great Britain	All	2015-2023	Power distribution	British-Style Hybrid	Variations of cost from budgets shared through Information Quality Incentive Mechanism	RIIO-ED1 Final Proposals, December 2014
Australia/New Zealand						
Australia	ActewAGL	2015-2019	Power transmission & distribution	Australian-Style Hybrid	Not reviewed	Final Decision ActewAGL distribution determination 2015-16 to 2018-19; April 2015
Australia	Ausgrid	2015-2019	Power distribution	Australian-Style Hybrid	Not reviewed	Final Decision Ausgrid distribution determination 2015-16 to 2018-19; April 2015
Australia	Directlink	2015-2020	Power transmission	Australian-Style Hybrid	Not reviewed	Final Decision Directlink transmission determination 2015-16 to 2019-20; April 2015
Australia	Endeavour Energy	2015-2019	Power distribution	Australian-Style Hybrid	Not reviewed	Final Decision Endeavour Energy distribution determination 2015-16 to 2018-19; April 2015
Australia	Energex	2015-2020	Power distribution	Australian-Style Hybrid	Not reviewed	Final Decision Energex determination 2015-16 to 2019-20
Australia	Ergon Energy	2015-2020	Power distribution	Australian-Style Hybrid	Not reviewed	Final Decision Ergon Energy determination 2015-16 to 2019-20
Australia	Essential Energy	2015-2019	Power distribution	Australian-Style Hybrid	Not reviewed	Final Decision Essential Energy distribution determination 2015-16 to 2018-19; April 2015
Australia	Jemena Gas Networks	2015-2020	Gas distribution	Australian-Style Hybrid	Not reviewed	Final Decision Jemena Gas Networks (NSW) Ltd Access Arrangement 2015-20; June 2015
Australia	SA Power Networks	2015-2020	Power distribution	Australian-Style Hybrid	Not reviewed	Final Decision SA Power Networks determination 2015-16 to 2019-20
Australia	TasNetworks	2015-2019	Power transmission	Australian-Style Hybrid	Not reviewed	Final Decision TasNetworks transmission determination 2015-16 to 2018-19; April 2015
Australia	TransGrid	2015-2018	Power transmission	Australian-Style Hybrid	Not reviewed	Final Decision TransGrid transmission determination 2015-16 to 2017-18; July 2015
Australia	Power & Water	2014-2019	Power transmission & distribution	Australian-Style Hybrid	Not reviewed	2014 Networks Price Determination Final Determination Part-A Statement of Reasons; April 2014
Australia	All Queensland Distributors	2011-2016	Gas distribution	Australian-Style Hybrid	Not reviewed	Access Arrangement Proposal for Qld Gas Network, Final Decision; June 2011
Australia	Energex and Ergon Energy	2010-2015	Power distribution	Australian-Style Hybrid	Not reviewed	Queensland Distribution Determination 2011-11 to 2014-15 (Final Decision)
Australia	Envestra	2011-2016	Gas distribution	Australian-Style Hybrid	Not reviewed	Access Arrangement Proposal for the SA Gas Network, Final Decision; June 2011
Australia	All Victorian Distributors	2013-2017	Gas distribution	Australian-Style Hybrid	Not reviewed	Access Arrangement Final Decision; March 2013

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Rate Escalation Provisions	Earnings Sharing Provisions	Case Reference
Current (cont'd)						
Australia/New Zealand (cont'd)						
Australia	CitiPower	2011-2015	Power distribution	Australian-Style Hybrid	Not reviewed	CitiPower Pty Distribution Determination 2011-2015; September 2012
Australia	Powercor	2011-2015	Power distribution	Australian-Style Hybrid	Not reviewed	Powercor Australia Ltd Distribution Determination 2011-2015; October 2012
Australia	Jemena Electricity Networks	2011-2015	Power distribution	Australian-Style Hybrid	Not reviewed	Jemena Electricity Networks (Victoria) Ltd Distribution Determination 2011-2015; September 2012
Australia	SP AusNet	2011-2015	Power distribution	Australian-Style Hybrid	Not reviewed	SPI Electricity Pty Ltd Distribution Determination 2011-2015; August 2013
Australia	United Energy Distribution	2011-2015	Power distribution	Australian-Style Hybrid	Not reviewed	United Energy Distribution Distribution Determination 2011-2015; September 2012
New Zealand	All but Orion Electric	2015-2020	Power distribution	Revenue Cap Index: CPI-0% for most companies	None	Project no. 14.07/14118; November 2014
New Zealand	All	2013-2017	Gas distribution	New Zealand-Style Hybrid	Not reviewed	Project no. 15.01/13199
New Zealand	All	2013-2017	Gas transmission	New Zealand-Style Hybrid	Not reviewed	Project no. 15.01/13199
Historic						
United States						
CA	Bear Valley Electric Service	2009-2012	Power distribution	Revenue Cap Stairstep	None	Decision 09-10-028; October 2009
CA	Pacific Gas & Electric	2011-2013	Gas & bundled power service	Revenue Cap Stairstep	None	Decision 11-05-018; May 2011
CA	Pacific Gas & Electric	2007-2010	Gas & bundled power service	Revenue Cap Stairstep	None	Decision 07-03-044; March 2007
CA	Pacific Gas & Electric	2004-2006	Gas & bundled power service	Revenue Cap Index	None	Decision 04-05-055; May 2004
CA	Pacific Gas & Electric	1993-1995	Gas & bundled power service	Revenue Cap Hybrid	None	Decision 92-12-057; December 1992
CA	Pacific Gas & Electric	1990-1992	Gas & bundled power service	Revenue Cap Hybrid	None	Decision 89-12-057; December 1989
CA	Pacific Gas & Electric	1987-1989	Gas & bundled power service	Revenue Cap Hybrid	None	Decision 86-12-092; December 1986
CA	Pacific Gas & Electric	1984-1986	Gas & bundled power service	Revenue Cap Hybrid	None	Decisions 83-12-068; December 1983 and 85-12-076; December 1985
CA	PacifiCorp	2007-2009, extended to 2010	Bundled power service	Price Cap Index	None	Decisions 06-12-011; December 2006 and 09-04-017; April 2009
CA	PacifiCorp	1994-1996	Bundled power service	Price Cap Index	None	Decision 93-12-106; December 1993
CA	PacifiCorp	1984-1987	Bundled power service	Revenue Cap Hybrid	None	Decisions 84-07-150; July 1984 and 85-12-076; December 1985
CA	San Diego Gas & Electric	2008-2011	Gas & bundled power service	Revenue Cap Stairstep	None	Decision 08-07-046; July 2008
CA	San Diego Gas & Electric	2005-2007	Gas & bundled power service	Revenue Cap Index	Sharing of overearnings only with deadband and multiple sharing bands	Decision 05-03-025; March 2005
CA	San Diego Gas and Electric	1999-2002	Gas & power distribution	Price Cap Index	Sharing of overearnings only above deadband with multiple sharing bands	Decision 99-05-030; May 1999

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Rate Escalation Provisions	Earnings Sharing Provisions	Case Reference
Historic (cont'd)						
United States (cont'd)						
CA	San Diego Gas & Electric	1994-1999	Gas & bundled power service	Revenue Cap Hybrid	Sharing of overearnings only with deadband and multiple sharing bands up to an earnings cap	Decision 94-08-023; August 1984
CA	San Diego Gas & Electric	1989-1993	Gas & bundled power service	Revenue Cap Hybrid	None	Decision 88-12-085; December 1988
CA	San Diego Gas & Electric	1986-1988	Gas & bundled power service	Revenue Cap Hybrid	None	Decision 85-12-108; December 1985
CA	Sierra Pacific Power	2009-2011, extended to 2012	Bundled power service	Price Cap Index	None	Decision 09-10-041; October 2009
CA	Sierra Pacific Power	1990-1992	Bundled power service	Revenue Cap Hybrid	None	Decision 90-07-060; July 1990
CA	Southern California Edison	2012-2014	Bundled power service	Revenue Cap Hybrid	None	Decision 12-11-051; November 2012
CA	Southern California Edison	2009-2011	Bundled power service	Revenue Cap Stairstep	None	Decision 09-03-025; March 2009
CA	Southern California Edison	2006-2008	Bundled power service	Revenue Cap Hybrid	None	Decision 06-05-016; May 2006
CA	Southern California Edison	2004-2006	Bundled power service	Revenue Cap Hybrid	None	Decision 04-07-022; July 2004
CA	Southern California Edison	1997-2001	Power distribution	Price Cap Index	Sharing of over/underearnings outside deadband with multiple sharing bands	Decision 96-09-092; September 1996
CA	Southern California Edison	1986-1991	Bundled power service	Revenue Cap Hybrid	None	Decision 85-12-076; December 1985
CA	Southern California Gas	2008-2011	Gas	Revenue Cap Stairstep	None	Decision 08-07-046; July 2008
CA	Southern California Gas	2005-2007	Gas	Revenue Cap Index	Sharing of overearnings only with deadband and multiple sharing bands	Decision 05-03-025; March 2005
CA	Southern California Gas	1998-2003	Gas	Revenue Cap Index	Sharing of over/underearnings outside deadband with multiple sharing bands	Decision 97-07-054; July 1997
CA	Southern California Gas	1990-1993	Gas	Revenue Cap Hybrid	None	Decision 90-01-016; January 1990
CA	Southern California Gas	1985-1989	Gas	Revenue Cap Hybrid	None	1984, 85-12-076; December 1985, and 87-05-027; May 1987
CA	Southwest Gas	2009-2013	Gas	Revenue Cap Stairstep	None	Decision 08-11-048; November 2008
CO	Public Service Company of Colorado	2012-2014	Bundled power service	Revenue Cap Stairstep	Sharing of overearnings only without deadband, multiple sharing bands up to earnings cap	Decision C12-0494
CT	Connecticut Light & Power	2004-2007	Power distribution	Revenue Cap Stairstep	Even sharing of overearning without deadband	Docket 03-07-02
CT	United Illuminating	2006-2008	Power distribution	Revenue Cap Stairstep	Even sharing of overearning without deadband	Docket 05-06-04
FL	Florida Power & Light	2006-2009	Bundled power service	Rate Freeze with exception for new generating facilities after they are in service and multiple capital and other cost trackers	None	Docket 050045-EI
FL	Progress Energy Florida	2006-2009	Bundled power service	Rate Freeze with 1 step to reflect generation brought in-service and multiple capital and other cost trackers	None	Docket 050078-EI
GA	Georgia Power	2011-2013	Bundled power service	Revenue Cap Stairstep; Rate increases permitted for DSM and major generation plant additions	Sharing of overearnings only with deadband	Docket 31958
IA	MidAmerican Energy	2001-2005, extended to 2013	Bundled power service	Rate Freeze with nuclear capital and other cost trackers	Sharing of overearnings only in multiple sharing bands, deadband not applicable due to no allowed ROE	Dockets RPU-01-3 and RPU-2012-0001
LA	Cleco Power	2009-2014	Bundled power service	Rate Freeze with capital cost tracker	Sharing of overearnings only with deadband up to earnings cap	Order U-30689
MA	Bay State Gas	2006-2015, terminated in 2009	Gas distribution	Price Cap Index	75-25 shareholders-ratepayers sharing around deadband	Docket DTE 05-27
MA	Berkshire Gas	February 2002-January 2012	Gas distribution	No adjustment until September 2004, then Price Cap Index	None	Docket D.T.E. 01-56

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Attrition Relief Mechanism	Earnings Sharing Provisions	Case Reference
Historic (cont'd)						
United States (cont'd)						
MA	Boston Gas (I)	1997-2001	Gas distribution	Price Cap Index	75-25 shareholders-ratepayers sharing around deadband	Docket D.P.U. 96-50-C (Phase I); May 1997
MA	Boston Gas (II)	2004-2013, Terminated in 2010	Gas distribution	Price Cap Index	75-25 shareholders-ratepayers sharing around deadband	Docket DTE 03-40
MA	Blackstone Gas	November 1, 2004 - October 31, 2009	Gas distribution	Price Cap Index	Even sharing of earnings above/below deadband	Docket D.T.E. 04-79
MA	Nstar	2006-2012	Power distribution	Price Cap Index	Deadband with 50-50 sharing of over and underearnings	Docket D.T.E. 05-85
ME	Bangor Gas	2000-2009, extended to 2012	Gas distribution	Price Cap Index	Even sharing of overearnings only. No allowed ROE established for company and no determination of a deadband.	Docket 970795; June 1998
ME	Bangor Hydro Electric (I)	1998-2000	Power distribution	Price Cap Index	50/50 sharing around deadband	Docket 97-116; March 1998
ME	Central Maine Power (I)	1995-1999	Bundled power service	Price Cap Index	Even sharing of earnings above/below deadband	Docket 92-345 Phase II; January 1995
ME	Central Maine Power (II)	2001-2007	Power distribution	Price Cap Index	50-50 sharing below deadband	Docket 99-666; November 2000
ME	Central Maine Power (III)	2009-2013	Power distribution	Price Cap Index: GDPPI - 1%, separate capital cost tracker for AMI	50-50 sharing above 11% ROE	Docket 2007-215
ME	Maine Natural Gas	2010-2012	Gas	Revenue Cap Stairstep with steps conditioned on company earnings	None	Docket 2009-67
NY	Brooklyn Union Gas	October 1, 1991 - September 30, 1994	Gas	Revenue Cap Stairstep	Sharing of overearnings only without deadband	Case 90-G-0981, Opinion 91-21; October 1991
NY	Brooklyn Union Gas	October 1, 1994 - September 30, 1997	Gas	Revenue Cap Stairstep	Sharing of overearnings only without deadband and multiple sharing bands	Case 93-G-0941, Opinion 94-22; October 1994
NY	Central Hudson Gas & Electric	2010-2013	Gas & power distribution	Revenue Cap Stairstep	Sharing of overearnings with deadband and multiple sharing bands	Case 09-E-0588
NY	Central Hudson Gas & Electric	July 1, 2006 - June 30, 2009	Gas & power distribution	Price Cap Stairstep	Sharing of overearnings only with deadband, multiple sharing bands up to earnings cap	Case 05-E-0934 & Case 05-G-0935; July 2006
NY	Consolidated Edison	2010-2013	Gas	Revenue Cap Stairstep	Sharing of overearnings only with deadband that varies annually and multiple sharing bands	Case 09-G-0795
NY	Consolidated Edison	2007-2010	Gas	Revenue Cap Stairstep	Even sharing of overearnings only above deadband, sharing threshold adjustable depending on work with DSM program administrator for first year only	Case 06-G-1332
NY	Consolidated Edison	October 1, 1994 - September 30, 1997	Gas	Revenue Cap Stairstep	Even sharing of overearnings only above deadband	Case 93-G-0996, Opinion 94-2; October 1994
NY	Consolidated Edison	2010-2013	Power distribution	Revenue Cap Stairstep	Sharing of overearnings only above deadband with multiple sharing bands	Case 09-E-0428
NY	Consolidated Edison	April 1, 2005 - March 31, 2008	Power distribution	Price Cap Stairstep	Sharing of overearnings only with multiple bands. No allowed ROE approved.	Case 04-E-0572; March 2005
NY	Consolidated Edison	1992-1995	Bundled power service	Revenue Cap Stairstep	Even sharing of overearnings with varying allowed ROE and no deadband	Opinion 92-8
NY	Keyspan Energy Delivery - Long Island	2010-2012	Gas	Revenue Cap Stairstep	Sharing of overearnings only above deadband with multiple sharing bands, sharing threshold adjustable for good DSM performance	Case 06-G-1185
NY	Keyspan Energy Delivery - New York	2010-2012	Gas	Revenue Cap Stairstep	Sharing of overearnings only above deadband with multiple sharing bands, sharing threshold adjustable for good DSM performance	Case 06-G-1186
NY	Long Island Lighting Company	December 1, 1993 - November 30, 1996	Gas	Revenue Cap Stairstep	Even sharing of overearnings only with deadband	Case 93-G-002, Opinion 93-23; December 1993
NY	Long Island Lighting Company	1992-1994	Bundled power service	Revenue Cap Stairstep	Even sharing of overearnings only without deadband	Opinion 92-8

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Attrition Relief Mechanism	Earnings Sharing Provisions	Case Reference
Historic (cont'd)						
United States (cont'd)						
NY	New York State Electric & Gas	2010-2013	Gas & power distribution	Revenue Cap Stairstep	Sharing of overearnings only with deadband that varies annually and multiple sharing bands	Case 09-E-0715
NY	New York State Electric & Gas	August 1, 1995 - July 31, 1998, Years 2 and 3 not implemented due to restructuring	Bundled power service	Revenue Cap Stairstep	Sharing of overearnings only with annually varying deadbands	Case 94-M-0349, Opinion 95-27; September 1995
NY	New York State Electric & Gas	December 1, 1993 - August 31, 1995	Gas & bundled power service	Revenue Cap Stairstep	Even sharing of overearnings only above deadband	Case 92-G-1086, Opinion 93-22; November 1993
NY	Niagara Mohawk	July 1, 1990 - December 31, 1992	Gas & bundled power service	Revenue Cap Stairstep	Sharing of overearnings only without deadband up to earnings cap	Case 29327, Opinion 89-37; June 1991
NY	Orange & Rockland Utilities	2009-2012	Gas	Revenue Cap Stairstep	Sharing of overearnings only beyond deadband and multiple sharing bands	Case 08-G-1398
NY	Orange & Rockland Utilities	November 1, 2006 - October 31, 2009	Gas	Price Cap Stairstep	Sharing of overearnings only beyond deadband and multiple sharing bands	Case 05-G-1494; October 2006
NY	Orange & Rockland Utilities	November 1, 2003 - October 31, 2006	Gas	Price Cap Stairstep	Even sharing of overearnings only without deadband	Case 02-G-1553; October 2003
NY	Orange & Rockland Utilities	2012-2015	Power distribution	Revenue Cap Stairstep	Sharing of overearnings only with deadband and multiple bands	Case 11-E-0408
NY	Orange & Rockland Utilities	2008-2011	Power distribution	Revenue Cap Stairstep	Sharing of overearnings only above deadband with multiple sharing bands	Case 07-E-0949
NY	Orange & Rockland Utilities	1991-1993	Bundled power service	Revenue Cap Stairstep	Even sharing of overearnings above deadband	Case 89-E-175
NY	Rochester Gas & Electric	2010-2013	Gas & power distribution	Revenue Cap Stairstep	Sharing of overearnings only with deadband that varies annually and multiple sharing bands	Case 09-E-0717
NY	Rochester Gas & Electric	July 1, 1993 - June 30, 1996	Gas & bundled power service	Revenue Cap Stairstep	Earnings cap only	Case 92-G-0741, Opinion No. 93-19; August 1993
OH	AEP-Ohio	2012-2015	Power distribution	Rate Freeze supplemented by capital and other cost trackers	Company subject to Significantly Excessive Earnings Test conducted annually	Case No. 11-346-EL-SSO; August 2012
OH	Cincinnati Gas & Electric	2009-2011	Power generation	Price Cap Stairstep	Company subject to Significantly Excessive Earnings Test conducted annually	Case 08-920-EL-SSO
OR	PacifiCorp	1998-2001	Power distribution	Revenue Cap Index	Sharing of over/underearning outside deadband in multiple sharing bands	Order No. 98-191
US	All	2006-2011	Oil pipelines	Price Cap Index: PPI-Finished Goods + 1.3%	None	RM05-22-000
US	All	2001-2006	Oil pipelines	Price Cap Index: PPI-Finished Goods + 0%	None	RM00-11-000
US	All	1995-2001	Oil pipelines	Price Cap Index: PPI-Finished Goods - 1%	None	RM93-11-000
VT	Green Mountain Power	2007-2010	Bundled power service	Revenue Cap Stairstep	Earnings cap for overearnings above deadband; Multiple sharing bands for earnings apply if actual ROE below deadband (earnings floor of the deadband also applies)	Docket No. 7176
WA	Puget Sound Energy	1997-2001	Bundled power service	Price Cap Stairstep	None	Docket UE-960195
Australia/New Zealand						
Australia	Jemena Gas Networks	2010-2015	Gas distribution	Australia-Style Hybrid	Not reviewed	Access Arrangement Proposal for NSW Gas Networks, Final Decision; June 2010
Australia	All New South Wales distributors	2009-2014	Power distribution	Australia-Style Hybrid	Not reviewed	New South Wales Distribution Determination 2009-10 to 2013-14 Final Decision
Australia	ElectraNet	2008-2013	Power transmission	Australia-Style Hybrid	Not reviewed	Final Decision; April 2008
Australia	ElectraNet	2003-2008	Power transmission	Australia-Style Hybrid	Not reviewed	File No: C2001/1094
Australia	Powerlink	2007-2012	Power transmission	Australia-Style Hybrid	Not reviewed	Final Decision; June 2007

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Rate Escalation Provisions	Earnings Sharing Provisions	Case Reference
Historic (cont'd)						
Australia/New Zealand (cont'd)						
Australia	Powerlink	2002-2007	Power transmission	Australia-Style Hybrid	Not reviewed	File No: 2000/659
Australia	Snowy Mountains	1999-2004 (terminated in 2002 due to merger with Transgrid)	Electric transmission	Australia-Style Hybrid	Not reviewed	File No: C1999/62
Australia	SPI PowerNet	2003-2008	Power transmission	Australia-Style Hybrid	Not reviewed	File No: C2001/1093
Australia	Transend	2009-2014	Power transmission	Australia-Style Hybrid	Not reviewed	Transend Transmission Determination 2009/10-2013/14 (Final Decision)
Australia	Transend	2004-2009	Power transmission	Australia-Style Hybrid	Not reviewed	File No: C2001/1100
Australia	Transgrid	2009-2014	Electric transmission	Australia-Style Hybrid	Not reviewed	Transgrid Transmission Determination 2009/10-2013/14 (Final Decision)
Australia	Transgrid	2004-2009	Power transmission	Australia-Style Hybrid	Not reviewed	File No. M2003/287
Australia	Transgrid	1999-2004	Power transmission	Australia-Style Hybrid	Not reviewed	File No: CG98/118
Australia - New South Wales	Country Energy Gas	2006-2010	Gas distribution	Australia-Style Hybrid	Not reviewed	Revised Access Arrangement for Country Energy Gas Network, Final Decision; November 2005
Australia - New South Wales	AGL Gas Networks	1999-2004	Gas transmission & distribution	Australia-Style Hybrid	Not reviewed	Access Arrangement for AGL Gas Networks Limited, Final Decision; July 2000
Australia - New South Wales	All	2004-2009	Power distribution	Australia-Style Hybrid	Not reviewed	File No: S2004/138
Australia - New South Wales	All	1999-2004	Power distribution	Australia-Style Hybrid	Not reviewed	NEC Determination 99-1
Australia - Northern Territory	Power & Water	2000-2003	Power transmission & distribution	Australia-Style Hybrid	Not reviewed	Revenue Determinations document; June 2000
Australia - Northern Territory	Power & Water	2009-2014	Power transmission & distribution	Price Cap Index: CPI + 0.85%	Not reviewed	Final Determination Networks Pricing: 2009 Regulatory Reset; March 2009
Australia - Northern Territory	Power & Water	2004-2009	Power transmission & distribution	Price Cap Index: CPI - 2%	Not reviewed	Final Determination Networks Pricing: 2004 Regulatory Reset; February 2004
Australia - Victoria	All	2008-2012	Gas distribution	Australia-Style Hybrid	Not reviewed	Gas Access Arrangement Review 2008, 2012, Final Decision; March 2008
Australia - Victoria	All	2003-2007	Gas distribution	Australia-Style Hybrid	Not reviewed	Review of Gas Access Arrangements, Final Decision; October 2002
Australia - Victoria	All	2006-2010	Power distribution	Australia-Style Hybrid	Not reviewed	Electricity Distribution Price Review 2006-2010 (Final Decision Volume 1)
Australia - Victoria	All	2001-2005	Power distribution	Australia-Style Hybrid	Not reviewed	Electricity Distribution Price Determination 2001-2005 (Final Decision Volume 1)
New Zealand	All	2010-2015	Power distribution	Revenue Cap Index: CPI - 0%	None	Commerce Commission Initial Reset of the Default Price-Quality Path for Electricity Distribution Businesses Decisions Paper; November 2009

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Rate Escalation Provisions	Earnings Sharing Provisions	Case Reference
Historic (cont'd)						
Australia/New Zealand (cont'd)						
New Zealand	All	2004-2009	Power distribution	Revenue Cap Index: CPI - 0.86% (Average across firms)	None	Commerce Commission Regulation of Electricity Lines Businesses, Targeted Control Regime, Threshold Decisions; December 2003
Canada						
Alberta	Enmax	2007-2013	Power distribution	Price Cap Index: Input Price Index -1.2%	50-50 for excess earnings above deadband	Decision 2009-035
Alberta	Northwestern Utilities	1999-2002, reopened for 2001-2002	Gas distribution	Revenue Cap Stairstep; at reopener replaced with rate freeze	Sharing of earnings above/below deadband with multiple bands for overearnings; at reopener simplified to 50/50 sharing of overearnings with deadband	Decision U98060; March 1998 and Decision 2000-85; December 2000
Alberta	EPCOR	2002-2005, Terminated 12/31/2003	Power distribution	Price Cap Index	None	City of Edmonton Distribution Tariff Bylaw 12367; August 2000
Northwest Territory	Northland Utilities	2011-2013	Bundled power service	Revenue Cap Stairstep	None	Decision 17-2011; November 2011
Northwest Territory	Northland Utilities (Yellowknife)	2011-2013	Bundled power service	Revenue Cap Stairstep	None	Decision 13-2011; August 2011
Ontario	All Ontario Distributors	2010-2013	Power distribution	Price Cap Index: GDP IPI for Final Domestic Demand - (0.92% to 1.32% depending on company's annual performance in benchmarking studies)	None	EB-2007-0673; July 2008, September 2008, and January 2009
Ontario	All Ontario Distributors	2006-2009	Power distribution	Price Cap Index	None	EB-2006-0089; December 2006
Ontario	All Ontario Distributors	2000-2003	Power distribution	Price Cap Index	50-50 sharing of excess earnings without deadband	RP-1999-0034; January 2000
Ontario	Enbridge Gas Distribution	2008-2012	Gas distribution	Revenue Cap Index: GDP-IPI * 53%	50-50 sharing of excess earnings above deadband	EB-2007-0615; February 2008
Ontario	Union Gas	2008-2012	Gas distribution	Revenue Cap Index: GDP-IPI -1.82%	Sharing of overearnings only with deadband and multiple sharing bands	EB-2007-0606; January 2008
Ontario	Union Gas	2001-2003	Gas distribution	Price Cap Index	50-50 sharing around deadband	RP-1999-0017; July 2001
Great Britain						
Great Britain	All	2008-2013	Gas distribution	British-Style Hybrid	Not reviewed	Review- Final Proposals; Published December 2007
Great Britain	All	2002-2007, extended to 2008	Gas distribution	British-Style Hybrid	Not reviewed	"RPI - X @ 20." Ofgem Publication
Great Britain	All	2007-2012	Gas transmission	British-Style Hybrid	Not reviewed	Transmission Price Control Review; Published December 2006
Great Britain	All	2002-2007	Gas transmission	British-Style Hybrid	Not reviewed	"RPI - X @ 20." Ofgem Publication
Great Britain	All	1998-2002	Gas transmission & distribution	British-Style Hybrid	Not reviewed	Energy Law Journal Volume 23 No. 2 p.444
Great Britain	All	1994-1997	Gas transmission & distribution	British-Style Hybrid	Not reviewed	Energy Law Journal Volume 23 No. 2 p.444
Great Britain	All	1992-1994	Gas transmission & distribution	British-Style Hybrid	Not reviewed	Energy Law Journal Volume 23 No. 2 p.444
England & Wales	All	1995-2000	Power distribution	British-Style Hybrid	Not reviewed	"RPI - X @ 20." Ofgem Publication
Great Britain	All	2010-2015	Power distribution	British-Style Hybrid	Variances of cost from budgets shared though Information Quality Incentive Mechanism	Ofgem Distribution Price Control Review 5
Great Britain	All	2005-2010	Power distribution	British-Style Hybrid	Not reviewed	Ofgem Distribution Price Control Review 4

Table 7 (cont'd)

Jurisdiction	Company	Plan Term	Services Covered	Rate Escalation Provisions	Earnings Sharing Provisions	Case Reference
Historic (cont'd)						
Great Britain (cont'd)						
Great Britain	All	2000-2005	Power distribution	British-Style Hybrid	Not reviewed	"RPI - X @ 20." Ofgem Publication
England & Wales	National Grid	2001-2006, extended to 2007	Power transmission	British-Style Hybrid	Not reviewed	OECD Reviews of Regulatory Reform
England & Wales	National Grid	1997-2001	Power transmission	British-Style Hybrid	Not reviewed	"RPI - X @ 20." Ofgem Publication
England & Wales	National Grid	1993-1997	Power transmission	British-Style Hybrid	Not reviewed	Energy Law Journal Volume 23 No. 2 p.452
Great Britain	All	2007-2012	Power transmission	British-Style Hybrid	Not reviewed	Transmission Price Control Review; Published December 2006
Scotland	All	2000-2005, extended to 2007	Power transmission	British-Style Hybrid	Not reviewed	"RPI - X @ 20." Ofgem Publication
Scotland	All	1995-2000	Power transmission	British-Style Hybrid	Not reviewed	1995 Report by Monopolies and Mergers Commission

¹ Rate freezes without extensive supplemental funding from capital cost trackers are excluded from this table.

VI. Formula Rates

A cost of service formula rate plan (“FRP”) is essentially a wide-scope cost tracker designed to help a utility’s revenue track its cost of service. Earnings surpluses or deficits occur when revenue and cost are not balanced. FRPs have earnings true up mechanisms that adjust rates so that earnings variances are reduced or eliminated. Regulatory cost is contained by limiting review of costs and revenues.

The earnings true up mechanism plays a key role in an FRP. Some mechanisms compare the earned ROE to the target ROE and then calculate the rate adjustment needed to reduce the ROE variance. Others adjust rates for the difference between revenue and a pro forma cost of service calculated using a rate of return target. Both approaches can keep the utility whole for the time value of money.

Earnings true up mechanisms often include a deadband in which variances don’t trigger a rate adjustment. Once the variance exceeds the deadband, however, earnings true up mechanisms in FRPs commonly move the ROE all, or almost all, of the way to its regulated target without sharing earnings variances. This is an important distinction between the earnings true up mechanism of an FRP and the earnings *sharing* mechanisms found in some multiyear rate plans.

Formula rates do not always address major plant additions. In state-regulated FRPs for retail electric services, for instance, major investment programs are generally approved separately through such means as hearings on certificates of public convenience and necessity. The resultant cost is often recovered through a separate tracker.

Mechanisms are sometimes added to an FRP to encourage better operating performance. For example, escalation of revenue that compensates the utility for its O&M expenses may be limited by a formula tied to an inflation index. FRPs in several states that include Illinois and Mississippi contain a number of targeted performance incentive mechanisms.

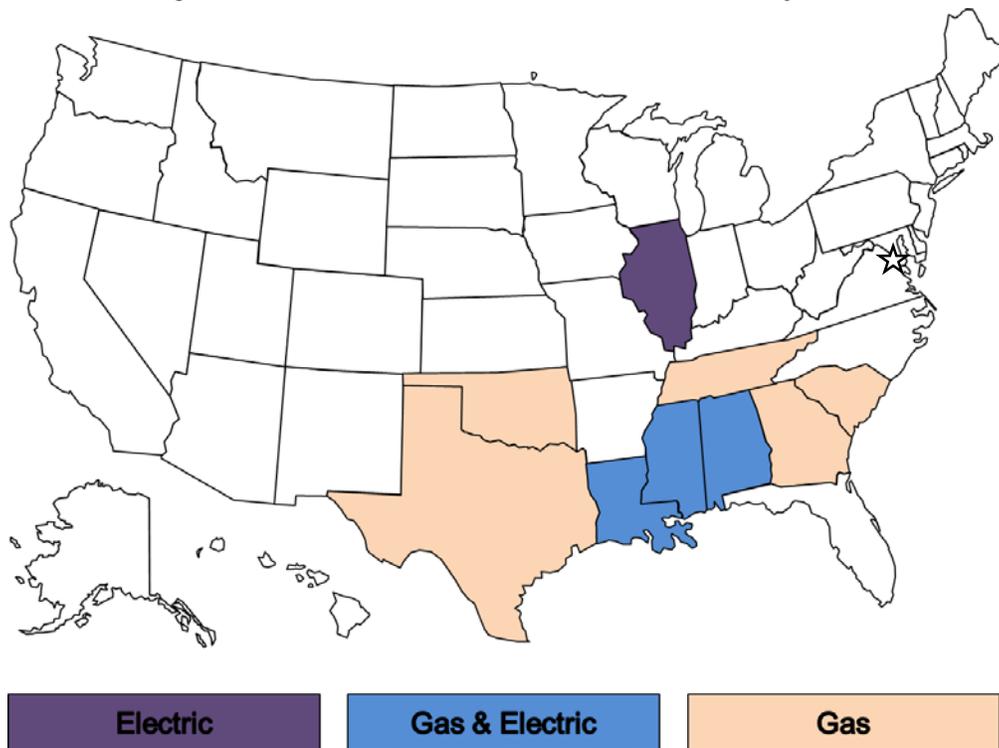
Formula rates have been used at the FERC and its predecessor agency to regulate interstate services of energy utilities for decades. Use of FRPs by the FERC was encouraged in the 1970s and early 1980s by rapid price inflation. Despite slower inflation in recent years, the FERC has made extensive use of formula rates for power transmission in an effort to simplify its daunting regulatory task and facilitate urgently needed investments.

Precedents for retail formula rates, which recover costs of generation and/or distribution, are listed in Table 8 and Figure 9.¹⁰ It can be seen that FRPs for retail utility services are most common in the Southeast and South Central states. Alabama was an early innovator, approving “Rate Stabilization and Equalization”

¹⁰ Some plans labeled as formula rates do not qualify for inclusion in this table and figure based on our definition. These usually take the form of ESMs that may or may not protect the utility from underearning.

plans for Alabama Power and Alabama Gas in the early 1980s.¹¹ Formula rates are now used to regulate electric utilities in Illinois, some gas and electric utilities in Louisiana and Mississippi, and some gas utilities in Georgia, Oklahoma, South Carolina, Tennessee, and Texas. Most of the recent approvals of formula rates have been for gas distribution, as this is one means to avoid the frequent rate cases that declining average use can trigger. However, formula rates were recently authorized legislatively for electric utilities in Arkansas.

Figure 9: Current Retail Formula Rate Precedents by State



¹¹ For further discussion of the Alabama FRP experience see Edison Electric Institute, *Case Study of Alabama Rate Stabilization and Equalization Mechanism*, June 2011.

Table 8

Retail Formula Rate Plan Precedents¹

Jurisdiction	Company Name	Services	Plan Name	Plan Term	Case Reference
Current					
AL	Alabama Power	Bundled Power Service	Rate Stabilization & Equalization Factor (Rate RSE)	2013-open	Dockets 18117 and 18416 (August 2013)
AL	Alabama Gas	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	2014-2018	Dockets 18406 and 18328 (December 2013)
AL	Mobile Gas Service	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	2013-2017	Docket 28101 (August 2013)
GA	Atmos Energy	Gas	Georgia Rate Adjustment Mechanism (GRAM)	2012-open	Docket 34764 (December 2011)
IL	Ameren Illinois	Power Distribution	Rate Modernization Action Plan - Pricing (Rate MAP-P)	2011-2017, extended through 2019	Case 12-0001 (September 2012) and Public Act 098-1175
IL	Commonwealth Edison	Power Distribution	Rate Delivery Service Pricing and Performance (Rate DSPP)	2011-2017, extended through 2019	Case 11-0721 (May 2012) and Public Act 098-1175
LA	Atmos Energy - Louisiana Gas Service	Gas	Rate Stabilization Clause	2014-open	Docket U-32987 (June 2014)
LA	Atmos Energy - Trans Louisiana Gas	Gas	Rate Stabilization Clause	2014-open	Docket U-32987 (June 2014)
LA	Southwestern Electric Power	Electric	Formula Rate Plan	2013-2016	Docket U-32220 (July 2014)
MS	Atmos Energy Corp	Gas	Stable/Rate Rider	2011-present	Docket 05-UN-0503 (April 2011)
MS	Centerpoint Energy	Gas	Rate Regulation Adjustment Rider	2014-open	Docket 2014-UN-060 (May 2014)
MS	Entergy Mississippi	Bundled Power Service	Formula Rate Plan 6 (FRP-6)	2015-open	Docket 2014-UN-132 (December 2014)
MS	Mississippi Power	Bundled Power Service	Performance Evaluation Plan - 5 (PEP-5)	2010-open	Docket 2003-UN-0898 (November 2009)
OK	Centerpoint Energy Arkla	Gas	Performance Based Rate of Change Plan	2010-open	Cause PUD 201000030 (July 2010)
OK	Arkansas Oklahoma Gas	Gas	Performance Based Rate of Change Plan	2013-open	Cause PUD 201200236 (July 2013)
SC	Piedmont Gas	Gas	NA	2005-open	Docket 2005-125-G (September 2005)
SC	South Carolina Electric and Gas	Gas	NA	2005-open	Docket 2005-113-G (October 2005)
TN	Atmos Energy	Gas	Annual Review Mechanism	2015-open	Docket 14-00146 (May 2015)
TX	Centerpoint Energy-Texas Coast Division	Gas	Cost of Service Adjustment Clause	2008-open	Gas Utility Docket 9791 (October 2008)
TX	Atmos Energy-Mid Texas Division	Gas	Rate Review Mechanism	2013-2017	Various Resolutions/Ordinances across cities in service territory, including City of Fort Worth Ordinance 17989-02-2007
TX	Atmos Energy West Texas Division	Gas	Rate Review Mechanism	2014-open	Various Resolutions/Ordinances across cities in service territory including City of Tulia Ordinance 2014-03
TX	Texas Gas Service - Rio Grande Service Area	Gas	Cost of Service Adjustment	2012-open	Various Resolutions/Ordinances across cities in service territory
TX	Texas Gas Service - North Service Area	Gas	Cost of Service Adjustment Tariff	2009-open	Various Resolutions/Ordinances in service territory and Gas Utility Docket 9839 (April 2009)

Table 8 (cont'd)

Jurisdiction	Company Name	Services	Plan Name	Plan Term	Case Reference
Historic					
AL	Alabama Power	Bundled Power Service	Rate Stabilization & Equalization Factor (Rate RSE)	2006-2013	Dockets 18117 and 18416 (October 2005)
AL	Alabama Power	Bundled Power Service	Rate Stabilization & Equalization Factor (Rate RSE)	2002-2006	Dockets 18117 and 18416 (March 2002)
AL	Alabama Power	Bundled Power Service	Rate Stabilization & Equalization Factor (Rate RSE)	1998-2002	Dockets 18117 and 18416 (March 1998)
AL	Alabama Power	Bundled Power Service	Rate Stabilization & Equalization Factor (Rate RSE)	1990-1998	Dockets 18117 and 18416 (March 1990)
AL	Alabama Power	Bundled Power Service	Rate Stabilization & Equalization Factor (Rate RSE)	1985-1990	Dockets 18117 and 18416 (June 1985)
AL	Alabama Power	Bundled Power Service	Rate Stabilization & Equalization Factor (Rate RSE)	1982-1985	Dockets 18117 and 18416 (November 1982)
AL	Alabama Gas	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	2008-2014, later changed to 2013	Dockets 18406 and 18328 (December 2007)
AL	Alabama Gas	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	2002-2007	Dockets 18046 and 18328 (June 2002)
AL	Alabama Gas	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	1996-2001	Dockets 18046 and 18328 (October 1996)
AL	Alabama Gas	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	1991-1995	Dockets 18046 and 18328 (December 1990)
AL	Alabama Gas	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	1987-1990	Dockets 18046 and 18328 (September 1987)
AL	Alabama Gas	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	1985-1987	Dockets 18046 and 18328 (May 1985)
AL	Alabama Gas	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	1983-1985	Dockets 18046 and 18328 (January 1983)
AL	Mobile Gas Service	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	2009-2013	Docket 28101 (December 2009)
AL	Mobile Gas Service	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	2005-2009	Docket 28101 (June 2005)
AL	Mobile Gas Service	Gas	Rate Stabilization & Equalization Factor (Rate RSE)	2001-2005	Docket 28101 (June 2002)
LA	Atmos Energy - Louisiana Gas Service	Gas	Rate Stabilization Plan	2006-2014	Docket U-21484 (May 2006)
LA	Atmos Energy - Louisiana Gas Service	Gas	Rate Stabilization Plan	2001-2003	Docket U-21484 (January 2001)
LA	Atmos Energy - Trans Louisiana Gas	Gas	Rate Stabilization Plan	2006-2014	Dockets U-28814 and U-28588 and U-28587 (May 2006)
LA	Entergy New Orleans	Electric and Gas	Formula Rate Plan	2010-2012	Docket UD-08-03 (April 2009)
LA	Entergy New Orleans	Electric only	Formula Rate Plan	2004-2006	Docket UD-01-04 (May 2003)
MS	Atmos Energy Corp	Gas	Stable/Rate Rider	2009-2011	Docket 05-UN-0503 (December 2009)
MS	Atmos Energy Corp	Gas	Stable/Rate Rider	2006-2009	Docket 05-UN-0503 (October 2005)
MS	Atmos Energy Corp	Gas	Stable/Rate Rider	1992-2006	Docket 92-UA-0230 (September 1992)
MS	Centerpoint Energy	Gas	Rate Regulation Adjustment Rider	2012-2014	Docket 12-UN-139 (May 2012)

Table 8 (cont'd)

Jurisdiction	Company Name	Services	Plan Name	Plan Term	Case Reference
Historic (cont'd)					
MS	Centerpoint Energy Entex	Gas	Rate Regulation Adjustment Rider	2008-2012	Docket 07-UN-548 (December 2007)
MS	Centerpoint Energy Entex	Gas	Rate Regulation Adjustment Rider	1996-2007	Docket 96-UN-0202 (September 1996)
MS	Entergy Mississippi	Bundled Power Service	Formula Rate Plan 5 (FRP-5)	2010-2014	Docket 2009-UN-388 (March 2010)
MS	Entergy Mississippi	Bundled Power Service	Formula Rate Plan 1 (FRP-1)	1995	Docket 93-UA-0301 (March 1994)
MS	Mississippi Power	Bundled Power Service	Performance Evaluation Plan - 4A (PEP- 4A)	2009	Docket 06-UN-0511 (January 2009)
MS	Mississippi Power	Bundled Power Service	Performance Evaluation Plan - 4 (PEP-4)	2004-2009	Docket 03-UN-0898 (May 2004)
MS	Mississippi Power	Bundled Power Service	Performance Evaluation Plan - 3 (PEP-3)	2002-2004	Docket 01-UN-0826 (October 2002)
MS	Mississippi Power	Bundled Power Service	Performance Evaluation Plan - 2A (PEP-2A)	2001-2002	Docket 01-UN-0548 (December 2001)
MS	Mississippi Power	Bundled Power Service	Performance Evaluation Plan - 1A (PEP-1A)	1992-1993	Docket 92-UN-0059 (July 1992)
MS	Mississippi Power	Bundled Power Service	Performance Evaluation Plan - 1 (PEP-1)	1991-1992	Docket 90-UN-0287 (December 1990)
MS	Mississippi Power	Bundled Power Service	Performance Evaluation Plan	1986-1990	Cause PUD U-4761 (August 1986)
OK	Centerpoint Energy Arkla	Gas	Performance Based Rate of Change Plan	2008-2010	Cause PUD 200800062 (July 2008)
OK	Centerpoint Energy Arkla	Gas	Performance Based Rate of Change Plan	2004-2008	Cause PUD 200400187 (November 2004)
OK	Oklahoma Natural Gas	Gas	Performance Based Rate of Change Plan	2010-2014	Docket 200800348 (April 2009)
TX	Atmos Energy-Mid Texas Division	Gas	Rate Review Mechanism	2008 - varying end dates	Various Resolutions/Ordinances across cities in service territory, including City of Fort Worth Ordinance 17989-02-2008
TX	Atmos Energy West Texas Division	Gas	Rate Review Mechanism	2009 - conclusion of rate case to be filed on or before June 1, 2013	Various Resolutions/Ordinances across cities in service territory
TX	Centerpoint Energy - Beaumont East Texas Gas Division	Gas	Cost of Service Adjustment	2009-2011	Various Resolutions/Ordinances across cities in service territory
TX	Texas Gas Service - Rio Grande Service Area	Gas	Cost of Service Adjustment	2009-2011	Various Resolutions/Ordinances across cities in service territory

¹ Table excludes some mechanisms that do not conform to our FRP definition. Some of these are called formula rate plans.

VII. Marketing Flexibility

This is a new section, added since the last survey. We've added it because we (and EEI) believe that marketing flexibility is a growing, strategic issue for EEI members. Several trends in business conditions are driving the need for more flexibility. The growth of distributed energy resources, for example, is a competitive challenge but also brings new service opportunities related to the development of distributed energy assets (e.g., designing, financing, procuring, building, fueling, and maintaining). Grid modernization is providing new functional capabilities to the grid which also create new service opportunities.¹² Examples include new reliability, network management, and transaction management services. Residential and commercial customers also have a growing interest in plug-in electric vehicles, and all retail customers have shown an interest in green power packages that can be supplied from grid-accessed resources.

New services will tend to be optional services that all customers will not want. Customers must be able to decline them; and if they do, not to incur associated costs. Competitive alternatives will be available for many of these services, and customers may have special needs that are difficult to address with standard tariffs. Thus, utilities will need to be able to respond quickly to the market. They will often be price "takers," as opposed to price "makers."

To date, regulatory precedent allowing investor-owned electric utilities to offer many of these services has been limited. This chapter is, in effect, a place holder for expected future electricity precedent.

Why Electric Utilities Need Marketing Flexibility

Of course, electric utilities have always needed flexibility in some of the markets they serve:

- Utility assets have uses in markets other than those for retail electric services. Most notably, surplus generating capacity of VIEUs can be used for sales in bulk power markets. These markets are competitive and price-volatile. Land in transmission corridors can be well-suited for nurseries. Prices utilities charge in competitive markets like these are largely decontrolled. Margins earned in these markets are shared with customers of retail electric services.
- The demand of large-load retail customers is often sensitive to the rates and other terms of service utilities offer because these customers have power-intensive technologies and/or options to cost-competitively cogenerate or operate at alternative locations, or are economically marginal. Customers of this kind are especially important to vertically integrated utilities. Discounts or special contracts for such customers are traditionally allowed but often require specific approval. Commission reviews of special contracts can take months.

¹² For an overview of modernization, see: EPRI, *The Integrated Grid: Realizing the Full Value of Central and Distributed Energy Resources*, 2014.

Marketing Flexibility Remedies

Marketing flexibility runs the gamut from greater commission effort to approve new rates and services by traditional means to “light handed” regulation and outright decontrol. Light handed regulation typically takes the form of expedited approval of market offerings. These offerings may be subject to further scrutiny at a later date (e.g., in the next rate case).

Flexibility is most commonly granted for rates and services with certain characteristics. Light handed regulation of optional rates and services, for example, is based on the grounds that customers are protected by their freedom not to take the service, their continued access to service under standard tariffs, and the availability of alternatives in unregulated markets. Optional offerings include tariffs open to all qualifying customers, special contracts, and discretionary value-added services. Decontrol is typically permitted only for offerings to markets where vigorous competition reigns.

Marketing Flexibility Examples: Electric Utilities

Marketing flexibility is not extensive in the electric utility industry today but there are nonetheless notable examples such as the following.

- Four Florida electric utilities have “Commercial/Industrial Service Rider” (“CISR”) tariffs that allow them to negotiate contract service agreements (“CSAs”) that outline discounts on the base energy and/or demand charges for large load customers who can show that they have viable alternatives to utility-provided electric service.¹³ The discounted rate must cover the incremental cost of service provision and provide a contribution to fixed costs. CSAs do not need commission approval but the commission has the option to conduct a prudence review of any signed contract.
- Duke Energy offers large North Carolina customers an optional Green Source Rider service. The program allows customers that have added at least 1 MW of new load since June 2012 to apply for an annual amount of renewable energy (and the associated renewable energy certificates) over a specific term (between 3-15 years). Customers may request a particular renewable resource in their application. Duke would then negotiate a purchased power agreement on behalf of the customer or attempt to source the energy from its own assets.

¹³ Florida Public Service Commission (2014), Order Approving Commercial/Industrial Service Rider Tariff, Order No. PSC-14-0110-TRF-EI.

Marketing Flexibility in Other Regulated Industries

Regulators and electric utilities considering new forms of marketing flexibility can learn from other utility industries that have experienced technological change, increased competition, and/or complex and changing customer needs. We provide here brief overviews of experience in the telecommunications, gas distribution, gas transmission, and railroad industries.

Telecommunications

Local telephone companies (aka incumbent local exchange carriers or "ILECs") control the traditional distribution networks connecting residences and businesses. The "last mile" services they provide include the interconnection needed for long-distance, data, security, paging, and mobile telephone services as well as local telephone calling. ILECs have in the last 30 years confronted extensive competition, rapid technological change, and new marketing opportunities. Challenges they have faced have many parallels to those emerging for electric utilities.

The Federal Communications Commission ("FCC") regulates interstate access services of ILECs. Other ILEC services are regulated by state commissions. In the 1980s, ILECs were still regulated using cost-of-service regulation with complex reporting and compensation schemes. This was succeeded by multiyear rate plans, often called "price cap" plans since they capped rate escalation but permitted some discounts to encourage greater system use. Price caps were often escalated using inflation – X formulas where the X factor reflected an estimate of the telecommunication industry productivity trend. Prices were separately capped for several baskets of services. This insulated customers in each service basket from discounts offered to other baskets. Insulation was heightened by the infrequency (or elimination) of rate cases and the common lack of earnings sharing. The FCC instituted price caps for interstate access services of ILECs in the early 1990s. Price caps also became commonplace in state ILEC regulation.

Marketing flexibility for ILECs has been most relevant in the following two areas.

Competition in Traditional Service Markets Some services ILECs offered became subject to mounting competitive pressure that varied with the location where service was offered. For example, by the late 1990s, competitive access providers like MFS were constructing high-speed fiber optic networks connecting office buildings in metropolitan areas. These networks allowed businesses and long-distance carriers to connect to customers while bypassing ILEC data facilities. They could also be used to transmit voice traffic, avoiding ILEC voice access charges. High regulated prices were uncompetitive in high-traffic locations where facilities-based competitors entered the market. For services subject to competitive challenges, price cap plans in many states permitted discounts to standard tariffs within certain bands (e.g., rates could rise by 5% less than the price cap index) and/or subject to pricing floors that discouraged predation and cross-subsidization. In markets where pronounced competition could be demonstrated, ILEC rates were sometimes effectively decontrolled.

Innovative Services Technological change gave rise to innovative new services [e.g., Voicemail, Centrex and high-speed data (e.g., digital subscriber loop or "DSL")] which utilize essential network assets of ILECs

and cannot not practically be performed by affiliates.¹⁴ Many of these services were deemed “information” services and were regulated by the FCC. Regulators ultimately permitted ILECs to provide a host of these services and allowed considerable pricing flexibility.

Gas Distribution

Natural gas distributors also need flexibility to address some markets that they serve. Like VIEUs, many large-load customers of gas distributors have price sensitive demands and special needs. Distributors have frequently obtained light handed regulation to respond to these challenges. Nicor Gas, for example, offers a contract service for customers taking delivery near interstate gas pipelines. Contracts are submitted to state regulators for informational purposes and are treated on a proprietary basis. Nicor has similar flexibility to enter into custom contracts with electric power generators. The Company must document to the regulator that revenues from such service exceed the incremental cost of service, thereby ensuring a positive contribution to fixed cost recovery.

Interstate Gas Transmission

Interstate pipeline companies need marketing flexibility for many reasons. Demand for a pipeline’s services can be sensitive to the terms it offers due to competition from other pipelines, dual-fuel capabilities of large volume customers, the extreme variability of need for service, and other special needs. It is difficult to design standard tariffs that meet the needs of all customers. Pipelines also have their own needs, such as an interest in signing anchor shippers to long-term contracts before constructing new facilities. Since 1996, the FERC has engaged in light handed regulation of negotiated pipeline rates to individual customers who have recourse to service under a standard tariff. The FERC gives a quick turnaround to most requests for negotiated contracts. A sizable share of pipeline service is conducted under negotiated rates. A remarkable variety of rate designs have been employed.¹⁵

Railroads

In the railroad industry, MRPs were permitted under the terms of the Staggers Railroad Act of 1980. Railroads were given a freer hand to respond to competition from truckers, waterborne carriers, and other railroads. The railroads also used marketing flexibility to offer discounts to customers that reduced their cost by assembling their own unit trains and not requesting pickups or deliveries in remote locations.

MRPs are less common today in the railroad and telecom industries. However, marketing flexibility continues under new regulatory systems that share with MRPs the attribute of protecting core customers without linking a carrier’s rates closely to its own cost. Railroads have recently used this flexibility to compete for traffic from new oil field developments.

¹⁴ Centrex service, which provided businesses features like call-waiting, auto attendant, voicemail, 4-digit extension dialing and conference calling, could also be sourced by purchasing or leasing a private branch exchange ("PBX"), a private network platform that enabled these features.

¹⁵ See, for example, Comments of the Interstate Natural Gas Association of America in FERC Docket PLO2-6-000, September 2002.

VIII. Conclusions

Regulation of North American energy utilities is evolving to better meet the needs of utilities and their customers in a rapidly changing world. Innovation continues, while some older forms of Altreg such as multiyear rate plans are having a renaissance.

The variety of Altreg approaches that have been established reflects the varied circumstances of utilities. Some are vertically integrated, while others are more specialized wire companies. Capex needs and trends in average use vary greatly. Regulatory traditions also vary across the US and other advanced industrial countries.

No single Altreg approach is right for every situation. The availability of multiple remedies for the underlying challenges increases the chance that an approach has already been tried that would work well, with some adjustments, in new situations. Numerous precedents for an approach should raise confidence that it makes good sense under fairly common circumstances.

Taken together, the many innovations described in this survey can encourage utilities to achieve compensatory rates of return while making needed investments, improving efficiency, and developing more market-responsive rates and services. Regulation can be streamlined, and utilities can be encouraged to embrace cost-effective DERs. Regulators and stakeholders to regulation across the US should give priority attention to these options and consider which kinds of Altreg might work best in their situation.



May 19, 2017

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The Median of Estimated
PRICE-EARNINGS RATIOS
 of all stocks with earnings

19.6

26 Weeks Ago	Market Low	Market High
18.0	10.3	19.6

The Median of Estimated
DIVIDEND YIELDS
 (next 12 months) of all dividend
 paying stocks under review

2.0%

26 Weeks Ago	Market Low	Market High
2.2%	4.0%	2.0%

The Estimated Median Price
APPRECIATION POTENTIAL
 of all 1700 stocks in the Value Line
 universe in the hypothesized
 economic environment 3 to 5 years hence

35%

26 Weeks Ago	Market Low	Market High
40%	185%	35%

ANALYSES OF INDUSTRIES IN ALPHABETICAL ORDER WITH PAGE NUMBER

Numeral in parenthesis after the industry is rank for probable performance (next 12 months).

	PAGE		PAGE		PAGE		PAGE
Advertising (30)	2389	Electric Utility (West) (16)	2224	Investment Co.(Foreign) (-)	421	Railroad (57)	339
Aerospace/Defense (72)	701	Electronics (46)	1317	Machinery (73)	1701	R.E.I.T. (25)	1511
Air Transport (65)	301	Engineering & Const (79)	1230	Maritime (47)	330	Recreation (12)	2301
Apparel (26)	2101	Entertainment (32)	2328	Medical Services (14)	793	Reinsurance (83)	2023
*Automotive (9)	101	Entertainment Tech (88)	2009	*Med Supp Invasive (77)	169	Restaurant (20)	351
Auto Parts (11)	973	Environmental (86)	411	*Med Supp Non-Invasive (81)	195	Retail Automotive (6)	2118
Bank (74)	2501	Financial Svcs. (Div.) (37)	2534	Metal Fabricating (63)	729	Retail Building Supply (48)	1138
Bank (Midwest) (92)	775	Food Processing (56)	1901	Metals & Mining (Div.) (53)	1580	Retail (Hardlines) (27)	2163
Beverage (71)	1967	Foreign Electronics (1)	1985	Natural Gas Utility (75)	546	Retail (Softlines) (22)	2200
Biotechnology (84)	828	Funeral Services (66)	1833	Natural Gas (Div.) (23)	524	Retail Store (15)	2132
Brokers & Exchanges (80)	1791	Furn/Home Furnishings (17)	1147	Newspaper (82)	2382	Retail/Wholesale Food (43)	1945
Building Materials (7)	1101	Healthcare Information (24)	820	Office Equip/Supplies (19)	1409	Semiconductor (51)	1347
Cable TV (2)	1016	*Heavy Truck & Equip (87)	151	Oil/Gas Distribution (76)	604	Semiconductor Equip (49)	1379
Chemical (Basic) (97)	1597	Homebuilding (5)	1123	Oilfield Svcs/Equip. (96)	2418	Shoe (28)	2154
Chemical (Diversified) (69)	2443	Hotel/Gaming (8)	2351	Packaging & Container (35)	1173	Steel (52)	739
Chemical (Specialty) (70)	557	Household Products (55)	1187	Paper/Forest Products (13)	1163	Telecom. Equipment (42)	939
Computers/Peripherals (54)	1391	Human Resources (41)	1640	Petroleum (Integrated) (18)	501	Telecom. Services (21)	918
Computer Software (64)	2586	Industrial Services (44)	379	Petroleum (Producing) (29)	2399	Telecom. Utility (36)	1024
Diversified Co. (61)	1737	Information Services (39)	436	Pharmacy Services (4)	964	Thrift (89)	1501
Drug (59)	1609	IT Services (67)	2608	Pipeline MLPs (60)	616	Tobacco (95)	1993
E-Commerce (33)	1811	Insurance (Life) (93)	1551	Power (50)	1213	Toiletries/Cosmetics (40)	1006
Educational Services (78)	2001	Insurance (Prop/Cas.) (94)	754	Precious Metals (3)	1563	Trucking (85)	318
Electrical Equipment (62)	1301	Internet (58)	2631	*Precision Instrument (68)	112	Water Utility (91)	1781
Electric Util. (Central) (38)	901	Investment Banking (34)	1803	Public/Private Equity (31)	2657	Wireless Networking (10)	588
*Electric Utility (East) (45)	138	Investment Co. (-)	1202	Publishing (90)	2374		

*Reviewed in this week's issue.

In three parts: This is Part 1, the Summary & Index. Part 2 is Selection & Opinion. Part 3 is Ratings & Reports. Volume LXXII, No. 40.

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Index to Stocks

Prices quoted are as of May 9, 2017.

All shares are traded on the New York Stock Exchange except where noted.

PAGE NUMBERS

Bold type refers to Ratings and Reports

NAME OF STOCK	Ticker Symbol	Recent Price	RANKS			3-5 year Target Price Range and % appreciation potential	Current P/E Ratio	% Est'd Yield next 12 mos.	Est'd Earnings 12 mos. to 12-31-17	(f) Est'd Div'd next 12 mos.	Industry Rank	LATEST RESULTS			Do Options Trade?				
			Timeliness	Safety	Technical							Beta	Qtr. Ended	Earnings Per sh.	Year Ago	Qtr. Ended	Latest Div'd	Year Ago	YES
1702	AAON, Inc. (NDQ)	AAON 37.00	▲4	3	3	1.25	35- 55 (N- 50%)	33.6	0.7	1.10	.26	73	3/31	◆.19	.21	3/31	NIL	NIL	YES
702	AAR Corp.	AIR 35.52	3	3	3	1.25	30- 45 (N- 25%)	20.7	0.8	1.72	.30	72	2/28	◆.38	.31	6/30	.075	.075	YES
1968	AB InBev ADR	BUD 119.11	-	1	-	1.00	120- 145 (N- 20%)	26.5	3.6	4.50	4.25	71	3/31	◆.71	.08	3/31	NIL	NIL	YES
1738	ABB Ltd. ADR	ABB 24.56	4	2	2	1.15	30- 40 (20- 65%)	22.3	3.0	1.10	.74	61	3/31	◆.34	.23	3/31	NIL	NIL	YES
380	ABM Industries Inc.	ABM 43.20	3	2	3	.80	45- 60 (5- 40%)	22.7	1.6	1.90	.68	44	1/31	◆.38	.38	6/30	.17	.165	YES
1410	ACCO Brands	ACCO 12.45	2	4	2	1.35	15- 25 (20-100%)	11.3	NIL	1.10	NIL	19	3/31	◆.04	d.01	3/31	NIL	NIL	YES
856	2609 ACI Worldwide (NDQ)	ACIW 23.73	1	3	3	1.05	25- 35 (5- 45%)	23.7	NIL	1.00	NIL	67	3/31	◆d.01	.74	3/31	NIL	NIL	YES
1214	AES Corp.	AES 11.34	▼3	3	5	1.15	16- 25 (40-120%)	NMF	4.2	d.98	.48	50	3/31	◆d.04	.19	6/30	.12	.11	YES
152	AGCO Corp.	AGCO 63.82	3	3	3	1.10	60- 95 (N- 50%)	25.5	0.9	2.50	.56	87	3/31	◆d.02	.09	6/30	◆.14	.13	YES
2383	A.H. Belo	AHC 6.00	-	4	-	.90	7- 11 (15- 85%)	15.0	5.3	.40	.32	82	3/31	d.21	d.04	6/30	◆.08	.08	YES
740	AK Steel Holding	AKS 5.87	2	5	1	1.95	10- 18 (70-205%)	10.9	NIL	.54	NIL	52	3/31	◆.19	d.08	3/31	NIL	NIL	YES
2302	AMC Entertainment Hldgs.	AMC 28.90	3	3	2	1.05	45- 65 (55-125%)	23.7	2.8	1.22	.80	12	3/31	◆.07	.29	6/30	◆.20	.20	YES
2329	AMC Networks (NDQ)	AMCX 55.36	1	3	3	.90	115- 175 (110-215%)	8.9	NIL	6.20	NIL	32	3/31	◆2.10	1.99	3/31	NIL	NIL	YES
1641	AMN Healthcare	AMN 38.35	1	3	3	1.10	45- 65 (15- 70%)	16.3	NIL	2.36	NIL	41	3/31	◆.65	.53	3/31	NIL	NIL	YES
1564	ASA Gold & Precious	ASA 11.65	-	3	1	.90	16- 25 (35-115%)	NMF	0.3	NMF	.04	3	2/28	13.73(q)	11.47(q)	6/30	.02	.02	YES
919	AT&T Inc.	T 38.22	3	1	1	.75	45- 55 (20- 45%)	13.0	5.2	2.94	1.97	21	3/31	◆.74	.72	6/30	.49	.48	YES
920	ATN International (NDQ)	ATNI 66.64	5	3	3	.85	75- 110 (15- 65%)	29.1	2.1	2.29	1.38	21	3/31	◆.53	.54	6/30	.34	.32	YES
1318	AVX Corp.	AVX 16.63	▼4	3	3	1.00	14- 20 (N- 20%)	18.7	2.8	.89	.46	46	3/31	◆.20	.19	3/31	▲.11	.105	YES
2664	2133 Aaron's Inc.	AAN 36.19	2	3	3	1.00	35- 55 (N- 50%)	14.2	0.3	2.55	.11	15	3/31	◆.80	.71	6/30	.028	.025	YES
196	Abaxis, Inc. (NDQ)	ABAX 48.01	3	3	4	1.05	50- 75 (5- 55%)	38.4	1.2	1.25	.56	81	3/31	◆.33	.36	6/30	◆.14	.12	YES
197	Abbott Labs.	ABT 44.67	3	1	2	1.05	60- 70 (35- 55%)	18.2	2.4	2.45	1.06	81	3/31	◆.48	.41	6/30	◆.265	.26	YES
1610	AbbVie Inc.	ABBV 66.17	3	3	3	1.10	90- 135 (35-105%)	12.0	3.9	5.50	2.56	59	3/31	◆1.28	1.15	6/30	.64	.57	YES
★	2201 Abercrombie & Fitch	ANF 12.67	-	3	-	1.30	20- 30 (60-135%)	NMF	6.3	d.10	.80	22	1/31	◆.71	.85	3/31	.20	.20	YES
422	Aberdeen Australia Fd. (ASE)	IAF 6.01	-	3	2	.95	9- 13 (50-115%)	NMF	3.3	NMF	.20	-	1/31	6.38(q)	5.84(q)	3/31	.01	.072	YES
1203	Aberdeen Asia-Pac. Fd.(ASE)	FAX 5.00	-	3	2	.65	4- 7 (N- 40%)	NMF	8.4	NMF	.42	-	10/31	5.69(q)	5.57(q)	3/31	.14	.14	YES
423	Aberdeen Japan Equity	JEQ 8.26	-	3	3	.95	11- 16 (35- 95%)	NMF	1.2	NMF	.10	-	10/31	9.51(q)	8.69(q)	3/31	.089	.048	YES
170	ABIOMED Inc. (NDQ)	ABMD 130.88	3	3	3	1.00	130- 200 (N- 55%)	88.4	NIL	1.48	NIL	77	3/31	◆.33	.24	3/31	NIL	NIL	YES
940	Acacia Communications(NDQ)	ACIA 48.41	-	3	-	NMF	175- 265 (260-445%)	11.4	NIL	4.25	NIL	42	3/31	◆.86	.30	3/31	NIL	NIL	YES
2610	Accenture Plc	ACN 121.07	3	1	3	1.05	115- 140 (N- 15%)	20.5	2.1	5.92	2.53	67	2/28	1.33	1.34	6/30	1.21	1.10	YES
457	2010 Activision Blizzard (NDQ)	ATVI 54.62	3	3	4	1.05	30- 45 (N- N%)	47.1	0.5	1.16	.30	88	3/31	◆.56	.48	6/30	▲.30	.26	YES
153	Actuant Corp.	ATU 27.30	5	3	3	1.40	25- 40 (N- 45%)	23.7	0.1	1.15	.04	87	2/28	.11	.21	3/31	NIL	NIL	YES
1839	1302 Acuity Brands	AYI 191.37	3	3	5	1.30	205- 310 (5- 60%)	21.0	0.3	9.12	.52	62	2/28	1.77	1.80	6/30	.13	.13	YES
1204	Adams Divers. Equity Fd	ADX 14.17	-	2	3	.95	20- 25 (40-75%)	NMF	1.4	NMF	.20	-	12/31	15.22(q)	15.04(q)	6/30	◆.05	.05	YES
2587	Adobe Systems (NDQ)	ADBE 135.60	▲3	3	4	1.15	180- 275 (35-105%)	45.2	NIL	3.00	NIL	64	2/28	.80	.50	3/31	NIL	NIL	YES
941	ADTRAN, Inc. (NDQ)	ADTN 19.90	2	3	3	.85	25- 40 (25-100%)	24.3	1.8	.82	.36	42	3/31	◆.14	.10	6/30	.09	.09	YES
2119	Advance Auto Parts	AAP 146.12	3	3	4	1.00	145- 220 (N- 50%)	19.5	0.2	7.50	.24	6	12/31	1.00	1.21	6/30	.06	.06	YES
1348	Advanced Energy (NDQ)	AEIS 75.68	3	3	3	1.15	65- 95 (N- 25%)	21.0	NIL	3.60	NIL	51	3/31	1.04	.56	3/31	NIL	NIL	YES
2665	1349 Advanced Micro Dev. (NDQ)	AMD 10.18	4	5	1	1.55	5- 10 (N- N%)	NMF	NIL	0.50	NIL	51	3/31	d.04	d.12	3/31	NIL	NIL	YES
2455	1902 AdvancePierre Foods	APFH 40.57	-	3	-	NMF	25- 40 (N- N%)	30.1	1.6	1.35	.66	56	3/31	◆.36	.25	3/31	.16	NIL	YES
437	Advisory Board (NDQ)	ABCO 51.65	-	3	-	.65	40- 65 (N- 25%)	31.7	NIL	1.63	NIL	39	3/31	◆.48	.25	3/31	NIL	NIL	YES
1231	AECOM	ACM 34.20	3	3	2	1.50	45- 65 (30- 90%)	11.3	NIL	3.02	NIL	79	3/31	◆.89	.87	3/31	NIL	NIL	YES
847	1102 Aegion Corp. (NDQ)	AEGN 20.00	2	3	1	1.40	25- 40 (25-100%)	14.3	NIL	1.40	NIL	7	3/31	◆.18	.12	3/31	NIL	NIL	YES
1552	AEGON	AEG 5.33	5	3	3	1.40	6- 9 (15- 70%)	7.6	5.4	.70	.29	93	12/31	.22	d.31	3/31	NIL	NIL	YES
2535	AerCap Hldgs. NV	AER 46.02	1	3	3	1.30	60- 85 (30- 85%)	8.1	NIL	5.70	NIL	37	3/31	◆1.48	1.14	3/31	NIL	NIL	YES
1739	Aerojet Rocketdyne	AJRD 21.10	▲2	3	2	1.15	30- 40 (40- 90%)	25.1	NIL	.84	NIL	61	3/31	◆.08	.08	3/31	NIL	NIL	YES
703	AeroVironment (NDQ)	AVAV 29.49	4	3	3	1.05	35- 50 (20- 70%)	54.6	NIL	.54	NIL	72	1/31	d.09	.27	3/31	NIL	NIL	YES
456	794 Aetna Inc.	AET 142.40	1	2	4	.95	140- 185 (N- 30%)	16.2	1.4	8.80	2.00	14	3/31	2.71	2.30	6/30	▲.50	.25	YES
2536	Affiliated Managers	AMG 154.00	3	3	1	1.40	210- 310 (35-100%)	16.6	0.5	9.30	.80	37	3/31	2.13	1.92	6/30	.20	NIL	YES
1553	Aflac Inc.	AFL 73.86	3	2	3	1.05	75- 100 (N- 35%)	11.3	2.4	6.54	1.76	93	3/31	1.67	1.73	6/30	◆.43	.41	YES
113	Agilent Technologies	A 56.87	3	3	3	1.15	65- 95 (15- 65%)	26.2	0.9	2.17	.53	68	1/31	◆.53	.46	6/30	.132	.115	YES
1565	Agnico Eagle Mines	AEM 46.22	3	3	3	.60	50- 75 (10- 60%)	58.5	0.9	.79	.40	3	3/31	◆.28	.13	6/30	◆.10	.08	YES
1598	Agrium, Inc.	AGU 91.65	-	3	-	1.05	95- 140 (5- 55%)	17.6	4.0	5.22	3.68	97	3/31	d.08	.02	9/30	.875	.875	YES
2444	Air Products & Chem.	APD 145.30	3	1	5	1.05	180- 220 (25- 50%)	21.4	2.6	6.78	3.80	69	3/31	1.43	1.82	6/30	▲.95	.86	YES
2537	Aircastle Ltd.	AYR 21.94	3	3	2	1.30	25- 35 (15- 60%)	10.2	4.7	2.15	1.04	37	3/31	◆.54	.46	6/30	◆.26	.24	YES
2665	1812 Akamai Technologies (NDQ)	AKAM 50.40	3	3	3	1.35	100- 150 (100-200%)	22.4	NIL	2.25	NIL	33	3/31	◆.46	.42	3/31	NIL	NIL	YES

★★ Supplementary Report in this week's issue.

▲ Arrow indicates the direction of a change. When it appears with the Latest Dividend, the arrow signals that a change in the regular payment rate has occurred in the latest quarter.

For Timeliness, 3-5 year Target Price Range, or Estimated Earnings 12 months to 12-31-17, the arrow indicates a change since the preceding week. When a diamond ◆ (indicating a new figure) appears alongside the latest quarterly earnings

results, the rank change probably was primarily caused by the earnings report. In other cases, the change is due to the dynamics of the ranking system and could simply be the result of the improvement or weakening of other stocks.

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NAME OF STOCK	Ticker Symbol	Recent Price	RANKS				3-5 year Target Price Range and % appreciation potential	Current P/E Ratio	% Est'd Yield next 12 mos.	Est'd Earnings 12 mos. to 12-31-17	(f) Est'd Div'd next 12 mos.	LATEST RESULTS							
			Timeliness	Safety	Beta	Technical						Qtr. Ended	Earnings Per sh.	Year Ago	Qtr. Ended	Latest Div'd	Year Ago		
																		Industry Rank	Qtr. Ended
2455 1611 Akorn, Inc. (NDQ)	AKRX	33.27	- 3	- 1	1.15	25- 35 (N- 5%)	31.7	NIL	1.05	NIL	59	3/31	◆3.33	.34	3/31	NIL	NIL	YES	
302 Alaska Air Group	ALK	84.21	2 3	1	1.15	100- 150 (20- 80%)	10.7	1.4	7.90	1.20	65	6/30	◆3.05	1.44	6/30	◆30	.275	YES	
1703 Albany Intl 'A'	AIN	47.45	5 3	3	1.15	45- 70 (N- 50%)	23.7	1.4	2.00	.68	73	3/31	◆4.46	.46	6/30	.17	.17	YES	
636 1612 Albany Molecular (NDQ)	AMRI	18.00	5 4	5	1.25	19- 30 (5- 65%)	NMF	NIL	d.20	NIL	59	3/31	◆d.25	d.29	3/31	NIL	NIL	YES	
2445 Albemarle Corp.	ALB	109.33	5 3	3	1.25	120- 180 (10- 65%)	26.0	1.2	4.20	1.28	69	3/31	◆4.45	2.02	6/30	▲.32	.305	YES	
1581 Alcoa Corp.	AA	30.82	- 3	-	NMF	35- 55 (15- 80%)	11.7	NIL	2.63	NIL	53	3/31	.63	d1.16	3/31	NIL	NIL	YES	
198 Alere Inc.	ALR	49.22	- 3	-	1.00	45- 70 (N- 40%)	17.0	NIL	2.90	NIL	81	9/30	.19	.50	3/31	NIL	NIL	YES	
1613 Alexion Pharm. (NDQ)	ALXN	124.70	3 3	5	1.10	150- 230 (20- 85%)	40.9	NIL	3.05	NIL	59	3/31	.75	.41	3/31	NIL	NIL	YES	
2632 Alibaba Group Hldg Ltd.	BABA	120.00	3 3	4	1.00	130- 195 (10- 65%)	33.6	NIL	3.57	NIL	58	12/31	1.30	.99	3/31	NIL	NIL	YES	
2665 199 Align Techn. (NDQ)	ALGN	138.17	3 3	4	1.20	105- 160 (N- 15%)	44.6	NIL	3.10	NIL	81	3/31	.85	.50	3/31	NIL	NIL	YES	
1946 Alimentation Couche-Tard(TSE)	ATDB.TO	64.11b	3 3	4	1.20	95- 145 (50-125%)	19.2	0.6	3.34	.38	43	1/31	.68(b)	.60(b)	6/30	.09(b)	.068(b)	YES	
829 Alkermes plc (NDQ)	ALKS	57.34	4 3	2	1.35	80- 120 (40-110%)	NMF	NIL	d.05	NIL	84	3/31	d.18	d.12	3/31	NIL	NIL	YES	
755 Allegheny Corp.	Y	578.21	4 1	3	90	540- 660 (N- 15%)	19.3	NIL	30.00	NIL	94	3/31	◆5.80	7.00	3/31	NIL	NIL	YES	
1582 Allegheny Techn. (NDQ)	ATI	16.11	▲3	4	2	90	20- 35 (25-115%)	19.9	NIL	.81	53	3/31	.16	d.58	3/31	NIL	.08	YES	
303 Allegiant Travel (NDQ)	ALGT	146.15	3 3	2	.85	170- 250 (15- 70%)	13.3	1.9	10.95	2.80	65	3/31	2.50	4.29	6/30	.70	.70	YES	
1319 Allegion plc	ALLE	76.98	3 3	3	1.10	85- 125 (10- 60%)	20.4	0.8	3.78	.64	46	3/31	.73	.61	6/30	.16	.12	YES	
1614 Allergan plc	AGN	238.51	3 3	4	1.00	305- 460 (30- 95%)	14.8	0.1	16.10	.28	59	3/31	◆3.35	3.04	6/30	◆.07	NIL	YES	
902 ALLETE	ALE	69.40	3 2	3	.80	50- 70 (N- N%)	21.0	3.1	3.30	2.16	38	3/31	◆.97	.93	6/30	.535	.52	YES	
438 Alliance Data Sys.	ADS	260.21	2 3	2	1.10	290- 435 (10- 65%)	14.1	0.8	18.46	2.08	39	3/31	3.91	3.83	6/30	.52	NIL	YES	
1583 Alliance Resource (NDQ)	ARLP	22.80	2 3	2	1.15	40- 55 (75-140%)	8.1	7.7	2.80	1.75	53	3/31	1.10	.36	6/30	◆.438	.438	YES	
2538 AllianceBernstein Hldg.	AB	21.05	1 3	3	1.20	30- 40 (45- 90%)	10.5	9.6	2.00	2.02	37	3/31	.46	.40	6/30	.46	.40	YES	
903 Alliant Energy	LNT	39.57	3 2	3	70	30- 45 (N- 15%)	19.8	3.2	2.00	1.26	38	3/31	◆.44	.43	6/30	.315	.295	YES	
974 Allison Transmission	ALSN	38.48	4 3	3	1.00	35- 55 (N- 45%)	21.4	1.6	1.80	.60	11	3/31	.52	.28	3/31	.15	.15	YES	
821 Allscripts Healthcare (NDQ)	MDRX	12.06	2 3	3	1.00	15- 25 (25-105%)	19.1	NIL	.63	NIL	24	3/31	◆.13	.13	3/31	NIL	NIL	YES	
756 Allstate Corp.	ALL	84.17	3 1	3	.85	95- 115 (15- 35%)	13.6	1.8	6.19	1.48	94	3/31	1.64	.84	6/30	▲.37	.33	YES	
2502 Ally Financial	ALLY	19.75	3 3	2	1.20	30- 50 (50-155%)	8.8	1.6	2.25	.32	74	3/31	.48	.52	6/30	.08	NIL	YES	
830 Anilym Pharm. (NDQ)	ALNY	54.02	5 4	4	1.45	65- 120 (20-120%)	NMF	NIL	d5.00	NIL	84	3/31	◆d1.25	d1.21	3/31	NIL	NIL	YES	
2633 Alphabet Inc.	GOOG	932.17	3 1	4	1.05	1085-1325 (15- 40%)	26.6	NIL	35.00	NIL	58	3/31	3.73	6.02	3/31	NIL	NIL	YES	
1704 Altra Industrial Motion (NDQ)	AIMC	42.65	4 3	3	1.30	30- 50 (N- 15%)	25.8	1.4	1.65	.60	73	3/31	.36	.34	9/30	.15	.15	YES	
1994 Altria Group	MO	70.29	4 2	3	.65	70- 95 (N- 35%)	22.0	3.5	3.20	2.44	95	3/31	.73	.62	6/30	.61	.565	YES	
2634 Amazon.com (NDQ)	AMZN	952.82	2 3	4	1.10	765-1145 (N- 20%)	NMF	NIL	7.95	NIL	58	3/31	1.48	1.07	3/31	NIL	NIL	YES	
2611 Amdocs Ltd. (NDQ)	DOX	61.82	3 1	3	.80	60- 75 (N- 20%)	21.2	1.4	2.91	.88	67	3/31	◆.76	.71	9/30	◆.22	.195	YES	
795 Amesys, Inc. (NDQ)	AMED	58.80	2 4	4	1.15	35- 60 (N- N%)	31.8	NIL	1.85	NIL	14	3/31	.47	.33	3/31	NIL	NIL	YES	
319 AMERCO (NDQ)	UHAL	369.58	4 3	2	1.10	340- 505 (N- 35%)	16.4	NIL	22.60	NIL	85	12/31	3.33	4.17	3/31	NIL	NIL	YES	
904 Ameren Corp.	AEE	54.21	3 2	3	.65	45- 60 (N- 10%)	19.4	3.3	2.80	1.79	38	3/31	◆.42	.43	6/30	.44	.425	YES	
921 America Movil	AMX	15.46	3 3	5	1.10	14- 20 (N- 30%)	16.6	2.0	.93	.31	21	3/31	.53	.08	3/31	NIL	NIL	YES	
304 Amer. Airlines (NDQ)	AAL	47.08	3 3	3	1.30	50- 75 (5- 60%)	10.8	0.8	4.35	.40	65	3/31	.46	1.17	6/30	◆.10	.10	YES	
975 Amer. Axle	AXL	17.92	▲2	4	2	1.35	25- 40 (40-125%)	5.3	NIL	3.40	NIL	11	3/31	◆1.03	.78	3/31	NIL	NIL	YES
2202 Amer. Eagle Outfitters	AEO	13.94	3 3	4	90	18- 25 (30- 80%)	11.2	3.6	1.25	.50	22	1/31	.39	.42	6/30	.125	.125	YES	
905 Amer. Elec. Power	AEP	67.31	2 1	3	.65	60- 75 (N- 10%)	18.4	3.6	3.65	2.42	38	3/31	1.20	1.02	6/30	.59	.56	YES	
2238 2539 Amer. Express	AXP	78.44	3 1	1	1.10	90- 105 (15- 35%)	13.8	1.7	5.70	1.36	37	3/31	1.34	1.45	9/30	.32	.32	YES	
757 Amer. Financial Group	AFG	97.66	2 2	3	.85	80- 110 (N- 15%)	15.5	1.3	6.30	1.25	94	3/31	◆1.69	1.25	6/30	.313	.28	YES	
456 2540 Amer. Intl Group	AIG	61.82	4 3	2	1.10	70- 100 (15- 60%)	10.7	2.1	5.80	1.28	37	3/31	◆1.36	d.12	6/30	◆.32	.32	YES	
2303 Amer. Outdoor Brands (NDQ)	AOBC	22.11	2 3	5	.95	25- 35 (15- 60%)	12.4	NIL	1.79	NIL	12	1/31	.57	.56	3/31	NIL	NIL	YES	
340 Amer. Railcar (NDQ)	ARIL	38.28	3 3	4	1.40	35- 55 (N- 45%)	11.6	4.2	3.30	1.60	57	3/31	.55	1.16	6/30	.40	.40	YES	
1782 Amer. States Water	AWR	43.32	3 2	3	.75	40- 55 (N- 25%)	25.5	2.2	1.70	.97	91	3/31	.34	.28	6/30	.242	.224	YES	
589 Amer. Tower 'A'	AMT	128.09	3 2	4	.95	130- 175 (N- 35%)	47.4	2.0	2.70	2.62	10	3/31	.67	.58	6/30	▲.62	.51	YES	
558 Amer. Vanguard Corp.	AVD	17.45	3 3	3	1.10	17- 25 (N- 45%)	31.7	0.3	.55	.06	70	3/31	◆.12	.10	6/30	▲.015	NIL	YES	
1783 Amer. Water Works	AWK	75.30	3 3	3	.60	60- 90 (N- 20%)	24.7	2.2	3.05	1.66	91	3/31	◆.52	.46	6/30	▲.415	.375	YES	
856 1103 Amer. Woodmark (NDQ)	AMWD	92.50	1 3	3	1.10	85- 125 (N- 35%)	20.2	NIL	4.57	NIL	7	1/31	.89	.73	3/31	NIL	NIL	YES	
605 AmeriGas Partners	APU	43.89	4 3	1	.75	50- 70 (15- 60%)	22.2	8.7	1.98	3.84	76	3/31	1.14	1.74	6/30	▲.95	.94	YES	
2541 Ameriprise Fin'l	AMP	128.91	3 3	2	1.30	165- 245 (30- 90%)	13.1	2.6	9.87	3.32	37	3/31	2.52	2.09	6/30	▲.83	.75	YES	
200 AmerisourceBergen	ABC	87.54	3 2	3	.85	105- 145 (20- 65%)	14.6	1.7	5.98	1.46	81	3/31	◆1.77	1.68	6/30	◆.365	.34	YES	
1740 Ametek, Inc.	AME	60.30	3 2	4	1.10	50- 70 (N- 15%)	24.6	0.6	2.45	.36	61	3/31	.60	.57	6/30	◆.09	.09	YES	
1419 831 Amgen (NDQ)	AMGN	163.22	2 1	2	1.05	225- 275 (40- 70%)	13.0	2.9	12.60	4.70	84	3/31	3.15	2.90	6/30	◆1.15	1.00	YES	
1380 Amkor Technology (NDQ)	AMKR	11.98	2 5	2	1.30	12- 20 (N- 65%)	20.7	NIL	.58	NIL	49	3/31	d.04	NIL	3/31	NIL	NIL	YES	
1320 Amphenol Corp.	APH	72.66	3 2	3	.95	55- 75 (N- 5%)	24.2	0.9	3.00	.64	46	3/31	.71	.59	9/30	◆.16	.14	YES	
★ 758 AmTrust Financial Svcs.(NDQ)	AFSI	12.81	5 3	3	.90	30- 45 (135-250%)	4.3	5.3	3.00	.68	94	3/31	◆.32	.66	6/30	.17	.15	YES	
2400 Anadarko Petroleum	APC	51.33	4 3	1	1.65	75- 115 (45-125%)	NMF	0.4	d.20	.20	29	3/31	◆d.58	d2.03	3/31	.05	.05	YES	
1350 Analog Devices (NDQ)	ADI	78.50	3 2	1	1.10	95- 130 (20- 65%)	19.4	2.3	4.05	1.80	51	1/31	.94	.56	3/31	▲.45	.42	YES	
1034 114 Analog Corp. (NDQ)	ALOG	73.00	3 3	4	.80	65- 100 (N- 35%)	30.3												

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Bold type refers to Ratings and Reports

RANKS

Industry Rank

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NAME OF STOCK	Ticker Symbol	Recent Price			Safety	Technical	Beta	3-5 year Target Price Range and % appreciation potential	Current P/E Ratio	% Est'd Yield next 12 mos.	Est'd Earnings 12 mos. to 12-31-17	(f) Est'd Div'd next 12 mos.	LATEST RESULTS							
		Timeliness	↓	↑									Qtr. Ended	Earnings Per sh.	Year Ago	Qtr. Ended	Latest Div'd	Year Ago		
																			↓	↑
759 Arch Capital Group (NDQ)	ACGL	95.37	4	1	3	.70	90- 110 (N- 15%)	17.8	NIL	5.35	NIL	94	3/31	1.42	.98	3/31	NIL	NIL	YES	
1903 Archer Daniels Mid'd	ADM	42.36	3	2	1	1.10	50- 70 (20- 65%)	14.9	3.0	2.85	1.28	56	6/30	◆.32	.39	6/30	◆.32	.30	YES	
1584 Arconic Inc.	ARNC	27.26	-	3	-	NMF	30- 50 (10- 85%)	17.6	0.9	1.55	.24	53	3/31	.65	.21	6/30	◆.06	NIL	YES	
2024 Argo Group Int'l (NDQ)	AGIL	65.50	3	2	3	.85	60- 80 (N- 20%)	15.6	1.6	4.20	1.08	83	3/31	◆1.19	.89	3/31	◆1.19	.27	.20	YES
636 1813 Arista Networks	ANET	144.93	2	3	4	1.05	120- 175 (N- 20%)	50.9	NIL	2.85	NIL	33	3/31	◆1.07	.48	3/31	NIL	NIL	YES	
847 1105 Armstrong World Inds.	AWI	45.55	2	3	2	1.20	55- 80 (20- 75%)	17.5	NIL	2.60	NIL	7	3/31	.55	.49	3/31	NIL	NIL	YES	
942 Arris Int'l plc (NDQ)	ARRS	28.04	2	3	3	1.20	40- 60 (45-115%)	10.0	NIL	2.80	NIL	42	3/31	◆.40	.47	3/31	NIL	NIL	YES	
1322 Arrow Electronics	ARW	76.50	4	3	3	1.30	55- 80 (N- 5%)	10.8	NIL	7.10	NIL	46	3/31	◆1.46	1.43	3/31	NIL	NIL	YES	
2120 Asbury Automotive	ABG	58.45	1	3	3	1.30	95- 145 (65-150%)	9.2	NIL	6.35	NIL	6	3/31	1.58	1.36	3/31	NIL	NIL	YES	
2203 Ascena Retail Group (NDQ)	ASNA	3.71	2	4	3	1.35	14- 20 (275-440%)	10.3	NIL	.36	NIL	22	1/31	d.18	d.12	3/31	NIL	NIL	YES	
559 Ashland Global Hldgs.	ASH	123.16	-	3	-	1.10	50- 70 (N- N%)	24.9	1.3	4.95	1.56	70	3/31	1.71	1.83	3/31	.39	.39	YES	
2025 Aspen Insurance Hldgs.	AHL	50.40	5	2	2	.85	40- 55 (N- 10%)	12.3	1.9	4.10	.96	83	3/31	1.36	1.68	6/30	▲.24	.22	YES	
776 Assoc. Banc-Corp	ASB	25.15	3	3	3	1.15	25- 40 (N- 60%)	17.5	1.9	1.44	.48	92	3/31	.35	.27	6/30	.12	.11	YES	
2543 Assurant Inc.	AIZ	104.43	3	2	4	.90	55- 80 (N- N%)	16.6	2.0	6.30	2.12	37	3/31	2.53	3.34	3/31	.53	.50	YES	
2026 Assured Guaranty	AGO	39.27	▲	1	3	1.40	30- 45 (N- 15%)	14.3	1.5	2.75	.58	83	3/31	◆2.49	.43	6/30	.143	.13	YES	
154 Astec Inds. (NDQ)	ASTE	60.37	4	3	2	1.20	75- 115 (25- 90%)	22.8	0.7	2.65	.40	87	3/31	.65	.77	6/30	◆.10	.10	YES	
1502 Astoria Financial	AF	20.42	-	3	-	1.05	18- 25 (N- 20%)	37.8	0.8	.54	.16	89	3/31	.12	.16	6/30	.04	.04	YES	
1615 AstraZeneca PLC (ADS)	AZN	30.90	2	3	4	1.00	35- 50 (15- 60%)	25.8	4.5	1.20	1.40	59	3/31	.21	.26	3/31	.95	.95	YES	
704 Astronics Corp. (NDQ)	ATRO	31.01	3	3	4	1.25	35- 55 (15- 75%)	17.2	NIL	1.80	NIL	72	3/31	◆.38	.38	3/31	NIL	NIL	YES	
2666 822 athenahealth (NDQ)	ATHN	107.93	3	3	5	1.15	155- 235 (45-120%)	89.9	NIL	1.20	NIL	24	3/31	d.03	d.02	3/31	NIL	NIL	YES	
305 Atlas Air Worldwide (NDQ)	AAWW	52.35	3	3	2	1.35	60- 90 (15- 70%)	11.3	NIL	4.65	NIL	65	3/31	d.03	.02	3/31	NIL	NIL	YES	
547 Atmos Energy	ATO	80.55	3	1	3	.70	95- 115 (20- 45%)	22.4	2.3	3.60	1.86	75	3/31	◆1.52	1.38	6/30	◆.45	.42	YES	
2589 Autodesk, Inc. (NDQ)	ADSK	94.74	5	3	4	1.25	45- 70 (N- N%)	NMIF	NIL	d1.50	NIL	64	1/31	d.78	d.17	3/31	NIL	NIL	YES	
976 Autoliv, Inc.	ALV	103.78	3	3	4	1.10	105- 155 (N- 50%)	16.0	2.3	6.49	2.40	11	3/31	1.62	1.51	9/30	◆.60	.58	YES	
2612 Automatic Data Proc. (NDQ)	ADP	97.08	4	1	3	.95	120- 145 (25- 50%)	27.3	2.5	3.55	2.46	67	3/31	1.31	1.17	9/30	.57	.53	YES	
2121 AutoNation, Inc.	AN	40.14	2	3	3	1.05	65- 95 (60-135%)	9.7	NIL	4.12	NIL	6	3/31	.97	.90	3/31	NIL	NIL	YES	
2122 AutoZone Inc.	AZO	707.05	3	3	4	.75	735-1100 (5- 55%)	15.2	NIL	46.39	NIL	6	2/28	8.08	7.43	3/31	NIL	NIL	YES	
1514 AvalonBay Communities	AVB	192.13	3	2	3	.75	215- 290 (10- 50%)	28.2	3.0	6.82	5.85	25	3/31	1.72	1.73	6/30	▲1.42	1.35	YES	
139 AVANGRID, Inc.	AGR	43.75	-	2	-	NMF	35- 45 (N- 5%)	20.8	4.0	2.10	1.73	45	3/31	.77	.63	9/30	.432	.432	YES	
560 Avery Dennison	AVY	83.01	3	2	3	1.00	80- 110 (N- 35%)	18.7	2.2	4.45	1.80	70	3/31	1.11	.94	6/30	▲.45	.41	YES	
1420 1323 Avigilon Corp. (TSE)	AVO.TO	16.48b	2	3	3	1.10	30- 40 (80-145%)	17.3	NIL	.95	NIL	46	12/31	.35(b)	.28(b)	3/31	NIL	NIL	YES	
2164 Avis Budget Group (NDQ)	CAR	27.37	3	4	5	1.60	40- 70 (45-155%)	8.3	NIL	3.30	NIL	27	3/31	◆d.94	d.28	3/31	NIL	NIL	YES	
2225 Avista Corp.	AVA	40.98	2	2	4	.70	35- 45 (N- 10%)	21.0	3.5	1.95	1.45	16	3/31	.96	.92	3/31	▲.358	.343	YES	
1324 Avnet, Inc.	AVT	37.45	4	3	1	1.15	50- 75 (35-100%)	10.2	1.9	3.68	.72	46	3/31	.88	1.01	3/31	▲.18	.17	YES	
1007 Avon Products	AVP	3.54	4	5	4	1.65	5- 10 (40-100%)	17.7	NIL	.20	NIL	40	3/31	◆d.10	d.36	3/31	NIL	NIL	YES	
561 Axalta Coating	AXTA	31.30	3	3	2	1.05	35- 50 (10- 60%)	22.4	NIL	1.40	NIL	70	3/31	.26	.13	3/31	NIL	NIL	YES	
2027 AXIS Capital Hldgs.	AXS	64.16	4	2	2	.80	60- 80 (N- 25%)	16.3	2.4	3.94	1.52	83	3/31	.59	1.07	9/30	◆.38	.35	YES	
725 Axon Enterprise (NDQ)	AAXN	25.18	3	4	4	1.25	35- 60 (40-140%)	56.0	NIL	4.5	NIL	72	3/31	◆.09	.06	3/31	NIL	NIL	YES	
1904 B&G Foods	BGS	40.45	3	3	2	.60	45- 70 (10- 75%)	18.4	4.6	2.20	1.86	56	3/31	◆.58	.65	6/30	.465	.42	YES	
2503 BB&T Corp.	BBT	43.47	3	2	3	1.05	40- 50 (N- 15%)	15.5	2.9	2.80	1.28	74	3/31	.46	.67	6/30	.30	.28	YES	
2034 1025 BCE Inc.	BCE	45.08	3	3	4	.70	40- 60 (N- 35%)	18.8	6.4	2.40	2.87	36	3/31	.65	.63	9/30	▲.718	.512	YES	
705 B/E Aerospace	BEAV						SEE FINAL SUPPLEMENT - PAGE 2034													
1792 BGC Partners (NDQ)	BGCP	11.52	3	3	3	1.20	12- 18 (5- 55%)	10.5	6.3	1.10	.72	80	3/31	◆.23	.18	6/30	▲.18	.16	YES	
1585 BHP Billiton Ltd. ADR	BHP	34.40	3	3	2	1.40	60- 85 (75-145%)	12.3	4.7	2.80	1.60(h)	53	12/31	1.20(p)	d2.12(p)	3/31	▲.80	.32	YES	
352 BJ's Restaurants (NDQ)	BJRI	45.70	1	3	5	.90	90- 135 (95-195%)	22.9	NIL	2.00	NIL	20	3/31	.42	.47	3/31	NIL	NIL	YES	
777 BOK Financial (NDQ)	BOKF	83.15	4	3	3	1.05	80- 115 (N- 40%)	17.7	2.1	4.70	1.76	92	3/31	1.35	.64	6/30	.44	.43	YES	
502 BP PLC ADR	BP	35.35	2	3	3	1.25	50- 75 (40-110%)	14.1	6.8	2.50	2.40	18	3/31	◆.44	d.19	6/30	.60	.60	YES	
1026 BT Group ADR(g)	BT	20.09	▼	3	4	1.00	30- 45 (50-125%)	11.1	4.5	1.81	.90	36	12/31	.41	.64	3/31	.301	.316	YES	
848 1215 BWX Technologies	BWXT	49.60	-	3	-	NMF	50- 70 (N- 40%)	26.1	0.9	1.90	.44	50	3/31	.55	.47	6/30	▲.11	.09	YES	
848 1232 Babcock & Wilcox Enter.	BW	9.81	-	3	-	NMF	25- 35 (155-255%)	12.3	NIL	.80	NIL	79	3/31	◆d.14	.20	3/31	NIL	NIL	YES	
115 Badger Meter	BMI	38.25	4	3	3	1.00	40- 55 (5- 45%)	30.6	1.2	1.25	.46	68	3/31	.30	.27	6/30	.115	.10	YES	
2635 Baidu, Inc. (NDQ)	BIDU	182.98	2	3	4	1.25	140- 210 (N- 15%)	33.3	NIL	5.50	NIL	58	3/31	.67	.84	3/31	NIL	NIL	YES	
2419 Baker Hughes	BHI	58.60	-	3	-	1.30	50- 75 (N- 30%)	NMIF	1.2	d.05	.68	96	3/31	d.30	d2.22	6/30	◆.17	.17	YES	
562 Balchem Corp. (NDQ)	BCPC	82.31	4	3	3	1.00	70- 105 (N- 30%)	31.7	0.5	2.60	.38	70	3/31	◆.48	.37	3/31	▲.38	.34	YES	
1175 Ball Corp.	BLL	79.64	3	2	3	.95	60- 80 (N- N%)	19.0	0.5	4.20	.43	35	3/31	◆.38	d.90	6/30	▼.10	.13	YES	
2504 BancorpSouth	BXS	30.40	4	3	3	1.15	30- 45 (N- 50%)	18.4	1.9	1.65	.58	74	3/31	.41	.34	9/30	.125	.10	YES	
2505 Bank of America	BAC	23.98	3	3	2	1.30	25- 35 (5- 45%)	13.3	1.4	1.80	.33	74	3/31	.41	.28	6/30	◆.075	.05	YES	
2506 Bank of Hawaii	BOH	81.52	4	2	3	1.00	75- 105 (N- 30%)	19.0	2.5	4.30	2.00	74	3/31	1.20	1.16	6/30	.50	.48	YES	
2507 Bank of Montreal (TSE)	BMO.TO	95.70b	3	2	2	.75	100- 135 (5- 40%)	12.2	3.8	7.82	3.64	74								

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RANKS

Industry Rank

LATEST RESULTS

Table with columns: NAME OF STOCK, Ticker Symbol, Recent Price, Timeliness, Safety, Technical, Beta, 3-5 year Target Price Range and % appreciation potential, Current P/E Ratio, % Est'd Yield next 12 mos., Est'd Earnings 12 mos. to 12-31-17, (f) Est'd Div'd next 12 mos., Qtr. Ended, Earnings Per sh., Year Ago, Qtr. Ended, Latest Div'd, Year Ago, and a final column for YES/NO.

(e) All data adjusted for announced stock split or stock dividend. See back page of Ratings & Reports. (f) The estimate may reflect a probable increase or decrease. If a dividend boost or cut is possible but not probable, two figures are shown, the first is the more likely. (g) Dividends subject to foreign withholding tax for U.S. residents. (h) Est'd Earnings & Est'd Dividends after conversion to U.S. dollars at Value Line estimated translation rate. (i) All index data expressed in hundreds. (j) 6 months (q) Asset Value N=Negative figure NA=Not available NMF=No meaningful figure

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RANKS

Industry Rank

Attachment 67

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NAME OF STOCK	Ticker Symbol	Recent Price			RANKS			3-5 year Target Price Range and % appreciation potential	Current P/E Ratio	% Est'd Yield next 12 mos.	Est'd Earnings 12 mos. to 12-31-17	(f) Est'd Div'd next 12 mos.	LATEST RESULTS							
		Timeliness	Safety	Technical	Beta	Qtr. Ended	Earnings Per sh.						Year Ago	Qtr. Ended	Latest Div'd	Year Ago				
																	Qtr. Ended	Earnings Per sh.	Year Ago	Qtr. Ended
1908 Cal-Maine Foods	(NDQ) CALM	37.30	5	3	4	1.05	30- 40	(N- 5%)	44.4	NIL	.84	NIL	56	2/28	.09	1.33	3/31	NIL	.751	YES
591 CalAmp Corp.	(NDQ) CAMP	18.60	4	4	3	1.10	20- 35	(10- 90%)	NMF	NIL	.11	NIL	10	2/28	d.10	.15	3/31	NIL	NIL	YES
1125 CalAtlantic Group	(NDQ) CAA	36.26	1	3	4	1.35	55- 85	(50-135%)	9.2	0.4	3.95	.16	5	3/31	.62	.52	6/30	.04	.04	YES
1034 1909 Calavo Growers	(NDQ) CVGW	66.20	3	3	4	.70	60- 90	(N- 35%)	28.2	1.4	2.35	.90	56	1/31	.34	.37	3/31	NIL	NIL	YES
1419 2155 Caleres Inc.	(NDQ) CAL	28.10	3	3	3	1.10	35- 50	(25- 80%)	13.1	1.0	2.15	.28	28	1/31	.33	.26	6/30	.07	.07	YES
412 Calgon Carbon	CCC	13.85	5	3	4	1.10	15- 25	(10- 80%)	15.4	1.4	.90	.20	86	3/31	♦.02	.11	6/30	♦.05	.05	YES
1785 California Water	CWT	33.25	3	3	3	.75	30- 50	(N- 50%)	25.2	2.2	1.32	.72	91	3/31	.02	d.02	6/30	.18	.173	YES
2305 Callaway Golf	ELY	12.79	3	4	4	1.05	12- 19	(N- 50%)	51.2	0.3	.25	.04	12	3/31	♦.30	.40	6/30	.01	.01	YES
527 Callon Petroleum	CPE	11.99	3	3	3	2.05	16- 25	(35-110%)	20.3	NIL	.59	NIL	23	3/31	.22	d.51	3/31	NIL	NIL	YES
★ 1216 Calpine Corp.	CPN	10.07	2	3	3	1.00	16- 25	(60-150%)	20.1	NIL	.50	NIL	50	3/31	d.16	d.56	3/31	NIL	NIL	YES
834 Cambrex Corp.	CBM	53.45	1	3	3	1.05	65- 100	(20- 85%)	17.1	NIL	3.13	NIL	84	3/31	♦.63	.45	3/31	NIL	NIL	YES
1516 Camden Property Trust	CPT	81.54	3	3	3	.75	85- 125	(5- 55%)	49.4	3.7	1.65	3.00	25	3/31	♦.39	.41	6/30	.75	.75	YES
1586 Cameco Corp.	(TSE) COO.TO	13.68b	5	3	4	1.30	20- 30	(45-120%)	45.6	2.9	.30	.40	53	3/31	d.07(b)	d.02(b)	9/30	10(b)	10(b)	YES
1910 Campbell Soup	CPB	57.17	3	2	3	.70	55- 80	(N- 40%)	18.0	2.4	3.17	1.40	56	1/31	.91	.87	6/30	.35	.312	YES
2510 Can. Imperial Bank	(TSE) CM.TO	108.36b	1	1	1	.75	115- 140	(5- 30%)	10.0	4.7	10.85	5.14	74	1/31	3.50(b)	2.43(b)	6/30	▲1.27(b)	1.18(b)	YES
342 Can. National Railway	CNI	74.21	3	2	2	1.05	70- 100	(N- 35%)	19.8	2.2	3.75	1.65	57	3/31	.86	.75	6/30	▲.413	.28	YES
2403 Can. Natural Res.	(TSE) CNQ.TO	42.35b	2	3	2	1.40	45- 70	(5- 65%)	33.9	2.6	1.25	1.10	29	3/31	♦.25(b)	d.50(b)	9/30	♦.275(b)	23(b)	YES
343 Can. Pacific Railway	CP	155.41	3	3	3	1.20	175- 260	(15- 65%)	18.4	1.4	8.45	2.25	57	3/31	1.88	1.88	9/30	▲.563	.375	YES
2136 Canadian Tire 'A'	(TSE) CTCA.TO	164.69b	1	1	4	.70	190- 235	(15- 45%)	16.3	1.6	10.10	2.60	15	12/31	3.46(b)	3.01(b)	6/30	65(b)	575(b)	YES
1986 Canon Inc. ADR(g)	CAJ	33.99	3	2	3	.95	45- 65	(30- 90%)	24.3	3.5	1.40	1.20	1	3/31	♦.45	.22	6/30	598	594	YES
202 Cantel Medical Corp.	CMD	73.06	▲	3	2	1.00	70- 110	(N- 50%)	38.1	0.2	1.92	.15	81	1/31	.43	.37	3/31	▲.07	.06	YES
2548 Capitol One Fin'l	COF	82.32	5	3	2	1.10	70- 105	(N- 30%)	11.1	1.9	7.40	1.60	37	3/31	1.51	1.85	6/30	♦.40	.40	YES
1503 Capitol Fed. Fin'l	(NDQ) CFFN	14.48	4	2	3	.70	14- 19	(N- 30%)	22.6	2.3	.64	.34	89	3/31	.16	.16	6/30	.085	.085	YES
2420 CARBO Ceramics	CRR	7.72	4	5	2	1.50	20- 40	(160-420%)	NMF	NIL	0.10	NIL	96	3/31	d1.22	d1.07	3/31	NIL	NIL	YES
203 Cardinal Health	CAH	72.39	3	1	3	.95	110- 135	(50- 85%)	16.2	2.6	4.47	1.87	81	3/31	1.20	1.17	9/30	▲.462	.449	YES
848 2004 Career Education	(NDQ) CECO	10.58	4	5	4	1.45	10- 18	(N- 70%)	NMF	NIL	.05	NIL	78	3/31	♦.08	.04	3/31	NIL	NIL	YES
1745 Carlisle Cos.	CSL	102.39	3	2	3	1.05	120- 160	(15- 55%)	16.8	1.4	6.10	1.40	61	3/31	1.04	1.05	6/30	.35	.30	YES
2123 CarMax, Inc.	KMX	60.28	3	3	2	1.20	70- 100	(15- 65%)	17.3	NIL	3.48	NIL	6	2/28	.81	.74	3/31	NIL	NIL	YES
2306 Carnival Corp.	CCL	63.22	3	3	3	.95	70- 105	(10- 65%)	16.6	2.5	3.80	1.60	12	2/28	.48	.38	6/30	▲.40	.35	YES
742 Carpenter Technology	CRS	36.54	3	3	3	1.50	60- 90	(65-145%)	26.5	2.2	1.38	.80	52	3/31	.44	.30	6/30	.18	.18	YES
1834 Carriage Services	CSV	27.26	4	3	3	.95	30- 50	(10- 85%)	19.2	0.7	1.42	.20	66	3/31	.39	.27	6/30	♦.05	.025	YES
2102 Carter's Inc.	CRI	92.38	2	3	5	.80	120- 180	(30- 95%)	16.4	1.6	5.65	1.48	26	3/31	.95	1.04	3/31	▲.37	.33	YES
1948 Casey's Gen'l Stores	(NDQ) CASY	114.56	3	3	5	.70	85- 130	(N- 15%)	23.8	0.9	4.81	1.02	43	1/31	.58	.97	6/30	.24	.22	YES
2456 155 Caterpillar Inc.	CAT	99.29	3	2	3	1.20	105- 145	(5- 45%)	24.5	3.1	4.05	3.08	87	3/31	1.28	.67	6/30	.77	.77	YES
2205 Cato Corp.	CATO	22.88	3	3	5	1.05	35- 50	(55-100%)	15.3	6.3	1.50	1.44	22	1/31	d.48	.42	3/31	.33	.60	YES
1353 Cavium Inc.	(NDQ) CAVM	70.55	3	3	3	1.30	80- 120	(15- 70%)	25.9	NIL	2.72	NIL	51	3/31	.58	.25	3/31	NIL	NIL	YES
2307 Cedar Fair L.P.	FUN	70.47	3	3	3	.85	65- 95	(N- 35%)	19.9	4.9	3.54	3.42	12	3/31	d1.16	d.87	6/30	♦.855	.83	YES
2447 Celanese Corp.	CE	86.65	3	3	3	1.30	85- 125	(N- 45%)	12.0	2.1	7.25	1.84	69	3/31	1.81	1.83	6/30	▲.46	.36	YES
1327 Celastica Inc.	CLS	13.98	3	3	2	1.00	14- 20	(N- 45%)	13.2	NIL	1.06	NIL	46	3/31	.21	.18	3/31	NIL	NIL	YES
1618 Celgene Corp.	(NDQ) CELG	120.10	3	3	2	1.20	160- 240	(35-100%)	16.7	NIL	7.20	NIL	59	3/31	1.16	.99	3/31	NIL	NIL	YES
1108 CEMEX ADS(*)	CX	8.75	1	4	3	1.65	10- 17	(15- 95%)	17.5	NIL	.50	NIL	7	3/31	.14	.03	3/31	NIL	NIL	YES
1651 508 Cenovus Energy	(TSE) CVE.TO	13.05b	1	3	3	1.10	25- 35	(90-170%)	37.3	1.5	.35	.20	18	3/31	.25(b)	d.14(b)	6/30	.05(b)	.05(b)	YES
795 Centene Corp.	CNC	75.73	1	3	3	.85	90- 135	(20- 80%)	15.9	NIL	4.75	NIL	14	3/31	1.12	.74	3/31	NIL	NIL	YES
907 CenterPoint Energy	CNP	27.45	3	3	3	.85	20- 30	(N- 10%)	21.1	3.9	1.30	1.08	38	3/31	♦.44	.36	6/30	♦.268	.258	YES
424 Central Europe/Russia	CEE	21.73	-	4	2	1.10	25- 45	(15-105%)	NMF	2.3	NMF	.50	-	10/31	22.08(q)	21.37(q)	3/31	.321	.486	YES
1188 Central Garden & Pet	(NDQ) CENT	34.99	3	3	2	.75	25- 35	(N- 9%)	24.1	NIL	1.45	NIL	55	3/31	♦.67	.65	3/31	NIL	NIL	YES
1587 Century Aluminum	(NDQ) CENX	12.80	3	4	3	2.15	15- 25	(15- 95%)	NMF	NIL	.03	NIL	53	3/31	d.17	d.19	3/31	NIL	NIL	YES
1027 CenturyLink Inc.	CTL	25.03	-	3	-	.95	25- 40	(N- 60%)	11.6	8.6	2.15	2.16	36	3/31	♦.52	.44	3/31	.54	.54	YES
823 Cerner Corp.	(NDQ) CERN	64.85	2	2	4	.95	60- 85	(N- 30%)	25.8	NIL	2.51	NIL	24	3/31	.59	.53	3/31	NIL	NIL	YES
204 Charles River	CRL	91.70	▲	2	3	1.05	100- 150	(10- 65%)	21.6	NIL	4.25	NIL	81	3/31	♦.97	.78	3/31	NIL	NIL	YES
730 Chart Industries	(NDQ) GTLS	35.02	5	3	3	1.70	45- 65	(30- 85%)	38.9	NIL	.90	NIL	63	3/31	d.09	d.15	3/31	NIL	NIL	YES
1017 Charter Commun.	(NDQ) CHTR	325.52	2	3	3	.95	215- 325	(N- 9%)	51.7	NIL	6.30	NIL	2	3/31	.57	d1.86	3/31	NIL	NIL	YES
1815 Check Point Software	(NDQ) CHKP	106.04	3	2	3	.80	95- 125	(N- 20%)	21.5	NIL	4.93	NIL	33	3/31	1.08	.95	3/31	NIL	NIL	YES
357 Cheesecake Factory	(NDQ) CAKE	62.57	2	2	2	.85	65- 85	(5- 35%)	20.9	1.6	3.00	1.02	20	3/31	♦.72	.68	6/30	♦.24	.20	YES
1746 Chemed Corp.	CHE	203.16	4	3	4	.85	180- 270	(N- 35%)	27.6	0.5	7.35	1.04	61	3/31	1.78	1.45	3/31	.26	.24	YES
778 Chemical Financial	(NDQ) CHFC	49.20	▲	4	3	1.00	50- 75	(N- 50%)	16.1	2.2	3.06	1.08	92	3/31	.67	.60	6/30	.27	.26	YES
457 564 Chemours Co. (The)	CC	40.72	-	4	-	NMF	35- 55	(N- 35%)	16.5	0.3	2.47	.12	70							

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Industry Rank

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Recent Price

Safety

Technical

3-5 year Target Price Range and % appreciation potential

Current P/E Ratio

% Est'd Yield next 12 mos.

Est'd Earnings 12 mos. to 12-31-17

(f) Est'd Div'd next 12 mos.

LATEST RESULTS

Qtr. Ended, Earnings Per sh., Year Ago, Qtr. Ended, Latest Div'd, Year Ago

Main table with columns for Stock Name, Ticker, Price, Ranks (Timeliness, Safety, Technical, Beta), 3-5 year Target Price Range, Current P/E, % Est'd Yield, Est'd Earnings, Est'd Dividends, Qtr. Ended, Earnings Per share, Year Ago, Qtr. Ended, Latest Dividend, Year Ago, and Yes/No.

(a) All data adjusted for announced stock split or stock dividend. (b) Canadian Dollars. (c) Deficit. (d) Est'd Earnings & Est'd Dividends after conversion to U.S. dollars at Value Line estimated translation rate. (e) All index data expressed in hundreds. (f) 6 months (g) Asset Value (h) Negative figure (i) Not available (j) No meaningful figure

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RANKS

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Table with columns: NAME OF STOCK, Ticker Symbol, Recent Price, Timeliness, Safety, Technical, Beta, 3-year Target Price Range and % appreciation potential, Current P/E Ratio, % Est'd Yield next 12 mos., Est'd Earnings 12 mos. to 12-31-17, (f) Est'd Div'd next 12 mos., Qtr. Ended, Earnings Per sh., Year Ago, Qtr. Ended, Latest Div'd, Year Ago. Includes rows for various stocks like JAZZ, JCA.TO, JBLU, JNJ, etc.

(e) All data adjusted for announced stock split or stock dividend. See back page of Ratings & Reports.

(f) New figure this week.

(g) Canadian Dollars.

(h) Deficit.

(i) The estimate may reflect a probable increase or decrease.

If a dividend boost or cut is possible but not probable,

two figures are shown, the first is the more likely.

(j) Dividends subject to foreign withholding tax for U.S. residents.

(k) Est'd Earnings & Est'd Dividends after conversion to U.S. dollars at Value Line estimated translation rate.

(l) All index data expressed in hundreds.

(m) 6 months (n) Asset Value

N=Negative figure NA=Not available NMF=No meaningful figure

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Table with columns: NAME OF STOCK, Ticker Symbol, Recent Price, Timeliness, Safety, Technical, Beta, 3-5 year Target Price Range, Current P/E Ratio, % Est'd Yield, Est'd Earnings, Est'd Div'd, Qtr. Ended, Earnings Per sh., Year Ago, Qtr. Ended, Latest Div'd, Year Ago. Includes rows for 1953 Loblaw Cos. Ltd., 717 Lockheed Martin, 2568 Loews Corp., etc.

★ Supplementary Report in this week's issue. ▲ Arrow indicates the direction of a change. When it appears with the Latest Dividend, the arrow signals that a change in the regular payment rate has occurred in the latest quarter.

For Timeliness, 3-5 year Target Price Range, or Estimated Earnings 12 months to 12-31-17, the arrow indicates a change since the preceding week. When a diamond ♦ (indicating a new figure) appears alongside the latest quarterly earnings

results, the rank change probably was primarily caused by the earnings report. In other cases, the change is due to the dynamics of the ranking system and could simply be the result of the improvement or weakening of other stocks.

PAGE NUMBERS

Bold type refers to Ratings and Reports

RANKS

Industry Rank

LATEST RESULTS

Table with columns: NAME OF STOCK, Ticker Symbol, Recent Price, Timeliness, Safety, Technical, Beta, 3-5 year Target Price Range and % appreciation potential, Current P/E Ratio, % Est'd Yield next 12 mos., Est'd Earnings 12 mos. to 12-31-17, (f) Est'd Div'd next 12 mos., Qtr. Ended, Earnings Per sh., Year Ago, Qtr. Ended, Latest Div'd, Year Ago. Rows include companies like Newmont Mining, NextEra Energy, Nielsen Hldgs. plc, etc.

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RANKS

Industry Rank

Attachment 67

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(e) All data adjusted for announced stock split or stock dividend. See back page of Ratings & Reports.
(f) The estimate may reflect a probable increase or decrease. If a dividend boost or cut is possible but not probable, two figures are shown, the first is the more likely.
(g) Dividends subject to foreign withholding tax for U.S. residents.
(h) Est'd Earnings & Est'd Dividends after conversion to U.S. dollars at Value Line estimated translation rate.
(j) All index data expressed in hundreds.
(p) 6 months (q) Asset Value
N=Negative figure NA=Not available NMF=No meaningful figure

PAGE NUMBERS
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Industry Rank

Attachment 67

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RANKS

LATEST RESULTS

Main table with columns: NAME OF STOCK, Ticker Symbol, Recent Price, Timeliness, Safety, Technical, Beta, 3-5 year Target Price Range, Current P/E Ratio, % Est'd Yield, Est'd Earnings, Est'd Div'd, Qtr. Ended, Earnings Per Sh., Year Ago, Qtr. Ended, Latest Div'd, Year Ago. Includes rows for companies like Standard Motor Prod., Sunoco Logistics Part., and Tesla, Inc.

Supplementary Report in this week's issue. Arrow indicates the direction of a change. When it appears with the Latest Dividend, the arrow signals that a change in the regular payment rate has occurred in the latest quarter.

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RANKS

Industry Rank

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(e) All data adjusted for announced stock split or stock dividend. See back page of Ratings & Reports. (f) The estimate may reflect a probable increase or decrease. (g) Dividends subject to foreign withholding tax for U.S. residents. (h) Est'd Earnings & Est'd Dividends after conversion to U.S. dollars at Value Line estimated translation rate. (i) All index data expressed in hundreds. (j) 6 months (k) Asset Value N=Negative figure NA=Not available NMF=No meaningful figure

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INDUSTRIES, IN ORDER OF TIMELINESS RANK*

Arrow (▲▼) before name indicates that a **significant change in Rank** has occurred since the preceding week.

1 Foreign Electronics	26 Apparel	51▲ Semiconductor	76 Oil/Gas Distribution
2 Cable TV	27 Retail (Hardlines)	52 Steel	77 Med Supp Invasive
3 Precious Metals	28 Shoe	53 Metals & Mining (Div.)	78 Educational Services
4 Pharmacy Services	29 Petroleum (Producing)	54 Computers/Peripherals	79 Engineering & Const
5 Homebuilding	30▼ Advertising	55 Household Products	80 Brokers & Exchanges
6 Retail Automotive	31 Public/Private Equity	56 Food Processing	81 Med Supp Non-Invasive
7 Building Materials	32 Entertainment	57 Railroad	82 Newspaper
8 Hotel/Gaming	33 E-Commerce	58 Internet	83 Reinsurance
9 Automotive	34 Investment Banking	59▼ Drug	84 Biotechnology
10 Wireless Networking	35 Packaging & Container	60 Pipeline MLPs	85 Trucking
11 Auto Parts	36 Telecom. Utility	61 Diversified Co.	86 Environmental
12 Recreation	37 Financial Svcs. (Div.)	62 Electrical Equipment	87 Heavy Truck & Equip
13 Paper/Forest Products	38 Electric Util. (Central)	63 Metal Fabricating	88 Entertainment Tech
14 Medical Services	39 Information Services	64 Computer Software	89 Thrift
15 Retail Store	40▼ Toiletries/Cosmetics	65 Air Transport	90 Publishing
16 Electric Utility (West)	41 Human Resources	66 Funeral Services	91 Water Utility
17 Furn/Home Furnishings	42 Telecom. Equipment	67 IT Services	92 Bank (Midwest)
18 Petroleum (Integrated)	43 Retail/Wholesale Food	68 Precision Instrument	93 Insurance (Life)
19 Office Equip/Supplies	44 Industrial Services	69 Chemical (Diversified)	94 Insurance (Prop/Cas.)
20 Restaurant	45 Electric Utility (East)	70 Chemical (Specialty)	95 Tobacco
21▲ Telecom. Services	46 Electronics	71 Beverage	96 Oilfield Svcs/Equip.
22 Retail (Softlines)	47▼ Maritime	72 Aerospace/Defense	97 Chemical (Basic)
23 Natural Gas (Div.)	48▲ Retail Building Supply	73 Machinery	
24 Healthcare Information	49 Semiconductor Equip	74 Bank	
25 R.E.I.T.	50 Power	75 Natural Gas Utility	

*Based on the Timeliness™ ranks of the stocks in the industry

Noteworthy Rank Changes

Listed below are some of the stocks whose Timeliness ranks have changed this week. We include mostly rank changes caused by fundamentals such as new earnings reports. Even when a significant change in earnings momentum has been forecast, the stock's rank will not be affected until the actual results, confirming that forecast, are reported. In most cases, we omit stocks that have been bumped up or down in rank by the dynamism of the ranking system.

STOCKS MOVING UP IN TIMELINESS RANK

Stock Name	Old Rank	New Rank	Reason for Change	Earnings Est. 12 months to 12-31-17
Amer. Axle	3	2	Surprise factor, greater than average gain. Mar. quarter \$1.03 vs. year ago 78¢. Our estimate was 90¢.	Under Review
Assured Guaranty	2	1	Surprise factor, greater than average gain. Mar. quarter \$2.49 vs. year ago 43¢. Our estimate was 67¢.	Under Review
Broadridge Fin'l	4	3	Higher than expected earnings. Mar. quarter 69¢ vs. year ago 52¢. Our estimate was 60¢.	\$3.20
Conn. Water Services	5	4	Surprise factor, earnings turnaround. Mar. quarter 36¢ vs. year ago 28¢. Our estimate was 30¢.	2.20
MGE Energy	5	4	Higher than expected earnings. Mar. quarter 56¢ vs. year ago 49¢. Our estimate was 48¢.	2.38
Magna Int'l 'A'	3	2	Surprise factor, greater than average gain. Mar. quarter \$1.54 vs. year ago \$1.22. Our estimate was \$1.35.	Under Review
Masonite Int'l	3	2	Higher than expected earnings. Mar. period 78¢ vs. year ago 57¢. Our estimate was 70¢.	4.00
Moody's Corp.	3	2	Higher than expected earnings. Mar. quarter \$1.47 vs. year ago 93¢. Our estimate was \$1.10.	5.20
New Jersey Resources	5	4	Surprise factor, earnings turnaround. Mar. quarter \$1.21 vs. year ago 91¢. Our estimate was 95¢.	Under Review
Paylocity Holding	3	2	Surprise factor, greater than average gain. Mar. quarter 27¢ vs. year ago 12¢. Our estimate was 15¢.	.11
Universal Display (B)	3	2	Higher than expected earnings. Mar. quarter 22¢ vs. year ago 4¢. Our estimate was 10¢.	Under Review

STOCKS MOVING DOWN IN TIMELINESS RANK

Stock Name	Old Rank	New Rank	Reason for Change	Earnings Est. 12 months to 12-31-17
AES Corp.	2	3	Lower than expected earnings. Mar. quarter d4¢ vs. year ago 19¢. Our estimate was 30¢.	Under Review
Belmond Ltd.	3	4	Surprise factor, earnings reversal. Mar. quarter d18¢ vs. year ago d2¢. Our estimate was d5¢.	Under Review
Brookdale Senior Living	3	4	Lower than expected earnings. Mar. quarter d68¢ vs. year ago d26¢. Our estimate was d20¢.	Under Review
Chicago Bridge & Iron (B)	2	3	Lower than expected earnings. Mar. quarter 24¢ vs. year ago \$1.01. Our estimate was 90¢.	Under Review
Computer Prog. & Sys.	3	4	Lower than expected earnings. Mar. quarter 2¢ vs. year ago d13¢. Our estimate was 40¢.	Under Review

STOCKS MOVING DOWN IN TIMELINESS RANK

Stock Name	Old Rank	New Rank	Reason for Change	12 months to 12-31-17
Cooper Tire & Rubber Cubic Corp.	1	2	Dynamism of the ranking system.	
DeVry Education Group	4	5	Lower than expected earnings. Mar. quarter 2¢ vs. year ago 43¢. Our estimate was 45¢.	Under Review
Discovery Communic.	2	3	Earnings reversal. Mar. quarter 70¢ vs. year ago 71¢. Our estimate was 65¢.	\$2.60
Energy Transfer Part. Fluor Corp.	1	2	Surprise factor, earnings reversal. Mar. quarter 37¢ vs. year ago 42¢. Our estimate was 50¢.	Under Review
Fortis Inc.	1	2	Dynamism of the ranking system.	
Fossil Group (B)	2	3	Lower than expected earnings. Mar. quarter 43¢ vs. year ago 85¢. Our estimate was 70¢.	3.00
ILG, Inc.	1	2	Dynamism of the ranking system.	
Ironwood Pharmac.	3	4	Lower than expected earnings. Management forecasts d83¢-\$d1.00 for the Jun. period vs. year ago 12¢. Our estimate was 5¢.	Under Review
Kyocera Corp. ADR	1	2	Dynamism of the ranking system.	
Macy's Inc. (B)	1	2	Surprise factor, earnings reversal. Mar. quarter d36¢ vs. year ago d9¢. Our estimate was d15¢.	Under Review
Mallinckrodt plc	2	3	Surprise factor, earnings reversal. Apr. period 24¢ vs. year ago 40¢. Our estimate was 35¢.	Under Review
National CineMedia (B)	1	2	Dynamism of the ranking system.	
Nektar Therapeutics	1	3	Earnings reversal. Mar. period d8¢ vs. year ago d7¢. Our estimate was d6¢.	.45
Nordstrom, Inc.	3	4	Earnings reversal, as forecast. Mar. quarter d42¢ vs. year ago d14¢. Our estimate was d40¢.	d1.35
Pan Amer. Silver	1	2	Dynamism of the ranking system.	
PharMerica Corp.	1	2	Surprise factor, earnings reversal. Mar. quarter 24¢ vs. year ago 31¢. Our estimate was 39¢.	1.85
Teva Pharmac. ADR	1	2	Surprise factor, earnings reversal. Mar. quarter \$1.06 vs. year ago \$1.20. Our estimate was \$1.20.	Under Review
Vitamin Shoppe (B)	2	3	Surprise factor, earnings reversal. Mar. quarter 35¢ vs. year ago 59¢. Our estimate was 57¢.	2.05
Weis Markets	3	4	Surprise factor, earnings reversal. Mar. period 44¢ vs. year ago 75¢. Our estimate was 70¢.	Under Review
West Corp. (B)	1	-	Rank removed - see supplement.	

(B) Supplementary report in this week's Ratings & Reports.

TIMELY STOCKS IN TIMELY INDUSTRIES

Page No.	Industry (Industry Rank)	Recent Price	RANKS			Current P/E Ratio	% Est'd Yield	Est'd. 3-5 Year Price Apprec.	Page No.	Industry (Industry Rank)	Recent Price	RANKS			Current P/E Ratio	% Est'd Yield	Est'd. 3-5 Year Price Apprec.		
			Timeliness	Technical Safety	Beta							Timeliness	Technical Safety	Beta					
Foreign Electronics (INDUSTRY RANK 1)								Retail Automotive (INDUSTRY RANK 6)											
1987	FUJIFILM Hldgs. ADR	37.67	2	3	3	0.95	16.3	1.8	20- 75%	2120	Asbury Automotive	58.45	1	3	3	1.30	9.2	NIL	65-150%
1988	Hitachi, Ltd. ADR	56.12	2	3	3	1.10	11.9	2.0	N- 50%	2121	AutoNation, Inc.	40.14	2	3	3	1.05	9.7	NIL	60-135%
1989	Kyocera Corp. ADR	58.74	2	2	3	1.00	25.1	1.3	N- 45%	2125	Group 1 Automotive	62.36	1	3	2	1.25	8.3	1.6	45-115%
1991	Philips Electronics NV	35.99	1	3	3	1.10	27.7	2.6	N- 40%	2126	KAR Auction Svcs.	42.97	2	3	3	1.00	23.9	3.1	5- 50%
1992	Sony Corp. ADR	35.41	2	3	3	1.25	38.9	0.6	N- 55%	2127	Lithia Motors	91.44	1	3	3	1.30	10.6	1.2	25- 90%
Cable TV (INDUSTRY RANK 2)								Building Materials (INDUSTRY RANK 7)											
1017	Charter Communic.	325.52	2	3	3	0.95	51.7	NIL	N- N%	1102	Aegion Corp.	20.00	2	3	1	1.40	14.3	NIL	25-100%
1018	Cogeco Communic.	79.68	1	3	4	0.65	13.5	2.2	N- 20%	1103	Amer. Woodmark	92.50	1	3	3	1.10	20.2	NIL	N- 35%
1019	Comcast Corp.	39.08	2	2	3	0.90	20.6	1.6	15- 55%	1104	Apogee Enterprises	54.25	2	3	2	1.20	16.0	1.0	10- 65%
1022	Liberty Global plc	30.85	1	3	3	1.10	NMF	NIL	30- 95%	1105	Armstrong World Inds.	45.55	2	3	2	1.20	17.5	NIL	20- 75%
Precious Metals (INDUSTRY RANK 3)								Hotel/Gaming (INDUSTRY RANK 8)											
1566	AngloGold Ashanti ADS	10.60	2	4	4	0.65	13.3	0.9	90-230%	2353	Boyd Gaming	24.60	1	4	4	1.50	20.5	0.8	N- 85%
1567	Barrick Gold	16.28	2	3	2	0.75	20.6	0.7	N- 55%	2355	Churchill Downs	167.95	2	3	3	0.90	24.7	0.9	N- 30%
1568	Eldorado Gold	3.55	2	4	4	1.15	35.5	NIL	95-240%	2356	Extended Stay America	17.74	1	3	4	1.15	20.9	4.7	15- 95%
1570	Goldcorp Inc.	13.68	2	3	3	0.75	30.4	0.6	120-190%	2358	Hyatt Hotels	57.99	2	3	3	1.10	44.6	NIL	5- 55%
1571	Kinross Gold	3.75	2	5	4	0.90	93.8	NIL	N- 60%	2361	Las Vegas Sands	58.04	2	3	3	1.40	23.7	5.0	40-100%
1572	Newmont Mining	32.76	2	3	3	0.80	33.8	0.6	N- 5%	2362	MGM Resorts Int'l	30.96	2	3	3	1.55	25.8	1.4	15- 80%
1573	Pan Amer. Silver	16.10	2	4	2	1.10	29.3	0.6	5- 85%	2363	Marcus Corp.	33.25	1	3	3	1.00	22.2	1.5	5- 50%
1575	Royal Gold	70.34	1	3	3	0.90	37.0	1.4	35-105%	2365	Marriott Vacations	114.00	2	3	5	1.20	21.9	1.2	N- 25%
1576	Silver Wheaton	19.26	2	3	2	1.05	31.6	1.5	30- 80%	2367	Penn Nat'l Gaming	18.71	2	3	3	1.20	19.7	NIL	35- 85%
1578	Tahoe Resources	8.68	1	4	4	1.15	13.4	2.8	105-245%	2372	Wyndham Worldwide	96.67	2	3	4	1.10	16.4	2.4	N- 25%
1579	Yamana Gold	2.50	2	5	3	1.05	41.7	0.8	20-140%										
Pharmacy Services (INDUSTRY RANK 4)																			
965	CVS Health	81.10	1	1	5	0.85	13.9	2.5	60- 90%										
967	Express Scripts	62.08	1	3	3	0.95	12.5	NIL	60-140%										
970	PharMerica Corp.	24.80	2	4	4	1.15	13.4	NIL	40-120%										
Homebuilding (INDUSTRY RANK 5)																			
1125	CalAtlantic Group	36.26	1	3	4	1.35	9.2	0.4	50-135%										
1126	Horton D.R.	33.21	1	3	2	1.30	12.0	1.2	5- 65%										
1130	M.D.C. Holdings	34.10	2	3	3	1.30	13.9	2.9	N- 45%										
1131	Meritage Homes	40.05	2	3	3	1.40	10.2	NIL	50-125%										
1133	PulteGroup, Inc.	22.71	2	3	2	1.40	9.9	1.6	55-120%										
1134	St. Joe Corp.	17.50	2	3	5	1.00	NMF	NIL	N- 15%										
1137	Toll Brothers	37.36	2	3	3	1.30	12.1	0.9	5- 60%										

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Continued from preceding page

TIMELY STOCKS

Stocks Ranked 2 (Above Average) for Relative Price Performance in the Next 12 Months

Table with columns: Page No., Stock Name, Ticker, Recent Price, Ranks (Technical, Safety, Current P/E, Est'd Yield), Industry Group, Industry Rank, Stock Name, Ticker, Recent Price, Ranks (Technical, Safety, Current P/E, Est'd Yield), Industry Group, Industry Rank. Lists various stocks like ACCO Brands, AK Steel Holding, Aaron's Inc., etc.

▲ Arrow indicates the direction of a change in Timeliness. ■ Newly added this week.

HIGHEST DIVIDEND YIELDING STOCKS (Based upon estimated year-ahead dividends per share)

Table with 14 columns: Page No., Stock Name, Recent Price, Time-liness, 5-year Potential, Safety Rank, Dividend Yield, P/E Ratio, Est'd Yield, Industry Group, Industry Rank, Page No., Stock Name, Recent Price, Time-liness, 5-year Potential, Safety Rank, Dividend Yield, P/E Ratio, Est'd Yield, Industry Group, Industry Rank.

STOCKS WITH HIGH 3- TO 5-YEAR PRICE APPRECIATION POTENTIAL

Some of the stocks tabulated below are very risky and appreciation potentialities tentative. Please read the full-page reports in Ratings & Reports to gain an understanding of the risks entailed. Some of these stocks may not be timely investment commitments. (See the Performance Ranks below.)

Table with 14 columns: Page No., Stock Name, Recent Price, 3-to 5-year Potential, Time-liness, Safety Rank, Industry Group, Industry Rank, Page No., Stock Name, Recent Price, 3-to 5-year Potential, Time-liness, Safety Rank, Industry Group, Industry Rank.

WIDEST DISCOUNTS FROM BOOK VALUE

Stocks whose ratios of recent price to book value are lowest

Page No.	Stock Name	Ticker	Recent Price	Book Value Per sh.*	Percent Price-to-Book Value	Time-line	Safety Rank	Beta	P/E Ratio	Est'd Yield	Industry Group	Industry Rank
1554	Genworth Fin'l	GNW	3.66	29.30	12%	–	5	1.95	4.3	NIL	Insurance (Life)	93
338	Teekay Corp.	TK	7.59	44.75	17%	3	5	1.95	NMF	2.9	Maritime	47
2431	Noble Corp. plc	NE	4.73	22.05	21%	3	5	1.75	NMF	NIL	Oilfield Svcs/Equip.	96
2441	Transocean Ltd.	RIG	10.96	40.05	27%	3	5	1.60	NMF	NIL	Oilfield Svcs/Equip.	96
2424	Ensco plc	ESV	7.83	26.95	29%	2	4	1.60	NMF	0.5	Oilfield Svcs/Equip.	96
331	Diana Shipping	DSX	3.81	12.50	30%	–	4	1.55	NMF	NIL	Maritime	47
306	Bristow Group	BRS	13.22	41.45	32%	–	5	1.55	NMF	2.1	Air Transport	65
2436	Rowan Cos. plc	RDC	13.77	39.90	35%	3	3	1.40	NMF	NIL	Oilfield Svcs/Equip.	96
1760	LSB Inds.	LXU	8.68	24.14	36%	–	5	1.90	NMF	NIL	Diversified Co.	61
1552	AEGON	AEG	5.33	14.25	37%	5	3	1.40	7.6	5.4	Insurance (Life)	93
2203	Ascena Retail Group	ASNA	3.71	9.70	38%	2	4	1.35	10.3	NIL	Retail (Softlines)	22
1031	Frontier Communic.	FTR	1.43	3.70	39%	4	5	1.10	NMF	11.2	Telecom. Utility	36
2420	CARBO Ceramics	CRR	7.72	19.45	40%	4	5	1.50	NMF	NIL	Oilfield Svcs/Equip.	96
2582	Voya Financial	VOYA	36.63	86.40	42%	3	3	1.25	9.6	0.1	Financial Svcs. (Div.)	37
978	China Auto. Sys.	CAAS	4.46	10.15	44%	–	5	1.45	5.2	NIL	Auto Parts	11
1632	PDL BioPharma	PDLI	2.27	5.05	45%	5	4	1.05	11.4	NIL	Drug	59
2422	Diamond Offshore	DO	14.69	28.05	52%	3	3	1.20	19.6	NIL	Oilfield Svcs/Equip.	96
1579	Yamana Gold	AUY	2.50	4.80	52%	2	5	1.05	41.7	0.8	Precious Metals	3
741	ArcelorMittal	MT	7.76	13.50	57%	1	4	1.70	12.9	NIL	Steel	52
2426	Helix Energy Solutions	HLX	5.86	10.35	57%	2	4	2.00	NMF	NIL	Oilfield Svcs/Equip.	96
2334	Global Eagle Entertain.	ENT	2.85	4.95	58%	3	4	1.30	NMF	NIL	Entertainment	32
947	Comtech Telecom.	CMTL	14.39	22.75	63%	3	4	1.25	33.5	2.8	Telecom. Equipment	42
2410	Marathon Oil Corp.	MRO	14.40	22.40	64%	2	3	1.80	NMF	1.4	Petroleum (Producing)	29
2502	Ally Financial	ALLY	19.75	30.10	66%	3	3	1.20	8.8	1.6	Bank	74
2387	News Corp. 'A'	NWSA	13.11	19.40	68%	4	3	1.30	57.0	1.5	Newspaper	82
1568	Eldorado Gold	EGO	3.55	5.15	69%	2	4	1.15	35.5	NIL	Precious Metals	3
108	Nissan Motor ADR	NSANY	19.11	27.55	69%	2	3	1.05	6.2	4.4	Automotive	9
332	Frontline Ltd.	FRO	6.29	8.80	71%	2	5	1.40	25.2	9.5	Maritime	47
2029	Greenlight Capital Re	GLRE	20.75	29.35	71%	3	3	1.00	8.3	NIL	Reinsurance	83
750	Schnitzer Steel	SCHN	19.15	27.00	71%	3	3	1.50	23.9	3.9	Steel	52
933	Telephone & Data	TDS	27.50	39.00	71%	3	3	1.25	91.7	2.3	Telecom. Services	21
937	Vodafone Group ADR	VOD	26.95	37.95	71%	2	3	1.10	29.9	5.9	Telecom. Services	21
1221	First Solar, Inc.	FSLR	35.78	49.50	72%	4	3	1.60	NMF	NIL	Power	50
2201	Abercrombie & Fitch	ANF	12.67	17.35	73%	–	3	1.30	NMF	6.3	Retail (Softlines)	22
2540	Amer. Int'l Group	AIG	61.82	84.50	73%	4	3	1.10	10.7	2.1	Financial Svcs. (Div.)	37
2026	Assured Guaranty	AGO	39.27	53.65	73%	1	3	1.40	14.3	1.5	Reinsurance	83
333	GasLog Ltd.	GLOG	13.45	18.45	73%	3	4	1.70	24.5	4.2	Maritime	47
516	Petroleo Brasileiro ADR	PBR	9.36	12.75	73%	3	5	1.90	NMF	NIL	Petroleum (Integrated)	18
320	ArcBest Corp.	ARCB	18.50	25.00	74%	3	3	1.65	13.2	1.7	Trucking	85
1124	Beazer Homes USA	BZH	14.44	19.60	74%	3	5	1.85	17.6	NIL	Homebuilding	5
927	Iridium Commun.	IRDM	10.50	14.05	75%	1	4	0.95	14.0	NIL	Telecom. Services	21
2417	Whiting Petroleum	WLL	8.64	11.45	75%	2	5	2.30	NMF	NIL	Petroleum (Producing)	29
758	AmTrust Financial Svcs.	AFSI	12.81	16.70	77%	5	3	0.90	4.3	5.3	Insurance (Prop/Cas.)	94
2406	Creasant Point Energy	CPG.TO	13.11	16.95	77%	2	3	1.50	NMF	2.7	Petroleum (Producing)	29
1413	Essendant Inc.	ESND	17.22	22.35	77%	3	3	1.15	12.8	3.3	Office Equip/Supplies	19
2324	Speedway Motorsports	TRK	17.01	21.95	77%	3	3	0.90	15.5	3.5	Recreation	12
2552	EZCORP, Inc.	EZPW	8.85	11.40	78%	–	4	1.45	15.3	NIL	Financial Svcs. (Div.)	37
2523	Popular Inc.	BPOP	40.89	52.45	78%	3	3	1.35	11.5	2.4	Bank	74
2511	Citigroup Inc.	C	60.23	76.65	79%	3	3	1.35	11.5	1.1	Bank	74
2565	Kemper Corp.	KMPR	37.30	47.00	79%	4	3	1.05	14.6	2.6	Financial Svcs. (Div.)	37
107	Honda Motor ADR	HMC	28.47	35.75	80%	1	3	1.05	10.6	3.0	Automotive	9
1646	Kelly Services 'A'	KELYA	22.06	27.65	80%	3	3	1.10	12.6	1.4	Human Resources	41
2030	Maiden Hldgs. Ltd.	MHLD	10.95	13.70	80%	4	3	0.95	5.8	5.6	Reinsurance	83
633	Energy Transfer Part.	ETP	22.53	27.80	81%	2	3	1.50	18.8	9.5	Pipeline MLPs	60
2568	Leows Corp.	L	46.33	56.85	81%	2	2	0.95	14.0	0.5	Financial Svcs. (Div.)	37
1594	Teck Resources 'B'	TECKB.TO	24.85	30.70	81%	3	5	1.60	7.0	0.8	Metals & Mining (Div.)	53
607	Clean Energy Fuels	CLNE	2.51	3.05	82%	–	5	1.90	NMF	NIL	Oil/Gas Distribution	76
1619	Endo Int'l plc	ENDP	12.82	15.55	82%	1	4	1.05	3.6	NIL	Drug	59
1605	Mosaic Company	MOS	23.49	28.80	82%	3	3	1.30	25.0	2.6	Chemical (Basic)	97
774	XL Group Ltd.	XL	42.00	51.30	82%	4	3	0.90	12.4	2.1	Insurance (Prop/Cas.)	94
305	Atlas Air Worldwide	AAWW	52.35	63.25	83%	3	3	1.35	11.3	NIL	Air Transport	65
1642	CDI Corp.	CDI	7.85	9.45	83%	–	4	1.35	NMF	NIL	Human Resources	41
1557	MetLife Inc.	MET	52.31	62.95	83%	3	3	1.35	9.7	3.3	Insurance (Life)	93
541	QEP Resources	QEP	11.51	13.85	83%	2	4	1.70	NMF	NIL	Natural Gas (Div.)	23
2032	Third Point Reinsurance	TPRE	12.40	15.00	83%	4	3	0.90	5.9	NIL	Reinsurance	83
2535	AerCap Hldgs. NV	AER	46.02	54.55	84%	1	3	1.30	8.1	NIL	Financial Svcs. (Div.)	37
1013	Regis Corp.	RGS	9.47	11.30	84%	4	3	1.05	49.8	NIL	Toiletries/Cosmetics	40
1229	TransAlta Corp.	TA.TO	7.24	8.50	85%	2	3	0.85	14.5	2.2	Power	50
2547	CIT Group	CIT	46.70	54.20	86%	4	4	1.15	18.0	1.3	Financial Svcs. (Div.)	37
711	Embraer SA	ERJ	19.31	22.35	86%	3	3	1.05	11.7	0.8	Aerospace/Defense	72
1570	Goldcorp Inc.	GG	13.68	16.00	86%	2	3	0.75	30.4	0.6	Precious Metals	3
1164	Domtar Corp.	UFS	38.13	43.95	87%	3	3	1.10	14.8	4.4	Paper/Forest Products	13
1624	Mallinckrodt plc	MNK	44.55	51.45	87%	2	3	1.30	8.1	NIL	Drug	59
2174	Fossil Group	FOSL	18.15	20.65	88%	4	3	1.30	NMF	NIL	Retail (Hardlines)	27
1761	Leucadia National	LUK	25.30	28.90	88%	3	3	1.25	18.1	1.0	Diversified Co.	61
2198	West Marine	WMAR	10.55	12.00	88%	2	3	1.00	33.0	1.9	Retail (Hardlines)	27
1600	CVR Partners, LP	UAN	4.58	5.15	89%	5	3	1.20	NMF	9.8	Chemical (Basic)	97
1125	CalAtlantic Group	CAA	36.26	40.95	89%	1	3	1.35	9.2	0.4	Homebuilding	5
2172	Container Store Group	TCS	4.09	4.60	89%	–	5	1.40	16.4	NIL	Retail (Hardlines)	27
510	Husky Energy	HSE.TO	16.05	18.00	89%	2	3	1.15	32.1	NIL	Petroleum (Integrated)	18
935	U.S. Cellular	USM	38.81	43.45	89%	2	3	1.10	NMF	NIL	Telecom. Services	21
2537	Aircastle Ltd.	AYR	21.94	24.50	90%	3	3	1.30	10.2	4.7	Financial Svcs. (Div.)	37
2659	Apollo Investment	AINV	6.45	7.15	90%	4	3	0.90	9.1	9.3	Public/Private Equity	31
513	Murphy Oil Corp.	MUR	26.63	29.55	90%	2	3	1.55	53.3	3.8	Petroleum (Integrated)	18
925	Hawaiian Telcom	HCOM	24.16	26.65	91%	3	3	0.90	NMF	NIL	Telecom. Services	21
2440	TETRA Technologies	TTI	3.09	3.40	91%	3	5	1.65	NMF	NIL	Oilfield Svcs/Equip.	96
505	Centovus Energy	CVE.TO	13.05	14.20	92%	1	3	1.10	37.3	1.5	Petroleum (Integrated)	18
1987	FUJIFILM Hldgs. ADR	FUJJI	37.67	40.90	92%	2	3	0.95	16.3	1.8	Foreign Electronics	1
2385	New Media Investment	NEWM	13.35	14.45	92%	3	3	1.15	19.1	10.5	Newspaper	82
2196	Vitamin Shoppe	VTSH	19.00	20.70	92%	3	3	0.95	9.3	NIL	Retail (Hardlines)	27
2505	Bank of America	BAC	23.98	25.70	93%	3	3	1.30	13.3	1.4	Bank	74
2512	Citizens Fin'l Group	CFG	37.18	40.00	93%	2	3	1.15	15.2	1.6	Bank	74
621	Enable Midstream Part.	ENBL	16.52	17.70	93%	4	4	1.30	18.2	7.7	Pipeline MLPs	60
2430	National Oilwell Varco	NOV	33.76	36.15	93%	5	3	1.15	NMF	0.6	Oilfield Svcs/Equip.	96
2113	Perry Ellis Int'l	PERY	20.65	22.25	93%	3	3	1.00	9.6	NIL	Apparel	26
2517	HSBC Holdings PLC	HSBC	42.91	45.55	94%	5	3	1.05	10.1	5.9	Bank	74
2412	Oasis Petroleum	OAS	11.49	12.20	94%	3	5	2.15	NMF	NIL	Petroleum (Producing)	29
728	Triumph Group	TGI	24.30	25.80	94%	3	3	1.15	5.4	0.7	Aerospace/Defense	72
121	Geospace Technologies	GEOS	16.42	17.30	95%	5	4	1.75	NMF	NIL	Precision Instrument	68
509	HollyFrontier Corp.	HFC	27.79	29.40	95%	3	3	1.15	17.3	5.0	Petroleum (Integrated)	18

*If fiscal 2017 Book Value not available, estimate used.

LOWEST P/Es
Stocks with the lowest estimated current P/E ratios

Table with 16 columns: Page No., Stock Name, Recent Price, Current P/E Ratio, Time-liness, Safety Rank, Industry Group, Industry Rank. Contains 44 rows of data for various stocks like Valeant Pharm., Endo Int'l plc, AmTrust Financial Svcs., etc.

HIGHEST P/Es
Stocks with the highest estimated current P/E ratios

Table with 16 columns: Page No., Stock Name, Recent Price, Current P/E Ratio, Time-liness, Safety Rank, Industry Group, Industry Rank. Contains 44 rows of data for various stocks like Zayo Group Holdings, Vertex Pharmac., Apartment Investment, etc.

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STOCKS WITH HIGHEST ANNUAL TOTAL RETURNS (NEXT 3 TO 5 YEARS)
(Estimated compound annual stock price appreciation plus estimated annual dividend income.)

Table with columns: Page No., Stock Name, Recent Price, Est'd Total Return, Time-liness, Safety Rank, Industry Group, Industry Rank. Lists various stocks such as Frontier Commun., TETRA Technologies, Acacia Communications, etc.

STOCKS WITH HIGHEST PROJECTED 3- TO 5-YEAR DIVIDEND YIELD
Based upon the projected dividend per share 3 to 5 years hence divided by the recent price

Table with columns: Page No., Stock Name, Recent Price, Est'd Future Yield, Time-liness, Safety Rank, Industry Group, Industry Rank. Lists various stocks such as Frontier Commun., Frontline Ltd., Teekay Corp., etc.

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HIGH RETURNS EARNED ON TOTAL CAPITAL

Stocks with high average returns on capital in last 5 years ranked by earnings retained to common equity

Page No.	Stock Name	Ticker	Recent Price	Avg. Retained to Com. Eq.	Avg. Return On Cap.	Time-line	Safety Rank	Beta	Current P/E Ratio	% Est'd Yield	Industry Group	Industry Rank
717	Lockheed Martin	LMT	273.87	764%	33%	4	1	0.80	22.1	2.7	Aerospace/Defense	72
1927	Mead Johnson Nutrition	MJN	88.85	724%	37%	-	2	0.95	29.6	1.9	Food Processing	56
1715	Lennox Int'l	LII	166.95	540%	33%	2	3	1.05	20.6	1.0	Machinery	73
450	Moody's Corp.	MCO	116.71	158%	40%	2	3	1.15	22.4	1.3	Information Services	39
1190	Clorox Co.	CLX	132.43	140%	34%	3	2	0.65	24.0	2.5	Household Products	55
706	Boeing	BA	186.91	132%	37%	3	1	1.05	18.2	3.2	Aerospace/Defense	72
1917	Herbalife, Ltd.	HLF	72.81	125%	41%	2	3	1.40	18.2	NIL	Food Processing	56
2421	Core Laboratories	CLB	106.76	93%	44%	5	3	1.15	50.8	2.1	Oilfield Svcs/Equip.	96
1632	PDL BioPharma	PDLI	2.27	79%	85%	5	4	1.05	11.4	NIL	Drug	59
447	Gartner Inc.	IT	113.69	77%	38%	3	2	0.90	37.5	NIL	Information Services	39
212	IDEXX Labs.	IDXX	162.06	73%	37%	3	3	0.90	53.1	NIL	Med Supp Non-Invasive	81
1398	Int'l Business Mach.	IBM	152.11	63%	31%	4	1	0.90	12.7	3.9	Computers/Peripherals	54
316	United Parcel Serv.	UPS	106.51	61%	31%	3	1	0.85	17.8	3.1	Air Transport	65
1620	Gilead Sciences	GILD	67.61	55%	32%	2	3	0.95	8.2	3.1	Drug	59
600	Ubiquiti Networks	UBNT	46.84	54%	43%	2	3	0.95	15.1	NIL	Wireless Networking	10
126	Mettler-Toledo Int'l	MTD	547.43	53%	29%	3	3	1.10	32.2	NIL	Precision Instrument	68
2008	Strayer Education	STRA	92.83	53%	29%	5	4	1.15	25.8	1.1	Educational Services	78
1191	Colgate-Palmolive	CL	71.50	52%	33%	3	1	0.80	25.1	2.3	Household Products	55
1143	Sherwin-Williams	SHW	338.38	52%	33%	2	2	1.00	24.2	1.0	Retail Building Supply	48
1981	National Beverage	FIZZ	83.61	51%	34%	2	3	0.85	31.8	NIL	Beverage	71
2663	KKR & Co. L.P.	KKR	18.97	48%	29%	3	3	1.30	8.4	3.6	Public/Private Equity	31
2625	Manhattan Assoc.	MANH	45.36	48%	48%	3	3	1.15	25.2	NIL	IT Services	67
2571	MasterCard Inc.	MA	116.41	46%	41%	3	1	1.05	27.4	0.8	Financial Svcs. (Div.)	37
2661	Fortress Investment	FIG	8.03	45%	51%	-	3	1.20	8.0	4.5	Public/Private Equity	31
1793	CBOE Holdings	CBOE	84.99	44%	68%	4	2	0.70	42.5	1.2	Brokers & Exchanges	80
2213	Francesca's Hldgs.	FRAN	15.70	44%	41%	3	3	0.85	13.7	NIL	Retail (Softlines)	22
576	NewMarket Corp.	NEU	463.39	41%	29%	3	3	1.00	21.3	1.5	Chemical (Specialty)	70
2218	TJX Companies	TJX	78.98	41%	39%	3	1	0.85	20.8	1.6	Retail (Softlines)	22
1918	Hershey Co.	HSY	106.41	40%	31%	3	2	0.70	22.2	2.3	Food Processing	56
1119	Trex Co.	TREX	65.73	40%	40%	3	3	1.45	25.3	NIL	Building Materials	7
839	Jazz Pharmac. plc	JAZZ	158.35	39%	30%	3	3	1.30	14.1	NIL	Biotechnology	84
1608	Terra Nitrogen	TNH	90.10	39%	117%	4	3	0.75	10.9	6.5	Chemical (Basic)	97
2110	Michael Kors Hldgs.	KORS	38.65	38%	38%	2	3	0.95	9.1	NIL	Apparel	26
1630	Novo Nordisk ADP	NVO	39.90	37%	60%	2	2	0.90	18.6	2.8	Drug	59
1405	Seagate Technology	STX	42.83	37%	29%	3	3	1.35	9.3	5.9	Computers/Peripherals	54
2217	Ross Stores	ROST	65.22	35%	38%	3	2	0.85	21.0	1.0	Retail (Softlines)	22
2610	Accenture Plc	ACN	121.07	33%	55%	3	1	1.05	20.5	2.1	IT Services	67
2318	Polaris Inds.	PIL	91.20	32%	34%	3	3	1.20	20.7	2.5	Recreation	12
2595	Intuit Inc.	INTU	126.73	31%	34%	4	2	1.10	28.3	1.1	Computer Software	64
1980	Monster Beverage	MNST	47.99	31%	31%	3	3	0.80	32.0	NIL	Beverage	71
2204	Buckle (The), Inc.	BKE	19.85	30%	41%	3	3	0.90	11.7	5.0	Retail (Softlines)	22
445	FactSet Research	FDS	162.64	30%	38%	4	2	0.95	23.3	1.3	Information Services	39
2325	Sturm, Ruger & Co.	RGR	63.00	29%	46%	1	3	0.85	14.5	2.1	Recreation	12
1392	Apple Inc.	AAPL	153.99	28%	29%	3	2	0.90	16.2	1.6	Computers/Peripherals	54
1994	Altria Group	MO	70.29	27%	30%	4	2	0.65	22.0	3.5	Tobacco	95
385	C.H. Robinson	CHRW	70.86	22%	32%	3	2	0.85	18.8	2.5	Industrial Services	44
2170	Coach Inc.	COH	45.20	21%	33%	3	3	1.05	20.4	3.0	Retail (Hardlines)	27
405	Rollins, Inc.	ROL	39.85	16%	30%	3	2	0.90	46.9	1.2	Industrial Services	44
1144	Tile Shop Hldgs.	TTS	20.50	16%	36%	3	4	1.15	36.6	1.0	Retail Building Supply	48
824	Computer Prog. & Sys.	CPSI	32.20	9%	42%	4	3	0.65	20.1	2.6	Healthcare Information	24

BARGAIN BASEMENT STOCKS

Stocks with current price-earnings multiples and price-to-“net” working capital ratios that are in the bottom quartile of the Value Line universe (“Net” working capital equals current assets less all liabilities including long-term debt and preferred)

Page No.	Stock Name	Ticker	Recent Price	Percent Price-to “Net” Wkg. Capital	Current P/E Ratio	Percent Price-to Book Value	Time-line	Safety Rank	Beta	% Est'd Yield	Industry Group	Industry Rank
978	China Auto. Sys.	CAAS	4.46	86%	5.2	44%	-	5	1.45	NIL	Auto Parts	11
1131	Meritage Homes	MTH	40.05	124%	10.2	105%	2	3	1.40	NIL	Homebuilding	5
1135	TRI Pointe Group	TPH	12.52	141%	10.4	98%	3	3	1.40	NIL	Homebuilding	5
2186	Movado Group	MOV	23.60	146%	15.7	111%	3	3	1.20	2.2	Retail (Hardlines)	27
2383	A.H. Belo	AHC	6.00	175%	15.0	115%	-	4	0.90	5.3	Newspaper	82
1804	Goldman Sachs	GS	223.76	178%	11.2	92%	3	2	1.25	1.3	Investment Banking	34
1130	M.D.C. Holdings	MDC	34.10	178%	13.9	123%	2	3	1.30	2.9	Homebuilding	5
1136	Taylor Morrison Home	TMHC	23.26	184%	11.9	120%	3	3	1.50	NIL	Homebuilding	5
1125	CalAtlantic Group	CAA	36.26	187%	9.2	89%	1	3	1.35	0.4	Homebuilding	5
1324	Avnet, Inc.	AVT	37.45	194%	10.2	102%	4	3	1.15	1.9	Electronics	46
1137	Toll Brothers	TOL	37.36	205%	12.1	129%	2	3	1.30	0.9	Homebuilding	5
1128	KB Home	KBH	20.82	214%	14.9	95%	3	4	1.55	0.5	Homebuilding	5
1406	Tech Data	TECD	94.32	225%	10.5	130%	3	3	1.05	NIL	Computers/Peripherals	54
2208	Citi Trends	CTRN	19.31	230%	16.1	125%	1	4	0.70	1.7	Retail (Softlines)	22
1413	Essendant Inc.	ESND	17.22	242%	12.8	77%	3	3	1.15	3.3	Office Equip/Supplies	19
1126	Horton D.R.	DHI	33.21	247%	12.0	162%	1	3	1.30	1.2	Homebuilding	5
2189	PC Connection	CNXX	29.22	254%	15.2	164%	4	3	1.10	NIL	Retail (Hardlines)	27
1327	Celestica Inc.	CLS	13.98	258%	13.2	143%	3	3	1.00	NIL	Electronics	46
2180	Hibbett Sports	HIBB	25.50	259%	9.3	159%	3	3	0.90	NIL	Retail (Hardlines)	27
2559	Franklin Resources	BEN	43.43	274%	14.0	194%	2	2	1.35	1.9	Financial Svcs. (Div.)	37
2205	Cato Corp.	CATO	22.88	275%	15.3	161%	3	3	1.05	6.3	Retail (Softlines)	22
2211	Finish Line (The)	FINL	15.75	288%	16.1	131%	4	3	0.95	2.8	Retail (Softlines)	22
1133	PulteGroup, Inc.	PHM	22.71	291%	9.9	143%	2	3	1.40	1.6	Homebuilding	5
1339	Plexus Corp.	PLXS	50.95	292%	15.5	169%	3	3	1.10	NIL	Electronics	46
2184	MarineMax	HZO	19.35	300%	14.7	135%	3	4	1.30	NIL	Retail (Hardlines)	27
2168	Big 5 Sporting Goods	BGFV	14.50	333%	13.2	152%	1	4	0.90	4.1	Retail (Hardlines)	27
1808	Piper Jaffray Cos.	PJC	60.55	346%	9.8	114%	2	3	1.35	2.1	Investment Banking	34
2161	Skechers U.S.A.	SKX	24.30	363%	13.5	199%	3	3	1.30	NIL	Shoe	28
594	Finisar Corp.	FSNR	24.60	396%	13.1	157%	3	4	1.25	NIL	Wireless Networking	10
1129	Lennar Corp.	LEN	50.66	398%	12.1	149%	3	3	1.25	0.3	Homebuilding	5
1346	Vishay Intertechnology	VSH	16.70	400%	15.9	144%	2	3	1.35	1.5	Electronics	46
2204	Buckle (The), Inc.	BKE	19.85	407%	11.7	208%	3	3	0.90	5.0	Retail (Softlines)	22
1646	Kelly Services 'A'	KELYA	22.06	425%	12.6	80%	3	3	1.10	1.4	Human Resources	41
2327	Winnebago	WGO	26.75	437%	12.0	211%	1	3	1.25	1.5	Recreation	12
1000	Superior Inds. Int'l	SUP	19.60	450%	10.9	119%	2	3	1.05	3.7	Auto Parts	11

UNTIMELY STOCKS

Stocks ranked 5 (Lowest) for Relative Price Performance in the next 12 months

Table with columns: Page No., Stock Name, Recent Price, Rank, Current P/E Ratio, % Est'd Yield, Industry Group, Industry Rank. Lists 100 stocks with their respective metrics.

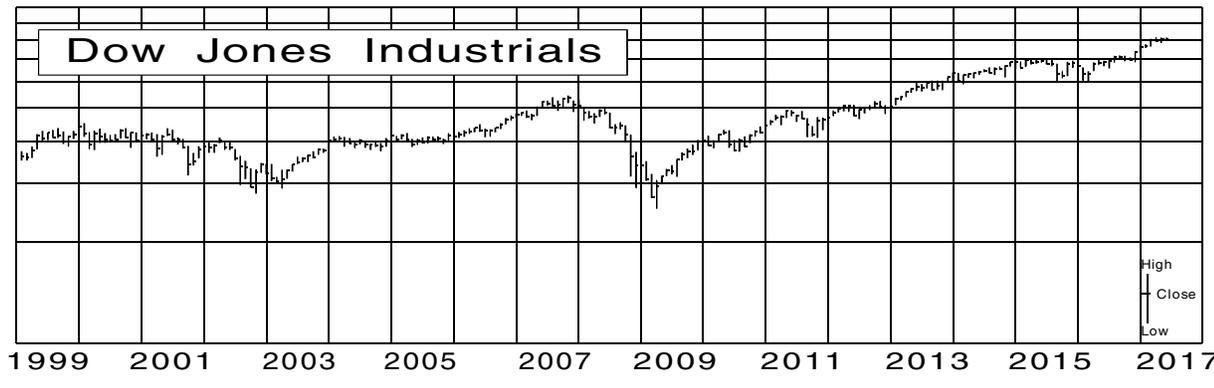
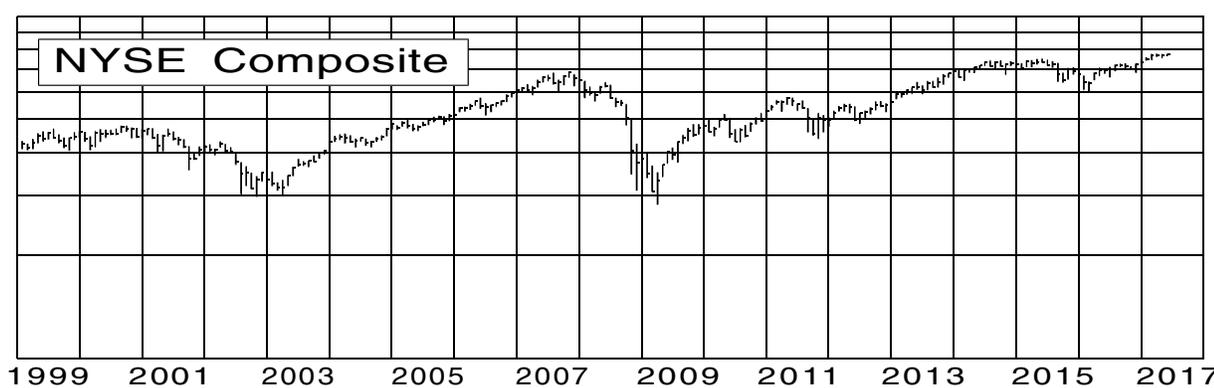
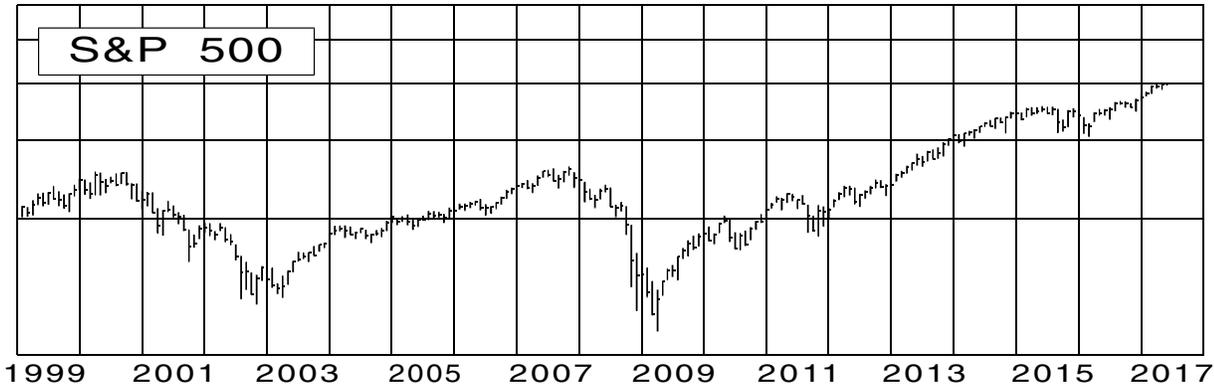
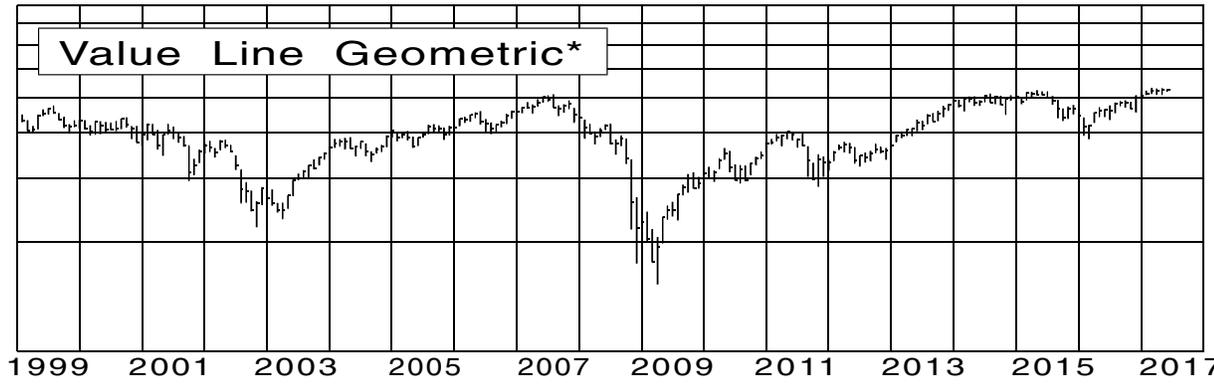
■ Newly added this week.

HIGHEST DIVIDEND YIELDING NON-UTILITY STOCKS

Based upon estimated year-ahead dividends per share

Table with columns: Page No., Stock Name, Recent Price, Time-liness, Rank, Current P/E Ratio, % Est'd Yield, Industry Group, Industry Rank. Lists 100 stocks with their respective metrics.

† Dividend cut possible

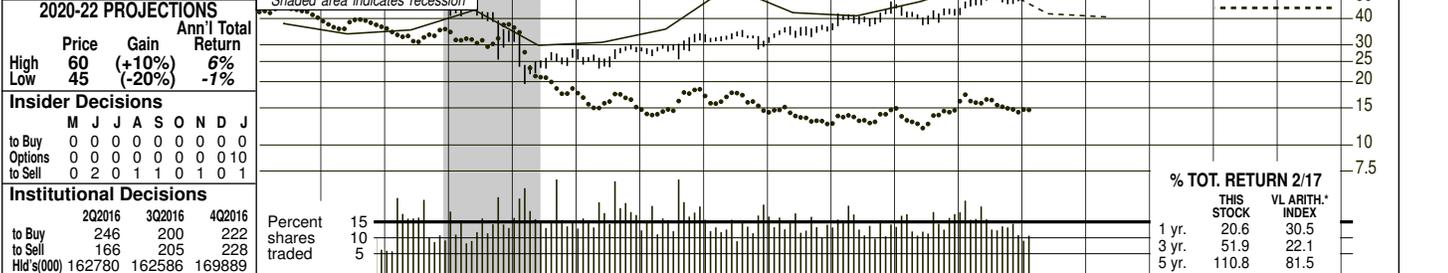


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ALLIANT ENERGY NYSE-LNT			RECENT PRICE	P/E RATIO	Trailing: 23.8 Median: 15.0	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE	Target Price Range	Page 2 of 2																																												
			39.28	20.0		1.03	3.2%		2020-2022	428																																												
TIMELINESS 3 Lowered 11/18/16	High: 20.0	23.3	21.2	15.8	18.8	22.2	23.8	27.1	34.9	35.4	41.0	39.6																																										
SAFETY 2 Raised 9/28/07	Low: 13.8	17.5	11.4	10.2	14.6	17.0	20.9	21.9	25.0	27.1	30.4	36.6																																										
TECHNICAL 3 Lowered 2/17/17	LEGENDS — 0.90 x Dividends p sh divided by Interest Rate ... Relative Price Strength --- 2-for-1 split 5/16 Options: Yes Shaded area indicates recession																																																					
BETA .70 (1.00 = Market)	2020-22 PROJECTIONS																																																					
	Price	Gain	Ann'l Total																																																			
	High	Low	Return																																																			
	45	(+15%)	7%																																																			
	30	(-25%)	-2%																																																			
Insider Decisions	M	J	J	A	S	O	N	D	J																																													
to Buy	1	0	0	0	0	0	0	1	0						80																																							
Options	0	0	0	0	0	0	0	0	0						60																																							
to Sell	0	0	1	1	0	0	0	0	0						50																																							
Institutional Decisions			202016	3Q2016	4Q2016																																																	
to Buy			421	194	192																																																	
to Sell			47	198	196																																																	
Hld's(000)			149878	150673	152516																																																	
Percent shares traded			24	16	8																																																	
Alliant Energy, formerly called Interstate Energy Corporation, was formed on April 21, 1998 through the merger of WPL Holdings, IES Industries, and Interstate Power. WPL stockholders received one share of Interstate Energy stock for each WPL share, IES stockholders received 1.14 Interstate Energy shares for each IES share, and Interstate Power stockholders received 1.11 Interstate Energy shares for each Interstate Power share.																																																						
CAPITAL STRUCTURE as of 12/31/16 Total Debt \$4320.2 mill. Due in 5 Yrs \$1500.0 mill. LT Debt \$4315.6 mill. LT Interest \$200.0 mill. (LT interest earned: 3.2x)																																																						
Pension Assets-12/16 \$895.7 mill. Oblig. \$1244.3 mill. Pfd Stock \$400.0 mill. Pfd Div'd \$10.2 mill. 16,000,000 shs. Common Stock 227,673,654 shs. Adjusted for 2-for-1 split 4/20/16																																																						
MARKET CAP: \$8.9 billion (Large Cap)																																																						
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<p>Business: Alliant Energy Corp., formerly named Interstate Energy, is a holding company formed through the merger of WPL Holdings, IES Industries, and Interstate Power. Supplies electricity, gas, and other services in Wisconsin, Iowa, and Minnesota. Elect. revs. by state: WI, 44%; IA, 55%; MN, 1%. Elect. rev.: residential, 35%; commercial, 25%; industrial, 29%; wholesale, 9%; other, 2%. Fuel sources, 2016: coal, 44%; gas, 21%; other, 35%. Fuel costs: 49% of revs. 2016 depreciation rate: 5.9%. Estimated plant age: 14 years. Has approximately 4,000 employees. Chairman & Chief Executive Officer: Patricia L. Kampling. Incorporated: Wisconsin. Address: 4902 N. Biltmore Lane, Madison, Wisconsin 53718. Telephone: 608-458-3311. Internet: www.alliantenergy.com.</p>																																																						
<p>The Public Service Commission of Wisconsin has approved a rate increase for Alliant Energy's main utility subsidiary. Electric and natural gas rates for Wisconsin Power and Light will rise by approximately \$19 million in 2017 and 2018. The order was based on a return of 10% on a common-equity ratio of 52%. The utility will use the additional revenue to enhance system reliability and help pay for pollution controls at its coal-fired plants. Alliant also expects to file a rate case with the Iowa Utilities Board in the second quarter. In 2014, the IUB approved a regulatory settlement worth \$105 million (paid via customer billing credits over three years) for Interstate Power and Light. With the arrangement set to expire at the end of this year, LNT will likely ask for relief in the form of rate increases to help offset the reduction in the credits.</p>																																																						
<p>The company has made significant progress in the field of renewable energy. At the end of 2016, Alliant was generating about 1,200 megawatts of renewable energy across three different states. The utility has plans to invest \$1 billion over the next five years to expand a farm</p>																																																						
<p>in Iowa that would add an additional 500 megawatts of wind power to its portfolio. The project is part of management's vision to reduce carbon emissions by 40% from 2005 to 2030. LNT has also pledged to ramp up investments in solar energy over the coming years as technology improves and costs come down.</p>																																																						
<p>The board of directors raised the dividend in January. The increase was \$0.02 a share (6.8%) quarterly, as we had expected. Alliant is targeting a payout ratio in the range of 60%-70%.</p>																																																						
<p>Alliant increased its projected capital expenditures. The company plans to spend \$5.56 billion on capex over the next four years, up from its previous outlook of \$5.36 billion. The largest increase will come in 2019 when the Riverside Energy Center and Iowa wind farm expansions are completed.</p>																																																						
<p>This good-quality issue has a decent dividend yield and above-average growth prospects for a utility. That said, with the recent quotation well within our 2020-2022 Target Price Range, total return potential is subpar.</p>																																																						
<p>Daniel Henigson March 17, 2017</p>																																																						
<p>(A) Diluted EPS. Excl. nonrecurr. gains (losses): '07, 55¢; '08, 4¢; '09, (44¢); '10, (8¢); '11, (1¢); '12, (8¢). Next earnings report due early May. (B) Dividends historically paid in mid-Feb., May, Aug., and Nov. (C) Shareholder invest. plan avail. (D) Shareholder invest. plan avail. (E) Incl. deferred chgs. In '16: \$22.6 mill., \$0.10/sh. (F) In millions, adjusted for split. (G) Rate base: Orig. cost. Rates all'd on com. eq. in IA in '16: 10.5%; in WI in '16 Regul. Clim.: WI, Above Avg.; IA, Avg.</p>																																																						
<p>Company's Financial Strength A Stock's Price Stability 100 Price Growth Persistence 95 Earnings Predictability 80</p>																																																						
<p>To subscribe call 1-800-VALUeline</p>																																																						

AMEREN NYSE-AEE **RECENT PRICE 54.82** **P/E RATIO 20.1** (Trailing: 20.4 Median: 15.0) **RELATIVE P/E RATIO 1.03** **DIV'D YLD 3.3%** **VALUE LINE** May 22, 2017
Item No. 73 Attachment 67

TIMELINESS 3 Lowered 8/19/16 High: 55.2 55.0 54.3 35.3 29.9 34.1 35.3 37.3 48.1 46.8 54.1 55.5
SAFETY 2 Raised 6/20/14 Low: 48.0 47.1 25.5 19.5 23.1 25.5 28.4 30.6 35.2 37.3 41.5 51.4
TECHNICAL 4 Lowered 3/17/17
BETA .70 (1.00 = Market) **Target Price Range 2020 2021 2022** 428



2020-22 PROJECTIONS		Ann'l Total	
Price	Gain	Return	
High 60	(+10%)	6%	
Low 45	(-20%)	-1%	

Insider Decisions	
M	J
to Buy 0	0
Options 0	0
to Sell 0	0

Institutional Decisions	
202016	3Q2016
to Buy 246	200
to Sell 166	205
Hld's(000) 162780	162586

Percent shares traded	
2016	2017
15	10
10	5
5	

% TOT. RETURN 2/17	
THIS STOCK	VL ARITH. INDEX
1 yr. 20.6	30.5
3 yr. 51.9	22.1
5 yr. 110.8	81.5

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
32.64	24.93	28.20	26.43	33.12	33.30	36.23	36.92	29.87	31.77	31.04	28.14	24.06	24.95	25.13	25.04	25.75	26.60	Revenues per sh	29.00
6.33	5.28	6.29	5.57	6.10	6.02	6.76	6.44	6.06	6.33	5.87	5.87	5.25	5.77	6.08	6.59	7.05	7.55	"Cash Flow" per sh	9.25
3.41	2.66	3.14	2.82	3.13	2.66	2.98	2.88	2.78	2.77	2.47	2.41	2.10	2.40	2.38	2.68	2.80	3.00	Earnings per sh A	3.50
2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	1.54	1.54	1.56	1.60	1.60	1.61	1.66	1.72	1.78	1.84	Div'd Decl'd per sh B	2.15
7.99	5.11	4.19	4.13	4.63	4.99	6.96	9.75	7.51	4.66	4.50	5.49	5.87	7.66	8.12	8.78	9.15	9.30	Cap'l Spending per sh	9.75
24.26	24.93	26.73	29.71	31.09	31.86	32.41	32.80	33.08	32.15	32.64	27.27	26.97	27.67	28.63	29.27	30.30	31.50	Book Value per sh C	35.50
138.05	154.10	162.90	195.20	204.70	206.60	208.30	212.30	237.40	240.40	242.60	242.63	242.63	242.63	242.63	242.63	242.63	242.63	Common Shs Outst'g D	242.63
12.1	15.8	13.5	16.3	16.7	19.4	17.4	14.2	9.3	9.7	11.9	13.4	16.5	16.7	17.5	18.3	18.3	18.3	Avg Ann'l P/E Ratio	14.5
.62	.86	.77	.86	.89	1.05	.92	.85	.62	.62	.75	.85	.93	.88	.88	.96	.88	.96	Relative P/E Ratio	.90
6.2%	6.1%	6.0%	5.5%	4.9%	4.9%	4.9%	6.2%	6.0%	5.8%	5.3%	5.0%	4.6%	4.0%	4.0%	3.5%	4.0%	3.5%	Avg Ann'l Div'd Yield	4.2%

CAPITAL STRUCTURE as of 12/31/16	
Total Debt \$7834 mill.	Due in 5 Yrs \$3110 mill.
LT Debt \$6595 mill.	LT Interest \$330 mill.
(LT interest earned: 4.0x)	
Leases, Uncapitalized	Annual rentals \$6 mill.
Pension Assets-12/16	\$3813 mill.
Oblig \$4518 mill.	
Pfd Stock \$142 mill.	Pfd Div'd \$6 mill.
807,595 sh. \$3.50 to \$5.50 cum. (no par), \$100 stated val., redeem. \$102.176-\$110/sh.; 616,323 sh. 4.00% to 6.625%, \$100 par, redeem. \$100-\$104/sh.	
Common Stock 242,634,798 sh. as of 1/31/17	
MARKET CAP: \$13 billion (Large Cap)	

ELECTRIC OPERATING STATISTICS			
	2014	2015	2016
% Change Retail Sales (KWH)	-1	-1.1	-4.2
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (c)	5.46	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	NA	NA	NA

ANNUAL RATES			
Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22	
Revenues	-2.0%	-4.0%	2.5%
"Cash Flow"	.5%	-	7.0%
Earnings	-1.5%	-1.5%	6.0%
Dividends	-4.0%	1.5%	4.5%
Book Value	-1.0%	-2.5%	3.5%

Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	1594	1419	1670	1370	6053.0
2015	1556	1401	1833	1308	6098.0
2016	1434	1427	1859	1356	6076.0
2017	1500	1450	1900	1400	6250
2018	1550	1500	1950	1450	6450

Cal-endar	EARNINGS PER SHARE A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	.40	.62	1.20	.19	2.40
2015	.45	.40	1.41	.12	2.38
2016	.43	.61	1.52	.13	2.68
2017	.45	.65	1.50	.20	2.80
2018	.50	.70	1.55	.25	3.00

Cal-endar	QUARTERLY DIVIDENDS PAID B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	.40	.40	.40	.40	1.60
2014	.40	.40	.40	.41	1.61
2015	.41	.41	.41	.425	1.66
2016	.425	.425	.425	.44	1.72
2017					

(A) Diluted EPS. Excl. nonrecurr. gain (losses): '05, (11c); '10, (\$2.19); '11, (32c); '12, (\$6.42); '09 (loss) from disc. ops.: '13, (92c); '15, 21c. '14 & '16 EPS don't sum due to rounding. Next eps. report due early May. (B) Div'ds histor. paid in late Mar., June, Sept., & Dec. Div'd reinvest. plan avail. (C) Incl. intang. In '16: \$7.62/sh. (D) In mill. (E) Rate base: Orig. cost depr. Rate all'd on com. eq. in MO in '15: elec., 9.53%; in '11: gas, none specified; in IL in '14: elec., 8.7%, in '16: gas, 9.6%; earned on avg. com. eq., '16: 9.3%. Reg. Climate: Below Avg.

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Company's Financial Strength	
Stock's Price Stability	A
Price Growth Persistence	95
Earnings Predictability	85

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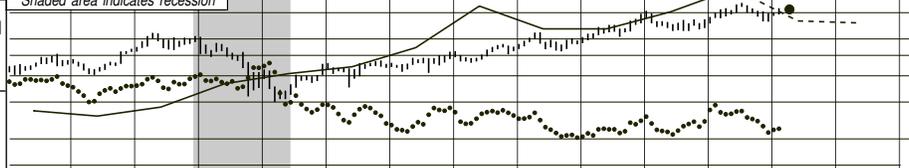
Ameren has reached a settlement of its electric rate case in Missouri. The agreement, if approved by the Missouri commission, would raise rates by \$92 million. It would also remove the negative effect of a reduction in electric sales to an aluminum smelter. Certain regulatory tracking mechanisms would continue. This is a "black box" settlement in which an allowed return on equity and common-equity ratio are not specified. The agreement calls for new tariffs to take effect no later than March 20, 2017. **We estimate that earnings will advance nearly 5% in 2017.** The earnings comparison is made tougher by the favorable weather conditions that boosted profits by \$0.08 a share in 2016. We assume normal weather conditions in our estimates. Ameren should benefit from a partial year of rate relief in Missouri. In addition, its operations in Illinois and its federally regulated transmission business have forward-looking rate plans that lift the company's earning power each year. Our earnings estimate of \$2.80 a share is within Ameren's guidance of \$2.65-\$2.85. **We forecast further profit growth in**

2018. Ameren will have a full year's worth of the rate hike in Missouri and additional revenues from the formula rate plans. In addition, there will be no refueling outage for the Callaway nuclear unit next year. Our \$3.00-a-share earnings estimate would produce a growth rate within Ameren's goal of 5%-8% annually. **The regulatory structure in Missouri isn't as supportive as that in Illinois and that of the Federal Energy Regulatory Commission (FERC).** This is why Ameren is directing the majority of its capital spending toward its Illinois utilities and its FERC-regulated electric transmission business. Missouri uses a historical test year, which results in regulatory lag for the state's utilities. Legislative action is being sought to improve this situation, but similar efforts in recent years have been unsuccessful. **Neither the dividend yield of Ameren stock nor its 3- to 5-year total return potential stand out among utility issues.** Like many utility equities, the recent quotation is well within our 2020-2022 Target Price Range. *Paul E. Debbas, CFA* *March 17, 2017*

AMERICAN ELEC. PWR. NYSE-AEP **RECENT PRICE 66.24** P/E RATIO **16.7** (Trailing: 15.6; Median: 14.0) **RELATIVE P/E RATIO 0.86** **DIV/D YLD 3.7%** **VALUE LINE** May 22, 2017
Item No. 73 Attachment 67 Target Price Range 428

TIMELINESS 3 Lowered 11/11/16
SAFETY 1 Raised 3/17/17
TECHNICAL 3 Raised 3/17/17
BETA .65 (1.00 = Market)

High:	43.1	51.2	49.1	36.5	37.9	41.7	45.4	51.6	63.2	65.4	71.3	67.2
Low:	32.3	41.7	25.5	24.0	28.2	33.1	37.0	41.8	45.8	52.3	56.8	61.8



Year	2020	2021	2022
Target Price	42.8	42.8	42.8
% TOT. RETURN 2/17	12.4	30.5	22.1
1 yr.	12.4	30.5	22.1
3 yr.	49.1	22.1	22.1
5 yr.	116.9	81.5	81.5

2020-22 PROJECTIONS

Price	75	(+15%)	7%
Gain	60	(-10%)	2%
Ann'l Total Return			

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	9	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	202016	3Q2016	4Q2016
to Buy	389	365	389
to Sell	337	373	376
Hlds(000)	339322	333330	341984

Percent shares traded

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Percent	15	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22
Revenues per sh	190.10	42.96	36.82	35.51	30.76	31.82	33.41	35.56	28.22	30.01	31.27	30.77	31.48	34.78	33.51	33.31	33.15	33.75	36.50
"Cash Flow" per sh	7.65	6.99	5.76	5.89	5.96	6.67	6.80	6.84	6.32	6.29	6.83	6.92	7.02	7.57	7.98	8.47	8.25	8.25	9.50
Earnings per sh	3.27	2.86	2.53	2.61	2.64	2.86	2.86	2.99	2.97	2.60	3.13	2.98	3.18	3.34	3.59	4.23	3.65	3.85	4.75
Div'd Decl'd per sh	2.40	2.40	1.65	1.40	1.42	1.50	1.58	1.64	1.64	1.71	1.85	1.88	1.95	2.03	2.15	2.27	2.39	2.51	2.90
Cap'l Spending per sh	5.69	5.08	3.44	4.28	6.11	8.89	8.88	9.83	6.19	5.07	5.74	6.45	7.75	8.68	9.37	9.98	11.90	12.65	12.50
Book Value per sh	25.54	20.85	19.93	21.32	23.08	23.73	25.17	26.33	27.49	28.33	30.33	31.37	32.98	34.37	36.44	35.38	36.90	38.25	43.25
Common Shs Outst'g	322.24	338.84	395.02	395.86	393.72	396.67	400.43	406.07	478.05	480.81	483.42	485.67	487.78	489.40	491.05	491.71	492.00	492.00	492.00
Avg Ann'l P/E Ratio	13.9	12.7	10.7	12.4	13.7	12.9	16.3	13.1	10.0	13.4	11.9	13.8	14.5	15.9	15.8	15.2	Bold figures are Value Line estimates		14.5
Relative P/E Ratio	.71	.69	.61	.66	.73	.70	.87	.79	.67	.85	.75	.88	.81	.84	.80	.80			.90
Avg Ann'l Div'd Yield	5.3%	6.6%	6.1%	4.3%	3.9%	4.1%	3.4%	4.2%	5.5%	4.9%	5.0%	4.6%	4.2%	3.8%	3.8%	3.5%			4.2%

CAPITAL STRUCTURE as of 12/31/16
Total Debt \$21969 mill. Due in 5 Yrs \$10660 mill.
LT Debt \$17378 mill. LT Interest \$782 mill.
Incl. \$1728 mill. securitized bonds. Incl. \$343.5 mill. capitalized leases. (LT interest earned: 4.1x)
Leases, Uncapitalized Annual rentals \$238.2 mill.
Pension Assets-12/16 \$4827.3 mill. Oblig \$5085.8 mill.

Pfd Stock None

Common Stock 491,711,928 shs.

MARKET CAP: \$33 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	+1.1	-1.2	+3
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (c)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+3	+3	NA

BUSINESS: American Electric Power Company, Inc. (AEP), through 10 operating utilities, serves 5.4 mill. customers in Arkansas, Kentucky, Indiana, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, Virginia, & West Virginia. Electric revenue breakdown: residential, 40%; commercial, 23%; industrial, 19%; wholesale, 15%; other, 3%. Sold SEEBOARD (British utility) '02; Houston Pipeline '05; commercial barge operation in '15. Generating sources not available. Fuel costs: 35% of revenues. '16 reported deprec. rates (utility): 1.5%-8.6%. Has 17,400 employees. Chairman, President & CEO: Nicholas K. Akins. Incorporated: New York. Address: 1 Riverside Plaza, Columbus, Ohio 43215-2373. Tel.: 614-716-1000. Internet: www.aep.com.

Fixed Charge Cov. (%) 348 356 374

ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 of change (per sh)

Revenues	5%	2.5%	1.5%
"Cash Flow"	2.5%	4.5%	3.0%
Earnings	3.0%	5.0%	4.0%
Dividends	4.0%	4.5%	5.0%
Book Value	4.5%	4.5%	3.5%

QUARTERLY REVENUES (\$ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	4648	4044	4302	4026	17020
2015	4580	3827	4431	3615	16453
2016	4045	3893	4652	3790	16380
2017	4100	3900	4500	3800	16300
2018	4250	3950	4550	3850	16600

EARNINGS PER SHARE

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	1.15	.80	1.01	.39	3.34
2015	1.27	.88	1.04	.41	3.59
2016	1.02	1.03	1.43	.76	4.23
2017	1.15	.90	1.15	.45	3.65
2018	1.25	.95	1.20	.45	3.85

QUARTERLY DIVIDENDS PAID

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.47	.49	.49	.50	1.95
2014	.50	.50	.50	.53	2.03
2015	.53	.53	.53	.56	2.15
2016	.56	.56	.56	.59	2.27
2017					

American Electric Power has completed an asset sale. In recent years, low power prices and sluggish demand for electricity have hurt the nonregulated power-generating business. AEP wants to exit this segment, and took a step in this direction by selling 5,200 megawatts of coal- and gas-fired assets. Net proceeds of the transaction are \$1.2 billion, which the company will use to invest in its regulated utilities (especially electric transmission) and its nascent renewable-energy business. AEP expects to record a nonrecurring aftertax gain of \$130 million in the March quarter.

We have raised the company's Financial Strength rating and the stock's Safety rank. This reflects AEP's lower risk as it exits the nonregulated generating business. We lifted the company's Financial Strength rating from A to A+ and the equity's Safety grade from 2 to 1 (Highest).

Investors should not be alarmed by the earnings decline we estimate in 2017. The aforementioned asset sale is understandable strategically, and will reduce AEP's risks, but will hurt ongoing profits

by more than \$0.30 a share this year. We assume no recurrence of the favorable weather conditions that helped the company in 2016. We have reduced our earnings estimate by \$0.30 a share, to \$3.65. This is the midpoint of AEP's targeted range of \$3.55-\$3.75 a share.

Profit growth should resume in 2018. AEP should benefit from some rate relief (see below) and ongoing investment in electric transmission. Our earnings estimate of \$3.85 a share (again, the midpoint of the company's guidance of \$3.75-\$3.95) would produce an increase within management's annual goal of 5%-7%.

A rate case is pending in Texas. SWEPCO filed for an increase of \$106 million (including monies already being recovered through various regulatory mechanisms), based on a 10% return on a 51.54% common-equity ratio. AEP's utilities in Oklahoma and Kentucky expect to file rate applications this year.

We consider this stock fairly valued. The dividend yield and 3- to 5-year total return potential are close to the averages for electric companies.

Paul E. Debbas, CFA March 17, 2017

(A) Dil. EPS. Excl. nonrec. gains (losses): '03, (\$1.92); '04, 24c; '05, (62c); '06, (20c); '07, (20c); '08, 40c; '10, (7c); '11, 89c; '12, (38c); '13, (14c); '16, (\$2.99); '10-'17, 26c; disc. ops.: '03, (32c); '04, 15c; '05, 7c; '06, 2c; '08, 3c; '15, 58c; '16, (1c). '14-'16 EPS don't sum due to rounding. Next eqs. report due late Apr. (B) Div'ds paid early Mar., June, Sept., & Dec. (C) Incl. intang. In '16: \$15.79/sh. (D) In mill. (E) Rate base: various. Rates all'd on com. eq.: 9.65%-10.9%; earn. on avg. com. eq., '16: 11.3%. Regul. Climate: Avg.

Company's Financial Strength	A+
Stock's Price Stability	100
Price Growth Persistence	55
Earnings Predictability	90

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CMS ENERGY CORP. NYSE-CMS			RECENT PRICE 44.44	P/E RATIO 22.4 (Trailing: 22.3; Median: 16.0)	RELATIVE P/E RATIO 1.15	DIV'D YLD 3.0%	VALUE LINE	May 22, 2017 Item No. 73 Attachment 67 Page 428						
TIMELINESS 3 Raised 12/30/16	High: 17.0	19.5	17.5	16.1	19.3	22.4	25.0	30.0	36.9	38.7	46.3	44.8	Target Price Range 2020 2021 2022	
SAFETY 2 Raised 3/21/14	Low: 12.1	15.0	8.3	10.0	14.1	17.0	21.1	24.6	26.0	31.2	35.0	41.1		
TECHNICAL 3 Lowered 9/30/16	LEGENDS 0.81 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession													
BETA .65 (1.00 = Market)	2020-22 PROJECTIONS Ann'l Total Price Gain Return High 45 (Nil) 4% Low 35 (-20%) -1%													
Insider Decisions M J J A S O N D J to Buy 0 0 0 0 0 0 0 1 0 0 Options 10 0 1 0 1 0 0 0 11 to Sell 4 0 0 3 0 0 0 0 0														
Institutional Decisions 2Q2016 3Q2016 4Q2016 to Buy 236 203 232 to Sell 201 225 218 Hld's(000) 251054 246256 246703														
Percent shares traded 30 20 10														
% TOT. RETURN 2/17 THIS STOCK VL ARITH. INDEX 1 yr. 16.0 30.5 3 yr. 72.5 22.1 5 yr. 147.5 81.5														

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
72.16	60.28	34.21	28.06	28.52	30.57	28.95	30.13	27.23	25.77	25.59	23.90	24.68	26.09	23.29	22.92	23.15	23.85	Revenues per sh	26.00
5.24	d.09	2.39	2.87	3.43	3.22	3.08	3.88	3.47	3.70	3.65	3.82	4.06	4.22	4.59	4.88	5.30	5.65	"Cash Flow" per sh	7.00
1.27	d2.99	d.29	.74	1.10	.64	.64	1.23	.93	1.33	1.45	1.53	1.66	1.74	1.89	1.98	2.15	2.30	Earnings per sh ^A	2.75
1.46	1.09	--	--	--	--	.20	.36	.50	.66	.84	.96	1.02	1.08	1.16	1.24	1.33	1.42	Div'd Decl'd per sh ^B	1.70
9.49	5.18	3.32	2.69	2.69	3.01	5.61	3.50	3.59	3.29	3.47	4.65	4.98	5.73	5.64	5.99	6.55	6.65	Cap'l Spending per sh	6.25
14.21	7.86	9.84	10.63	10.53	10.03	9.46	10.88	11.42	11.19	11.92	12.09	12.98	13.34	14.21	15.23	16.30	17.40	Book Value per sh ^C	21.00
132.99	144.10	161.13	195.00	220.50	222.78	225.15	226.41	227.89	249.60	254.10	264.10	266.10	275.20	277.16	279.21	281.00	283.00	Common Shs Outst'g ^D	289.00
20.8	--	--	12.4	12.6	22.2	26.8	10.9	13.6	12.5	13.6	15.1	16.3	17.3	18.3	20.9	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	14.5
1.07	--	--	.66	.67	1.20	1.42	.66	.91	.80	.85	.96	.92	.91	.92	1.10			Relative P/E Ratio	.90
5.5%	7.5%	--	--	--	--	1.2%	2.7%	4.0%	4.0%	4.3%	4.2%	3.8%	3.6%	3.4%	3.0%			Avg Ann'l Div'd Yield	4.2%

CAPITAL STRUCTURE as of 12/31/16

Total Debt \$10034 mill. Due in 5 Yrs \$4608 mill.
 LT Debt \$8750 mill. LT Interest \$389 mill.
 Incl. \$110 mill. capitalized leases.
 (LT interest earned: 3.0x)

Leases, Uncapitalized Annual rentals \$20 mill.
Pension Assets-12/16 \$2101 mill.

Oblig \$2562 mill.
 Pfd Stock \$37 mill. Pfd Div'd \$2 mill.
 Incl. 373,148 shs. \$4.50 \$100 par, cum., callable at \$110.00.
Common Stock 279,205,000 shs.

MARKET CAP: \$12 billion (Large Cap)

6519.0	6821.0	6205.0	6432.0	6503.0	6312.0	6566.0	7179.0	6456.0	6399.0	6500	6750	Revenues (\$mill)	7500
168.0	300.0	231.0	356.0	384.0	413.0	454.0	479.0	525.0	553.0	610	655	Net Profit (\$mill)	805
37.6%	31.6%	34.6%	38.1%	36.8%	39.4%	39.9%	34.3%	34.0%	33.1%	34.0%	34.0%	Income Tax Rate	34.0%
3.6%	1.3%	13.0%	2.2%	2.6%	2.9%	2.0%	2.3%	2.7%	3.1%	3.0%	3.0%	AFUDC % to Net Profit	2.0%
70.5%	69.4%	67.9%	70.1%	66.9%	67.9%	67.5%	68.7%	68.3%	67.1%	66.5%	65.5%	Long-Term Debt Ratio	64.5%
25.9%	27.4%	29.0%	29.5%	32.6%	31.6%	32.2%	31.0%	31.4%	32.6%	33.5%	34.0%	Common Equity Ratio	35.5%
8212.0	8993.0	8977.0	9473.0	9279.0	10101	10730	11846	12534	13040	13725	14450	Total Capital (\$mill)	17100
8728.0	9190.0	9682.0	10069	10633	11551	12246	13412	14705	15715	16675	17600	Net Plant (\$mill)	19800
4.5%	5.4%	4.7%	5.8%	6.3%	5.9%	6.0%	5.7%	5.7%	5.8%	6.0%	6.0%	Return on Total Cap'l	6.0%
6.9%	10.9%	8.0%	12.5%	12.5%	12.8%	13.0%	12.9%	13.2%	12.9%	13.0%	13.0%	Return on Shr. Equity	13.0%
7.2%	11.7%	8.5%	12.5%	12.6%	12.9%	13.1%	13.0%	13.3%	13.0%	13.5%	13.5%	Return on Com Equity ^E	13.5%
5.1%	8.4%	4.1%	6.9%	5.6%	5.0%	5.2%	5.0%	5.2%	4.8%	5.0%	5.0%	Retained to Com Eq	5.0%
35%	31%	54%	46%	55%	61%	60%	62%	61%	63%	61%	61%	All Div'ds to Net Prof	61%

BUSINESS: CMS Energy Corporation is a holding company for Consumers Energy, which supplies electricity and gas to lower Michigan (excluding Detroit). Has 1.8 million electric, 1.7 million gas customers. Has 1,034 megawatts of nonregulated generating capacity. Sold Palisades nuclear plant in '07. Electric revenue breakdown: residential, 45%; commercial, 31%; industrial, 18%; other, 6%. Generating sources: coal, 27%; gas, 16%; other, 3%; purchased, 54%. Fuel costs: 44% of revenues. '16 reported deprec. rates: 3.9% electric, 2.9% gas, 9.8% other. Has 7,400 employees. Chairman: John G. Russell. President & CEO: Patti Poppe. Incorporated: Michigan. Address: One Energy Plaza, Jackson, Michigan 49201. Tel.: 517-788-0550. Internet: www.cmsenergy.com.

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	+1.9	-8	+1.7
Avg. Indust. Use (MWH)	NMF	5922	NA
Avg. Indust. Revs. per KWH (c)	8.79	8.07	NA
Capacity at Peak (Mw)	8776	8762	NA
Peak Load, Summer (Mw)	7498	7812	NA
Annual Load Factor (%)	59.7	56.8	NA
% Change Customers (yr-end)	--	+6	+1

Fixed Charge Cov. (%) 278 288 292

ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 of change (per sh)

Revenues	-2.0%	-1.5%	1.5%
"Cash Flow"	3.5%	5.0%	7.5%
Earnings	8.5%	8.5%	6.5%
Dividends	--	11.5%	6.5%
Book Value	3.0%	4.5%	6.5%

CMS Energy's utility subsidiary received an electric rate increase. The Michigan Public Service Commission (MPSC) granted Consumers Energy a rate hike of \$113 million, based on a 10.1% return on equity. The utility had sought a boost of \$225 million, based on a 10.3% ROE. New tariffs went into effect on March 7th.

The utility self-implemented an interim gas rate increase in late January. The increase was \$20 million, effective January 29th. Consumers Energy is seeking a hike of \$90 million, based on a 10.6% ROE. The MPSC's final decision is due by the end of July.

Earnings should advance nicely this year and next. Consumers Energy will benefit from the aforementioned rate matters. In addition, the company is benefiting from a cost-management program that should see a reduction of 2%-3% annually in operating and maintenance expenses. Our 2017 estimate is within CMS Energy's typically narrow guidance of \$2.14-\$2.18 a share. (Management raised this by a cent upon its fourth-quarter earnings release in early February.) For

2018, we forecast a bottom-line increase in line with the company's annual goal of 6%-8%.

The board of directors raised the dividend in the first quarter. The increase was \$0.09 a share (7.3%). This is in line with CMS Energy's target for yearly profit growth.

The utility has asked the MPSC to approve the buyout of a purchased-power contract with Entergy, the owner of the Palisades nuclear plant. Current market prices for power are well below the prices specified in the contract. If the \$172 million buyout is approved, the contract will terminate in 2018 instead of 2022, and Consumers Energy will issue securitized bonds for the amount of the payment. The company expects to hear from the MPSC in August.

CMS Energy's strengths are reflected in the stock price, in our view. This reflects the company's solid earnings and dividend growth potential. With the equity's recent quotation near the upper end of our 2020-2022 Target Price Range, total return potential is negligible.

Paul E. Debbas, CFA March 17, 2017

Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	2523	1468	1430	1758	7179.0
2015	2111	1350	1486	1509	6456.0
2016	1801	1371	1587	1640	6399.0
2017	1900	1400	1550	1650	6500
2018	2000	1450	1600	1700	6750

Cal-endar	EARNINGS PER SHARE ^A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	.75	.30	.34	.35	1.74
2015	.73	.25	.53	.38	1.89
2016	.59	.45	.67	.28	1.98
2017	.70	.40	.60	.45	2.15
2018	.80	.40	.65	.45	2.30

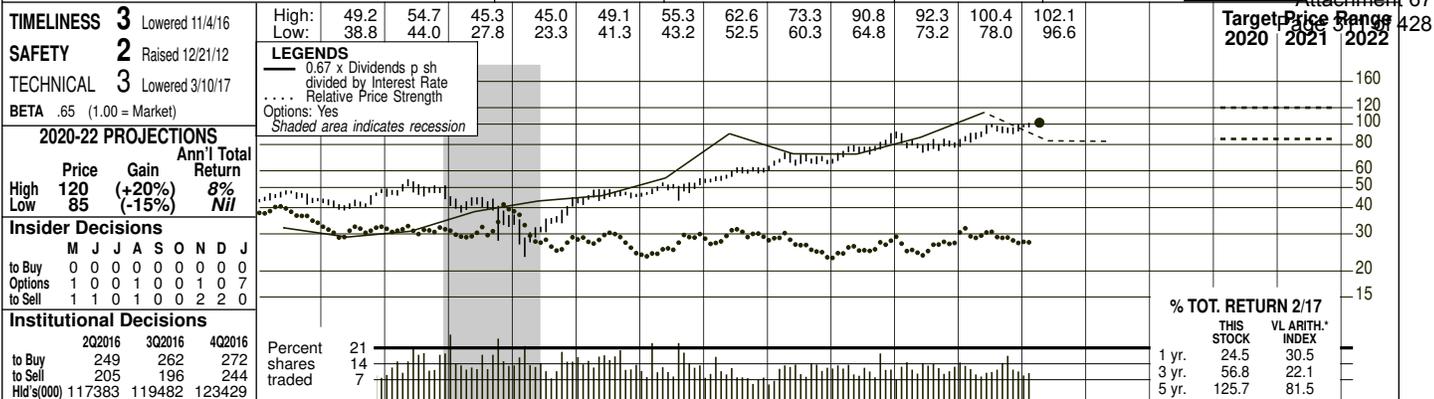
Cal-endar	QUARTERLY DIVIDENDS PAID ^B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	.255	.255	.255	.255	1.02
2014	.27	.27	.27	.27	1.08
2015	.29	.29	.29	.29	1.16
2016	.31	.31	.31	.31	1.24
2017	.325				

(A) Diluted EPS. Excl. nonrec. gains (losses): '05, (\$1.61); '06, (\$1.08); '07, (\$1.26); '09, (7c); '10, 3c; '11, 12c; '12, (14c); gains (losses) on disc. ops.: '05, 7c; '06, 3c; '07, (40c); '09, 8c; '10, (8c); '11, 1c; '12, 3c. '16 EPS don't sum due to rounding. Next earnings report due late Apr. (B) Div'ds historically paid late Feb., May, Aug., & Nov. (C) Div'd reinvestment plan avail. (D) In mill. (E) Rate base: Net orig. cost. Rate allowed on com. eq. in '17: 10.1%; earned on avg. com. eq., '16: 13.5%. Regulatory Climate: Average.

Company's Financial Strength B++
Stock's Price Stability 100
Price Growth Persistence 90
Earnings Predictability 80

DTE ENERGY CO. NYSE-DTE

RECENT PRICE **101.55** P/E RATIO **20.6** (Trailing: 21.1; Median: 16.0) RELATIVE P/E RATIO **1.06** DIV'D YLD **3.4%** VALUE LINE **May 22, 2017** Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
48.71	40.30	41.76	40.84	50.74	50.93	54.28	57.23	48.45	50.51	52.57	51.01	54.56	69.50	57.60	59.24	64.05	67.70	Revenues per sh	75.50
6.98	8.31	6.95	6.81	8.14	8.19	8.48	8.26	9.38	9.78	9.57	9.77	10.13	11.85	9.44	10.60	11.60	12.45	"Cash Flow" per sh	14.75
2.15	3.83	2.85	2.55	3.27	2.45	2.66	2.73	3.24	3.74	3.67	3.88	3.76	5.10	4.44	4.83	5.30	5.65	Earnings per sh ^A	6.50
2.06	2.06	2.06	2.06	2.06	2.08	2.12	2.12	2.12	2.18	2.32	2.42	2.59	2.69	2.84	3.06	3.36	3.59	Div'd Decl'd per sh ^B	4.30
6.80	5.88	4.45	5.19	5.99	7.92	7.96	8.42	6.26	6.49	8.77	10.56	10.59	11.58	11.26	11.40	16.15	14.50	Cap'l Spending per sh	14.00
28.48	27.26	31.36	31.85	32.44	33.02	35.86	36.77	37.96	39.67	41.41	42.78	44.73	47.05	48.88	50.22	52.15	54.25	Book Value per sh ^C	62.00
161.13	167.46	168.61	174.21	177.81	177.14	163.23	163.02	165.40	169.43	169.25	172.35	177.09	176.99	179.47	179.43	179.50	179.50	Common Shs Outst'g ^D	187.00
19.3	11.3	13.7	16.0	13.8	17.4	18.3	14.8	10.4	12.3	13.5	14.9	17.9	14.9	18.1	19.0	16.0	16.0	Avg Ann'l P/E Ratio	16.0
.99	.62	.78	.85	.73	.94	.97	.89	.69	.78	.85	.95	1.01	.78	.91	1.00	1.00	1.00	Relative P/E Ratio	1.00
5.0%	4.8%	5.3%	5.0%	4.6%	4.9%	4.4%	5.2%	6.3%	4.8%	4.7%	4.2%	3.8%	3.5%	3.5%	3.3%	3.5%	3.3%	Avg Ann'l Div'd Yield	4.2%

CAPITAL STRUCTURE as of 12/31/16
 Total Debt \$11782 mill. Due in 5 Yrs \$3578 mill.
 LT Debt \$1269 mill. LT Interest \$463 mill.
 Incl. \$7 mill. capitalized leases and \$780 mill. Trust Preferred Securities.
 (LT interest earned: 3.7x)

Leases, Uncapitalized Annual rentals \$33 mill.
Pension Assets-12/16 \$4012 mill.
Oblig \$5171 mill.

Pfd Stock None
Common Stock 179,432,999 shs.
as of 1/31/17

MARKET CAP: \$18 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	-1.7	.6	+3.5
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (c)	NMF	NMF	NMF
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-avr)	NA	NA	NA

ANNUAL RATES

Past	Past	Est'd '14-'16	
10 Yrs.	5 Yrs.	to '20-'22	
Revenues	2.5%	4.0%	3.5%
"Cash Flow"	3.5%	2.0%	5.5%
Earnings	5.5%	6.0%	5.0%
Dividends	3.5%	5.5%	7.0%
Book Value	4.0%	4.0%	4.0%

QUARTERLY REVENUES (\$ mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	3930	2698	2595	3078	12301
2015	2984	2268	2598	2487	10337
2016	2566	2262	2928	2874	10630
2017	3050	2450	3000	3000	11500
2018	3250	2600	3150	3150	12150

EARNINGS PER SHARE ^A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	1.84	.70	.88	1.68	5.10
2015	1.53	.61	1.47	.83	4.44
2016	1.37	.84	1.88	.73	4.83
2017	1.60	1.00	1.60	1.10	5.30
2018	1.70	1.05	1.70	1.20	5.65

QUARTERLY DIVIDENDS PAID ^B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.62	.62	.655	.655	2.55
2014	.655	.655	.655	.69	2.66
2015	.69	.69	.69	.73	2.80
2016	.73	.73	.73	.77	2.96
2017	.825				

BUSINESS: DTE Energy Company is a holding company for DTE Electric (formerly Detroit Edison), which supplies electricity in Detroit and a 7,600-square-mile area in southeastern Michigan, and DTE Gas (formerly Michigan Consolidated Gas). Customers: 2.1 mill. electric, 1.3 mill. gas. Has various nonutility operations. Electric revenue breakdown: residential, 48%; commercial, 34%; industrial,

DTE Energy's utility subsidiaries have received rate orders in recent months. DTE Gas received an increase of \$122.3 million, effective December 16th. DTE Electric was granted a raise of \$184.3 million, effective February 7th. Each ruling was based on a 10.1% return on equity, based on a common-equity ratio of 52% and 50% for DTE Gas and DTE Electric, respectively. DTE Electric will file another application in the second quarter. As for DTE Gas, it expects to initiate its next case in 2018 or 2019.

We estimate that earnings will increase significantly in 2017. The comparison will be easy, as mark-to-market accounting charges associated with the energy trading business hurt the bottom line by \$0.39 a share in 2016. Rate relief from the aforementioned tariff hikes will help. We expect a rise in income from the non-regulated side of DTE Energy's business, helped by a midstream gas acquisition the company made last fall. However, we also base our estimate on normal weather patterns. Favorable weather added \$59 million to DTE Electric's net profit in 2016. Our 2017 earnings estimate is within the

13%; other, 5%. Generating sources: coal, 67%; nuclear, 17%; gas, 1%; purchased, 15%. Fuel costs: 52% of revenues. '16 reported deprec. rates: 3.5% electric, 2.4% gas. Has 10,000 employees. Chairman & CEO: Gerard M. Anderson. President & COO: Jerry Norcia. Inc.: MI. Address: One Energy Plaza, Detroit, MI 48226-1279. Tel.: 313-235-4000. Internet: www.dteenergy.com.

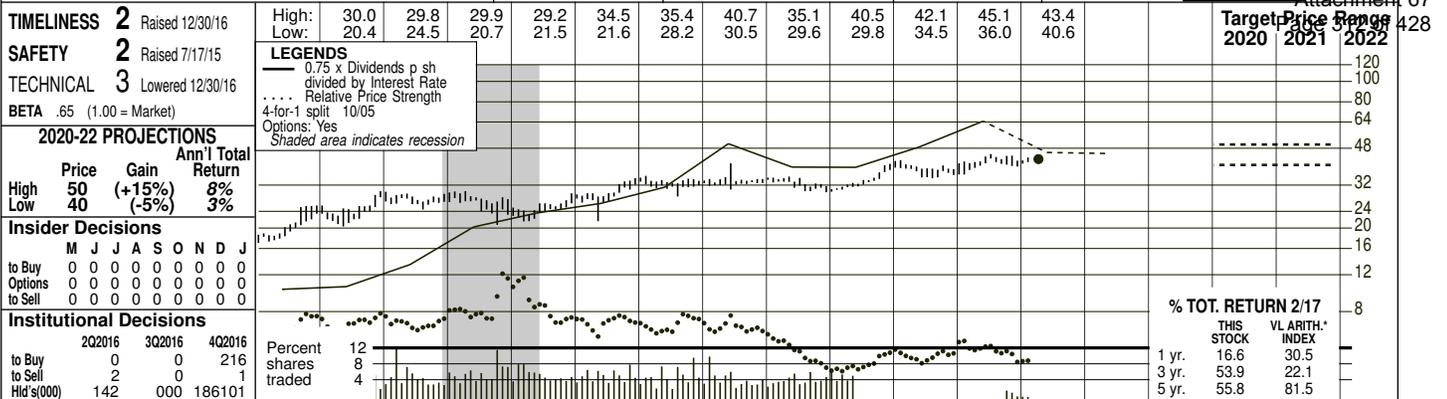
company's targeted range of \$5.15-\$5.46 a share. **The proposed NEXUS natural gas pipeline has had a temporary setback.** The Federal Energy Regulatory Commission is currently unable to approve it due to a lack of a quorum, with three vacancies on the five-man commission. DTE Energy would have a 50% stake (a \$1 billion investment) in NEXUS. The company believes the addition of a commissioner can still come in time for the project to be completed on schedule in late 2017.

We forecast higher profits in 2018. We assume that NEXUS is completed on schedule and that DTE Electric receives a rate increase in the first half of next year. The company's goal for annual earnings (and dividend) growth is 5%-7%.

DTE Energy's strengths are reflected in the stock price. The dividend yield is just average for a utility. And with the recent quotation near the midpoint of our 2020-2022 Target Price Range, total return potential is low, despite the strong dividend growth we project over that time frame.

(A) Diluted EPS. Excl. nonrec. gains (losses): '03, (16c); '05, (2c); '06, 1c; '07, \$1.96; '08, 50c; '11, 51c; '15, (39c); gains (losses) on disc. ops.: '03, 40c; '04, (6c); '05, (20c); '06, (2c); '07, \$1.20; '08, 13c; '12, (33c). '16 EPS don't sum due to rounding. Next egs report due late Apr. (B) Div'ds paid in mid-Jan., Apr., July and Oct. Div'd reinvest. plan avail. (C) Incl. intang. In '16: \$39.01/sh. (D) In mill. (E) Rate base: Net orig. cost. Rate allowed on com. eq. in '17: 10.1% elec.; in '16: 10.1% gas; earn. on avg. com. eq., '16: 4.9%. Reg. Clim.: Avg.	Company's Financial Strength	B++
	Stock's Price Stability	100
	Price Growth Persistence	85
	Earnings Predictability	90

FORTIS INC. TSE-FTS.TO^A RECENT PRICE **42.61** P/E RATIO **18.8** (Trailing: 22.5; Median: 19.0) RELATIVE P/E RATIO **0.96** DIV'D YLD **3.9%** VALUE LINE May 22, 2017
Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22	
10.48	10.40	12.13	11.99	13.86	14.14	17.48	23.07	21.24	21.01	19.84	19.07	18.99	19.57	23.89	17.03	18.80	19.15	Revenues per sh	20.25
1.88	1.83	1.92	2.23	2.73	3.05	2.96	3.51	3.66	3.99	3.90	4.10	4.10	3.62	5.21	3.91	5.15	5.50	"Cash Flow" per sh	6.50
.84	.96	1.03	1.01	1.19	1.36	1.29	1.52	1.51	1.62	1.74	1.65	1.63	1.38	2.11	1.89	2.40	2.55	Earnings per sh ^B	3.00
.47	.50	.52	.54	.59	.67	.82	1.00	1.04	1.12	1.17	1.21	1.25	1.30	1.43	1.55	1.65	1.75	Div'd Decl'd per sh ^C	2.05
2.49	3.33	2.99	2.92	4.93	4.80	5.16	5.34	5.79	5.89	5.91	5.68	5.32	6.00	7.97	5.13	7.15	6.70	Cap'l Spending per sh	5.25
7.49	8.50	8.84	10.47	11.76	12.26	16.72	18.00	18.57	18.95	20.53	20.84	22.39	24.90	28.63	32.32	33.40	34.30	Book Value per sh ^D	37.25
59.92	68.77	69.52	95.53	103.20	104.09	155.52	169.19	171.26	174.39	188.83	191.57	213.17	276.00	281.56	401.49	420.00	426.00	Common Shs Outst'g ^E	444.00
11.7	12.6	13.6	15.3	17.2	17.7	21.1	17.5	16.4	18.2	18.8	20.1	20.0	24.3	18.0	21.6	21.60	21.60	Avg Ann'l P/E Ratio	15.0
.60	.69	.78	.81	.92	.96	1.12	1.05	1.09	1.16	1.18	1.28	1.12	1.28	.91	1.13	1.13	1.13	Relative P/E Ratio	.95
4.8%	4.1%	3.7%	3.5%	2.9%	2.8%	3.0%	3.8%	4.2%	3.8%	3.6%	3.6%	3.8%	3.9%	3.8%	3.8%	3.8%	3.8%	Avg Ann'l Div'd Yield	4.5%

CAPITAL STRUCTURE as of 12/31/16
 Total Debt \$22759 mill. Due in 5 Yrs \$5715 mill.
 LT Debt \$21277 mill. LT Interest \$892 mill.
 Incl. \$460 mill. capitalized leases.
 (LT interest earned: 2.2x)

Leases, Uncapitalized Annual rentals \$13 mill.

Pension Assets-12/16 \$2646 mill.
 Oblig \$3037 mill.

Pfd Stock \$1623 mill. Pfd Div'd \$67 mill.

Common Stock 401,486,414 shs.
MARKET CAP: \$17 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	NA	NA	NA
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (c)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	9740	9705	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+37.1	+9	NA

	2014	2015	2016
Fixed Charge Cov. (%)	141	195	173

ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16
Revenues	4.0%	-5%	Nil
"Cash Flow"	5.0%	2.0%	7.5%
Earnings	4.0%	2.0%	9.0%
Dividends	9.0%	5.0%	6.0%
Book Value	9.5%	8.0%	4.5%

Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	Year
2014	1455	1056	1197	1693	5401
2015	1915	1538	1566	1708	6727
2016	1772	1485	1528	2053	6838
2017	2150	1750	1850	2150	7900
2018	2250	1800	1900	2200	8150

Cal-endar	EARNINGS PER SHARE ^B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	Year
2014	.66	.22	.06	.44	1.38
2015	.71	.43	.50	.48	2.11
2016	.57	.38	.45	.49	1.89
2017	.70	.50	.58	.62	2.40
2018	.75	.52	.62	.66	2.55

Cal-endar	QUARTERLY DIVIDENDS PAID ^C				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	Year
2013	.31	.31	.31	.31	1.24
2014	.32	.32	.32	.32	1.28
2015	.34	.34	.34	.375	1.40
2016	.375	.375	.375	.40	1.53
2017	.40				

BUSINESS: Fortis Inc.'s main focus is electricity, hydroelectric, and gas utility operations (both regulated and nonregulated) in the United States, Canada, and the Caribbean. Has 2 mill. electric, 1.2 mill. gas customers. Owns UNS Energy (Arizona), Central Hudson (New York), FortisBC Energy (British Columbia), FortisAlberta (Central Alberta), and Eastern Canada (Newfoundland). Sold commercial real estate and hotel property assets in 2015. Acqd ITC Holdings 10/16. Fuel costs: 34% of revs. '16 reported deprec. rate: 2.8%. Has 8,000 employees. Chairman: David G. Norris. President & CEO: Barry V. Perry. Inc.: Canada. Address: Fortis Place, Suite 1100, 5 Springdale St., PO Box 8837, St. John's, NL, Canada, A1B 3T2. Telephone: 709-737-2800. Internet: www.fortisinc.com.

Fortis' earnings should advance significantly in 2017. The comparison is easy, as costs associated with the acquisition of ITC Holdings reduced the bottom line by \$0.29 a share last year. Results in 2016 were also depressed by some other unusual (but not nonrecurring) expenses that amounted to \$0.10 a share. Fortis will record a full year of income from ITC in 2017. ITC's federally regulated transmission business benefits from a forward-looking formula rate plan that enables it to earn a return on expected capital spending and recover increases in most kinds of expenses. Another plus is a rate hike for Tucson Electric Power that took effect this quarter (see below). We think our previous estimate for 2017 was too conservative, and have raised it by \$0.15 a share, to \$2.40. Management doesn't give earnings guidance, but says the addition of ITC will be "nicely accretive."

Tucson Electric Power received a rate increase. The Arizona regulators approved a settlement calling for a \$81.5 million rate increase, based on a 9.75% return on a 50% common-equity ratio. There were also changes in rate design that will lessen

the subsidization of solar customers by nonsolar users. New tariffs took effect at the start of March.

Further profit growth is likely in 2018. The usual formula rate relief at ITC and growth in the rate base at the Canadian utilities should help. Our forecast is \$2.60 a share, which would produce a 6% earnings increase.

There is a good reason why Fortis has looked to acquire utilities in the United States. Besides the ITC purchase last October, the company bought CH Energy in 2013 and UNS Energy in 2014. Allowed returns on equity and common-equity ratios are significantly higher in the U.S. than in Canada. And allowed ROEs for ITC, a transmission-only utility, are higher than those for distribution utilities, even after the Federal Energy Regulatory Commission lowered them.

The dividend yield and 3- to 5-year total return potential of timely Fortis stock are slightly above average for a utility. The company has set a goal of 6% annual dividend growth through 2021. We think it will meet these expectations.

Paul E. Debbas, CFA March 17, 2017

(A) Also trades on NYSE under the symbol FTS. All data in Canadian dollars. (B) Dil. earnings. Excl. nonrec. gains: '06, 1c; '07, 3c; '14, 2c; '15, 48c. '15 EPS don't sum due to rounding. Next earnings report due early May. (C) Div'ds historically paid in early Mar., June, Sept., and Dec. Div'd reinvest. plan avail. (2% disc.). (D) Incl. intang. In '16: \$39.84/sh. (E) In mill., adj. for split. (F) Rate base: varies. Rates all'd on com. eq.: 8.3%-10.32%; earned on avg. com. eq.: '16: 6.2%. Regulat. Climate: FERC. Above Avg.; AZ, Avg.; NY, Below Avg.

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Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	35
Earnings Predictability	75

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VECTREN CORP. NYSE-VVC

May 22, 2017
Item No. 73
Attachment 67

TIMELINESS 3 Lowered 7/22/16	High: 29.3 30.5 32.2 26.9 27.8 30.7 30.8 37.9 48.3 49.5 53.3 57.1	Low: 25.2 24.8 19.5 18.1 21.7 23.7 27.5 29.5 34.6 37.3 39.4 51.5	RECENT PRICE 56.30	P/E RATIO 21.2 (Trailing: 22.1 Median: 16.0)	RELATIVE P/E RATIO 1.09	DIV'D YLD 3.1%	VALUE LINE																																					
SAFETY 2 Lowered 1/5/01								Target Price Range 2020 2021 2022 128 96 80 64 48 40 24 16 12																																				
TECHNICAL 3 Raised 2/24/17																																												
BETA .75 (1.00 = Market)																																												
2020-22 PROJECTIONS	<table border="1" style="margin: 0;"> <tr><th>Price</th><th>Gain</th><th>Ann'l Total Return</th></tr> <tr><td>High 65</td><td>(+15%)</td><td>7%</td></tr> <tr><td>Low 45</td><td>(-20%)</td><td>-1%</td></tr> </table>		Price	Gain	Ann'l Total Return	High 65	(+15%)	7%	Low 45	(-20%)	-1%																																	
Price	Gain	Ann'l Total Return																																										
High 65	(+15%)	7%																																										
Low 45	(-20%)	-1%																																										
Insider Decisions	<table border="1" style="margin: 0;"> <tr><th>M</th><th>J</th><th>J</th><th>A</th><th>S</th><th>O</th><th>N</th><th>D</th><th>J</th></tr> <tr><td>to Buy</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Options</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>to Sell</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </table>		M	J	J	A	S	O	N	D	J	to Buy	0	0	0	0	0	0	0	0	Options	0	0	0	0	0	0	0	0	to Sell	0	0	0	0	0	0	0	0						
M	J	J	A	S	O	N	D	J																																				
to Buy	0	0	0	0	0	0	0	0																																				
Options	0	0	0	0	0	0	0	0																																				
to Sell	0	0	0	0	0	0	0	0																																				
Institutional Decisions	<table border="1" style="margin: 0;"> <tr><th>2Q2016</th><th>3Q2016</th><th>4Q2016</th></tr> <tr><td>to Buy</td><td>151</td><td>129</td><td>138</td></tr> <tr><td>to Sell</td><td>112</td><td>136</td><td>132</td></tr> <tr><td>Hld's(000)</td><td>52315</td><td>51679</td><td>52408</td></tr> </table>		2Q2016	3Q2016	4Q2016	to Buy	151	129	138	to Sell	112	136	132	Hld's(000)	52315	51679	52408	<table border="1" style="margin: 0;"> <tr><th>Percent shares traded</th><th>12</th><th>8</th><th>4</th></tr> </table>		Percent shares traded	12	8	4			<table border="1" style="margin: 0;"> <tr><th>% TOT. RETURN 2/17</th><th>THIS STOCK</th><th>VL ARITH. INDEX</th></tr> <tr><td>1 yr.</td><td>27.9</td><td>30.5</td></tr> <tr><td>3 yr.</td><td>62.6</td><td>22.1</td></tr> <tr><td>5 yr.</td><td>133.6</td><td>81.5</td></tr> </table>		% TOT. RETURN 2/17	THIS STOCK	VL ARITH. INDEX	1 yr.	27.9	30.5	3 yr.	62.6	22.1	5 yr.	133.6	81.5					
2Q2016	3Q2016	4Q2016																																										
to Buy	151	129	138																																									
to Sell	112	136	132																																									
Hld's(000)	52315	51679	52408																																									
Percent shares traded	12	8	4																																									
% TOT. RETURN 2/17	THIS STOCK	VL ARITH. INDEX																																										
1 yr.	27.9	30.5																																										
3 yr.	62.6	22.1																																										
5 yr.	133.6	81.5																																										

Vectren was formed on March 31, 2000 through the merger of Indiana Energy and SIGCORP. The merger was consummated with a tax-free exchange of shares and has been accounted for as a pooling of interests. Indiana Energy common stockholders received one Vectren common share for each share held. SIGCORP stockholders exchanged each common share for 1.333 common shares of Vectren.

CAPITAL STRUCTURE as of 12/31/16											© VALUE LINE PUB. LLC 20-22			
Total Debt \$1908.4 mill. Due in 5 Yrs \$633.5 mill.	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Revenues per sh	40.70
LT Debt \$1589.9 mill. LT Interest \$85.0 mill. (LT interest earned: 4.8x)	29.88	30.67	25.76	26.06	28.39	27.16	30.23	31.62	29.40	29.53	30.85	31.90	"Cash Flow" per sh	7.80
Pension Assets-12/16 \$304.5 mill. Oblig. \$350.4 mill.	4.29	3.97	4.40	4.44	4.71	5.03	5.03	5.33	5.48	5.69	5.95	6.25	Earnings per sh ^A	3.45
Pfd Stock None	1.83	1.63	1.79	1.65	1.73	1.94	1.66	2.02	2.39	2.55	2.70	2.85	Div'd Decl'd per sh ^{B+†}	2.00
Common Stock 82,922,412 shs. as of 1/31/17	1.27	1.31	1.35	1.37	1.39	1.41	1.43	1.46	1.54	1.62	1.70	1.78	Cap'l Spending per sh	8.70
MARKET CAP: \$4.7 billion (Mid Cap)	4.38	4.83	5.33	3.39	3.92	4.45	4.77	5.43	5.76	6.54	6.95	7.40	Book Value per sh ^C	27.05
ELECTRIC OPERATING STATISTICS	16.16	16.68	17.23	17.61	17.89	18.57	18.86	19.45	20.34	21.33	22.50	23.80	Common Shs Outst'g ^D	86.00
2014 2015 2016	76.36	81.03	81.10	81.70	81.90	82.20	82.40	82.60	82.80	82.90	83.50	84.00	Avg Ann'l P/E Ratio	16.0
Avg. Retail Sales (KWH)	15.3	16.8	12.9	15.0	15.8	15.0	20.7	20.0	17.9	19.2	19.2	19.2	Relative P/E Ratio	1.00
Avg. Indust. Use (MWH)	.81	1.01	.86	.95	.99	.95	1.16	1.05	.90	1.01	1.01	1.01	Avg Ann'l Div'd Yield	3.6%
Avg. Indust. Revs. per KWH (c)	4.5%	4.8%	5.9%	5.5%	5.1%	4.8%	4.2%	3.6%	3.6%	3.3%	3.3%	3.3%	Revenues (\$mill)	3500
Capacity at Peak (Mw)	2281.9	2484.7	2088.9	2129.5	2325.2	2232.8	2491.2	2611.7	2434.7	2448.3	2575	2680	Net Profit (\$mill)	295
Peak Load, Summer (Mw)	143.1	129.0	145.0	133.7	141.6	159.0	136.6	166.9	197.3	211.6	225	240	Income Tax Rate	35.0%
Annual Load Factor (%)	34.7%	37.1%	26.5%	35.8%	37.9%	34.2%	32.9%	32.7%	33.6%	34.8%	35.0%	35.0%	AFUDC % to Net Profit	4.0%
% Change Customers (yr-end)	2.8%	2.9%	4.1%	--	--	--	--	--	4.1%	4.0%	4.0%	4.0%	Long-Term Debt Ratio	48.0%
Fixed Charge Cov. (%)	50.2%	48.0%	52.4%	49.9%	51.6%	50.4%	53.3%	46.7%	50.6%	47.3%	48.0%	48.0%	Common Equity Ratio	52.0%
	49.8%	52.0%	47.6%	50.1%	48.4%	49.6%	46.7%	53.3%	49.4%	52.7%	52.0%	52.0%	Total Capital (\$mill)	4475
	2479.1	2599.5	2937.7	2874.1	3025.1	3079.5	3331.4	3013.9	3406.6	3358.0	3630	3850	Net Plant (\$mill)	6000
	2539.7	2720.3	2878.8	2955.4	3032.6	3119.6	3224.3	3439.0	4089.5	4406.8	4700	5000	Return on Total Cap'l	7.5%
	7.2%	6.5%	6.3%	6.1%	6.2%	6.4%	5.4%	6.8%	7.0%	7.4%	7.5%	7.5%	Return on Shr. Equity	12.5%
	11.6%	9.5%	10.4%	9.3%	9.7%	10.4%	8.8%	10.4%	11.7%	12.0%	12.0%	12.0%	Return on Com Equity ^E	12.5%
	11.6%	9.5%	10.4%	9.3%	9.7%	10.4%	8.8%	10.4%	11.7%	12.0%	12.0%	12.0%	Retained to Com Eq	5.5%
	3.8%	2.0%	2.6%	1.6%	1.9%	2.9%	1.2%	2.9%	4.2%	4.4%	4.5%	4.5%	All Div'ds to Net Prof	58%
	67%	80%	75%	83%	80%	73%	86%	72%	65%	63%	63%	62%		

BUSINESS: Vectren is a holding company formed through the merger of Indiana Energy and SIGCORP. Supplies electricity and gas to an area nearly two-thirds of the state of Indiana. Owns gas distribution assets in Ohio. Has a customer base exceeding 1.1 million. 2016 Electricity revenues: residential, 37%; commercial, 27%; industrial, 34%; other, 2%. 2016 Gas revenues: residential, 67%; commercial, 23%; other, 10%. Nonutility operations include Infrastructure Services and Energy Services. Est'd plant age: electric, 10 years. '16 depreciation rate: 4.0%. Has about 5,800 employees. Chairman, President, & CEO: Carl Chapman. Incorporated: Indiana. Address: One Vectren Square, Evansville, Indiana 47708. Telephone: 812-491-4000. Internet: www.vectren.com.

Shares of Vectren have moved higher in price in recent months, and are presently trading close to an all-time high.											
The company finished 2016 on a good note. Revenues advanced nearly 16% in the December quarter, on a year-to-year basis. Expenses increased at roughly the same pace, and share earnings were moderately higher. Favorable performance at the Utility Group was largely driven by continued investment in gas infrastructure programs in both Indiana and Ohio. On the nonutility side, the Infrastructure Services distribution business was able to capitalize on greater spending on gas infrastructure systems. Performance at the Infrastructure Services transmission operation has been impacted by increasing competition, which has reduced the number of projects awarded and pressured margins. The recent addition of several projects has provided some support here, and should continue to do so.											
Overall performance should remain solid going forward.											
Continued investment by the company in gas infrastructure and accelerated spending in its electric system augur well for future performance here. Vectren's utility businesses remain well positioned in their service territories. We look for solid results at the company's nonutility operations, as well. A greater national emphasis on infrastructure spending in the coming years may well benefit performance at the Infrastructure Services line. We envision healthy growth at the Energy Services unit, too.											
These shares do not stand out at this time.											
The stock is ranked to mirror the broader market for the year ahead. Long-term total return potential is nothing to write home about, either. This issue presently trades at a price-to-earnings multiple that is well above its historical average, following a run-up in the share price. We do expect solid growth at the company out to early next decade, but this appears to be discounted by the recent quotation. A selloff some time down the road may offer conservative, income-seeking accounts a more attractive entry point. Vectren earns good marks for Safety, Financial Strength, Price Stability, and Earnings Predictability. Volatility is below average here, as well (Beta: .75).											
Michael Napoli, CFA March 17, 2017											
Cal-endar	QUARTERLY REVENUES (\$ mill.) ^F								Full Year		
	Mar.31	Jun.30	Sep.30	Dec.31	Mar.31	Jun.30	Sep.30	Dec.31	2014	2015	
2014	796.8	542.5	595.6	676.8	2611.7				2434.7		
2015	706.2	551.0	573.5	604.0	2434.7				2448.3		
2016	660	565	650	700	2575						
2017	680	600	675	725	2680						
2018											
Cal-endar	EARNINGS PER SHARE ^A								Full Year		
	Mar.31	Jun.30	Sep.30	Dec.31	2014	2015					
2014	.62	.14	.57	.69	2.02	2.39					
2015	.69	.43	.48	.79	2.39	2.55					
2016	.58	.39	.74	.84	2.55	2.70					
2017	.64	.43	.75	.88	2.70	2.85					
2018	.70	.46	.78	.91	2.85						
2019											
Cal-endar	QUARTERLY DIVIDENDS PAID ^{B+†}								Full Year		
	Mar.31	Jun.30	Sep.30	Dec.31	2013	2014					
2013	.355	.355	.355	.360	1.43	1.46					
2014	.360	.360	.360	.380	1.46	1.54					
2015	.380	.380	.380	.400	1.54	1.62					
2016	.400	.400	.400	.420	1.62						
2017	.420										
2018											

(A) Diluted EPS. Excl. nonrecur. gain (loss): '09, 15c. Next eps report due early May. (B) Div'ds historically paid in early March, June, September, and December. †Div'd rein-vest. plan avail. † Shareholder invest. plan avail. (C) Incl. intang. ln '16, \$7.27/sh. (D) In millions. (E) Electric rate base determination: fair value. Rates allowed on elect. common equity range from 10.15% to 10.4%. Regulatory Climate: Above Average. (F) Totals may not sum due to rounding.

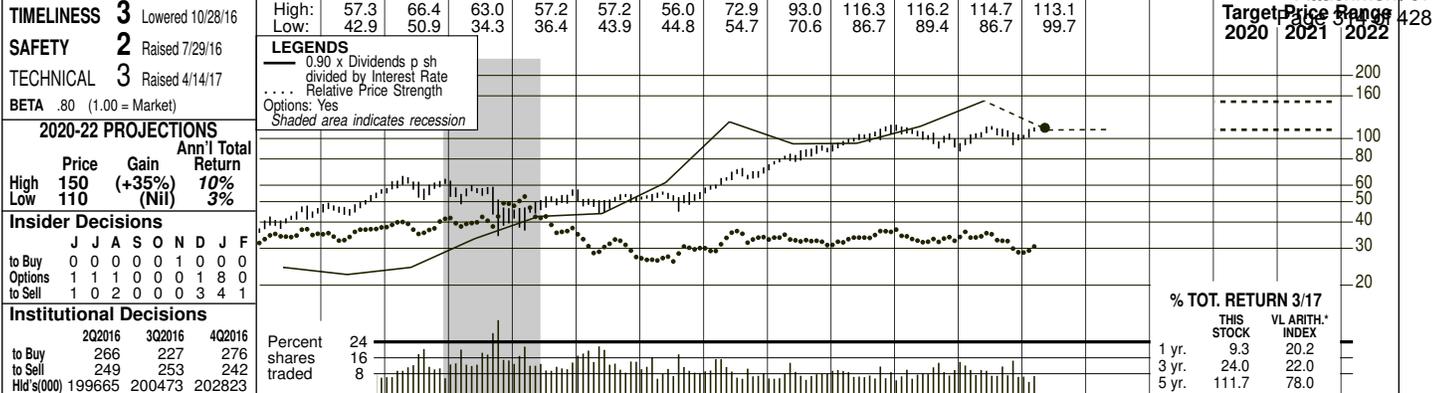
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Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	75

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SEMPRA ENERGY NYSE-SRE

RECENT PRICE **112.50** P/E RATIO **21.6** (Trailing: 26.7; Median: 15.0) RELATIVE P/E RATIO **1.10** DIV'D YLD **3.0%** **VALUE LINE** May 22, 2017
Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
39.27	29.38	34.81	40.18	45.64	44.89	43.79	44.21	32.88	37.44	41.83	39.80	43.18	44.80	41.20	40.71	41.45	42.30	Revenues per sh	52.75
5.39	5.71	5.56	6.58	5.96	6.74	6.93	7.40	7.94	7.76	8.58	8.92	8.87	9.50	10.32	9.50	10.60	11.45	"Cash Flow" per sh	15.25
2.55	2.79	3.01	3.93	3.52	4.23	4.26	4.43	4.78	4.02	4.47	4.35	4.22	4.63	5.23	4.24	5.00	5.50	Earnings per sh ^A	7.50
1.00	1.00	1.00	1.00	1.16	1.20	1.24	1.37	1.56	1.56	1.92	2.40	2.52	2.64	2.80	3.02	3.29	3.56	Div'd Decl'd per sh ^B	4.55
5.22	5.92	4.63	4.62	5.46	7.28	7.70	8.47	7.76	8.58	11.85	12.20	10.52	12.68	12.71	16.85	13.50	10.45	Cap'l Spending per sh	11.50
13.17	13.79	17.17	20.78	23.95	28.66	31.87	32.75	36.54	37.54	41.00	42.42	45.03	45.98	47.56	51.77	53.40	55.20	Book Value per sh ^C	57.75
204.48	204.91	226.60	234.18	257.19	262.01	261.21	243.32	246.51	240.45	239.93	242.37	244.46	246.33	248.30	250.15	252.00	254.00	Common Shs Outst'g ^D	236.00
9.7	8.2	9.0	8.6	11.8	11.5	14.0	11.8	10.1	12.6	11.8	14.9	19.7	21.9	19.7	24.4	24.4	24.4	Avg Ann'l P/E Ratio	17.5
.50	.45	.51	.45	.63	.62	.74	.71	.67	.80	.74	.95	1.11	1.15	.99	1.29	1.29	1.29	Relative P/E Ratio	1.10
4.1%	4.4%	3.7%	2.9%	2.8%	2.5%	2.1%	2.6%	3.2%	3.1%	3.6%	3.7%	3.0%	2.6%	2.7%	2.9%	2.9%	2.9%	Avg Ann'l Div'd Yield	3.5%

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
11438	10758	8106.0	9003.0	10036	9647.0	10557	11035	10231	10183	10450	10750	Revenues (\$mill)	12450						
1135.0	1123.0	1193.0	1008.0	1088.0	1079.0	1060.0	1162.0	1314.0	1065.0	1375	1510	Net Profit (\$mill)	1875						
33.6%	29.2%	30.5%	26.5%	25.3%	18.2%	26.5%	19.7%	19.2%	14.4%	29.0%	29.0%	Income Tax Rate	28.0%						
11.5%	13.2%	10.6%	11.3%	15.2%	17.2%	11.2%	14.4%	15.3%	22.2%	15.0%	13.0%	AFUDC % to Net Profit	11.0%						
34.8%	44.5%	44.8%	49.4%	50.4%	52.8%	50.5%	51.7%	52.6%	52.7%	53.0%	53.0%	Long-Term Debt Ratio	60.0%						
63.7%	54.2%	54.1%	49.6%	49.2%	46.7%	49.4%	48.2%	47.3%	47.3%	47.0%	46.5%	Common Equity Ratio	40.0%						
13071	14692	16646	18186	20015	22002	22281	23513	24963	27400	28750	30225	Total Capital (\$mill)	33900						
14884	16865	18281	19876	23572	25191	25460	25902	28039	32931	34925	36075	Net Plant (\$mill)	39100						
9.6%	8.5%	8.3%	6.8%	6.7%	6.1%	6.0%	6.1%	6.4%	5.0%	6.0%	6.0%	Return on Total Cap'l	7.0%						
13.3%	13.8%	13.0%	10.9%	10.9%	10.4%	9.6%	10.2%	11.1%	8.2%	9.5%	10.0%	Return on Shr. Equity	13.0%						
13.5%	14.0%	13.1%	11.1%	11.0%	10.4%	9.6%	10.3%	11.1%	8.2%	9.5%	10.0%	Return on Com Equity ^E	13.0%						
9.7%	9.7%	9.3%	7.0%	6.5%	5.1%	4.1%	5.0%	5.8%	2.9%	3.5%	3.5%	Retained to Com Eq	5.0%						
29%	31%	29%	37%	41%	52%	58%	52%	48%	65%	65%	64%	All Div'ds to Net Prof	61%						

CAPITAL STRUCTURE as of 12/31/16
Total Debt \$17121 mill. Due in 5 Yrs \$7861 mill.
LT Debt \$14429 mill. LT Interest \$620 mill.
Incl. \$240 mill. capitalized leases.
(LT interest earned: 2.8x)

Leases, Uncapitalized Annual rentals \$78 mill.
Pension Assets-12/16 \$2459 mill.

Pfd Stock \$20 mill. **Pfd Div'd** \$1.2 mill.
811,073 shs. 6% cum., \$25 par.
Common Stock 250,543,688 shs.
as of 2/21/17

MARKET CAP: \$28 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

2014	2015	2016	
% Change Retail Sales (KWH)	+1.8	-1.0	3.8
Avg. Indust. Use (MWH)	4543	4683	4785
Avg. Indust. Revs. per KWH (c)	16.55	17.58	NA
Capacity at Peak (Mw)	NMF	NMF	NMF
Peak Load, Summer (Mw)	NMF	NMF	NMF
Annual Load Factor (%)	NMF	NMF	NMF
% Change Customers (yr-end)	+6	+7	+6

ANNUAL RATES

Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16	
Revenues	-5%	2.5%	4.0%
"Cash Flow"	4.0%	4.0%	8.0%
Earnings	2.0%	1.0%	8.0%
Dividends	9.5%	11.0%	8.5%
Book Value	7.0%	5.0%	3.0%

QUARTERLY REVENUES (\$ mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	2795	2678	2815	2747	11035
2015	2682	2367	2481	2701	10231
2016	2622	2156	2535	2870	10183
2017	2750	2250	2550	2900	10450
2018	2850	2350	2600	2950	10750

EARNINGS PER SHARE ^A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.99	1.08	1.39	1.17	4.63
2015	1.74	1.03	.99	1.47	5.23
2016	1.61	.06	1.02	1.52	4.24
2017	1.70	1.00	1.00	1.30	5.00
2018	1.85	1.10	1.10	1.45	5.50

QUARTERLY DIVIDENDS PAID ^B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.60	.63	.63	.63	2.49
2014	.63	.66	.66	.66	2.61
2015	.66	.70	.70	.70	2.76
2016	.70	.755	.755	.755	2.97
2017	.755	.8225			

SEMPRA ENERGY'S EARNINGS WILL PROBABLY RISE SIGNIFICANTLY THIS YEAR. This is partly because the comparison with the 2016 tally is easy, especially in the second quarter. In the June period last year, the company took an aftertax charge of \$123 million for the early release of gas pipeline capacity. Beyond this, Sempra is experiencing growth in both its utility and non-utility operations. The domestic utilities are benefiting from rate hikes and growth in their rate bases, and the South American utilities are experiencing rising demand for power. On the nonutility side, several projects are coming on line in 2017, particularly in Mexico (see below). Our earnings estimate is within Sempra's guidance of \$4.85-\$5.25 a share. **We forecast another year of solid growth in 2018.** Sempra will benefit from a full year of income from projects that are coming on line in 2017, as well as a partial year of profits from those for which completion is expected in 2018. Our estimate is within guidance of \$5.30-\$5.80 a share. **The company's earning power should accelerate in 2019.** The Cameron liquefied natural gas export facility should

begin contributing to the bottom line. Once the project is fully operating, annual earnings are expected to amount to \$300 million-\$350 million initially, rising as debt is paid down. **Mexico provides ample opportunities for investment for Sempra.** Through the company's 66.4% stake in IEnova, management expects operating earnings to surge 50% in 2017, thanks to acquisitions and projects that are scheduled for completion this year. The company has built some gas pipelines, and has opportunities to build electric transmission lines and renewable energy projects. **The board of directors raised the dividend significantly.** The annual payout was raised \$0.27 a share (8.9%). Sempra expects 8%-9% dividend growth through 2019, with the possibility of accelerating this once Cameron is completed. **The dividend yield of Sempra stock is low, by utility standards.** This reflects the company's healthy earnings and dividend growth potential. Total return prospects over the 3- to 5-year period are a cut above the norm for utility equities. *Paul E. Debbas, CFA April 28, 2017*

AVANGRID, INC. NYSE-AGR				RECENT PRICE	43.75	P/E RATIO	20.8 (Trailing: 20.6 Median: NMF)	RELATIVE P/E RATIO	1.06	DIV'D YLD	4.0%	VALUE LINE	May 22, 2017 Item No. 73 Attachment 67	
TIMELINESS	—							High: 38.9	46.7	44.3			Target Price Range 2020-2022	
SAFETY	2	Raised 2/17/17	LEGENDS		Relative Price Strength			Low: 32.4	35.4	37.4			128	
TECHNICAL	—		Options: Yes		Shaded area indicates recession								96	
BETA	NMF	(1.00 = Market)											80	
2020-22 PROJECTIONS													64	
	Price	Gain	Ann'l Total Return										48	
High	45	(+5%)	5%										40	
Low	35	(-20%)	-1%										32	
Insider Decisions													24	
	J	A	S	O	N	D	J	F	M				16	
to Buy	0	1	1	1	3	1	0	2	0				12	
Options	0	0	0	0	0	0	0	0	0					
to Sell	0	0	0	0	0	0	0	0	0					
Institutional Decisions														
	2Q2016	3Q2016	4Q2016	Percent	9								% TOT. RETURN 4/17	
to Buy	98	110	106	shares	6								THIS STOCK 10.9	
to Sell	77	86	109	traded	3								VL ARITH. INDEX 19.0	
Hld's(000)	39675	38903	39830										1 yr. — 25.3	
													3 yr. — 82.4	
													5 yr. —	
AVANGRID, Inc. was formed through a merger between Iberdrola USA, Inc. and UIL Holdings Corporation in December of 2015. Iberdrola S.A., a worldwide leader in the energy industry, owns 81.5% of AVANGRID. The predecessor company was founded in 1852 and is headquartered in New Gloucester, Maine. It was incorporated in 1997 in New York under the name NGE Resources, Inc. AVANGRID began trading on the NYSE on December 17, 2015.														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
	--	--	--	--	--	--	--	--	14.14	19.48	20.40	21.05	Revenues per sh	23.50
	--	--	--	--	--	--	--	--	3.44	4.74	4.85	5.15	"Cash Flow" per sh	6.00
	--	--	--	--	--	--	--	--	1.05	1.98	2.10	2.25	Earnings per sh ^A	2.75
	--	--	--	--	--	--	--	--	--	1.73	1.73	1.73	Div'd Decl'd per sh ^B	1.85
	--	--	--	--	--	--	--	--	3.50	5.52	6.45	6.45	Cap'l Spending per sh	5.75
	--	--	--	--	--	--	--	--	48.74	48.90	49.25	49.75	Book Value per sh ^C	52.00
	--	--	--	--	--	--	--	--	308.86	308.99	309.00	309.00	Common Shs Outst'g ^D	309.00
	--	--	--	--	--	--	--	--	33.5	20.5	<i>Bold figures are Value Line estimates</i>	<i>Value Line estimates</i>	Avg Ann'l P/E Ratio	14.5
	--	--	--	--	--	--	--	--	1.69	1.08			Relative P/E Ratio	.90
	--	--	--	--	--	--	--	--	--	4.3%			Avg Ann'l Div'd Yield	4.7%
CAPITAL STRUCTURE as of 3/31/17														
Total Debt	\$5199 mill.	Due in 5 Yrs	\$2285 mill.					4594.0	4367.0	6018.0	6300	6500	Revenues (\$mill)	7250
LT Debt	\$4507 mill.	LT Interest	\$225 mill.					424.0	267.0	611.0	645	695	Net Profit (\$mill)	825
Incl.	\$104 mill.	capitalized leases.						39.9%	11.3%	37.4%	33.0%	33.0%	Income Tax Rate	33.0%
(LT interest earned:	4.6x)							6.8%	12.7%	7.5%	7.0%	7.0%	AFUDC % to Net Profit	6.0%
Leases, Uncapitalized	Annual rentals \$106 mill.							16.8%	23.1%	23.0%	24.0%	24.5%	Long-Term Debt Ratio	24.0%
								83.2%	76.9%	77.0%	76.0%	75.5%	Common Equity Ratio	76.0%
Pension Assets-12/16	\$2672 mill.	Oblig	\$3448 mill.					14956	19583	19619	20050	20350	Total Capital (\$mill)	21100
Pfd Stock	None							17099	20711	21548	22700	23800	Net Plant (\$mill)	26200
Common Stock	309,069,291 shs.							3.4%	2.1%	3.8%	4.0%	4.0%	Return on Total Cap'l	4.5%
as of 5/3/17								3.4%	1.8%	4.0%	4.0%	4.5%	Return on Shr. Equity	5.0%
MARKET CAP:	\$14 billion (Large Cap)							3.4%	1.8%	1.4%	5%	1.0%	Return on Com Equity ^E	5.0%
								--	--	66%	83%	77%	Retained to Com Eq	1.5%
													All Div'ds to Net Prof	69%
ELECTRIC OPERATING STATISTICS														
	2014	2015	2016	BUSINESS: AVANGRID, Inc., formerly Iberdrola USA, Inc., is a diversified energy and utility company that serves 2.2 million electric customers in New York, Connecticut, and Maine and 1 million gas customers in New York, Connecticut, Massachusetts and Maine. Has a nonregulated generating subsidiary focused on wind power, with 6.5 gigawatts of capacity. Revenue breakdown by customer class not available. Generating sources not available. Fuel costs: 21% of revenues. '16 depreciation rate: 3.0%. Iberdrola owns 81.5% of stock. Has 6,800 employees. Chairman: José Ignacio Sanchez Galan. CEO: James P. Torgerson. Incorporated: New York. Address: 157 Church Street, New Haven, Connecticut 06506. Telephone: 207-688-6363. Internet: www.avangrid.com.										
% Change Retail Sales (KWH)	NA	NA	NA	tomter class not available. Generating sources not available. Fuel costs: 21% of revenues. '16 depreciation rate: 3.0%. Iberdrola owns 81.5% of stock. Has 6,800 employees. Chairman: José Ignacio Sanchez Galan. CEO: James P. Torgerson. Incorporated: New York. Address: 157 Church Street, New Haven, Connecticut 06506. Telephone: 207-688-6363. Internet: www.avangrid.com.										
Avg. Indust. Use (MWH)	NA	NA	NA											
Avg. Indust. Revs. per KWH (c)	NA	NA	NA											
Capacity at Peak (Mw)	NA	NA	NA											
Peak Load, Summer (Mw)	NA	NA	NA											
Annual Load Factor (%)	NA	NA	NA											
% Change Customers (yr-end)	NA	NA	+5											
Fixed Charge Cov. (%)	347	183	415											
ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '20-'22														
Revenues	--	--	NMF	The utility business is benefiting from rate relief. In Connecticut, United Illuminating was granted a tariff increase of \$43.0 million at the start of 2017. The utility will receive additional hikes of \$11.5 million next year and \$2.9 million in 2019. In New York, the company's two utilities got electric and gas increases totaling \$54.5 million on May 1, 2016, and will receive \$72.1 million and \$80.5 million in May of 2017 and 2018, respectively. The renewables business is benefiting from the addition of wind and solar projects. A 208-megawatt wind farm reached full production in the first quarter, and AVANGRID has about 600 mw under construction for operation in 2017. The company is also repowering some older projects. There are further opportunities in offshore wind; in fact, AVANGRID has taken a 50% stake in a project to serve Massachusetts.										
"Cash Flow"	--	--	NMF	Our earnings presentation includes some items that the company excludes from its 2017 guidance of \$2.10-\$2.35 a share. We include mark-to-market accounting items stemming from										
Earnings	--	--	NMF	the renewables business because these are an ongoing part of AVANGRID's results. (This boosted March-quarter income by \$0.04 a share.) Also, we include results from the gas storage business, which is estimated to lose \$0.08-\$0.12 a share this year. Management is excluding this because it is a noncore business.										
Dividends	--	--	NMF	We expect no dividend growth in the near term. The payout ratio is high, even by utility standards. AVANGRID is targeting a payout ratio of 65%-75%. We project that the company will reach this goal within a few years, perhaps as early as 2019. The company's cash flow is ample; now that it is not paying cash taxes, so cash flow exceeds our "cash flow" figures.										
Book Value	--	--	NMF	The stock has risen more than 15% since the start of 2017. There has been no appreciable improvement in the company's prospects since then, so we suspect some takeover speculation is reflected in the recent quotation. The dividend yield is slightly above average, but 3- to 5-year total return potential is low. The stock is unranked for Timeliness due to its short trading history.										
Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year	Paul E. Debbas, CFA							May 19, 2017	
	Mar.31	Jun.30	Sep.30	Dec.31										
2014	1556	938	982	1118	4594.0									
2015	1227	939	1048	1153	4367.0									
2016	1670	1439	1418	1491	6018.0									
2017	1758	1471	1471	1600	6300									
2018	1850	1500	1500	1650	6500									
Cal-endar	EARNINGS PER SHARE ^A				Full Year									
	Mar.31	Jun.30	Sep.30	Dec.31										
2014	--	--	--	--	--									
2015	.42	.04	.22	.37	1.05									
2016	.63	.33	.35	.67	1.98									
2017	.77	.34	.34	.65	2.10									
2018	.85	.35	.35	.70	2.25									
Cal-endar	QUARTERLY DIVIDENDS PAID ^B				Full Year									
	Mar.31	Jun.30	Sep.30	Dec.31										
2013	--	--	--	--	--									
2014	--	--	--	--	--									
2015	--	--	--	--	--									
2016	--	.432	.432	.432	1.30									
2017	.432	.432												

(A) Diluted EPS. Excl. nonrecurring gain: '16, 6c. Next earnings report due late July. (B) Div'ds paid in early Jan., April, July, and Oct. Dividend reinvestment plan available. (C) Incl. intangibles. In '16: \$6.8 bill., \$21.86/sh. (D) In millions. (E) Rate base: net original cost. Rate allowed on com. eq. in NY in '16: 9.0%; in CT in '17: 9.1% elec.; in CT in '16: 9.36% gas; in ME in '14: 9.45%; earned on avg. common eq., '16: 4.1%. Regulatory Climate: Below Average.

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DOMINION RES. NYSE-D RECENT PRICE **77.48** P/E RATIO **22.8** (Trailing: 21.7; Median: 19.0) RELATIVE P/E RATIO **1.16** DIV'D YLD **4.1%** VALUE LINE May 22, 2017 Item No. 73 Attachment 67

TIMELINESS 3 Lowered 11/18/16
SAFETY 2 Raised 9/11/98
TECHNICAL 3 Lowered 5/19/17
BETA .65 (1.00 = Market)

High: 42.2, 49.4, 48.5, 39.8, 45.1, 53.6, 55.6, 68.0, 80.9, 79.9, 79.0, 79.4
Low: 34.4, 39.8, 31.3, 27.1, 36.1, 42.1, 48.9, 51.9, 63.1, 64.5, 66.3, 70.9

LEGENDS
0.71 x Dividends p sh divided by Interest Rate
Relative Price Strength
2-for-1 split 11/07
Options: Yes
Shaded area indicates recession

2020-22 PROJECTIONS
Ann'l Total Return
Price Gain (+35%) 12%
High 105
Low 75

Insider Decisions
to Buy 0 0 0 0 0 0 0 1 0
Options 0 0 1 0 0 0 1 8 1
to Sell 0 0 0 0 0 0 1 0 1

Institutional Decisions
202016 3Q2016 4Q2016
to Buy 499 423 449
to Sell 314 377 400
Hlds(000) 398528 406322 407763

Percent shares traded

% TOT. RETURN 4/17
THIS STOCK VL ARITH. INDEX
1 yr. 12.6 19.0
3 yr. 19.2 25.3
5 yr. 79.2 82.4

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
19.94	16.58	18.57	20.54	25.96	23.61	27.17	27.93	25.24	26.17	25.24	22.73	22.56	21.25	19.59	18.70	19.35	19.90	Revenues per sh	22.50
3.92	4.45	3.97	4.18	3.70	4.91	5.08	5.07	4.82	5.11	5.04	5.24	5.47	5.71	5.98	6.33	6.75	7.45	"Cash Flow" per sh	9.00
1.49	2.41	1.96	2.13	1.50	2.40	2.13	3.04	2.64	2.89	2.76	2.75	3.09	3.05	3.20	3.44	3.40	3.80	Earnings per sh A	4.50
1.29	1.29	1.29	1.30	1.34	1.38	1.46	1.58	1.75	1.83	1.97	2.11	2.25	2.40	2.59	2.80	3.02	3.30	Div'd Decl'd per sh B	4.20
2.31	2.17	5.20	3.88	4.83	5.81	6.89	6.09	6.40	5.89	6.41	7.20	7.06	9.13	9.35	9.69	8.95	7.80	Cap'l Spending per sh	8.75
15.81	16.57	16.20	16.79	14.96	18.50	16.31	17.28	18.66	20.66	20.09	18.34	20.02	19.74	21.24	23.26	25.10	25.65	Book Value per sh C	24.25
529.40	616.20	650.40	680.40	695.00	698.00	576.80	583.20	599.40	580.80	569.70	576.10	581.50	585.30	596.30	627.80	643.50	643.50	Common Shs Outst'g D	615.00
20.9	12.0	15.2	15.1	24.9	16.0	20.6	13.8	12.7	14.3	17.3	18.9	19.2	23.0	22.1	21.3	21.1	21.3	Avg Ann'l P/E Ratio	20.0
1.07	.66	.87	.80	1.33	.86	1.09	.83	.85	.91	1.09	1.20	1.08	1.21	1.11	1.13	1.11	1.13	Relative P/E Ratio	1.25
4.1%	4.4%	4.3%	4.0%	3.6%	3.6%	3.3%	3.8%	5.2%	4.4%	4.1%	4.1%	3.8%	3.4%	3.7%	3.8%	3.7%	3.8%	Avg Ann'l Div'd Yield	4.7%

CAPITAL STRUCTURE as of 3/31/17
Total Debt \$36114 mill. Due in 5 Yrs \$14890 mill.
LT Debt \$31096 mill. LT Interest \$1235 mill.
(LT interest earned: 3.5x)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Revenues (\$mill)	13850
15674	16290	15131	15197	14379	13093	13120	12436	11683	11737	12450	12800	12800	12800	12800	12800	12800	12800	Net Profit (\$mill)	2975
1414.0	1781.0	1585.0	1724.0	1603.0	1594.0	1806.0	1793.0	1899.0	2123.0	2255	2570	2570	2570	2570	2570	2570	2570	Income Tax Rate	30.0%
33.4%	37.1%	33.2%	38.6%	34.6%	36.2%	33.0%	28.1%	32.0%	22.8%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	AFUDC % to Net Profit	4.0%
7.3%	4.9%	4.8%	5.9%	5.3%	5.7%	3.7%	4.5%	5.3%	7.5%	6.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	Long-Term Debt Ratio	70.5%
57.8%	59.1%	57.5%	56.3%	59.8%	60.9%	61.9%	65.4%	65.1%	67.4%	67.0%	65.5%	65.5%	65.5%	65.5%	65.5%	65.5%	65.5%	Common Equity Ratio	29.5%
41.1%	39.8%	41.5%	42.8%	39.3%	38.2%	37.3%	34.6%	34.9%	32.6%	33.0%	34.5%	34.5%	34.5%	34.5%	34.5%	34.5%	34.5%	Total Capital (\$mill)	50800
22898	25290	26923	28012	29097	27676	31229	33360	36280	44836	48825	48125	48125	48125	48125	48125	48125	48125	Net Plant (\$mill)	64300
21352	23274	25592	26713	29670	30773	32628	36270	41554	49964	53550	56275	56275	56275	56275	56275	56275	56275	Return on Total Cap'l	7.5%
8.0%	8.7%	7.5%	7.7%	7.0%	7.5%	7.3%	6.6%	6.5%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	Return on Shr. Equity	19.0%
14.6%	17.2%	13.9%	14.1%	13.7%	14.7%	15.2%	15.5%	15.0%	14.5%	13.5%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	Return on Com Equity E	19.0%
14.9%	17.5%	14.0%	14.2%	13.9%	14.9%	15.4%	15.4%	15.0%	14.5%	13.5%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	Retained to Com Eq	1.5%
5.0%	8.4%	4.7%	5.3%	4.0%	3.5%	4.2%	3.3%	2.9%	2.7%	1.5%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	All Div'ds to Net Prof	88%
67%	52%	67%	63%	71%	77%	73%	79%	81%	81%	85%	83%	83%	83%	83%	83%	83%	83%		

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	+1.6	+7	NA
Avg. Indust. Use (MWH)	13847	13433	NA
Avg. Indust. Revs. per KWH (c)	6.12	6.17	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.0	+9	NA

Fixed Charge Cov. (%) 266 352 310

BUSINESS: Dominion Resources, Inc. is a holding company for Virginia Power & North Carolina Power, which serve 2.6 mill. customers in Virginia & northeastern North Carolina. Serves 2.3 mill. gas customers in Ohio, West Virginia, & Utah. Nonutility ops. incl. independent power production. Owns 70.9% of Dominion Midstream Partners. Acq'd Questar 9/16. Elec. rev. breakdown: residential, 46%; commercial, 32%; industrial, 7%; other, 15%. Generating sources: nuclear, 31%; gas, 31%; coal, 24%; other, 6%; purch., 8%. Fuel costs: 25% of revs. '16 reported depr. rates: 2.3%-4.1%. Has 16,200 employees. Chairman, Pres. & CEO: Thomas F. Farrell II. Inc.: VA. Address: 120 Tredegar St., P.O. Box 26532, Richmond, VA 23261-6532. Tel.: 804-819-2000. Internet: www.dom.com.

We estimate that Dominion Resources' earnings will decline slightly this year. Virginia Power is performing well, and should increase its income. However, there are some offsetting negative factors. A decline in tax credits for solar investment will hurt the bottom line by \$0.20 a share. Lower prices for power produced by the Millstone nonregulated nuclear facility will have a negative effect estimated at \$0.15-\$0.20 a share, and Millstone will have an additional refueling outage. Also, average shares outstanding will be higher. We note that our estimate is conservative. In fact, this is at the low end of the company's targeted range of \$3.40-\$3.90 a share. Dominion stock performed poorly in early 2017 after the company put forth this guidance, but the share price has rebounded since then. The recent quotation is not far below its all-time high.

Earnings should be much improved in 2018. In fact, management expects growth of at least 10%. The biggest driver is the conversion of the Cove Point liquefied natural gas terminal into an export facility. This project is scheduled for completion in late 2017, and will boost profits by an estimated \$0.40-\$0.45 a share in 2018. Millstone continues to feel the effects of weak power prices, but would benefit from proposed legislation in Connecticut that would enable it to participate in power auctions that are now limited to renewable energy. We are not assuming that this will be enacted.

Beyond 2018, the company's goal is annual earnings growth of 6%-8%. Virginia Power's addition of a \$1.3 billion, 1,588-megawatt gas-fired plant should benefit profits beginning in 2019. It also plans to invest some \$800 million a year in its electric transmission business.

This stock has an above-average dividend yield, even by utility standards. Strong dividend growth through 2020-2022 should produce a total return that also exceeds the industry norm.

Dominion Resources is changing its name to Dominion Energy. This will take effect as soon as the Virginia Corporation Commission issues a certificate of amendment. The stock's ticker symbol will remain D.

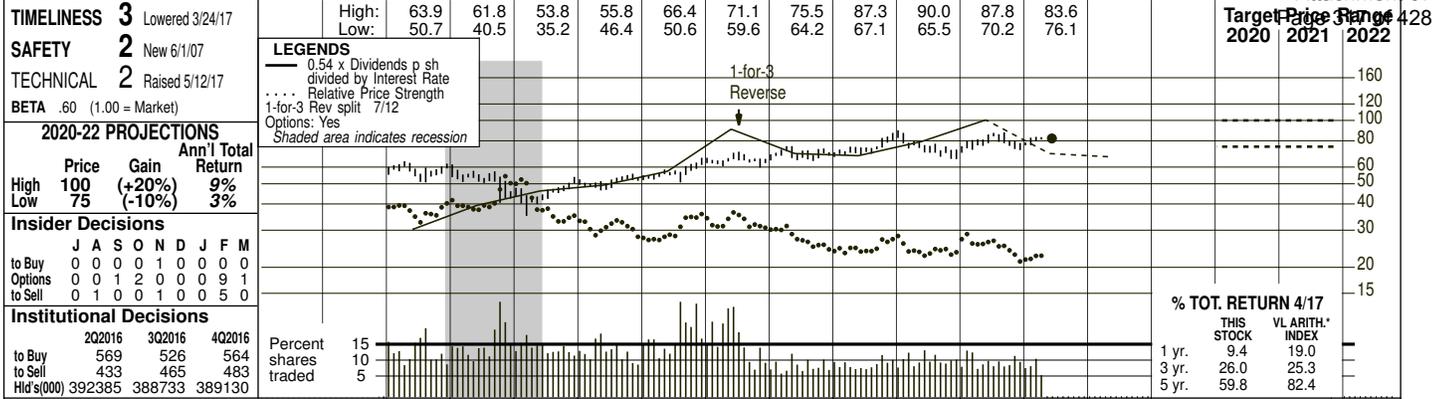
Paul E. Debbas, CFA May 19, 2017

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	3630	2813	3050	2943	12436
2015	3409	2747	2971	2556	11683
2016	2921	2598	3132	3086	11737
2017	3384	2850	3150	3066	12450
2018	3500	2900	3250	3150	12800

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	1.03	.60	.95	.47	3.05
2015	.91	.70	1.00	.59	3.20
2016	.88	.73	1.10	.73	3.44
2017	1.01	.64	1.00	.75	3.40
2018	1.05	.80	1.10	.85	3.80

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.562	.562	.563	.563	2.25
2014	.60	.60	.60	.60	2.40
2015	.647	.647	.648	.648	2.59
2016	.70	.70	.70	.70	2.80
2017	.755				

DUKE ENERGY NYSE-DUK RECENT PRICE **82.11** P/E RATIO **17.7** (Trailing: 21.1; Median: 17.0) RELATIVE P/E RATIO **0.90** DIV'D YLD **4.3%** VALUE LINE **Target Price Range 2020-2022** May 22, 2017 Item No. 73 Attachment 67



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
Duke Energy Corporation, in its current configuration, began trading on January 3, 2007, the day after it spun off its midstream gas operations into a new company, Spectra Energy (NYSE: SE). Duke Energy shareholders received half a share of Spectra Energy for each Duke share held. In July of 2012, Duke acquired Progress Energy and effected a 1-for-3 reverse split. Data for the "old" Duke are not shown because they are not comparable.	30.24	31.15	29.18	32.22	32.63	27.88	34.84	33.84	34.10	32.49	34.25	37.40	Revenues per sh	41.25
	8.11	7.34	7.58	8.49	8.68	6.80	8.56	9.11	9.40	9.20	10.50	10.95	"Cash Flow" per sh	12.00
	3.60	3.03	3.39	4.02	4.14	3.71	3.98	4.13	4.10	3.71	4.65	5.00	Earnings per sh ^A	5.50
	2.58	2.70	2.82	2.91	2.97	3.03	3.09	3.15	3.24	3.36	3.48	3.60	Div'd Decl'd per sh ^B	3.96
	7.43	10.35	9.85	10.84	9.80	7.81	7.83	7.62	9.83	11.29	13.45	12.55	Cap'l Spending per sh	12.50
	50.40	49.51	49.85	50.84	51.14	58.04	58.54	57.81	57.74	58.62	59.75	61.40	Book Value per sh ^C	65.00
	420.62	423.96	436.29	442.96	445.29	704.00	706.00	707.00	688.00	700.00	701.00	691.00	Common Shs Outst'g ^D	694.00
	16.1	17.3	13.3	12.7	13.8	17.5	17.4	17.9	18.2	21.3	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	16.0
	.85	1.04	.89	.81	.87	1.11	.98	.94	.92	1.13			Relative P/E Ratio	1.00
	4.4%	5.2%	6.2%	5.7%	5.2%	4.7%	4.4%	4.3%	4.3%	4.3%			Avg Ann'l Div'd Yield	4.5%
CAPITAL STRUCTURE as of 3/31/17 Total Debt \$52556 mill. Due in 5 Yrs \$18470 mill. LT Debt \$47021 mill. LT Interest \$1740 mill. Incl. \$1100 mill. capitalized leases. (LT interest earned: 3.0x)	12720	13207	12731	14272	14529	19624	24598	23925	23459	22743	24000	24700	Revenues (\$mill)	28550
	1522.0	1279.0	1461.0	1765.0	1839.0	2136.0	2813.0	2934.0	2854.0	2560.0	3345	3495	Net Profit (\$mill)	3920
	31.9%	32.5%	34.4%	32.6%	31.3%	30.2%	32.6%	30.6%	32.2%	31.0%	32.0%	32.0%	Income Tax Rate	32.0%
	7.2%	16.0%	17.5%	22.7%	23.2%	22.3%	8.8%	7.2%	9.2%	11.7%	10.0%	10.0%	AFUDC % to Net Profit	9.0%
	30.9%	38.7%	42.6%	44.3%	45.1%	47.0%	48.0%	47.7%	48.6%	52.6%	54.5%	54.5%	Long-Term Debt Ratio	55.0%
Leases, Uncapitalized Annual rentals \$218 mill. Pension Assets-12/16 \$8531 mill. Oblig \$8006 mill.	69.1%	61.3%	57.4%	55.7%	54.9%	52.9%	52.0%	52.3%	51.4%	47.4%	45.5%	45.5%	Common Equity Ratio	45.0%
	30697	34238	37863	40457	41451	77307	79482	78088	77222	86609	90600	93175	Total Capital (\$mill)	101500
Pfd Stock None	31110	34036	37950	40344	42661	68558	69490	70046	75709	82520	90200	94800	Net Plant (\$mill)	107900
Common Stock 699,883,528 shs.	6.0%	4.8%	4.9%	5.5%	5.6%	3.6%	4.6%	4.8%	4.8%	4.0%	5.0%	5.0%	Return on Total Cap'l	5.0%
	7.2%	6.1%	6.7%	7.8%	8.1%	5.2%	6.8%	7.2%	7.2%	6.2%	8.0%	8.0%	Return on Shr. Equity	8.5%
	7.2%	6.1%	6.7%	7.8%	8.1%	5.2%	6.8%	7.2%	7.2%	6.2%	8.0%	8.0%	Return on Com Equity ^E	8.5%
MARKET CAP: \$57 billion (Large Cap)	2.0%	.6%	1.1%	2.1%	2.2%	.9%	1.5%	1.7%	1.5%	.6%	2.5%	2.5%	Retained to Com Eq	2.5%
	72%	89%	84%	73%	72%	82%	78%	76%	79%	91%	72%	71%	All Div'ds to Net Prof	70%

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	+2.2	+6	-3
Avg. Indust. Use (MWH)	2876	2883	3486
Avg. Indust. Revs. per KWH (c)	6.15	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (avg.)	+1.0	+1.2	+1.4

ANNUAL RATES

	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	3.0%	1.5%	2.0%
"Cash Flow"	1.5%	2.5%	5.0%
Earnings	3.5%	.5%	4.5%
Dividends	-	2.5%	3.5%
Book Value	-5%	3.0%	2.0%

QUARTERLY REVENUES (\$ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	6263	5708	6395	5559	23925
2015	6065	5589	6483	5322	23459
2016	5377	5213	6576	5577	22743
2017	5729	5671	6800	5800	24000
2018	5900	5800	7000	6000	24700

EARNINGS PER SHARE ^A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	1.05	1.02	1.25	.81	4.13
2015	1.09	.87	1.44	.70	4.10
2016	.83	.90	1.44	.53	3.71
2017	1.02	1.00	1.60	1.03	4.65
2018	1.05	1.05	1.65	1.05	4.80

QUARTERLY DIVIDENDS PAID ^B

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.765	.765	.78	.78	3.09
2014	.78	.78	.795	.795	3.15
2015	.795	.795	.825	.825	3.24
2016	.825	.825	.855	.855	3.36
2017	.855				

BUSINESS: Duke Energy Corporation is a holding company for utilities with 7.4 mill. elec. customers in NC, FL, IN, SC, Oh, & KY, and 1.5 mill. gas customers in OH, KY, NC, SC, and TN. Owns independent power plants & has 25% stake in National Methanol in Saudi Arabia. Acq'd Progress Energy 7/12; Piedmont Natural Gas 10/16; discontinued most intl' ops. in '16. Elec. rev. breakdown:

Duke Energy has changed significantly in recent years. The company has sold most of its nonregulated power-generating assets (retaining some renewable-energy projects in this business); expanded its gas operations materially through the purchase of Piedmont Natural Gas; and sold most of its international businesses. Now, the company is primarily a regulated electric and gas utility with almost all of its operations in the United States. **Earnings will probably rise sharply this year.** This should occur despite the lost income from the divested international operations. (It used the \$1.9 billion in proceeds to pay down short-term debt.) Duke will have a full year's contribution from Piedmont, which it acquired last fall. In addition, merger-related costs will almost certainly be much lower than in 2016, when these reduced share net by \$0.48. (This expense was just \$0.02 a share in the first quarter of 2017.) And the company will benefit from rate relief in South Carolina and Florida. However, our previous earnings estimate was apparently too optimistic, so we lowered it by \$0.15 a share. Our revised estimate of

\$4.65 is within Duke's targeted range of \$4.50-\$4.70. **We forecast a modest profit increase in 2018.** We expect normal growth at the utility operations. Our estimate would produce earnings growth at a rate slightly below Duke's goal of 4%-6% annually. **Duke is about to become more active in the regulatory arena.** The company will file rate cases in its two North Carolina jurisdictions this summer, with orders expected in the first half of 2018. Beyond this year, Duke expects to file numerous applications through 2021 in order to recover (among other things) the costs of generating facilities, grid modernization, and coal ash removal. **Rate cases are not Duke's only means of profit growth.** The company continues to expand its renewable-energy portfolio. Also, its stake in three gas pipelines will result in an investment of about \$3 billion. **This equity offers a dividend yield that is nearly a percentage point above the utility mean.** Total return potential over the 3- to 5-year period is a cut above the industry average. *Paul E. Debbas, CFA* May 19, 2017

(A) Dil. EPS. Excl. nonrec. losses: '12, 70c; '13, 24c; '14, 67c; gains (losses) on disc. ops.: '12, 6c; '13, 2c; '14, (80c); '15, 5c; '16, (60c). '16 EPS don't sum due to rounding. Next egs. report due early Aug. (B) Div'ds paid mid-Mar., June, Sept., & Dec. (C) Div'd reinv. plan available. (D) Incl. intang. In '16: \$46.17/sh. (E) In mill., adj. for rev. split. (F) Rate base: Net orig. cost. Rates all'd on com. eq. in '13 in NC: 10.2%; in '17 in SC: 10.1%; in '09 in OH: 10.63%; in '04 in IN: 10.3%; earn. on avg. com. eq., '16: 6.3%. Reg. Clim.: NC Avg.; SC, OH, IN Above Avg.	Company's Financial Strength A
	Stock's Price Stability 100
	Price Growth Persistence 50
	Earnings Predictability 85

EVERSOURCE ENERGY NYSE-ES

RECENT PRICE **59.35** P/E RATIO **19.1** (Trailing: 19.7; Median: 17.0) RELATIVE P/E RATIO **0.97** DIV'D YLD **3.3%** VALUE LINE **May 22, 2017** Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
52.82	40.89	47.53	51.82	41.85	44.64	37.27	37.22	30.97	27.76	25.21	19.98	23.16	24.42	25.08	24.11	24.00	24.45	Revenues per sh	27.25
10.48	6.32	5.80	5.00	5.46	3.69	4.82	6.16	4.96	5.68	4.88	4.03	5.22	4.56	4.94	5.46	5.80	6.25	"Cash Flow" per sh	7.50
1.37	1.08	1.24	.91	.98	.82	1.59	1.86	1.91	2.10	2.22	1.89	2.49	2.58	2.76	2.96	3.10	3.30	Earnings per sh ^A	4.00
.45	.53	.58	.63	.68	.73	.78	.83	.95	1.03	1.10	1.32	1.47	1.57	1.67	1.78	1.90	2.00	Div'd Decl'd per sh ^B	2.30
3.40	3.86	4.31	4.85	5.89	5.49	7.14	8.06	5.17	5.41	6.08	4.69	4.62	5.06	5.44	6.24	8.55	8.75	Cap'l Spending per sh	5.25
16.27	17.33	17.73	17.80	18.46	18.14	18.65	19.38	20.37	21.60	22.65	29.41	30.49	31.47	32.64	33.80	35.00	36.35	Book Value per sh ^C	41.00
130.13	127.56	127.70	129.03	131.59	154.23	156.22	155.83	175.62	176.45	177.16	314.05	315.27	316.98	317.19	316.89	316.89	316.89	Common Shs Outst'g ^D	316.89
14.1	16.1	13.4	20.8	19.8	27.1	18.7	13.7	12.0	13.4	15.4	19.9	16.9	17.9	18.1	18.7	Bold figures are Value Line estimates	Bold figures are Value Line estimates	Avg Ann'l P/E Ratio	15.5
.72	.88	.76	1.10	1.05	1.46	.99	.82	.80	.85	.97	1.27	.95	.94	.91	.99	Bold figures are Value Line estimates	Bold figures are Value Line estimates	Relative P/E Ratio	.95
2.3%	3.0%	3.5%	3.3%	3.5%	3.3%	2.6%	3.2%	4.2%	3.6%	3.2%	3.5%	3.5%	3.4%	3.3%	3.2%	Bold figures are Value Line estimates	Bold figures are Value Line estimates	Avg Ann'l Div'd Yield	3.7%

CAPITAL STRUCTURE as of 3/31/17		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
Total Debt	\$11017 mill. Due in 5 Yrs	\$4675.7 mill.	5822.2	5800.1	5439.4	4898.2	4465.7	6273.8	7301.2	7741.9	7954.8	7639.1	7600	7850	Revenues (\$mill)	8650					
LT Debt	\$9267.9 mill. LT Interest	\$370.7 mill.	251.5	296.2	335.6	377.8	400.3	533.0	793.7	827.1	886.0	949.8	990	1065	Net Profit (\$mill)	1300					
Leases, Uncapitalized		Annual rentals \$14.1 mill.	30.3%	29.7%	34.9%	36.6%	29.9%	34.0%	35.0%	36.2%	37.9%	36.9%	37.5%	37.5%	Income Tax Rate	37.5%					
Pension Assets-12/16		\$4076.0 mill.	13.9%	15.8%	4.6%	7.1%	8.6%	2.3%	1.4%	2.4%	2.9%	3.9%	5.0%	4.0%	AFUDC % to Net Profit	2.0%					
Pfd Stock		\$155.6 mill. Pfd Div'd	59.2%	60.4%	57.2%	55.1%	53.4%	43.7%	44.3%	45.9%	45.6%	44.8%	45.5%	46.0%	Long-Term Debt Ratio	47.5%					
Pfd Div'd		\$7.6 mill.	39.2%	38.1%	41.5%	43.6%	45.3%	55.4%	54.8%	53.2%	53.6%	54.4%	53.5%	53.0%	Common Equity Ratio	52.0%					
Incl. 2,324,000 shs \$1.90-\$3.28 rates (\$50 par)		not subject to mandatory redemption, call. at \$50.50-\$54.00; 430,000 shs 4.25%-4.78% not subject to mandatory redemption, call. at \$102.80-\$103.63.	7431.1	7926.2	8629.5	8741.8	8856.0	16675	17544	18738	19313	19697	20675	21700	Total Capital (\$mill)	25000					
Common Stock		316,885,808 shs. as of 4/30/17	7229.9	8207.9	8840.0	9567.7	10403	16605	17576	18647	19892	21351	23350	25350	Net Plant (\$mill)	28500					
MARKET CAP:		\$19 billion (Large Cap)	5.0%	5.4%	5.4%	5.8%	5.9%	4.2%	5.5%	5.3%	5.5%	5.8%	5.5%	5.5%	Return on Total Cap'l	6.0%					
			8.3%	9.4%	9.1%	9.6%	9.7%	5.7%	8.1%	8.2%	8.4%	8.7%	9.0%	9.0%	Return on Shr. Equity	10.0%					
			8.4%	9.6%	9.2%	9.8%	9.8%	5.7%	8.2%	8.2%	8.5%	8.8%	9.0%	9.0%	Return on Com Equity ^E	10.0%					
			4.3%	5.3%	4.7%	5.0%	5.0%	1.6%	3.4%	3.5%	3.4%	3.5%	3.5%	3.5%	Retained to Com Eq	4.5%					
			50%	45%	50%	49%	50%	72%	59%	58%	61%	60%	62%	60%	All Div's to Net Prof	57%					

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	-1.6	+3	-1.8
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (c)	6.14	5.86	6.04
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Winter (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	NA	NA	NA

BUSINESS: Eversource Energy (formerly Northeast Utilities) is the parent of utilities that have 3.1 million electric, 504,000 gas customers. Supplies power to most of Connecticut and gas to part of Connecticut; supplies power to three fourths of New Hampshire's population; supplies power to western Massachusetts and parts of eastern Massachusetts & gas to central & eastern Massachusetts.

Acquired NSTAR 4/12. Electric revenue breakdown: residential, 52%; commercial, 36%; industrial, 5%; other, 7%. Fuel costs: 33% of revenues. '16 reported deprec. rate: 3.0%. Has 7,800 employees. Chairman: Thomas J. May. President & CEO: James J. Judge. Inc.: Massachusetts. Address: 300 Cadwell Drive, Springfield, MA 01104. Tel.: 413-785-5871. Internet: www.eversource.com.

ANNUAL RATES

	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	-6.0%	-2.5%	2.0%
"Cash Flow"	.5%	-5%	7.0%
Earnings	12.0%	6.0%	6.5%
Dividends	9.5%	10.5%	5.5%
Book Value	6.0%	8.5%	4.0%

Eversource's utilities in Massachusetts have electric rate cases pending. The utilities in the eastern and western parts of the state are seeking a total increase of \$96 million, based on a return of 10.5% on a common-equity ratio of 53.3%. The utility in eastern Massachusetts is also asking for the institution of a regulatory mechanism that decouples electric revenues and volume, similar to what its counterpart in the Bay State already has. An order is due in time for new tariffs to take effect at the start of 2018.

rate relief next year. Our 2017 earnings estimate is within management's targeted range of \$3.05-\$3.20 a share.

QUARTERLY REVENUES (\$ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	2290	1677	1892	1881	7741.9
2015	2513	1817	1933	1691	7954.8
2016	2056	1767	2040	1776	7639.1
2017	2105	1795	1900	1800	7600
2018	2200	1850	1950	1850	7850

Eversource has postponed the electric rate case it was required to file in Connecticut. The application had been planned for the start of June, with new rates taking effect six months later. Instead, the utility will file a case in late 2017, which will be effective in midyear.

Eversource got some potentially good news affecting its transmission business. Transmission customers have made four complaints with the Federal Energy Regulatory Commission, stating that allowed ROEs for transmission owners in New England are too generous. FERC agreed, and lowered the allowed ROE based on the first complaint. However, a federal court has vacated this ruling, stating that FERC had to demonstrate why the previous allowed ROE was unreasonable. This is significant, considering that Eversource plans to spend \$3.9 billion on its transmission system from 2017 through 2020. Every tenth of a percentage point change in the allowed ROE for transmission affects the company's net profit by \$3 million. Thus, our estimates and projections might prove conservative.

EARNINGS PER SHARE^A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.74	.40	.74	.69	2.58
2015	.80	.65	.74	.57	2.76
2016	.77	.64	.83	.72	2.96
2017	.82	.70	.85	.73	3.10
2018	.90	.75	.90	.75	3.30

Earnings will probably advance nicely in 2017 and 2018. Each year, Eversource benefits from spending on its transmission system. (More on this below.) The company is effecting reductions in operating and maintenance expenses. Heating customers are converting from oil to gas. Finally, Eversource should receive some

This top-quality stock has a dividend yield and 3- to 5-year total return potential that are close to the utility averages.
Paul E. Debbas, CFA
May 19, 2017

QUARTERLY DIVIDENDS PAID^B

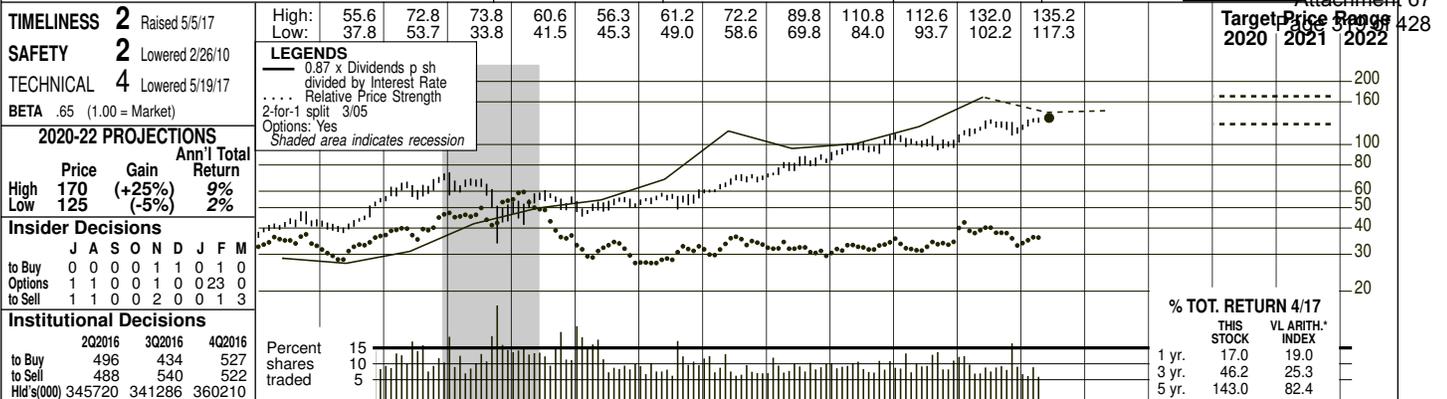
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.367	.367	.367	.367	1.47
2014	.393	.393	.393	.393	1.57
2015	.417	.417	.418	.418	1.67
2016	.445	.445	.445	.445	1.78
2017	.475				

(A) Dil. EPS. Excl. nonrec. gains (losses): '02, 10c; '03, (32c); '04, (7c); '05, (\$1.36); '08, (19c); '10, 9c. '14 EPS don't add due to rounding. Next earnings report due early Aug. (B) Div's historically paid late Mar., June, Sept., & Dec. Div'd reinvest. plan avail. (C) Incl. def'd chgs. In '16: \$22.59 sh. (D) In mill. (E) Rate eq., '16: 9.0%. Regulatory Climate: CT, Below Avg.; NH, Avg.; MA, Above Avg. '16, 9.8%; in CT: (elec.) '15, 9.02%; (gas) '15, 9.5%; in NH: '10, 9.67%; earned on avg. com. eq., '16: 9.0%. (F) Rate Eq. Rate Eq., '16: 9.0%. Regulatory Climate: CT, Below Avg.; NH, Avg.; MA, Above Avg.

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NEXTERA ENERGY NYSE-NEE

RECENT PRICE **133.77** P/E RATIO **19.7** (Trailing: 21.3; Median: 16.0) RELATIVE P/E RATIO **1.01** DIV'D YLD **3.0%** VALUE LINE **May 22, 2017** Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
24.10	22.74	26.13	28.27	30.00	38.75	37.47	40.13	37.82	36.39	36.88	33.62	34.80	38.42	37.93	34.52	34.25	35.70	Revenues per sh	39.75
5.02	4.51	5.36	5.60	6.18	6.77	6.85	8.03	8.75	9.62	9.29	8.69	10.54	12.10	12.92	12.97	13.80	14.65	"Cash Flow" per sh	17.25
2.31	2.01	2.45	2.46	2.32	3.23	3.27	4.07	3.97	4.74	4.82	4.56	4.83	5.60	6.06	5.78	6.80	7.05	Earnings per sh ^A	8.50
1.12	1.16	1.20	1.30	1.42	1.50	1.64	1.78	1.89	2.00	2.20	2.40	2.64	2.90	3.08	3.48	3.93	4.44	Div'd Decl'd per sh ^B = †	5.50
3.28	3.44	3.75	3.75	4.09	9.22	12.32	12.80	14.52	13.89	15.93	22.31	15.36	15.84	18.17	20.59	14.60	15.10	Cap'l Spending per sh	18.00
17.10	17.48	18.91	20.25	21.52	24.49	26.35	28.57	31.35	34.36	35.92	37.90	41.47	44.96	48.97	52.01	54.25	56.90	Book Value per sh ^C	68.00
351.71	365.51	368.53	372.24	394.85	405.40	407.35	408.92	413.62	420.86	416.00	424.00	435.00	443.00	461.00	468.00	496.00	496.00	Common Shs Outst'g ^D	502.00
12.5	14.2	12.6	13.6	17.9	13.7	18.9	14.5	13.4	10.8	11.5	14.4	16.6	17.3	16.9	20.7	<i>Bold figures are Value Line estimates</i>		Avg Ann'l P/E Ratio	17.5
.64	.78	.72	.72	.95	.74	1.00	.87	.89	.69	.72	.92	.93	.91	.85	1.10			Relative P/E Ratio	1.10
3.9%	4.1%	3.9%	3.9%	3.4%	3.4%	2.7%	3.0%	3.5%	3.9%	4.0%	3.6%	3.3%	3.0%	3.0%	2.9%			Avg Ann'l Div'd Yield	3.7%

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
15263	16410	15643	15317	15341	14256	15136	17021	17486	16155	17000	17700	Revenues (\$mill)	20000						
1312.0	1639.0	1615.0	1957.0	2021.0	1911.0	2062.0	2465.0	2752.0	2693.0	3395	3630	Net Profit (\$mill)	4440						
21.9%	21.5%	16.8%	21.4%	22.4%	26.6%	26.9%	32.3%	30.8%	29.3%	29.0%	29.0%	Income Tax Rate	29.0%						
5.7%	6.6%	7.9%	4.4%	4.4%	10.8%	7.0%	6.7%	6.9%	8.2%	7.0%	6.0%	AFUDC % to Net Profit	6.0%						
51.2%	54.2%	55.7%	55.5%	58.2%	59.1%	57.1%	55.0%	54.2%	53.3%	51.5%	50.5%	Long-Term Debt Ratio	47.0%						
48.8%	45.8%	44.3%	44.5%	41.8%	40.9%	42.9%	45.0%	45.8%	46.7%	48.5%	49.5%	Common Equity Ratio	53.0%						
22015	25514	29267	32474	35753	39245	42009	44283	49255	52159	55225	57050	Total Capital (\$mill)	64500						
28652	32411	36078	39075	42490	49413	52720	55705	61386	66912	70625	74400	Net Plant (\$mill)	87600						
7.5%	7.9%	6.9%	7.4%	7.0%	6.2%	6.2%	7.0%	6.8%	6.3%	7.0%	7.5%	Return on Total Cap'l	8.0%						
12.2%	14.0%	12.5%	13.5%	13.5%	11.9%	11.4%	12.4%	12.2%	11.1%	12.5%	13.0%	Return on Shr. Equity	13.0%						
12.2%	14.0%	12.5%	13.5%	13.5%	11.9%	11.4%	12.4%	12.2%	11.1%	12.5%	13.0%	Return on Com Equity ^E	13.0%						
6.1%	7.9%	6.5%	7.8%	7.4%	5.6%	5.2%	6.0%	6.1%	4.4%	5.0%	4.5%	Retained to Com Eq	4.5%						
50%	44%	47%	42%	46%	53%	54%	51%	50%	60%	56%	61%	All Div'ds to Net Prof	62%						

CAPITAL STRUCTURE as of 3/31/17
Total Debt \$33864 mill. Due in 5 Yrs \$14173 mill.
LT Debt \$28539 mill. LT Interest \$1227 mill.
(LT interest earned: 4.3%)

Pension Assets-12/16 \$3651 mill. **Oblig** \$2474 mill.

Pfd Stock None

Common Stock 468,162,675 shs.

MARKET CAP: \$63 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	+5.2	+5.6	-8
Avg. Indust. Use (MWH)	294	277	255
Avg. Indust. Revs. per KWH (c)	6.95	6.69	6.11
Capacity at Peak (Mw)	27055	26073	NA
Peak Load, Summer (Mw)	22900	22717	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.4	+1.4	+1.3

BUSINESS: NextEra Energy, Inc. (formerly FPL Group, Inc.) is a holding company for Florida Power & Light Company (FPL), which provides electricity to 4.9 million customers in a 27,650-sq.-mi. area in eastern & southern Florida. NextEra Energy Resources is a non-regulated power generator with nuclear, gas, & wind ownership. Has a 79.9% stake in NextEra Energy Partners. Rev. breakdown: residential, 55%; commercial, 36%; industrial & other, 9%. Generating sources: gas, 70%; nuclear, 23%; coal, 4%; purchased, 3%. Fuel costs: 25% of revs. '16 reported depr. rate (utility): 3.4%. Has 13,800 employees. Chairman: Lewis Hay, III. President and CEO: James L. Robo, Inc.: FL. Address: 700 Universe Blvd., Juno Beach, FL 33408. Tel.: 561-694-4000. Internet: www.nexteraenergy.com.

Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	3674	4029	4654	4664	17021
2015	4104	4358	4954	4070	17486
2016	3835	3817	4805	3698	16155
2017	3972	4200	4828	4000	17000
2018	4100	4400	5000	4200	17700

Cal-endar	EARNINGS PER SHARE ^A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	.98	1.12	1.50	2.00	5.60
2015	1.45	1.59	1.93	1.10	6.06
2016	1.41	.93	1.62	1.82	5.78
2017	1.91	1.74	1.85	1.30	6.80
2018	1.85	1.85	1.95	1.40	7.05

Cal-endar	QUARTERLY DIVIDENDS PAID ^B = †				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	.66	.66	.66	.66	2.64
2014	.725	.725	.725	.725	2.90
2015	.77	.77	.77	.77	3.08
2016	.87	.87	.87	.87	3.48
2017	.983				

The Texas regulators rejected NextEra Energy's proposed purchase of Oncor. NextEra would have paid \$12 billion (mostly in cash) for the electric distribution company. The company has asked the commission for a rehearing, and its decision should be known soon. Our estimates and projections hadn't included Oncor anyway, but NextEra is incurring deal-related expenses that we include in our presentation. These were \$0.05 a share in the March quarter. The market was non-plused, as the regulators' decision had little effect on the stock.

NextEra had already begun some financing moves in anticipation of the deal. The company terminated a forward equity sale. It raised \$1.1 billion through an asset sale that closed in the first quarter, and resulted in a nonrecurring gain of \$1.46 a share on the deal. NextEra will use these funds for other corporate purposes.

Even without Oncor, NextEra has good prospects for earnings growth. Its utility subsidiary, Florida Power & Light, had a rate increase of \$400 million at the start of 2017. FPL will get a tariff hike of \$211 million at the start of 2018 and a \$200 million boost in mid-2019 when a 1,748-megawatt gas-fired plant is completed. Customer growth is above average. NextEra Energy Resources continues to raise its earning power by adding contracted wind and solar projects. This unit is also investing in natural gas pipelines. Our 2017 and 2018 share-earnings estimates are within the company's targeted ranges of \$6.35-\$6.85 and \$6.80-\$7.30, respectively. Note that we include mark-to-market accounting charges in our presentation because they are an ongoing part of NextEra's results.

The board of directors raised the dividend significantly in the first quarter. The annual payout was increased \$0.45 a share (12.9%). NextEra expects another hike in the 12%-14% range in 2018.

NextEra stock is timely, and stands out for its strong dividend growth potential. The dividend yield is a half percentage point below the utility average. This equity offers a 3- to 5-year total return that is slightly above that of most utility issues.

Paul E. Debbas, CFA *May 19, 2017*

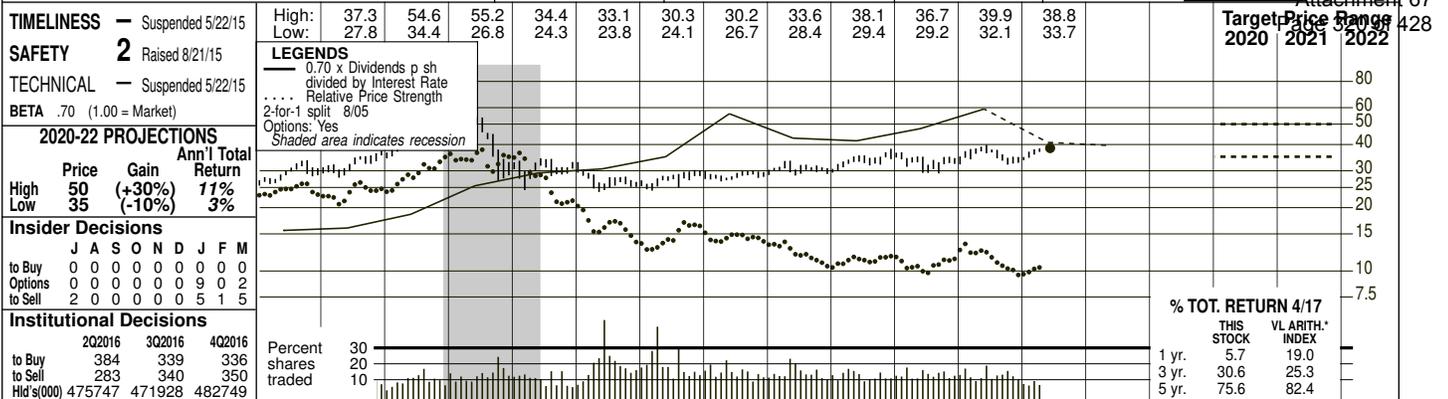
(A) Diluted EPS. Excl. nonrecur. gains (losses): '02, (6Q); '03, 5c; '11, (24c); '13, (80c); '16, 47c; '1Q '17, \$1.46; gain on discount. ops.: '13, 44c. '15 EPS don't add due to rounding. Next earnings report due late July. (B) Div'ds historically paid in mid-Mar., mid-June, mid-Sept., & mid-Dec. ■ Div'd reinvestment plan avail. † Shareholder investment plan avail. (C) Incl. deferred charges. In '15: \$6.36/sh. (D) In mill., adj. for stock split. (E) Rate allowed on com. eq. in '17: 9.6%-11.6%; earned on avg. com. eq., '15: 12.9%. Regulatory Climate: Average.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	75
Earnings Predictability	70

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PPL CORPORATION NYSE-PPL RECENT PRICE **38.37** P/E RATIO **17.8** (Trailing: 14.4 Median: 13.0) RELATIVE P/E RATIO **0.91** DIV'D YLD **4.2%** VALUE LINE May 22, 2017 Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
19.53	16.38	15.75	15.37	16.36	17.92	17.41	21.47	20.03	17.63	22.02	21.11	18.82	17.27	11.38	11.06	10.00	10.15	Revenues per sh	10.50
3.51	3.20	3.60	3.59	3.84	4.26	5.10	4.71	3.47	3.66	4.59	4.84	4.64	4.58	3.78	4.28	3.70	3.90	"Cash Flow" per sh	4.50
1.79	1.54	1.84	1.87	1.92	2.29	2.63	2.45	1.19	2.29	2.61	2.61	2.38	2.38	2.37	2.79	2.15	2.30	Earnings per sh ^A	2.75
.53	.72	.77	.82	.96	1.10	1.22	1.34	1.38	1.40	1.40	1.44	1.47	1.49	1.50	1.52	1.58	1.64	Div'd Decl'd per sh ^B	1.82
2.99	2.74	2.17	1.94	2.13	3.62	4.51	3.79	3.25	3.30	4.30	5.34	6.68	6.14	5.24	4.30	4.95	4.95	Cap'l Spending per sh	3.75
6.33	6.71	9.19	11.21	11.62	13.30	14.88	13.55	14.57	16.98	18.72	18.01	19.78	20.47	14.72	14.56	15.40	16.35	Book Value per sh ^C	19.25
293.16	331.47	354.72	378.14	380.15	385.04	373.27	374.58	377.18	483.39	578.41	581.94	630.32	665.85	673.86	679.73	690.00	700.00	Common Shs Outst'g ^D	730.00
12.4	11.1	10.6	12.5	15.1	14.1	17.3	17.6	25.7	11.9	10.5	10.9	12.8	14.1	13.9	12.8	10.00	10.15	Avg Ann'l P/E Ratio	15.0
.64	.61	.60	.66	.80	.76	.92	1.06	1.71	.76	.66	.69	.72	.74	.70	.68	10.00	10.15	Relative P/E Ratio	.95
2.4%	4.2%	4.0%	3.5%	3.3%	3.4%	2.7%	3.1%	4.5%	5.1%	5.1%	5.1%	4.8%	4.4%	4.5%	4.2%	4.2%	4.2%	Avg Ann'l Div'd Yield	4.4%

CAPITAL STRUCTURE as of 3/31/17

Total Debt \$20041 mill. Due in 5 Yrs \$5080 mill.
LT Debt \$17958 mill. LT Interest \$736 mill.
Incl. 23 mill. units 7.75%, \$25 liq. value; 82,000 units 8.23%, \$1000 face value.
(LT interest earned: 3.8x)

Leases, Uncapitalized Annual rentals \$55 mill.
Pension Assets-12/16 \$10454 mill.
Oblig \$11462 mill.

Pfd Stock None
Common Stock 683,174,778 shs.
as of 4/27/17
MARKET CAP: \$26 billion (Large Cap)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Revenues (\$mill)	7750
6498.0	8044.0	7556.0	8521.0	12737	12286	11860	11499	7669.0	7517.0	6900	7100	Revenues (\$mill)	7750						
1031.0	940.0	465.0	1009.0	1456.0	1536.0	1541.0	1583.0	1603.0	1902.0	1480	1595	Net Profit (\$mill)	1925						
20.7%	31.8%	21.8%	22.0%	31.0%	26.2%	23.1%	33.0%	22.5%	25.4%	27.0%	30.0%	Income Tax Rate	30.0%						
--	--	1.1%	9.5%	3.5%	4.0%	4.1%	3.7%	2.8%	1.6%	1.6%	2.0%	2.0%	AFUDC % to Net Profit	2.0%					
54.1%	57.1%	55.2%	59.0%	61.9%	64.1%	62.3%	58.0%	65.2%	64.3%	63.5%	63.0%	Long-Term Debt Ratio	58.5%						
43.6%	40.5%	42.5%	39.8%	37.2%	35.9%	37.7%	42.0%	34.8%	35.7%	36.5%	37.0%	Common Equity Ratio	41.5%						
12747	12529	12940	20621	29071	29205	33058	32484	28482	27707	29300	30950	Total Capital (\$mill)	34000						
12605	12416	13174	20858	27266	30032	33087	34597	30382	30074	32450	34800	Net Plant (\$mill)	40000						
9.8%	9.2%	5.2%	6.1%	6.5%	7.0%	6.2%	6.5%	7.1%	8.4%	6.5%	6.5%	Return on Total Cap'l	7.0%						
17.6%	17.5%	8.0%	11.9%	13.1%	14.7%	12.4%	11.6%	16.2%	19.2%	14.0%	14.0%	Return on Shr. Equity	13.5%						
18.2%	18.2%	8.1%	12.0%	13.3%	14.6%	12.4%	11.6%	16.2%	19.2%	14.0%	14.0%	Return on Com Equity ^E	13.5%						
10.0%	8.5%	NMF	5.2%	6.4%	6.7%	5.3%	4.5%	6.0%	8.8%	4.0%	4.0%	Retained to Com Eq	4.5%						
46%	54%	115%	58%	52%	54%	57%	61%	63%	54%	73%	71%	All Div'ds to Net Prof	68%						

ELECTRIC OPERATING STATISTICS

	2014	2015	2016
% Change Retail Sales (KWH)	-1.1	.5	.5
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (c)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Winter (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	NA	NA	NA

Fixed Charge Cov. (%) 309 321 339

ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 of change (per sh)

Revenues	-2.0%	-8.0%	NMF
"Cash Flow"	1.0%	1.5%	NMF
Earnings	2.0%	4.5%	NMF
Dividends	4.5%	1.5%	3.5%
Book Value	3.0%	--	NMF

BUSINESS: PPL Corporation (formerly PP&L Resources, Inc.) is a holding company for PPL Electric Utilities (formerly Pennsylvania Power & Light Company), which distributes electricity to 1.4 million customers in eastern & central PA. Acq'd Kentucky Utilities and Louisville Gas and Electric (1.2 million customers) 11/10. Has electric distribution sub. in U.K. (7.8 million customers). Sold gas distribution subsidiary in '08. Spun off power generating subsidiary in '15. The company no longer breaks out data on electric operating statistics. Fuel costs: 20% of revs. '16 reported deprec. rate: 2.7%. Has 12,700 employees. Chairman, President & CEO: William H. Spence, Inc.: PA. Address: Two North Ninth St., Allentown, PA 18101-1179. Tel.: 800-345-3085. Internet: www.pplweb.com.

PPL Corporation's earnings are likely to decline in 2017. The year-to-year comparison is difficult because the settlement of currency contracts lifted profits by \$0.30 a share last year. (PPL has exposure to the British pound because it owns utilities in the United Kingdom.) The company has hedged most of its exposure to the pound through 2019, but the hedged exchange rate in 2017 will be lower than the rate in 2016. (There is still some upside potential if the pound becomes stronger versus the dollar.) Some tax benefits PPL recorded in 2016 are not expected to recur. Finally, the share count is rising as the company issues about \$350 million of common equity annually to finance its capital spending. Our 2017 earnings estimate, which we trimmed by a nickel a share due to the effects of an unusually mild winter in Kentucky, is within management's targeted range of \$2.02-\$2.22.

PPL's utilities in Kentucky have reached a settlement of their rate cases. If approved by the state commission, Louisville Gas and Electric will receive electric and gas increases of \$59.4 million and \$7.5 million, respectively, and Kentucky Utilities will get an electric boost of \$54.9 million. The allowed return on equity will be 9.75%. A ruling is expected in time for new tariffs to take effect on July 1st.

We forecast higher earnings in 2018. A full year of rate relief in Kentucky and respectable income growth from the other utilities should benefit the company. (The U.K. utilities typically receive incentive revenues thanks to their effective operating performance.) Note that the utilities benefit from regulatory mechanisms that enable them to recover the majority of their capital spending without having to file a rate case. We are sticking with our 2018 earnings estimate of \$2.30 a share, which would produce an earnings growth rate slightly above PPL's target.

PPL stock offers a dividend yield that is above average, even by utility standards. Total return potential to 2020-2022 is modest, but is a cut above the norm for this industry. The stock is unranked for Timeliness due to its short trading history since PPL spun off its nonregulated power generating subsidiary in 2015.

Paul E. Debbas, CFA *May 19, 2017*

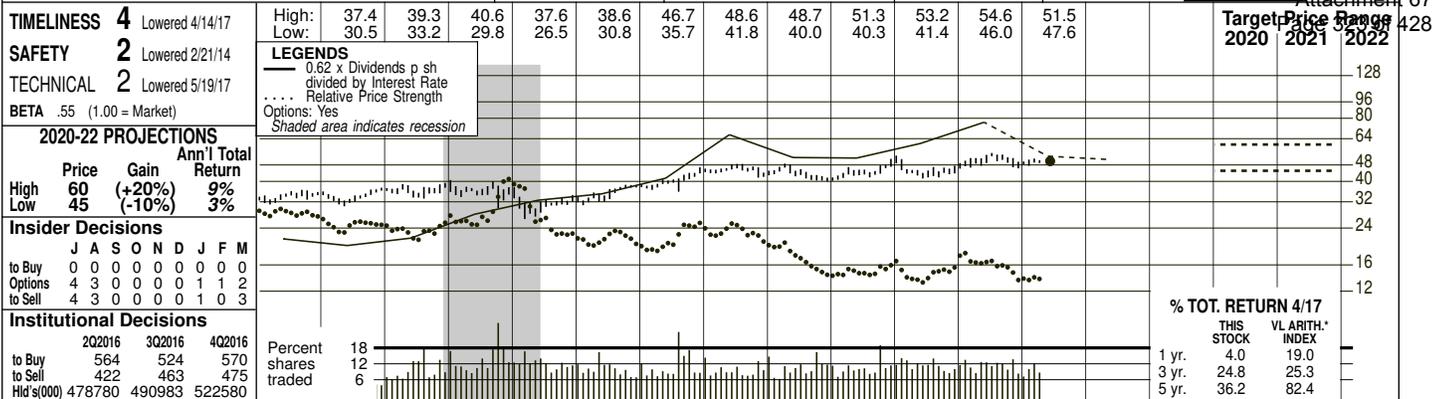
(A) Dil. EPS. Excl. nonrec. gain (losses): '07, (12c); '10, (8c); '11, 8c; '13, (62c); gains (losses) on disc. ops.: '07, 19c; '08, 3c; '09, (10c); '10, (4c); '12, (1c); '14, 23c; '15, (\$1.36).	'14 & '15 EPS don't sum to rounding. Next earnings report due early Aug. (B) Div'ds histor. pd. in early Jan., Apr., July, & Oct. ■ Div'd reinv. plan avail. (C) Incl. intang. In '16:	\$8.35/sh. (D) In mill., adj. for split. (E) Rate base: Fair val. Rate all'd on com. eq. in PA in '16: none spec.; in KY in '15: none spec.; earn. on avg. com. eq., '16: 19.2%. Reg. Clim.: Avg.	Company's Financial Strength B++ Stock's Price Stability 95 Price Growth Persistence 10 Earnings Predictability 65
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P.S. ENTERPRISE GP. NYSE-PEG				RECENT PRICE	42.95	P/E RATIO	15.1	(Trailing: 15.1; Median: 13.0)	RELATIVE P/E RATIO	0.77	DIV'D YLD	4.1%	VALUE LINE	May 22, 2017					
TIMELINESS	3	Lowered 3/24/17	High: 36.3	49.9	52.3	34.1	34.9	35.5	34.1	37.0	43.8	44.4	47.4	46.1	42.8				
SAFETY	1	Raised 11/23/12	Low: 29.5	32.2	22.1	23.7	29.0	28.0	28.9	29.7	31.3	36.8	37.8	42.8					
TECHNICAL	2	Raised 5/5/17	LEGENDS 0.72 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 2/08 Options: Yes Shaded area indicates recession																
BETA	.65	(1.00 = Market)	2020-22 PROJECTIONS Price: 60 Gain: (+40%) Ann'l Total Return: 12% High: 60 Low: 45 Gain: (+5%) 5%																
Insider Decisions				J A S O N D J F M to Buy 0 0 0 0 0 0 0 0 0 0 Options 1 1 1 1 1 1 3 7 5 to Sell 1 2 1 1 1 1 2 1 3															
Institutional Decisions				202016 302016 402016 to Buy 314 280 327 to Sell 294 299 303 Hld's(000) 333293 326956 331155 Percent shares traded 30 20 10															
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018														© VALUE LINE PUB. LLC 20-22					
23.84	18.62	23.54	23.09	24.74	24.07	25.28	27.94	24.57	23.31	22.42	19.33	19.71	21.52	20.61	18.22	18.40	18.95	Revenues per sh	21.75
3.14	3.01	2.92	3.02	3.42	3.91	4.36	4.68	4.98	5.27	5.36	4.87	5.17	5.82	6.15	5.07	5.55	5.80	"Cash Flow" per sh	7.00
1.85	1.88	1.88	1.52	1.79	1.85	2.59	2.90	3.08	3.07	3.11	2.44	2.45	2.99	3.30	2.83	2.85	2.90	Earnings per sh ^A	3.50
1.08	1.08	1.08	1.10	1.12	1.14	1.17	1.29	1.33	1.37	1.37	1.42	1.44	1.48	1.56	1.64	1.72	1.80	Div'd Decl'd per sh ^B †	2.10
4.99	4.03	2.86	2.64	2.04	2.01	2.65	3.50	3.55	4.27	4.12	5.09	5.56	5.58	7.65	8.32	9.10	6.40	Cap'l Spending per sh	5.25
10.05	8.85	11.71	12.05	11.99	13.35	14.35	15.36	17.37	19.04	20.30	21.31	22.95	24.09	25.86	26.01	26.40	27.55	Book Value per sh ^C	31.25
411.68	450.53	472.27	476.20	502.33	505.29	508.52	506.02	505.99	505.97	505.95	505.89	505.86	505.84	505.28	504.87	506.00	506.00	Common Shs Outst'g ^D	506.00
12.0	10.0	10.6	14.3	16.5	17.8	16.5	13.6	10.0	10.4	10.4	12.8	13.5	12.6	12.4	15.3	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	15.0
.61	.55	.60	.76	.88	.96	.88	.82	.67	.66	.65	.81	.76	.66	.62	.81			Relative P/E Ratio	.95
4.9%	5.7%	5.4%	5.1%	3.8%	3.5%	2.7%	3.3%	4.3%	4.3%	4.2%	4.6%	4.4%	3.9%	3.8%	3.8%			Avg Ann'l Div'd Yield	4.0%
CAPITAL STRUCTURE as of 3/31/17				12853 14139 12431 11793 11343 9781.0 9968.0 10886 10415 9198.0 9300 9600 Total Debt \$11713 mill. Due in 5 Yrs \$5108 mill. LT Debt \$10898 mill. LT Interest \$436 mill. (LT interest earned: 5.9x)												Revenues (\$mill) 11000 Net Profit (\$mill) 1770			
Leases, Uncapitalized				1323.0 1477.0 1567.0 1557.0 1577.0 1239.0 1243.0 1518.0 1679.0 1436.0 1460 1485 Annual rentals \$29 mill.												Income Tax Rate 37.0% AFUDC % to Net Profit 3.0%			
Pension Assets-12/16				44.5% 45.9% 42.3% 40.5% 40.4% 36.2% 39.5% 38.2% 37.4% 31.7% 37.0% 37.0% \$5193 mill. Oblig \$5772 mill.												Long-Term Debt Ratio 49.0% Common Equity Ratio 51.0%			
Pfd Stock				2.7% 3.2% 3.8% 5.5% 2.7% 4.8% 4.6% 4.5% 5.5% 8.4% None												Total Capital (\$mill) 31300 Net Plant (\$mill) 37400			
Common Stock				54.0% 50.5% 46.3% 44.8% 42.1% 38.3% 40.4% 40.4% 40.3% 45.3% 46.5% 47.0% 505,878,825 shs. as of 4/18/17												Return on Total Cap'l 6.5% Return on Shr. Equity 11.0% Return on Com Equity ^E 11.0%			
MARKET CAP: \$22 billion (Large Cap)				16041 15856 16513 17452 17731 17467 19470 20446 21900 24025 24950 26325 13275 14433 15440 16390 17849 19736 21645 23589 26539 29286 32025 33875												Retained to Com Eq 4.5% All Div'ds to Net Prof 60%			
ELECTRIC OPERATING STATISTICS				2014 2015 2016 % Change Retail Sales (KWH) -1.3 +2.4 -.3 Avg. Indust. Use (MWH) NA NA NA Avg. Indust. Revs. per KWH(c) NA NA NA Capacity at Peak (Mw) NA NA NA Peak Load, Summer (Mw) 9474 9595 NA Annual Load Factor (%) NA NA NA % Change Customers (avg.) NA NA NA												BUSINESS: Public Service Enterprise Group Incorporated is a holding company for Public Service Electric and Gas Company (PSE&G), which serves 2.2 million electric and 1.8 million gas customers in New Jersey, and PSEG Power LLC, a nonregulated power generator with nuclear, gas, and coal-fired plants in the Northeast. PSEG Energy Holdings is involved in renewable energy.			
ANNUAL RATES				Fixed Charge Cov. (%) 635 705 522 Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 of change (per sh) 10 Yrs. 5 Yrs. to '20-'22 Revenues -1.5% -3.0% 1.5% "Cash Flow" 5.0% 2.0% 3.5% Earnings 6.0% -5% 2.5% Dividends 3.5% 3.0% 5.0% Book Value 7.5% 6.0% 3.5%												Public Service Enterprise Group's utility subsidiary has good growth prospects. Public Service Electric and Gas expects to spend \$12 billion-\$14 billion from 2017 through 2021. The utility is replacing old equipment, hardening its system to lessen the damage caused by severe storms, enhancing the electric grid, and expanding its electric transmission system. Most of this spending is recovered in rates concurrently, and PSE&G wants to expand or extend some of these programs. For those costs that aren't recovered through regulatory mechanisms, the utility will seek a "moderate" base rate increase in a filing that must be made by November 1st.			
QUARTERLY REVENUES (\$ mill.)				The company no longer breaks out data on electric and gas operating statistics. Fuel costs: 31% of revenues. '15 reported depreciation rate (utility): 2.5%. Has 12,700 employees. Chairman, President & Chief Executive Officer: Dr. Ralph Izzo, Inc.: New Jersey. Address: 80 Park Plaza, P.O. Box 1171, Newark, New Jersey 07101-1171. Telephone: 973-430-7000. Internet: www.pseg.com.												Prospects of PSEG Power, the main nonutility subsidiary, aren't as bright. This business, as a whole, is still profitable and is generating cash. However, due to unfavorable conditions in the power markets, PSEG Power's income is well below the level achieved several years ago. The biggest problem is that the company's nuclear assets are not earning their cost of capital. They are still generating cash, but this will change by 2020, based on the forward price curve. Whether nuclear power will eventually be subsidized in New Jersey remains to be seen. Even so . . .			
EARNINGS PER SHARE ^A				PSEG Power is building three generating plants. This will provide about 1,800 megawatts of capacity in Maryland, New Jersey, and Connecticut, replacing older facilities. The Maryland plant will be gas fired, the other two dual fuel (gas or oil). The estimated cost of the three projects is \$1.975 billion-\$2.12 billion. The plants in Maryland and New Jersey are scheduled for completion in mid-2018, the other one in mid-2019.												We estimate little earnings growth in 2017 and 2018. Improvement at PSE&G will probably be offset by declines at PSEG Power. Even so, the company's financial strength is enabling the board of directors to raise the dividend. As we had expected, the quarterly payout was boosted by \$0.02 a share (4.9%) in the first quarter.			
QUARTERLY DIVIDENDS PAID ^B †				This high-quality stock is suitable for conservative utility accounts. The yield is about a half percentage point above the industry average, and 3- to 5-year total return potential is also above average.												Paul E. Debbas, CFA May 19, 2017			
Full Year				2014 .76 .42 .87 .94 2.99 2015 1.15 .68 .87 .60 3.30 2016 .93 .37 .94 .59 2.83 2017 .94 .60 .80 .51 2.85 2018 1.00 .60 .80 .50 2.90												Company's Financial Strength A++ Stock's Price Stability 95 Price Growth Persistence 15 Earnings Predictability 65			
Full Year				2013 .36 .36 .36 .36 1.44 2014 .37 .37 .37 .37 1.48 2015 .39 .39 .39 .39 1.56 2016 .41 .41 .41 .41 1.64 2017 .43												To subscribe call 1-800-VALUELINE			

(A) Diluted EPS. Excl. nonrecr. gain (losses): '02, (\$1.30); '05, (3c); '06, (35c); '08, (96c); '09, 6c; '11, (34c); '12, 7c; '16, (30c); '17, (72c); gains (loss) from disc. ops.: '05, (33c); '06, 12c; '07, 3c; '08, 40c; '11, 13c. Next eggs report due late July. (B) Div'ds histor. paid in late Mar., June, Sept., and Dec. ■ Div'd reinvest. plan avail. † Sharehold. invest. plan avail. (C) Incl. intang. In '16: \$6.80/sh. (D) In mill., adj. for split. (E) Rate base: Net orig. cost. Rate allowed on com. eq. in '10: 10.3%; earned on avg. com. eq., '16: 10.8%. Reg. Climate: Avg.

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SOUTHERN COMPANY NYSE-SO RECENT PRICE **49.98** P/E RATIO **16.7** (Trailing: 16.7; Median: 16.0) RELATIVE P/E RATIO **0.85** DIV'D YLD **4.7%** VALUE LINE May 22, 2017 Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22
14.54	14.73	15.31	16.05	18.28	19.24	20.12	22.04	19.21	20.70	20.41	19.06	19.26	20.34	19.18	20.09	22.35	23.00	25.75
3.55	3.46	3.53	3.65	4.03	4.01	4.22	4.43	4.43	4.51	4.91	5.18	5.27	5.28	5.47	5.69	6.35	6.50	7.25
1.61	1.85	1.97	2.06	2.13	2.10	2.28	2.25	2.32	2.36	2.55	2.67	2.70	2.77	2.84	2.83	3.00	3.10	3.50
1.34	1.36	1.39	1.42	1.48	1.54	1.60	1.66	1.73	1.80	1.87	1.94	2.01	2.08	2.15	2.22	2.30	2.38	2.62
3.75	3.79	2.72	2.85	3.20	4.01	4.65	5.10	5.70	4.85	5.23	5.54	6.16	6.58	6.22	7.38	8.90	8.10	7.25
11.43	12.16	13.13	13.86	14.42	15.24	16.23	17.08	18.15	19.21	20.32	21.09	21.43	21.98	22.59	25.00	25.95	26.95	29.50
698.34	716.40	734.83	741.50	741.45	746.27	763.10	777.19	819.65	843.34	865.13	867.77	887.09	907.78	911.72	990.39	1002.0	1014.0	1020.0
14.6	14.6	14.8	14.7	15.9	16.2	16.0	16.1	13.5	14.9	15.8	17.0	16.2	16.0	15.8	17.8	17.8	17.8	15.5
.75	.80	.84	.78	.85	.87	.85	.97	.90	.95	.99	1.08	.91	.84	.80	.94	.94	.94	.95
5.7%	5.0%	4.7%	4.7%	4.4%	4.5%	4.4%	4.6%	5.5%	5.1%	4.6%	4.3%	4.6%	4.7%	4.8%	4.4%	4.4%	4.4%	4.9%

CAPITAL STRUCTURE as of 3/31/17		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22
Total Debt	\$48873 mill. Due in 5 Yrs \$17005 mill.	15353	17127	15743	17456	17657	16537	17087	18467	17489	19896	22400	23300	25700	26470	27570	3120	3240	26200	
LT Debt	\$42786 mill. LT Interest \$1498 mill.	1782.0	1807.0	1910.0	2040.0	2268.0	2415.0	2439.0	2567.0	2647.0	2757.0	3120	3240	3350	3350	3350	3350	3350	3350	
Leases, Uncapitalized	Annual rentals \$152 mill.	31.9%	33.6%	31.9%	33.5%	35.0%	35.6%	34.8%	33.8%	33.4%	28.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	
Pension Assets	-12/16 \$11583 mill. Ob \$12385 mill.	9.5%	12.3%	14.9%	13.7%	10.2%	9.4%	11.6%	13.9%	13.2%	11.9%	12.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	10.0%	
Pfd Stock	\$1972 mill. Pfd Div'd \$45 mill.	51.2%	53.9%	53.2%	51.2%	50.0%	49.9%	51.5%	49.5%	52.8%	61.5%	61.0%	61.5%	61.5%	61.5%	61.5%	61.5%	61.5%	61.5%	
Incl. 1 mill. shs.	4.2%-5.44% cum. pfd. (\$100 par);	44.9%	42.6%	43.6%	45.7%	47.1%	47.3%	45.8%	47.3%	44.0%	35.7%	36.0%	36.0%	36.0%	36.0%	36.0%	36.0%	36.0%	36.0%	
1.52 mill. shs.	5.2%-5.83% cum. pfd. (\$1 par);	27608	31174	34091	35438	37307	38653	41483	42142	46788	69359	72125	75975	75975	75975	75975	75975	75975	83300	
2 mill. shs.	6.0% noncum. pfd. (\$25 par);	33327	35878	39230	42002	45010	48390	51208	54868	61114	78446	83975	88725	88725	88725	88725	88725	88725	100000	
4 mill. shs.	5.6%-6.5% noncum. pfd. (\$100 par);	7.9%	7.1%	6.9%	7.0%	7.2%	7.3%	6.8%	7.1%	6.6%	4.9%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	
8 mill. shs.	5.63%-6.5% noncum. pfd. (\$1 par).	13.2%	12.6%	12.0%	11.8%	12.2%	12.5%	12.1%	12.1%	12.0%	10.3%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.5%	
Common Stock	994,598,783 shs.	14.0%	13.1%	12.4%	12.2%	12.5%	12.8%	12.5%	12.5%	12.6%	11.0%	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%	12.0%	
MARKET CAP:	\$50 billion (Large Cap)	4.3%	3.5%	3.2%	3.0%	3.4%	3.6%	3.2%	3.2%	3.1%	2.5%	3.0%	2.5%	3.0%	2.5%	2.5%	2.5%	3.0%	3.0%	
ELECTRIC OPERATING STATISTICS		70%	74%	75%	77%	73%	73%	75%	75%	76%	78%	75%	75%	75%	75%	75%	75%	75%	75%	

BUSINESS: The Southern Company, through its subs., supplies electricity to 4.6 million customers in GA, AL, FL, and MS. Also has a competitive generation business. Acq'd AGL Resources (renamed Southern Company Gas, 4.5 mill. customers in GA, FL, NJ, IL, VA, & TN) 7/16. Electric rev. breakdown: residential, 39%; commercial, 31%; industrial, 18%; other, 12%. Retail revs. by state: GA, 49%; AL, 35%; FL, 9%; MS, 7%. Generating sources: gas & oil, 42%; coal, 31%; nuclear, 15%; other, 4%; purchased, 8%. Fuel costs: 30% of revs. '16 reported depr. rate (utility): 3.0%. Has 32,000 employees. Chairman, President and CEO: Thomas A. Fanning, Inc.: DE. Address: 30 Ivan Allen Jr. Blvd., N.W., Atlanta, GA 30308. Tel.: 404-506-0747. Internet: www.southerncompany.com.

ANNUAL RATES		Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	1.0%	-	-	4.5%
"Cash Flow"	3.5%	3.5%	5.0%	5.0%
Earnings	3.0%	3.0%	3.5%	3.5%
Dividends	4.0%	3.5%	3.5%	3.5%
Book Value	5.0%	4.0%	4.0%	4.0%

Cal-endar	QUARTERLY REVENUES (mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	Year
2014	4644	4467	5339	4017	18467
2015	4183	4337	5401	3568	17489
2016	3992	4459	6264	5181	19896
2017	5771	5200	6200	5229	22400
2018	6050	5400	6400	5450	23300

Cal-endar	EARNINGS PER SHARE A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	Year
2014	.66	.68	1.08	.36	2.77
2015	.56	.71	1.16	.42	2.84
2016	.57	.71	1.22	.33	2.83
2017	.73	.70	1.15	.42	3.00
2018	.70	.75	1.20	.45	3.10

Cal-endar	QUARTERLY DIVIDENDS PAID B+C				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	Year
2013	.49	.5075	.5075	.5075	2.01
2014	.5075	.525	.525	.525	2.08
2015	.525	.5425	.5425	.5425	2.15
2016	.5425	.56	.56	.56	2.22
2017	.56	.58			

(A) Dil. EPS. Excl. nonrec. gain (losses): '03, '06, '09, (25c); '13, (83c); '14, (59c); '15, (25c); '16, (28c); '17, (7c). '14 & '15 EPS don't add due to rounding. Next egs. report due early Aug. (B) Div'ds paid in early Mar., June, Sept., and Dec. 'C' Div'd reinvest. plan avail. to Shrhldr. invest. plan avail. (C) Incl. def'd chgs. In '16: \$17.26/sh. (D) In mill. (E) Rate base: AL, MS, fair value; FL, GA, orig. cost. All'd return on com. eq. (blended): 12.5%; earn. on avg. com. eq., '16: 11.8%. Regul. Climate: GA, AL, Above Avg.; MS, FL Avg. (F) Winter peak in '14 & '15.

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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	LNT	Industry	Sector	S&P 500
Current Qtr.	N/A	N/A	N/A	0.20
Next Qtr.	13.70%	N/A	N/A	0.21
Current Year	6.40%	N/A	N/A	0.09
Next Year	6.50%	N/A	N/A	0.12
Next 5 Years (per annum)	6.45%	N/A	N/A	0.10
Past 5 Years (per annum)	3.13%	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	N/A	2	1
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	AEE	Industry	Sector	S&P 500
Current Qtr.	1.60%	N/A	N/A	0.20
Next Qtr.	-3.30%	N/A	N/A	0.21
Current Year	3.70%	N/A	N/A	0.09
Next Year	8.30%	N/A	N/A	0.12
Next 5 Years (per annum)	6.05%	N/A	N/A	0.10
Past 5 Years (per annum)	1.42%	N/A	N/A	N/A

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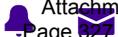
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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	1
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	AEP	Industry	Sector	S&P 500
Current Qtr.	-4.20%	N/A	N/A	0.20
Next Qtr.	-10.80%	N/A	N/A	0.21
Current Year	-7.10%	N/A	N/A	0.09
Next Year	6.30%	N/A	N/A	0.12
Next 5 Years (per annum)	2.39%	N/A	N/A	0.10
Past 5 Years (per annum)	3.74%	N/A	N/A	N/A

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Up Last 7 Days	1	N/A	N/A	N/A
Up Last 30 Days	1	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	1	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	AGR	Industry	Sector	S&P 500
Current Qtr.	21.90%	N/A	N/A	0.20
Next Qtr.	20.00%	N/A	N/A	0.21
Current Year	6.80%	N/A	N/A	0.09
Next Year	8.10%	N/A	N/A	0.12
Next 5 Years (per annum)	9.00%	N/A	N/A	0.10
Past 5 Years (per annum)	N/A	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	1	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	CMS	Industry	Sector	S&P 500
Current Qtr.	-15.60%	N/A	N/A	0.20
Next Qtr.	-7.10%	N/A	N/A	0.21
Current Year	7.40%	N/A	N/A	0.09
Next Year	7.40%	N/A	N/A	0.12
Next 5 Years (per annum)	7.52%	N/A	N/A	0.10
Past 5 Years (per annum)	5.90%	N/A	N/A	N/A

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Up Last 7 Days	N/A	1	1	1
Up Last 30 Days	N/A	1	2	4
Down Last 30 Days	1	N/A	N/A	1
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	D	Industry	Sector	S&P 500
Current Qtr.	-4.20%	N/A	N/A	0.20
Next Qtr.	-7.00%	N/A	N/A	0.21
Current Year	-3.70%	N/A	N/A	0.09
Next Year	10.70%	N/A	N/A	0.12
Next 5 Years (per annum)	3.96%	N/A	N/A	0.10
Past 5 Years (per annum)	5.02%	N/A	N/A	N/A

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EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	1	1
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	DTE	Industry	Sector	S&P 500
Current Qtr.	3.10%	N/A	N/A	0.20
Next Qtr.	-23.50%	N/A	N/A	0.21
Current Year	1.10%	N/A	N/A	0.09
Next Year	6.40%	N/A	N/A	0.12
Next 5 Years (per annum)	4.58%	N/A	N/A	0.10
Past 5 Years (per annum)	7.58%	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	4	5	3	3
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	DUK	Industry	Sector	S&P 500
Current Qtr.	-1.90%	N/A	N/A	0.20
Next Qtr.	-2.40%	N/A	N/A	0.21
Current Year	-1.70%	N/A	N/A	0.09
Next Year	4.80%	N/A	N/A	0.12
Next 5 Years (per annum)	2.55%	N/A	N/A	0.10
Past 5 Years (per annum)	0.73%	N/A	N/A	N/A

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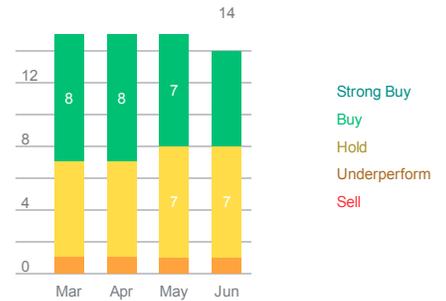
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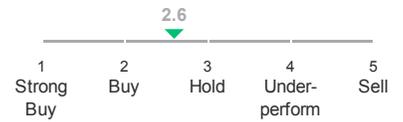
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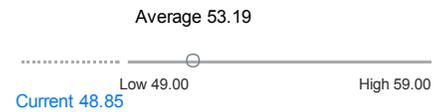
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Up Last 7 Days	N/A	1	2	3
Up Last 30 Days	N/A	1	2	4
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	ES	Industry	Sector	S&P 500
Current Qtr.	4.70%	N/A	N/A	0.20
Next Qtr.	6.00%	N/A	N/A	0.21
Current Year	6.40%	N/A	N/A	0.09
Next Year	5.40%	N/A	N/A	0.12
Next 5 Years (per annum)	5.99%	N/A	N/A	0.10
Past 5 Years (per annum)	6.72%	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	1
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	FTS	Industry	Sector	S&P 500
Current Qtr.	N/A	N/A	N/A	0.20
Next Qtr.	N/A	N/A	N/A	0.21
Current Year	N/A	N/A	N/A	0.09
Next Year	5.00%	N/A	N/A	0.12
Next 5 Years (per annum)	N/A	N/A	N/A	0.10
Past 5 Years (per annum)	N/A	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	1	1	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	NEE	Industry	Sector	S&P 500
Current Qtr.	1.80%	N/A	N/A	0.20
Next Qtr.	7.50%	N/A	N/A	0.21
Current Year	7.90%	N/A	N/A	0.09
Next Year	6.70%	N/A	N/A	0.12
Next 5 Years (per annum)	6.70%	N/A	N/A	0.10
Past 5 Years (per annum)	7.36%	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	1	1
Up Last 30 Days	1	2	2	2
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	PPL	Industry	Sector	S&P 500
Current Qtr.	-8.90%	N/A	N/A	0.20
Next Qtr.	-6.30%	N/A	N/A	0.21
Current Year	-11.80%	N/A	N/A	0.09
Next Year	7.90%	N/A	N/A	0.12
Next 5 Years (per annum)	2.44%	N/A	N/A	0.10
Past 5 Years (per annum)	-1.30%	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	1	1
Up Last 30 Days	N/A	1	1	1
Down Last 30 Days	N/A	N/A	N/A	1
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	PEG	Industry	Sector	S&P 500
Current Qtr.	3.50%	N/A	N/A	0.20
Next Qtr.	1.10%	N/A	N/A	0.21
Current Year	N/A	N/A	N/A	0.09
Next Year	1.40%	N/A	N/A	0.12
Next 5 Years (per annum)	0.66%	N/A	N/A	0.10
Past 5 Years (per annum)	4.11%	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	SCG	Industry	Sector	S&P 500
Current Qtr.	-14.90%	N/A	N/A	0.20
Next Qtr.	-9.80%	N/A	N/A	0.21
Current Year	1.20%	N/A	N/A	0.09
Next Year	7.10%	N/A	N/A	0.12
Next 5 Years (per annum)	5.80%	N/A	N/A	0.10
Past 5 Years (per annum)	6.01%	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	2	1	N/A	N/A
Down Last 30 Days	N/A	N/A	1	1
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	SRE	Industry	Sector	S&P 500
Current Qtr.	7.60%	N/A	N/A	0.20
Next Qtr.	2.00%	N/A	N/A	0.21
Current Year	0.80%	N/A	N/A	0.09
Next Year	10.20%	N/A	N/A	0.12
Next 5 Years (per annum)	9.90%	N/A	N/A	0.10
Past 5 Years (per annum)	6.85%	N/A	N/A	N/A

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Up Last 7 Days	N/A	N/A	1	1
Up Last 30 Days	N/A	N/A	1	1
Down Last 30 Days	1	1	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	SO	Industry	Sector	S&P 500
Current Qtr.	N/A	N/A	N/A	0.20
Next Qtr.	-8.60%	N/A	N/A	0.21
Current Year	2.80%	N/A	N/A	0.09
Next Year	4.70%	N/A	N/A	0.12
Next 5 Years (per annum)	3.84%	N/A	N/A	0.10
Past 5 Years (per annum)	-0.39%	N/A	N/A	N/A

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EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	2	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	VVC	Industry	Sector	S&P 500
Current Qtr.	15.40%	N/A	N/A	0.20
Next Qtr.	-10.80%	N/A	N/A	0.21
Current Year	2.70%	N/A	N/A	0.09
Next Year	6.90%	N/A	N/A	0.12
Next 5 Years (per annum)	5.50%	N/A	N/A	0.10
Past 5 Years (per annum)	7.71%	N/A	N/A	N/A



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Alliant Energy Corporation (LNT)

(Real Time Quote From BATS)

\$41.71 USD

+0.25 (0.60%)

Updated Jun 7, 2017 12:48 PM ET

Volume: 264,222

Open: \$41.50

Prior Close: \$41.46

Zacks Rank

Style Scores

3-Hold

Value: | Growth: | Momentum: | VGM:

[View All Zacks Rank #1 Strong Buys](#)

Quote Overview

Stock Activity

Open	41.50
Day Low	41.41
Day High	41.69
52 Wk Low	34.88
52 Wk High	41.91
Avg. Volume	1,645,181
Market Cap	9.45 B
Dividend	1.26 (3.04%)
Beta	0.42

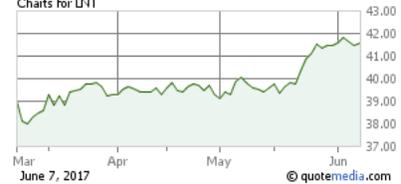
Key Earnings Data

Forward PE	20.73
PEG Ratio	3.77
Current Qtr Est	0.40
Current Yr Est	2.00
Most Accurate Est	0.38
Qtr Earnings ESP	-5.00%
Exp Earnings Date	8/7/17
Prior Year EPS	1.88
Exp EPS Growth (3-5yr)	5.50%

Utilities » Utility - Electric Power

Chart for LNT

Charts for LNT



[Interactive Chart](#) | [Fundamental Charts](#)

Research Reports For LNT

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Zacks News For LNT

- CenterPoint Energy (CNP) Well Poised on Solid Capex Plan
06/07/17-8:14AM EST Zacks
- Alliant Energy (LNT) Up 4.4% Since Earnings Report: Can It...
06/07/17-1:52AM EST Zacks
- LNT: What are Zacks experts saying now?
Zacks Private Portfolio Services
- FirstEnergy's (FE) Subsidiary Upgrades Eatontown Substation
06/02/17-9:41AM EST Zacks
- Consolidated Edison Q1 Results & Investment Plans Impress
05/19/17-7:33AM EST Zacks
- FirstEnergy Adds Substation, Fortifies Ohio Infrastructure
05/18/17-9:52AM EST Zacks

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Other News For LNT

Are You Sure The Expenses Are Too High?

06/06/17-7:01AM EST Seeking Alpha

Alliant Energy management to meet with...

06/05/17-10:31AM EST Thefly.com

Alliant Energy Now #423 Largest Company,...

05/31/17-3:46AM EST The Online Investor

Analysts' Actions -- Beazer Homes, Chevron,...

05/26/17-8:00AM EST TheStreet.com

Alliant Energy initiated with a Hold at Jefferies

05/26/17-4:45AM EST Thefly.com

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Ameren Corporation (AEE)

(Real Time Quote From BATS)

\$57.09 USD

+0.27 (0.48%)

Updated Jun 7, 2017 12:50 PM ET

Volume: 665,060
 Open: \$56.97
 Prior Close: \$56.82

Zacks Rank
Style Scores

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4-Sell

Value: | Growth: | Momentum: | VGM:

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Quote Overview

Stock Activity

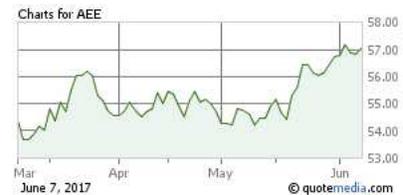
Open	56.97
Day Low	56.78
Day High	57.10
52 Wk Low	46.84
52 Wk High	57.21
Avg. Volume	1,747,892
Market Cap	13.79 B
Dividend	1.76 (3.10%)
Beta	0.37

Key Earnings Data

Forward PE	20.50
PEG Ratio	3.15
Current Qtr Est	0.64
Current Yr Est	2.77
Most Accurate Est	0.64
Qtr Earnings ESP	0.00%
Exp Earnings Date	8/4/17
Prior Year EPS	2.68
Exp EPS Growth (3-5yr)	6.50%

Utilities » Utility - Electric Power

Chart for AEE



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Zacks News For AEE

- Duke's Investments Impress, Stringent Regulations a Woe
06/02/17-6:38AM EST Zacks
- Ameren (AEE) Overvalued than Industry, Should You Sell?
05/25/17-5:52AM EST Zacks
- AEE: What are Zacks experts saying now?
Zacks Private Portfolio Services
- Maxwell (MXWL) Posts In-Line Q1 Loss, Revenues Top Estimates
05/10/17-7:09AM EST Zacks
- Sempra Energy (SRE) Beats on Q1 Earnings, Keeps '17 View
05/09/17-1:04PM EST Zacks
- Consolidated Edison (ED) Tops Q1 Earnings, Sales, Keeps View
05/05/17-7:18AM EST Zacks

[More Zacks News for AEE »](#)

Other News For AEE

- Ameren downgraded to Equal Weight from...
05/25/17-4:30AM EST Thefly.com
- Ameren downgraded at Barclays on Missouri...
05/25/17-3:01AM EST Seeking Alpha
- Aura Energy Submits Mining Lease Application...
05/24/17-6:59AM EST Alliance News
- *Aura Energy Submits Mining Lease Application...
05/24/17-2:18AM EST Alliance News
- First City Capital Management, Inc. Buys Williams...
05/17/17-2:15AM EST GuruFocus

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American Electric Power Company, Inc. (AEP)

(Real Time Quote From BATS)

\$72.63 USD

+0.50 (0.69%)

Updated Jun 7, 2017 12:50 PM ET

Volume: 1,020,254

Open: \$72.26

Prior Close: \$72.13

Zacks Rank

Style Scores

Add to portfolio

3-Hold

Value: | Growth: | Momentum: | VGM:

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Quote Overview

Stock Activity

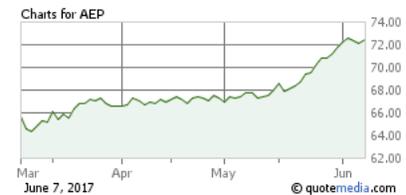
Open	72.26
Day Low	72.07
Day High	72.56
52 Wk Low	57.89
52 Wk High	72.72
Avg. Volume	2,248,888
Market Cap	35.47 B
Dividend	2.36 (3.27%)
Beta	0.31

Key Earnings Data

Forward PE	19.74
PEG Ratio	3.51
Current Qtr Est	0.88
Current Yr Est	3.65
Most Accurate Est	0.84
Qtr Earnings ESP	-4.55%
Exp Earnings Date	7/27/17
Prior Year EPS	3.93
Exp EPS Growth (3-5yr)	5.63%

Utilities » Utility - Electric Power

Chart for AEP



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Research Reports For AEP

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Zacks News For AEP

- American Electric Power Hits 52-Week High on Investments
06/02/17-9:18AM EST Zacks
- American Electric Power (AEP) Up 4.1% Since Earnings Report...
05/31/17-2:17AM EST Zacks
- AEP: What are Zacks experts saying now?
Zacks Private Portfolio Services
- Utility Industry Outlook - May 2017
05/18/17-12:00AM EST Zacks
- Dominion Resources (D) Beats on Q1 Earnings and Revenues
05/04/17-10:01AM EST Zacks
- Exelon (EXC) Earnings, Revenues Beat Estimates in Q1
05/03/17-2:33PM EST Zacks

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Other News For AEP

- Are You Sure The Expenses Are Too High?
06/06/17-7:01AM EST Seeking Alpha
- Mint Energy Now in all Major Ohio Markets
06/06/17-6:00AM EST PR Web
- Decent Steady High Yield Fund
06/05/17-9:16AM EST Seeking Alpha
- American Electric Power Company: A Safe And...
06/04/17-4:30AM EST Seeking Alpha
- American Electric Power Company: A Safe And...
06/02/17-12:45PM EST TalkMarkets

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Avangrid, Inc. (AGR)

(Real Time Quote From BATS)

\$45.22 USD

-0.20 (-0.44%)

Updated Jun 7, 2017 12:50 PM ET

Volume: 64,578
 Open: \$45.48
 Prior Close: \$45.42

Zacks Rank
Style Scores

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2-Buy 2

Value: C | Growth: D | Momentum: D | VGM: D

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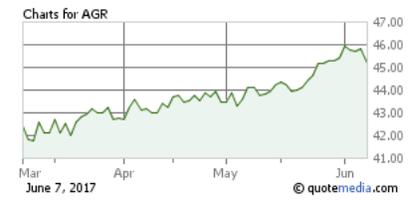
Open	45.48
Day Low	45.15
Day High	45.59
52 Wk Low	35.42
52 Wk High	46.74
Avg. Volume	307,481
Market Cap	14.17 B
Dividend	1.73 (3.77%)
Beta	0.54

Key Earnings Data

Forward PE	20.73
PEG Ratio	2.44
Current Qtr Est	0.37
Current Yr Est	2.21
Most Accurate Est	0.37
Qtr Earnings ESP	0.00%
Exp Earnings Date	7/17/17
Prior Year EPS	2.07
Exp EPS Growth (3-5yr)	8.50%

Utilities » Utility - Electric Power

Chart for AGR



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Zacks News For AGR

FirstEnergy On Track to Upgrade 69 KV Transmission Lines
 06/06/17-6:18AM EST Zacks

Xcel Energy to File for Natural Gas Rate Hike in Colorado
 06/05/17-9:18AM EST Zacks

AGR: What are Zacks experts saying now?
 Zacks Private Portfolio Services

NRG Energy Continues Cost Savings, Compliance Cost a Woe
 06/02/17-10:38AM EST Zacks

FirstEnergy's (FE) Subsidiary Upgrades Eatontown Substation
 06/02/17-9:41AM EST Zacks

American Electric Power Hits 52-Week High on Investments
 06/02/17-9:18AM EST Zacks

[More Zacks News for AGR »](#)

Other News For AGR

Avangrid management to meet with Guggenheim
 05/30/17-9:00AM EST Thefly.com

PPL Corp Hits 52-Week High on Planned Capital...
 05/29/17-10:31AM EST TalkMarkets

Boston Common Asset Management, LLC Buys...
 05/25/17-11:15AM EST GuruFocus

Avangrid (AGR) Presents At American Gas...
 05/23/17-3:01AM EST Seeking Alpha

Deutsche Bank to hold a conference
 05/16/17-6:30AM EST Thefly.com

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CMS Energy Corporation (CMS)

(Real Time Quote From BATS)

\$47.58 USD

+0.26 (0.55%)

Updated Jun 7, 2017 12:52 PM ET

Volume: 579,366

Open: \$47.39

Prior Close: \$47.32

Zacks Rank

Style Scores

Add to portfolio

3-Hold

Value: C | Growth: A | Momentum: A | VGM: A

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Quote Overview

Stock Activity

Open	47.39
Day Low	47.26
Day High	47.61
52 Wk Low	38.78
52 Wk High	47.95
Avg. Volume	1,884,205
Market Cap	13.27 B
Dividend	1.33 (2.81%)
Beta	0.15

Key Earnings Data

Forward PE	21.82
PEG Ratio	3.64
Current Qtr Est	0.43
Current Yr Est	2.17
Most Accurate Est	0.43
Qtr Earnings ESP	0.00%
Exp Earnings Date	7/27/17
Prior Year EPS	2.02
Exp EPS Growth (3-5yr)	6.00%

Utilities » Utility - Electric Power

Research Reports For CMS

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Zacks News For CMS

Why Is CMS Energy (CMS) Up 4.8% Since the Last Earnings...
 06/01/17-10:12AM EST Zacks

CMS Energy Hits 52-Week High on Strong Capital Investments
 05/30/17-9:08AM EST Zacks

CMS: What are Zacks experts saying now?
 Zacks Private Portfolio Services

Atlantica Yield (ABY) Posts Narrower-than-Expected Q1 Loss
 05/16/17-7:56AM EST Zacks

Brookfield Infrastructure (BIP) Incurs Loss, Lags Q1 Revenue
 05/08/17-8:25AM EST Zacks

PPL Corp (PPL) Earnings In Line with Estimates, Revenues Lag
 05/04/17-10:46AM EST Zacks

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Chart for CMS



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Other News For CMS

Are You Sure The Expenses Are Too High?
 06/06/17-7:01AM EST Seeking Alpha

Adams To Raise GBP1.0 Million To Invest In Tech...
 06/02/17-6:17AM EST Alliance News

CMS Crosses Above Average Analyst Target
 05/24/17-8:15AM EST ETF Channel

CMS Energy Corporation (CMS) Presents At...
 05/23/17-1:31AM EST Seeking Alpha

Credit Suisse to hold meetings at the AGA...
 05/22/17-12:31PM EST Thefly.com

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Dominion Resources, Inc. (D)

(Real Time Quote From BATS)

\$80.47 USD

+0.17 (0.21%)

Updated Jun 7, 2017 12:52 PM ET

Volume: 883,628

Open: \$80.50

Prior Close: \$80.30

Zacks Rank

Style Scores

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3-Hold

Value: **D** | Growth: **B** | Momentum: **C** | VGM: **C**

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Stock Activity

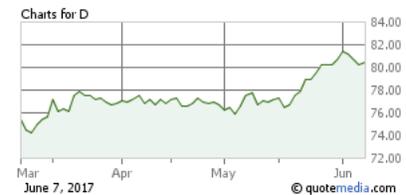
Open	80.50
Day Low	80.24
Day High	80.60
52 Wk Low	69.51
52 Wk High	81.65
Avg. Volume	2,063,688
Market Cap	50.51 B
Dividend	3.02 (3.76%)
Beta	0.29

Key Earnings Data

Forward PE	21.98
PEG Ratio	3.66
Current Qtr Est	0.66
Current Yr Est	3.65
Most Accurate Est	0.68
Qtr Earnings ESP	3.03%
Exp Earnings Date	8/2/17
Prior Year EPS	3.80
Exp EPS Growth (3-5yr)	6.00%

Utilities » Utility - Electric Power

Chart for D



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Zacks News For D

Dominion Hits 52-Week High on Returns from Steady Investment
 05/23/17-9:00AM EST Zacks

Dominion Gains from investments, Drop in Tax Credits a Woe
 05/18/17-9:04AM EST Zacks

D: What are Zacks experts saying now?
 Zacks Private Portfolio Services

ETFs in Focus After Dominion Resources Q1 Results
 05/05/17-1:01PM EST Zacks

Dominion Resources (D) Beats on Q1 Earnings and Revenues
 05/04/17-10:01AM EST Zacks

Dominion (D) Q1 Earnings, Revenues Surpass Estimates
 05/04/17-7:56AM EST Zacks

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Other News For D

RBC Capital to hold a conference
 06/06/17-7:45AM EST Thefly.com

SO, NEE, and D: Comparing US Utilities' Total...
 06/06/17-6:45AM EST Market Realist

Decent Steady High Yield Fund
 06/05/17-9:16AM EST Seeking Alpha

3 Disrespected Stocks Yielding Up to 5.2% (and...
 06/05/17-5:15AM EST The Online Investor

SO, NEE, and D: What's Next for Overpriced US...
 06/05/17-3:48AM EST Market Realist

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DTE Energy Company (DTE)

(Real Time Quote From BATS)

\$ 110.73 USD

+0.57 (0.52%)

Updated Jun 7, 2017 12:52 PM ET

Volume: 173,899
 Open: \$110.45
 Prior Close: \$110.16

Zacks Rank
Style Scores

3-Hold

Value: | Growth: | Momentum: | VGM:

[View All Zacks Rank #1 Strong Buys](#)

Quote Overview

Stock Activity

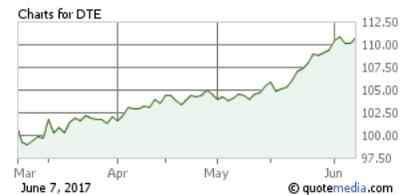
Open	110.45
Day Low	110.08
Day High	110.75
52 Wk Low	89.66
52 Wk High	111.18
Avg. Volume	632,639
Market Cap	19.76 B
Dividend	3.30 (3.00%)
Beta	0.22

Key Earnings Data

Forward PE	20.63
PEG Ratio	3.48
Current Qtr Est	0.94
Current Yr Est	5.34
Most Accurate Est	0.94
Qtr Earnings ESP	0.00%
Exp Earnings Date	7/25/17
Prior Year EPS	5.28
Exp EPS Growth (3-5yr)	5.93%

Utilities » Utility - Electric Power

Chart for DTE



[Interactive Chart](#) | [Fundamental Charts](#)

Research Reports For DTE

[All Zacks' Analyst Reports »](#)

Zacks News For DTE

- Duke's Investments Impress, Stringent Regulations a Woe**
06/02/17-6:38AM EST Zacks
- Why Is DTE Energy (DTE) Up 3.7% Since the Last Earnings...**
05/30/17-5:16AM EST Zacks
- DTE: What are Zacks experts saying now?**
Zacks Private Portfolio Services
- DTE Energy's Unit Acquires Two Landfill Gas-to-Energy Projects**
05/26/17-9:21AM EST Zacks
- DTE Energy Targets Over 80% Cut in Carbon Emissions by 2050**
05/17/17-6:14AM EST Zacks
- Atlantica Yield (ABY) Posts Narrower-than-Expected Q1 Loss**
05/16/17-7:56AM EST Zacks

[More Zacks News for DTE »](#)

Other News For DTE

- Natural Gas Utility Stock May Be Laying Pipeline...**
06/06/17-12:30PM EST Investors Business Daily
- 5 Companies Reach Yearly Highs**
06/06/17-2:15AM EST GuruFocus
- Decent Steady High Yield Fund**
06/05/17-9:16AM EST Seeking Alpha
- U.S. Pipeline Cos. Ready to Blow Past Regulatory...**
06/02/17-10:15AM EST TheStreet.com
- Breakout Watch: Dividend-Paying Natural Gas...**
06/01/17-3:16AM EST Investors Business Daily

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Duke Energy Corporation (DUK)

(Real Time Quote From BATS)

\$86.10 USD

+0.29 (0.34%)

Updated Jun 7, 2017 12:52 PM ET

Volume: 885,541

Open: \$85.81

Prior Close: \$85.81

Zacks Rank

Style Scores

Add to portfolio

4-Sell

Value: | Growth: | Momentum: | VGM:

[View All Zacks Rank #1 Strong Buys](#)

Quote Overview

Stock Activity

Open 85.81

Day Low 85.58

Day High 86.18

52 Wk Low 72.34

52 Wk High 87.75

Avg. Volume 2,477,366

Market Cap 60.06 B

Dividend 3.42 (3.99%)

Beta 0.26

Utilities » Utility - Electric Power

Key Earnings Data

Forward PE 18.69

PEG Ratio 3.74

Current Qtr Est 1.03

Current Yr Est 4.59

Most Accurate Est 1.04

Qtr Earnings ESP 0.97%

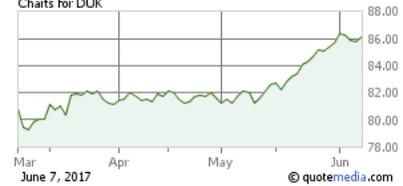
Exp Earnings Date 8/3/17

Prior Year EPS 4.69

Exp EPS Growth (3-5yr) 5.00%

Chart for DUK

Charts for DUK



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Other News For DUK

What Analysts Recommend for Duke Energy

06/07/17-9:45AM EST Market Realist

How Duke Energy's Current Valuation Compares...

06/07/17-8:15AM EST Market Realist

DUK, SO, and NEE: How Duke Energy Fared...

06/07/17-6:45AM EST Market Realist

Hindenburg Omen Is In Effect

06/07/17-6:45AM EST Seeking Alpha

Oppenheimer Ultra Dividend Revenue ETF (RDIV)...

06/06/17-9:15AM EST Seeking Alpha

[More Other News for DUK »](#)

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Zacks News For DUK

Duke's Investments Impress, Stringent Regulations a Woe

06/02/17-6:38AM EST Zacks

Utility Stocks Make Secure Bets on Multiple Factors

05/19/17-12:00AM EST Zacks

DUK: What are Zacks experts saying now?

Zacks Private Portfolio Services

Duke Energy Misses Q1 Earnings Estimates: ETFs in Focus

05/10/17-12:13PM EST Zacks

Duke Energy (DUK) Misses on Q1 Earnings, Keeps 2017 View

05/09/17-8:28AM EST Zacks

Duke Energy (DUK) Misses Q1 Earnings & Revenue Estimates

05/09/17-7:30AM EST Zacks

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Eversource Energy (ES)

(Real Time Quote From BATS)

\$62.86 USD

+0.70 (1.13%)

Updated Jun 7, 2017 01:02 PM ET

Volume: 667,181
 Open: \$62.11
 Prior Close: \$62.16

Zacks Rank
Style Scores

Add to portfolio

3-Hold

Value: C | Growth: B | Momentum: A | VGM: B

[View All Zacks Rank #1 Strong Buys](#)

Quote Overview

Stock Activity

Open	62.11
Day Low	62.11
Day High	62.92
52 Wk Low	50.56
52 Wk High	62.92
Avg. Volume	1,249,349
Market Cap	19.70 B
Dividend	1.90 (3.06%)
Beta	0.32

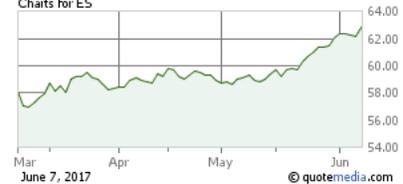
Key Earnings Data

Forward PE	19.69
PEG Ratio	3.11
Current Qtr Est	0.68
Current Yr Est	3.16
Most Accurate Est	0.67
Qtr Earnings ESP	-1.47%
Exp Earnings Date	7/27/17
Prior Year EPS	2.96
Exp EPS Growth (3-5yr)	6.33%

Utilities » Utility - Electric Power

Chart for ES

Charts for ES



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Research Reports For ES

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Zacks News For ES

- Why Is Eversource Energy (ES) Up 4.8% Since the Last Earnings...**
06/07/17-8:25:59AM EST Zacks
- Eversource Energy (ES) Hit by Regulatory and Weather Woes**
05/17/17-11:19AM EST Zacks
- ES: What are Zacks experts saying now?**
Zacks Private Portfolio Services
- Eversource (ES) Q1 Earnings Miss, Revenues Beat Estimates**
05/04/17-8:30AM EST Zacks
- Utility Stocks Q1 Earnings Reports on May 3: NI, LNT, ES**
05/02/17-6:37AM EST Zacks
- What's in Store for Eversource Energy (ES) in Q1 Earnings?**
05/02/17-5:42AM EST Zacks

[More Zacks News for ES »](#)

Other News For ES

- ES Crosses Above Average Analyst Target**
06/02/17-8:15AM EST ETF Channel
- Eversource Energy to acquire Aquarion Water...**
06/02/17-7:46AM EST Thefly.com
- Eversource Energy to buy Aquarion Water in...**
06/02/17-7:46AM EST Seeking Alpha
- Income For Millionaires**
05/30/17-1:15AM EST Seeking Alpha
- Eversource Energy (ES) Presents At American...**
05/23/17-5:01AM EST Seeking Alpha

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Fortis Inc. (FTS)

(Real Time Quote From BATS)

\$33.50 USD

-0.33 (-0.98%)

Updated Jun 7, 2017 01:02 PM ET

Volume: 53,888
 Open: \$33.82
 Prior Close: \$33.83

Zacks Rank
Style Scores

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5-Strong Sell ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Value: | Growth: | Momentum: | VGM:

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Quote Overview

Stock Activity

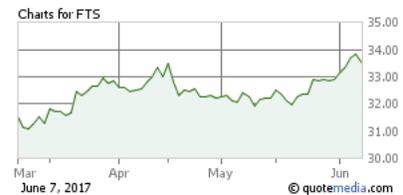
Open	33.82
Day Low	33.49
Day High	33.88
52 Wk Low	29.14
52 Wk High	34.66
Avg. Volume	145,521
Market Cap	14.07 B
Dividend	1.17 (3.46%)
Beta	0.00

Key Earnings Data

Forward PE	18.61
PEG Ratio	3.38
Current Qtr Est	0.40
Current Yr Est	1.82
Most Accurate Est	0.40
Qtr Earnings ESP	0.00%
Exp Earnings Date	8/4/17
Prior Year EPS	1.76
Exp EPS Growth (3-5yr)	5.50%

Utilities » Utility - Electric Power

Chart for FTS



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Research Report For FTS

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Zacks News For FTS

- New Strong Sell Stocks for June 7th**
06/07/17-6:56AM EST Zacks
- Ameren Corp's Subsidiary Files for Electric Rate Decrease**
04/17/17-9:06AM EST Zacks
- FTS: What are Zacks experts saying now?**
Zacks Private Portfolio Services
- NiSource (NI) Unit Files for Rate Hike to Recoup Investment**
04/17/17-8:11AM EST Zacks
- Today's Zacks Rank #1 (Strong Buy) Breakout Charts**
04/12/17-7:24PM EST Zacks
- NextEra's Texas Expansion Plans Hit by Regulatory Blockage**
03/31/17-2:01PM EST Zacks

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Other News For FTS

- Fortis could top growth goal with new LNG and...**
06/06/17-12:01PM EST Seeking Alpha
- Gas Not The Answer: Where Is BP's Plan B?**
05/26/17-12:30PM EST Seeking Alpha
- Resource Sector Digest: Another Resource...**
05/15/17-9:30AM EST Seeking Alpha
- Fortis to buy Teck's two-thirds interest in Waneta...**
05/12/17-6:15AM EST Thefly.com
- Utilities, Still A 'Safe' Bet In An Overvalued Market?**
05/11/17-6:01AM EST Seeking Alpha

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- Options Greek Montage

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NextEra Energy, Inc. (NEE)

(Real Time Quote From BATS)

\$ 142.64 USD

+0.72 (0.51%)

Updated Jun 7, 2017 01:04 PM ET

Volume: 581,137

Open: \$141.93

Prior Close: \$141.92

Zacks Rank

Style Scores

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3-Hold

Value: | Growth: | Momentum: | VGM:

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Quote Overview

Stock Activity

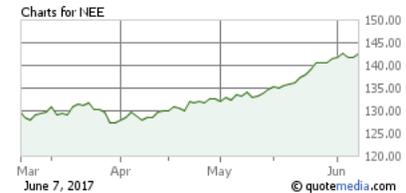
Open	141.93
Day Low	141.44
Day High	142.77
52 Wk Low	110.49
52 Wk High	142.93
Avg. Volume	1,713,770
Market Cap	66.44 B
Dividend	3.93 (2.77%)
Beta	0.33

Key Earnings Data

Forward PE	21.37
PEG Ratio	3.04
Current Qtr Est	1.74
Current Yr Est	6.64
Most Accurate Est	1.74
Qtr Earnings ESP	0.00%
Exp Earnings Date	7/26/17
Prior Year EPS	6.19
Exp EPS Growth (3-5yr)	7.03%

Utilities » Utility - Electric Power

Chart for NEE



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Zacks News For NEE

DTE Energy's Unit Acquires Two Landfill Gas-to-Energy Projects
05/26/17-9:21AM EST Zacks

NiSource (NI) Issues Notes Worth \$2B to Refinance Debts
05/24/17-9:14AM EST Zacks

NEE: What are Zacks experts saying now?
Zacks Private Portfolio Services

NextEra (NEE) Unit to Close SJRPP Coal Plant, Upgrade Fleet
05/23/17-10:01AM EST Zacks

Why Is NextEra Energy (NEE) Up 4.9% Since the Last Earnings...
05/22/17-2:28AM EST Zacks

Utility Stocks Make Secure Bets on Multiple Factors
05/19/17-12:00AM EST Zacks

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Other News For NEE

What Analysts Recommend for Duke Energy
06/07/17-9:45AM EST Market Realist

How Duke Energy's Current Valuation Compares...
06/07/17-8:15AM EST Market Realist

DUK, SO, and NEE: How Duke Energy Fared...
06/07/17-6:45AM EST Market Realist

What Do Analysts Think of Southern Company?
06/06/17-8:16AM EST Market Realist

SO, NEE, and D: Comparing US Utilities' Total...
06/06/17-6:45AM EST Market Realist

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PPL Corporation (PPL)

(Real Time Quote From BATS)

\$39.74 USD

+0.24 (0.60%)

Updated Jun 7, 2017 01:06 PM ET

Volume: 2,365,773

Open: \$39.61

Prior Close: \$39.51

Zacks Rank

Style Scores

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3-Hold

Value: | Growth: | Momentum: | VGM:

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Quote Overview

Stock Activity

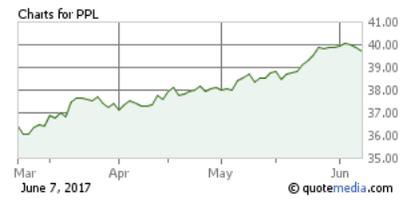
Open	39.61
Day Low	39.55
Day High	39.80
52 Wk Low	32.08
52 Wk High	40.20
Avg. Volume	2,926,374
Market Cap	27.26 B
Dividend	1.58 (3.96%)
Beta	0.50

Key Earnings Data

Forward PE	18.56
PEG Ratio	3.71
Current Qtr Est	0.49
Current Yr Est	2.15
Most Accurate Est	0.49
Qtr Earnings ESP	0.00%
Exp Earnings Date	8/8/17
Prior Year EPS	2.45
Exp EPS Growth (3-5yr)	5.00%

Utilities » Utility - Electric Power

Chart for PPL



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Zacks News For PPL

- Xcel Energy to File for Natural Gas Rate Hike in Colorado
06/05/17-9:18AM EST Zacks
- FirstEnergy's (FE) Subsidiary Upgrades Eatontown Substation
06/02/17-9:41AM EST Zacks
- PPL: What are Zacks experts saying now?
Zacks Private Portfolio Services
- PPL Corp Hits 52-Week High on Planned Capital Investment
05/29/17-8:03AM EST Zacks
- FirstEnergy Adds Substation, Fortifies Ohio Infrastructure
05/18/17-9:52AM EST Zacks
- Is PPL Corp. (PPL) the Right Choice for Your Portfolio?
05/11/17-8:27AM EST Zacks

[More Zacks News for PPL »](#)

Other News For PPL

- PPL Corp. backs FY17 ongoing EPS view...
06/07/17-6:46AM EST Thefly.com
- Notable Tuesday Option Activity: PPL, LVS, USAT
06/06/17-2:31AM EST Stock Options Channel
- PPL Corporation (PPL) Investor Presentation - ...
05/31/17-1:16AM EST Seeking Alpha
- PPL Corporation: A High-Yield Utility Stock...
05/30/17-12:31PM EST Seeking Alpha
- PPL Corp: A High-Yield Utility Stock Doubling Its...
05/30/17-12:16PM EST Seeking Alpha

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Public Service Enterprise Group Incorporated (PEG)

(Real Time Quote From BATS)

\$44.66 USD

+0.40 (0.90%)

Updated Jun 7, 2017 01:06 PM ET

Volume: 692,136

Open: \$44.39

Prior Close: \$44.26

Zacks Rank

Style Scores

[+](#) Add to portfolio

[Trades from \\$3](#)

3-Hold

Value: | Growth: | Momentum: | VGM:

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Quote Overview

Stock Activity

Open	44.39
Day Low	44.24
Day High	44.68
52 Wk Low	39.28
52 Wk High	46.81
Avg. Volume	3,041,354
Market Cap	22.61 B
Dividend	1.72 (3.85%)
Beta	0.39

Key Earnings Data

Forward PE	15.48
PEG Ratio	5.16
Current Qtr Est	0.59
Current Yr Est	2.89
Most Accurate Est	0.59
Qtr Earnings ESP	0.00%
Exp Earnings Date	8/4/17
Prior Year EPS	2.90
Exp EPS Growth (3-5yr)	3.00%

Utilities » Utility - Electric Power

Chart for PEG

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Other News For PEG

Ex-Dividend Reminder: Public Service Enterprise...
06/05/17-9:30AM EST Dividend Channel

PSEG files for fall gas supply rate increase
06/01/17-9:31AM EST Thefly.com

Wednesday Sector Leaders: Utilities, Healthcare
05/31/17-3:16AM EST Market News Video

PSEG Power closes its final two New Jersey...
05/30/17-12:31PM EST Seeking Alpha

DIRECTOR DEALINGS: Petards Group Chairman...
05/30/17-8:57AM EST Alliance News

[More Other News for PEG »](#)

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Zacks News For PEG

Is Public Service Enterprise (PEG) a Suitable Value Pick?
05/18/17-8:35AM EST Zacks

Consolidated Edison (ED) Tops Q1 Earnings, Sales, Keeps View
05/05/17-7:18AM EST Zacks

PEG: What are Zacks experts saying now?
Zacks Private Portfolio Services

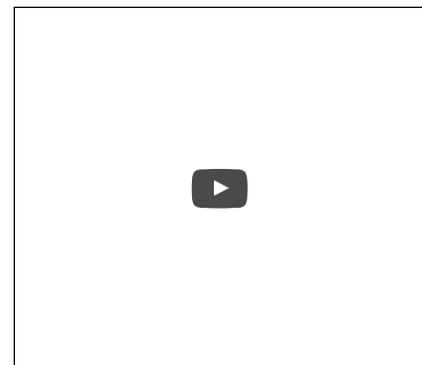
Can Sempra Energy (SRE) Pull a Surprise in Q1 Earnings?
05/05/17-7:15AM EST Zacks

Is a Beat in Store for AES Corporation (AES) in Q1 Earnings?
05/04/17-7:23AM EST Zacks

CMS Energy (CMS) Tops Q1 Earnings Estimates, Keeps '17 View
05/01/17-8:31AM EST Zacks

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The Zacks Rank has been called the Billion Dollar Secret. [Click here to watch the full series. »](#)



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Scana Corporation (SCG)

(Real Time Quote From BATS)

\$68.45 USD

+0.61 (0.90%)

Updated Jun 7, 2017 01:06 PM ET

Volume: 269,816

Open: \$67.99

Prior Close: \$67.84

Zacks Rank

Style Scores

[+](#) Add to portfolio

[Trades from \\$3](#)

4-Sell

Value: | Growth: | Momentum: | VGM:

[View All Zacks Rank #1 Strong Buys](#)

Quote Overview

Stock Activity

Open	67.99
Day Low	67.75
Day High	68.52
52 Wk Low	64.20
52 Wk High	76.41
Avg. Volume	997,599
Market Cap	9.70 B
Dividend	2.45 (3.61%)
Beta	0.26

Key Earnings Data

Forward PE	16.05
PEG Ratio	3.01
Current Qtr Est	0.75
Current Yr Est	4.23
Most Accurate Est	0.75
Qtr Earnings ESP	0.00%
Exp Earnings Date	7/27/17
Prior Year EPS	4.16
Exp EPS Growth (3-5yr)	5.33%

Utilities » [Utility - Electric Power](#)

Research Reports For SCG

[All Zacks' Analyst Reports »](#)

Zacks News For SCG

[Southern Company Inks Deal to Take Over the Vogtle Project](#)
05/15/17-8:08AM EST Zacks

[SCANA's \(SCG\) Q1 Earnings Miss Estimates, Decrease Y/Y](#)
04/27/17-10:39AM EST Zacks

[SCG: What are Zacks experts saying now?](#)
Zacks Private Portfolio Services

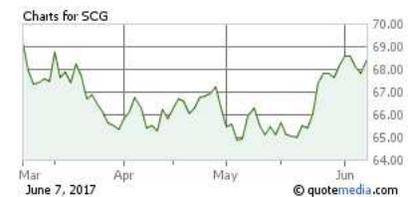
[SCANA \(SCG\) Misses on Q1 Earnings Estimate](#)
04/27/17-8:35AM EST Zacks

[Utilities to Report Q1 Earnings on Apr 27: AEP, FE & More](#)
04/26/17-7:15AM EST Zacks

[SCANA Corp \(SCG\) in Q1 Earnings: Disappointment in Store?](#)
04/25/17-9:34AM EST Zacks

[More Zacks News for SCG »](#)

Chart for SCG



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Other News For SCG

[Ex-Dividend Reminder: SCANA, Stock Yards...](#)
06/06/17-9:15AM EST Dividend Channel

[Decent Steady High Yield Fund](#)
06/05/17-9:16AM EST Seeking Alpha

[Lockout at Westinghouse plant could hit SCANA,...](#)
05/25/17-2:31AM EST Seeking Alpha

[Westinghouse reaches deal for \\$800M U.S....](#)
05/23/17-1:31AM EST Seeking Alpha

[Is This The End Of Nuclear Power Outside Of...](#)
05/16/17-4:46AM EST Seeking Alpha

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Sempra Energy (SRE)

(Real Time Quote From BATS)

\$ 117.65 USD

+0.58 (0.50%)

Updated Jun 7, 2017 01:06 PM ET

Volume: 755,823
 Open: \$117.13
 Prior Close: \$117.07

Zacks Rank
Style Scores

Add to portfolio

3-Hold

Value: | Growth: | Momentum: | VGM:

[View All Zacks Rank #1 Strong Buys](#)

Quote Overview

Stock Activity

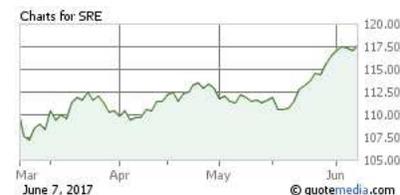
Open	117.13
Day Low	117.03
Day High	117.97
52 Wk Low	92.95
52 Wk High	117.97
Avg. Volume	1,243,825
Market Cap	29.34 B
Dividend	3.29 (2.81%)
Beta	0.56

Key Earnings Data

Forward PE	22.95
PEG Ratio	2.65
Current Qtr Est	0.75
Current Yr Est	5.10
Most Accurate Est	0.75
Qtr Earnings ESP	0.00%
Exp Earnings Date	8/3/17
Prior Year EPS	5.05
Exp EPS Growth (3-5yr)	8.67%

Utilities » Utility - Gas Distribution

Chart for SRE



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Research Reports For SRE

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Zacks News For SRE

- Just Energy (JE) Q4 Earnings Miss Estimates, Gives '18 View
05/18/17-9:07AM EST Zacks
- Maxwell (MXWL) Posts In-Line Q1 Loss, Revenues Top Estimates
05/10/17-7:09AM EST Zacks
- SRE: What are Zacks experts saying now?
Zacks Private Portfolio Services
- Top Research Reports for Activision Blizzard, Merck and Barclays
05/10/17-12:00AM EST Zacks
- Sempra Energy (SRE) Beats on Q1 Earnings, Keeps '17 View
05/09/17-1:04PM EST Zacks
- Sempra Energy (SRE) Tops Q1 Earnings & Revenue Estimates
05/09/17-8:47AM EST Zacks

[More Zacks News for SRE »](#)

Other News For SRE

- How TransCanada Corporation Makes Most of Its...
06/07/17-11:47AM EST TheMotleFool
- Merrill Lynch Gets More Bullish on 8 Top Stocks
06/05/17-12:16PM EST 247WallSt
- Decent Steady High Yield Fund
06/05/17-9:16AM EST Seeking Alpha
- Cowen utilities/power analysts hold an...
06/02/17-10:01AM EST Thefly.com
- *Sirius Real Estate Sells EUR18M Mature Assets,...
06/01/17-4:03AM EST Alliance News

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Southern Company (The) (SO)

(Real Time Quote From BATS)

\$51.08 USD

+0.29 (0.57%)

Updated Jun 7, 2017 01:06 PM ET

Volume: 1,710,040

Open: \$50.76

Prior Close: \$50.79

Zacks Rank

Style Scores

[+](#) Add to portfolio

[Trades from \\$3](#)

4-Sell

Value: | Growth: | Momentum: | VGM:

[View All Zacks Rank #1 Strong Buys](#)

Quote Overview

Stock Activity

Open 50.76

Day Low 50.71

Day High 51.12

52 Wk Low 46.20

52 Wk High 54.64

Avg. Volume 4,575,707

Market Cap 50.52 B

Dividend 2.32 (4.57%)

Beta 0.11

Utilities » Utility - Electric Power

Key Earnings Data

Forward PE 17.11

PEG Ratio 3.42

Current Qtr Est 0.73

Current Yr Est 2.97

Most Accurate Est 0.73

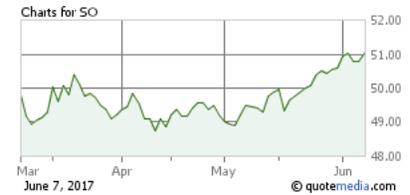
Qtr Earnings ESP 0.00%

Exp Earnings Date 7/26/17

Prior Year EPS 2.89

Exp EPS Growth (3-5yr) 5.00%

Chart for SO



[Interactive Chart](#) | [Fundamental Charts](#)

Other News For SO

What Analysts Recommend for Duke Energy
 06/07/17-9:45AM EST Market Realist

How Duke Energy's Current Valuation Compares...
 06/07/17-8:15AM EST Market Realist

DUK, SO, and NEE: How Duke Energy Fared...
 06/07/17-6:45AM EST Market Realist

Oppenheimer Ultra Dividend Revenue ETF (RDIV)...
 06/06/17-9:15AM EST Seeking Alpha

What Do Analysts Think of Southern Company?
 06/06/17-8:16AM EST Market Realist

[More Other News for SO »](#)

Research Reports For SO

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Zacks News For SO

Southern Company's Kemper Project Delayed, Rates Unchanged
 06/07/17-7:46AM EST Zacks

Southern Company (SO) Up 2.3% Since Earnings Report: Can It...
 06/07/17-5:31AM EST Zacks

SO: What are Zacks experts saying now?
 Zacks Private Portfolio Services

Southern Company Inks Deal to Take Over the Vogtle Project
 05/15/17-8:08AM EST Zacks

Southern Company (SO) Q1 Earnings and Sales Beat Estimates
 05/03/17-8:59AM EST Zacks

Southern Company (SO) Q1 Earnings and Sales Beat Estimates
 05/03/17-8:26AM EST Zacks

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Vectren Corporation (VVC)

(Real Time Quote From BATS)

\$61.98 USD

+0.34 (0.55%)

Updated Jun 7, 2017 01:06 PM ET

Volume: 75,076

Open: \$61.65

Prior Close: \$61.64

Zacks Rank

Style Scores

[+](#) Add to portfolio

[Trades from \\$3](#)

4-Sell

Value: **C** | Growth: **A** | Momentum: **C** | VGM: **A**

[View All Zacks Rank #1 Strong Buys](#)

Quote Overview

Stock Activity

Open	61.65
Day Low	61.33
Day High	62.02
52 Wk Low	46.52
52 Wk High	62.79
Avg. Volume	294,342
Market Cap	5.11 B
Dividend	1.68 (2.73%)
Beta	0.78

Key Earnings Data

Forward PE	23.51
PEG Ratio	4.15
Current Qtr Est	0.44
Current Yr Est	2.62
Most Accurate Est	0.44
Qtr Earnings ESP	0.00%
Exp Earnings Date	8/2/17
Prior Year EPS	2.55
Exp EPS Growth (3-5yr)	5.67%

Utilities » [Utility - Gas Distribution](#)

Research Report For VVC

[All Zacks' Analyst Reports »](#)

Zacks News For VVC

Delta Natural Gas (DGAS) to Be Acquired by Peoples for \$270M
02/22/17-3:49PM EST Zacks

New Strong Buy Stocks for February 2nd
02/02/17-12:00AM EST Zacks

VVC: What are Zacks experts saying now?
Zacks Private Portfolio Services

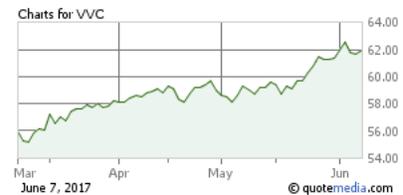
Top Ranked Income Stocks to Buy for February 2nd
02/02/17-12:00AM EST Zacks

Utility Industry Stock Outlook - Jan.-Feb. 2017
01/31/17-1:56PM EST Zacks

ONE Gas (OGS) Issues 2017 Guidance, Updates 5-Year Plan
01/18/17-7:41AM EST Zacks

[More Zacks News for VVC »](#)

Chart for VVC



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Other News For VVC

Glenville State College Saves Energy and...
06/06/17-7:30AM EST GuruFocus

Vectren subsidiary awarded U.S. DOE IDIQ contract
06/06/17-4:30AM EST Thefly.com

The Most Undervalued And Overvalued Dividend...
06/05/17-11:31AM EST Seeking Alpha

Energy Systems Group Awarded U.S. DOE IDIQ...
06/05/17-10:15AM EST GuruFocus

Short Interest In Vectren Increases 79.3%
05/25/17-1:46AM EST Market News Video

[More Other News for VVC »](#)

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Ticker	Company	Mkt Cap (\$ millions)	BEst Est LTG EPS CAGR % 6/7/17
Average	Average	\$ 16,265	5.49
PEG US Equity	PUBLIC SERVICE ENTERPRISE GP	\$ 22,552	3.20
XEL US Equity	XCEL ENERGY INC	\$ 24,322	5.90
SO US Equity	SOUTHERN CO/THE	\$ 50,766	4.65
PPL US Equity	PPL CORP	\$ 27,000	1.20
PCG US Equity	P G & E CORP	\$ 35,269	3.70
NI US Equity	NISOURCE INC	\$ 8,584	6.98
NEE US Equity	NEXTERA ENERGY INC	\$ 66,751	7.00
FE US Equity	FIRSTENERGY CORP	\$ 12,931	-2.00
EXC US Equity	EXELON CORP	\$ 33,892	4.00
ETR US Equity	ENTERGY CORP	\$ 14,438	-3.83
ES US Equity	EVERSOURCE ENERGY	\$ 19,831	6.10
EIX US Equity	EDISON INTERNATIONAL	\$ 26,661	6.18
ED US Equity	CONSOLIDATED EDISON INC	\$ 25,579	4.27
DUK US Equity	DUKE ENERGY CORP	\$ 60,253	5.53
DTE US Equity	DTE ENERGY COMPANY	\$ 19,846	6.00
D US Equity	DOMINION ENERGY INC	\$ 50,608	5.00
AEP US Equity	AMERICAN ELECTRIC POWER	\$ 35,708	4.00
AEE US Equity	AMEREN CORPORATION	\$ 13,803	5.80
SRE US Equity	SEMPRA ENERGY	\$ 29,436	12.15
AQN US Equity	ALGONQUIN POWER & UTILITIES	\$ 3,951	#N/A N/A
ALE US Equity	ALLETE INC	\$ 3,767	6.10
LNT US Equity	ALLIANT ENERGY CORP	\$ 9,480	6.43
AGR US Equity	AVANGRID INC	\$ 13,964	9.00
AVA US Equity	AVISTA CORP	\$ 2,791	#N/A N/A
BKH US Equity	BLACK HILLS CORP	\$ 3,762	6.00
CNP US Equity	CENTERPOINT ENERGY INC	\$ 12,205	6.53
CMS US Equity	CMS ENERGY CORP	\$ 13,327	6.83
EE US Equity	EL PASO ELECTRIC CO	\$ 2,204	6.50
EMA CN Equity	EMERA INC	\$ 7,636	7.00
FTS CN Equity	FORTIS INC	\$ 13,948	5.00
GXP US Equity	GREAT PLAINS ENERGY INC	\$ 6,298	5.00
HE US Equity	HAWAIIAN ELECTRIC INDS	\$ 3,665	3.15
IDA US Equity	IDACORP INC	\$ 4,493	3.00
MGEE US Equity	MGE ENERGY INC	\$ 2,311	#N/A N/A
NWE US Equity	NORTHWESTERN CORP	\$ 3,022	3.00
OGE US Equity	OGE ENERGY CORP	\$ 7,105	5.70
OTTR US Equity	OTTER TAIL CORP	\$ 1,610	6.00
PNW US Equity	PINNACLE WEST CAPITAL	\$ 9,824	5.90
PNM US Equity	PNM RESOURCES INC	\$ 3,138	7.00
POR US Equity	PORTLAND GENERAL ELECTRIC CO	\$ 4,244	5.30
SCG US Equity	SCANA CORP	\$ 9,817	6.00
VVC US Equity	VECTREN CORP	\$ 5,136	5.50
WEC US Equity	WEC ENERGY GROUP INC	\$ 20,001	6.70
WR US Equity	WESTAR ENERGY INC	7572.15308	5.25

BEst (Bloomberg Estimates) Long Term Growth EPS is the mean of broker contributed estimates. It represents the CAGR of the operating EPS over the company's next full business cycle (typically 3-5 years).

NYSE:LNT (SNL Inst Key: 4057038)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:LNT
2015	0.44	0.34	0.82	0.16	1.75	NA		NA
2016	0.43	0.37	0.8	0.28	1.88	NA		NA
2017	0.43	0.36	0.91	0.3	2	11		20.7
2018	0.46	0.37	1.08	0.22	2.13	11		19.4
2019	0.48	0.39	1.11	0.25	2.26	8		18.3
2020	0.51	0.46	1.11	0.32	2.38	5		17.4

Forward Estimate Statistics - Diluted EPS Normalized (\$)																				
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	12/31/2020
Median	0.43	0.37	0.85	0.31	2.00	0.46	0.37	1.08	0.22	2.13	0.48	0.39	1.11	0.25	2.25	0.51	0.46	1.11	0.32	2.38
High	0.46	0.41	1.02	0.38	2.04	0.47	0.39	1.13	0.24	2.19	0.49	0.42	1.15	0.28	2.38	0.51	0.46	1.11	0.32	2.41
Low	0.41	0.31	0.85	0.22	1.96	0.45	0.35	1.02	0.19	2.10	0.48	0.36	1.06	0.22	2.20	0.51	0.46	1.11	0.32	2.34
Number of Analysts	7	5	5	5	11	2	2	2	2	11	2	2	2	2	8	1	1	1	1	5

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		5.9	6.0	6.3	5.8
Median Estimate		6.0	6.0	6.0	6.0
High		6.0	6.0	7.0	6.0
Low		5.5	6.0	6.0	5.0
Number of Analysts		5	4	4	3

Bolded and italicized figures in the Mean Estimates and Actuals Summary grid represent consensus estimates.
 Quarterly and semi-annual estimates may not sum to annual values due to differing number of analysts making estimates on each period.
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 Definitions available in SNL Help.



NYSE:AEE (SNL Inst Key: 4007308)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:AEE
2015	0.45	0.58	1.41	0.12	2.56	NA		NA
2016	0.43	0.61	1.52	0.13	2.68	NA		NA
2017	0.42	0.62	1.47	0.29	2.78	12		20.5
2018	0.45	0.7	1.52	0.35	3.01	11		18.9
2019	NA	NA	NA	NA	3.2	7		17.8
2020	NA	NA	NA	NA	3.41	2		16.7

Forward Estimate Statistics - Diluted EPS Normalized (\$)												
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 FY	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	12/31/2019	12/31/2020
Median	0.41	0.64	1.48	0.21	2.77	0.45	0.70	1.52	0.35	3.00	3.22	3.41
High	0.45	0.70	1.53	0.57	2.85	0.45	0.70	1.52	0.35	3.07	3.24	3.42
Low	0.36	0.49	1.37	0.16	2.74	0.45	0.70	1.52	0.35	2.97	3.06	3.40
Number of Analysts	6	4	4	4	12	1	1	1	1	11	7	2

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		6.1	6.1	6.1	6.3
Median Estimate		6.0	6.0	6.0	6.3
High		6.5	6.5	6.5	7.0
Low		5.8	5.8	5.8	5.5
Number of Analysts		3	3	3	4

Bolded and italicized figures in the Mean Estimates and Actuals Summary grid represent consensus estimates.

Quarterly and semi-annual estimates may not sum to annual values due to differing number of analysts making estimates on each period.

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Definitions available in SNL Help.



NYSE:AEP (SNL Inst Key: 4006321)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:AEP
2015	1.28	0.88	1.06	0.48	3.69	NA		NA
2016	1.02	0.95	1.3	0.67	3.94	NA		NA
2017	0.96	0.91	1.16	0.63	3.65	20		19.7
2018	1.04	0.95	1.15	0.75	3.89	18		18.6
2019	1.06	1.02	1.23	0.78	4.11	16		17.6
2020	1.05	1.07	1.01	1.15	4.29	3		16.8

Forward Estimate Statistics - Diluted EPS Normalized (\$)																				
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	12/31/2020
Median	0.95	0.92	1.20	0.59	3.65	1.02	0.94	1.23	0.66	3.90	1.07	1.00	1.34	0.70	4.10	1.05	1.07	1.01	1.15	4.30
High	1.03	1.01	1.35	0.93	3.72	1.12	1.03	1.27	0.91	3.94	1.08	1.08	1.35	0.96	4.17	1.05	1.07	1.01	1.15	4.30
Low	0.91	0.82	0.89	0.39	3.60	0.97	0.90	0.95	0.63	3.82	1.03	0.98	0.99	0.67	4.05	1.05	1.07	1.01	1.15	4.28
Number of Analysts	14	10	9	8	20	5	5	5	5	18	3	3	3	3	16	1	1	1	1	3

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		4.1	3.9	3.8	4.7
Median Estimate		4.0	4.0	4.0	4.2
High		6.0	6.0	6.0	6.0
Low		1.7	1.7	1.8	4.0
Number of Analysts		7	8	9	5

Bolded and italicized figures in the Mean Estimates and Actuals Summary grid represent consensus estimates.
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 Definitions available in SNL Help.



NYSE:AGR (SNL Inst Key: 4057045)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:AGR
2015	NA	NA	NA	NA	1.84	NA	NA	NA
2016	0.63	0.32	0.35	0.67	2.07	NA	NA	NA
2017	0.73	0.39	0.42	0.69	2.21	9	20.7	20.7
2018	0.77	0.44	0.47	0.73	2.38	9	19.2	19.2
2019	0.81	0.44	0.52	0.81	2.44	8	18.8	18.8
2020	NA	NA	NA	NA	2.71	3	16.9	16.9

Forward Estimate Statistics - Diluted EPS Normalized (\$)																
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	12/31/2020
Median	0.70	0.39	0.41	0.69	2.22	0.77	0.44	0.47	0.73	2.40	0.81	0.44	0.52	0.81	2.55	2.77
High	0.78	0.43	0.46	0.75	2.25	0.80	0.48	0.47	0.74	2.49	0.81	0.44	0.52	0.81	2.65	2.85
Low	0.68	0.35	0.39	0.64	2.16	0.73	0.40	0.47	0.73	2.30	0.81	0.44	0.52	0.81	1.82	2.50
Number of Analysts	5	6	5	5	9	2	2	2	2	9	1	1	1	1	8	3

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		7.8	7.8	8.5	6.7
Median Estimate		9.0	9.0	9.0	8.0
High		9.0	9.0	9.0	8.0
Low		5.2	5.2	6.8	4.0
Number of Analysts		5	5	4	3

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 Definitions available in SNL Help.



NYSE:CMS (SNL Inst Key: 4004172)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:CMS
2015	0.73	0.25	0.53	0.38	1.89	NA		NA
2016	0.59	0.45	0.7	0.29	2.02	NA		NA
2017	0.71	0.38	0.65	0.43	2.17	17		21.8
2018	0.79	0.4	0.66	0.47	2.33	16		20.3
2019	0.79	0.48	0.75	0.47	2.51	11		18.8
2020	NA	NA	NA	NA	2.68	3		17.7
2021	NA	NA	NA	NA	2.85	1		16.6

Forward Estimate Statistics - Diluted EPS Normalized (\$)																	
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 FY	2021 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	12/31/2020	12/31/2021
Median	0.63	0.38	0.64	0.43	2.17	0.79	0.37	0.67	0.52	2.34	0.79	0.48	0.75	0.47	2.51	2.68	2.85
High	0.76	0.45	0.77	0.59	2.18	0.81	0.49	0.75	0.59	2.35	0.82	0.52	0.80	0.60	2.55	2.68	2.85
Low	0.60	0.29	0.57	0.30	2.16	0.76	0.35	0.56	0.31	2.28	0.76	0.44	0.70	0.33	2.47	2.67	2.85
Number of Analysts	11	6	6	6	17	3	3	3	3	16	2	2	2	2	11	3	1

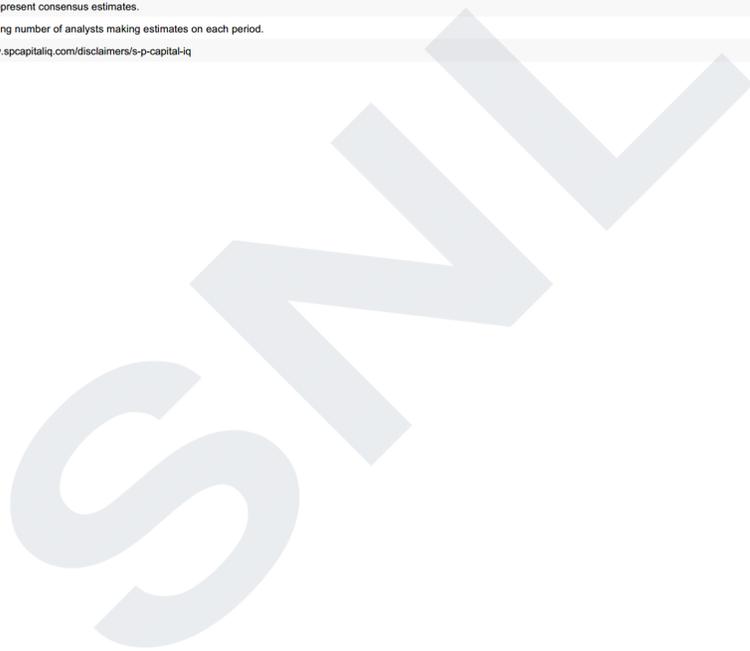
Long Term Growth Rate - Diluted EPS Normalized				
	Current 6/6/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		7.4	7.4	7.1
Median Estimate		7.3	7.3	7.0
High		8.1	8.1	7.5
Low		7.0	7.0	7.0
Number of Analysts		6	6	5

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Definitions available in SNL Help.



NYSE:D (SNL Inst Key: 4001616)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:D
2015	0.99	0.73	1.03	0.7	3.44	NA		NA
2016	0.96	0.71	1.14	0.99	3.8	NA		NA
2017	0.97	0.66	1.07	0.94	3.65	19		22
2018	1.09	0.8	1.14	1.02	4.05	17		19.8
2019	1.16	0.83	1.21	1.12	4.27	10		18.8
2020	1.29	1.1	1.08	1.06	4.51	2		17.8

Forward Estimate Statistics - Diluted EPS Normalized (\$)																				
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	12/31/2020
Median	0.96	0.65	1.08	0.95	3.65	1.07	0.80	1.13	1.04	4.04	1.16	0.83	1.21	1.12	4.25	1.29	1.10	1.08	1.06	4.51
High	1.03	0.70	1.12	1.07	3.76	1.15	0.87	1.18	1.07	4.19	1.20	0.89	1.25	1.13	4.48	1.29	1.10	1.08	1.06	4.54
Low	0.86	0.64	0.99	0.81	3.52	1.06	0.73	1.11	0.93	3.90	1.12	0.77	1.17	1.11	4.10	1.29	1.10	1.08	1.06	4.48
Number of Analysts	15	9	9	9	19	4	4	4	4	17	2	2	2	2	10	1	1	1	1	2

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		5.6	5.6	5.6	5.9
Median Estimate		6.0	6.0	6.0	6.0
High		7.0	7.0	6.5	6.5
Low		3.4	3.4	3.4	5.0
Number of Analysts		4	4	5	4

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Definitions available in SNL Help.



NYSE:DTE (SNL Instl Key: 4057044)

Source : S&P CapIQ
Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:DTE
2015	1.65	0.76	1.4	1.01	4.82	NA		NA
2016	1.52	0.98	1.96	0.81	5.28	NA		NA
2017	1.79	0.96	1.59	1.08	5.33	14		20.7
2018	1.67	1.19	1.91	0.96	5.68	12		19.4
2019	1.74	1.31	1.73	1.27	6.03	9		18.3
2020	1.62	1.36	2.16	1.32	6.44	3		17.1
2021	NA	NA	NA	NA	6.85	1		16.1

Forward Estimate Statistics - Diluted EPS Normalized (\$)																					
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 FY	2021 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	12/31/2020	12/31/2021
Median	1.56	0.95	1.60	1.12	5.33	1.67	1.19	1.91	0.96	5.68	1.74	1.31	1.73	1.27	6.04	1.62	1.36	2.16	1.32	6.46	6.85
High	1.63	1.03	1.83	1.20	5.46	1.78	1.19	2.11	1.31	5.77	1.84	1.36	1.79	1.39	6.21	1.62	1.36	2.16	1.32	6.48	6.85
Low	1.49	0.92	1.39	0.90	5.24	1.57	1.18	1.71	0.61	5.60	1.63	1.25	1.67	1.14	5.89	1.62	1.36	2.16	1.32	6.37	6.85
Number of Analysts	10	5	5	4	14	2	2	2	2	12	2	2	2	2	9	1	1	1	1	3	1

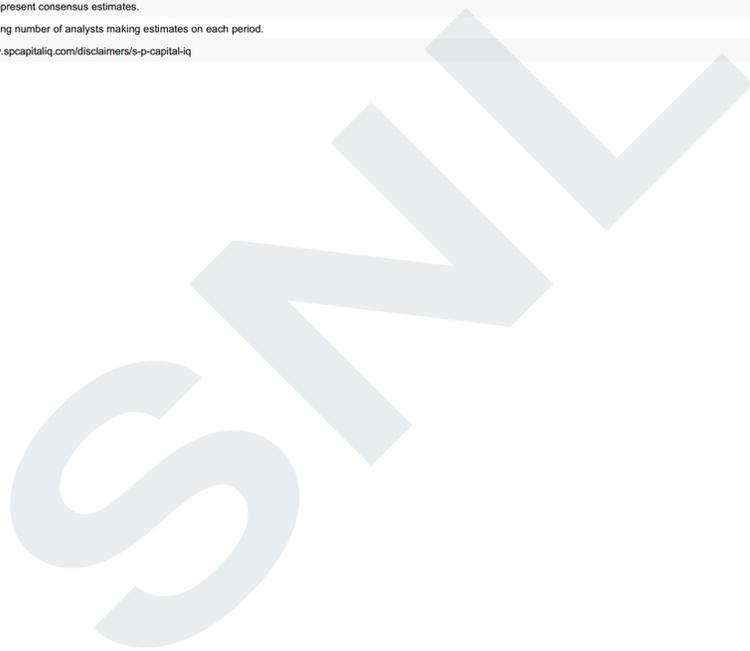
Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate	5.7	5.7	5.8	5.6	5.5
Median Estimate	6.0	6.0	6.0	5.8	5.5
High	7.0	7.0	7.0	6.0	6.0
Low	3.8	3.8	4.1	5.0	5.0
Number of Analysts	5	5	5	5	4

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Definitions available in SNL Help.



NYSE:DUK (SNL Inst Key: 4121470)

Source : S&P CapIQ
 Metric : EPS Normalized

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Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:DUK
2015	1.11	0.95	1.47	0.87	4.54	NA		NA
2016	1.13	1.07	1.68	0.81	4.69	NA		NA
2017	1.04	1.04	1.63	0.87	4.6	20		18.6
2018	1.06	1.07	1.71	0.99	4.84	20		17.7
2019	1.03	1.15	1.9	1.02	5.1	14		16.8
2020	NA	NA	NA	NA	5.31	3		16.1
2021	NA	NA	NA	NA	5.55	1		15.5

Forward Estimate Statistics - Diluted EPS Normalized (\$)																	
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 FY	2021 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	12/31/2020	12/31/2021
Median	1.03	1.03	1.61	0.85	4.60	1.05	1.10	1.74	1.01	4.84	1.08	1.18	1.88	1.03	5.10	5.31	5.55
High	1.16	1.17	1.84	0.98	4.67	1.19	1.15	1.91	1.05	4.90	1.10	1.20	1.99	1.11	5.16	5.35	5.55
Low	0.92	0.95	1.44	0.79	4.51	0.87	1.00	1.48	0.86	4.78	0.92	1.06	1.84	0.91	5.03	5.28	5.55
Number of Analysts	16	10	9	8	20	5	5	5	5	20	3	3	3	3	14	3	1

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		3.6	3.8	4.3	4.8
Median Estimate		3.8	4.0	4.4	4.5
High		5.0	5.0	6.1	7.1
Low		2.0	2.5	2.5	3.0
Number of Analysts		4	3	6	4

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Definitions available in SNL Help.



TSX:EMA (SNL Inst Key: 4072693)

Source : S&P CapIQ
Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x) TSX:EMA	
2015	0.95	0.27	0.12	0.6	2.06	NA	NA	
2016	0.68	1.45	0.56	0.38	2.09	NA	NA	
2017	0.54	0.39	0.54	0.5	2	13	18.3	
2018	0.54	0.5	0.61	0.5	2.22	14	16.3	
2019	NA	NA	NA	NA	2.34	5	15.5	
2020	NA	NA	NA	NA	2.5	3	14.5	
2021	NA	NA	NA	NA	2.6	3	14	

Forward Estimate Statistics - Diluted EPS Normalized (\$)													
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 FY	2020 FY	2021 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	12/31/2019	12/31/2020	12/31/2021
Median	0.55	0.38	0.54	0.51	2.01	0.54	0.50	0.62	0.50	2.23	2.38	2.56	2.68
High	0.60	0.46	0.58	0.56	2.06	0.54	0.50	0.62	0.50	2.36	2.47	2.58	2.71
Low	0.51	0.36	0.52	0.42	1.91	0.54	0.50	0.62	0.50	2.12	2.19	2.38	2.41
Number of Analysts	12	9	8	8	13	1	1	1	1	14	5	3	3

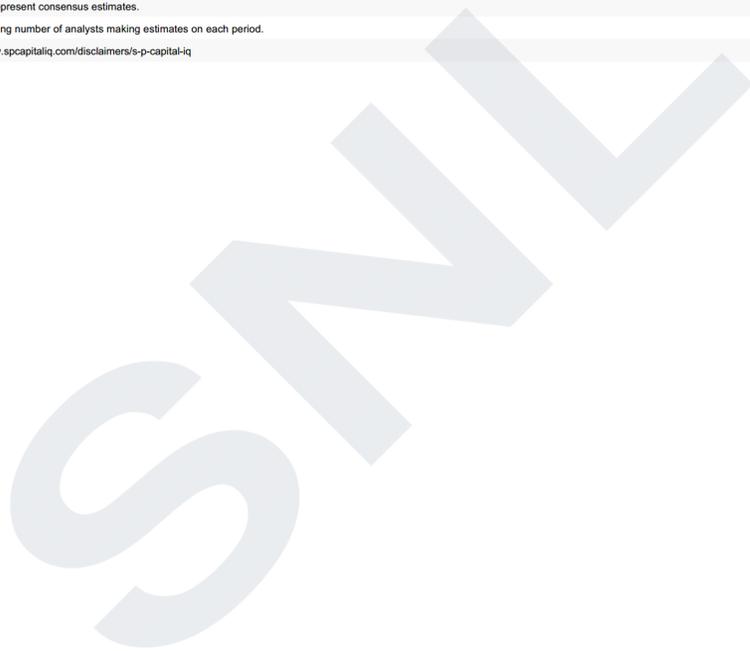
Long Term Growth Rate - Diluted EPS Normalized						
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016	
Mean Estimate		8.2	8.1	8.7	7.0	6.1
Median Estimate		8.0	8.0	8.7	7.0	6.1
High		9.5	9.3	9.3	7.0	6.8
Low		7.0	7.0	8.0	7.0	5.3
Number of Analysts		3	3	2	1	2

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Definitions available in SNL Help.



NYSE:ES (SNL Inst Key: 4057052)

Source : S&P CapIQ
Metric : EPS Normalized

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Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:ES
2015	0.81	0.66	0.75	0.6	2.81	NA		NA
2016	0.77	0.64	0.83	0.72	2.96	NA		NA
2017	0.82	0.67	0.86	0.78	3.14	18		19.8
2018	0.9	0.72	0.93	0.8	3.32	18		18.7
2019	0.98	0.75	0.99	0.86	3.55	12		17.5
2020	1.06	0.81	1.05	0.88	3.79	3		16.4

Forward Estimate Statistics - Diluted EPS Normalized (\$)																				
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	12/31/2020
Median	0.81	0.68	0.87	0.79	3.15	0.92	0.72	0.93	0.78	3.33	0.98	0.75	0.99	0.86	3.55	1.06	0.81	1.05	0.88	3.80
High	0.85	0.71	0.91	0.90	3.20	0.94	0.75	0.96	0.84	3.43	1.00	0.79	1.02	0.88	3.64	1.06	0.81	1.05	0.88	3.81
Low	0.80	0.58	0.78	0.68	3.07	0.84	0.68	0.91	0.77	3.23	0.97	0.70	0.97	0.84	3.41	1.06	0.81	1.05	0.88	3.75
Number of Analysts	13	10	10	9	18	5	5	5	5	18	2	2	2	2	12	1	1	1	1	3

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		5.8	5.9	5.9	5.8
Median Estimate		6.0	6.0	6.0	6.0
High		6.0	6.6	6.6	6.0
Low		5.0	5.0	5.0	5.0
Number of Analysts		7	8	8	6

Bolded and italicized figures in the Mean Estimates and Actuals Summary grid represent consensus estimates.

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Definitions available in SNL Help.



TSX:FTS (SNL Inst Key: 4082871)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x) TSX:FTS	
2015	0.52	0.36	0.4	0.38	1.65	NA	NA	
2016	0.49	0.29	0.41	0.48	1.76	NA	NA	
2017	0.52	0.41	0.43	0.48	1.87	13	18.2	
2018	0.59	0.42	0.41	0.51	1.95	13	17.3	
2019	NA	NA	NA	NA	1.99	3	16.9	
2020	NA	NA	NA	NA	2.12	1	15.9	
2021	NA	NA	NA	NA	2.24	1	15.1	

Forward Estimate Statistics - Diluted EPS Normalized (\$)													
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 FY	2020 FY	2021 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	12/31/2019	12/31/2020	12/31/2021
Median	0.54	0.41	0.43	0.48	1.86	0.59	0.42	0.41	0.51	1.94	2.03	2.12	2.24
High	0.56	0.43	0.48	0.53	2.03	0.59	0.42	0.41	0.51	2.14	2.03	2.12	2.24
Low	0.51	0.39	0.38	0.46	1.79	0.59	0.42	0.41	0.51	1.86	1.92	2.12	2.24
Number of Analysts	12	9	7	7	13	1	1	1	1	13	3	1	1

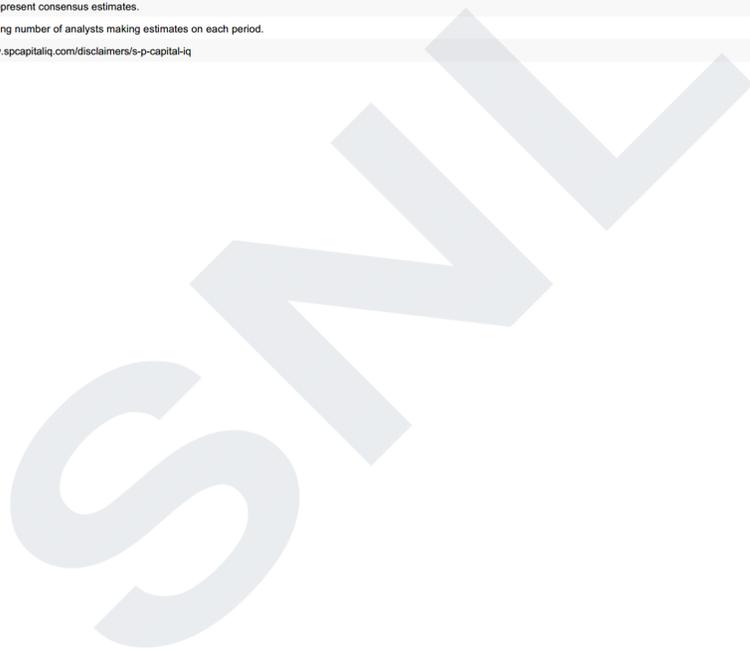
Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		6.2	5.9	5.8	6.5
Median Estimate		6.0	5.3	5.4	7.0
High		7.5	7.4	7.2	7.5
Low		5.0	5.0	5.0	5.0
Number of Analysts		3	3	4	3

Bolded and italicized figures in the Mean Estimates and Actuals Summary grid represent consensus estimates.

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Definitions available in SNL Help.



NYSE:NEE (SNL Inst Key: 3010401)

Source : S&P CapIQ
Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x) NYSE:NEE	
2015	1.41	1.56	1.6	1.17	5.71	NA	NA	
2016	1.37	1.67	1.74	1.21	6.19	NA	NA	
2017	1.75	1.7	1.87	1.41	6.67	18	21.3	
2018	1.59	1.76	2.03	1.75	7.14	18	19.9	
2019	1.59	1.8	2.17	1.99	7.64	14	18.6	
2020	1.87	2.09	2.27	1.88	8.2	4	17.3	
2021	NA	NA	NA	NA	8.63	2	16.5	

Forward Estimate Statistics - Diluted EPS Normalized (\$)																					
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 FY	2021 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	12/31/2020	12/31/2021
Median	1.62	1.73	1.87	1.39	6.66	1.64	1.70	2.05	1.69	7.15	1.59	1.80	2.17	1.99	7.62	1.87	2.09	2.27	1.88	8.15	8.63
High	1.70	1.82	1.95	1.54	6.79	1.76	1.96	2.06	2.06	7.27	1.79	1.82	2.18	2.22	7.79	1.87	2.09	2.27	1.88	8.38	8.75
Low	1.41	1.57	1.80	1.30	6.50	1.31	1.68	1.97	1.56	6.97	1.38	1.77	2.17	1.76	7.50	1.87	2.09	2.27	1.88	8.10	8.50
Number of Analysts	11	9	8	8	18	4	4	4	4	18	2	2	2	2	14	1	1	1	1	4	2

Long Term Growth Rate - Diluted EPS Normalized				
	Current 6/6/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		6.9	6.7	6.7
Median Estimate		7.0	7.0	7.1
High		8.0	7.3	7.5
Low		5.0	5.0	5.0
Number of Analysts		7	8	5

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Definitions available in SNL Help.



NYSE:PPL (SNL Inst Key: 4057058)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x) NYSE:PPL	
2015	0.77	0.49	0.51	0.43	2.21	NA	NA	NA
2016	0.67	0.56	0.63	0.6	2.45	NA	NA	NA
2017	0.62	0.49	0.59	0.47	2.16	16	16.4	18.4
2018	0.68	0.52	0.63	0.51	2.33	16	16	17.1
2019	0.69	0.51	0.66	0.56	2.43	10	10	16.4
2020	0.67	0.58	0.72	0.53	2.53	2	2	15.8

Forward Estimate Statistics - Diluted EPS Normalized (\$)																				
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	12/31/2020
Median	0.61	0.49	0.60	0.50	2.15	0.67	0.53	0.64	0.51	2.32	0.69	0.51	0.66	0.56	2.43	0.67	0.58	0.72	0.53	2.53
High	0.65	0.52	0.65	0.53	2.20	0.72	0.55	0.67	0.56	2.43	0.71	0.55	0.68	0.64	2.50	0.67	0.58	0.72	0.53	2.55
Low	0.58	0.45	0.53	0.41	2.14	0.66	0.47	0.58	0.46	2.28	0.68	0.46	0.63	0.48	2.37	0.67	0.58	0.72	0.53	2.50
Number of Analysts	13	7	8	7	16	3	3	3	3	16	2	2	2	2	10	1	1	1	1	2

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		5.2	4.2	4.2	3.7
Median Estimate		5.0	4.8	4.8	4.5
High		6.0	6.0	6.0	5.0
Low		4.5	1.1	1.1	1.5
Number of Analysts		3	4	4	3

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Definitions available in SNL Help.



NYSE:PEG (SNL Inst Key: 4050911)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:PEG
2015	1.04	0.57	0.8	0.5	2.91	NA		NA
2016	0.91	0.57	0.88	0.54	2.9	NA		NA
2017	0.92	0.58	0.88	0.56	2.9	18		15.4
2018	0.89	0.62	0.91	0.54	2.94	18		15.2
2019	0.95	0.62	0.88	0.47	2.95	13		15.1
2020	0.81	0.64	0.94	0.56	2.96	3		15.1

Forward Estimate Statistics - Diluted EPS Normalized (\$)																				
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	12/31/2020
Median	0.86	0.58	0.89	0.55	2.90	0.86	0.62	0.91	0.60	2.96	0.95	0.62	0.88	0.47	2.95	0.81	0.64	0.94	0.56	2.95
High	0.90	0.63	0.92	0.70	2.97	1.05	0.66	0.93	0.61	3.02	1.05	0.65	0.91	0.54	3.07	0.81	0.64	0.94	0.56	3.04
Low	0.76	0.53	0.82	0.47	2.85	0.75	0.59	0.88	0.42	2.70	0.86	0.59	0.86	0.41	2.85	0.81	0.64	0.94	0.56	2.89
Number of Analysts	13	9	8	7	18	3	3	3	3	18	2	2	2	2	13	1	1	1	1	3

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		5.1	5.1	3.1	7.4
Median Estimate		4.9	4.9	1.4	9.0
High		9.0	9.0	9.0	10.3
Low		1.7	1.7	0.4	3.0
Number of Analysts		4	4	4	3

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Definitions available in SNL Help.



NYSE:SCG (SNL Inst Key: 4057061)

Source : S&P CapIQ
 Metric : EPS Normalized

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Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:SCG
2015	1.39	0.69	1.04	0.69	3.81	NA		NA
2016	1.23	0.74	1.32	0.87	4.16	NA		NA
2017	1.19	0.68	1.19	1.14	4.25	9		16
2018	1.35	0.68	1.21	1.31	4.52	10		15
2019	1.57	0.65	1.37	1.22	4.77	7		14.2
2020	NA	NA	NA	NA	4.92	4		13.8

Forward Estimate Statistics - Diluted EPS Normalized (\$)																
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	12/31/2020
Median	1.35	0.74	1.19	1.07	4.25	1.46	0.61	1.24	1.14	4.50	1.57	0.65	1.37	1.22	4.77	4.91
High	1.42	0.76	1.46	1.44	4.28	1.60	0.86	1.57	2.13	4.70	1.57	0.65	1.37	1.22	4.95	5.05
Low	1.21	0.51	0.98	1.04	4.23	0.91	0.51	0.94	1.01	4.40	1.57	0.65	1.37	1.22	4.60	4.80
Number of Analysts	8	5	6	6	9	5	5	5	5	10	1	1	1	1	7	4

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		5.4	5.4	5.6	5.5
Median Estimate		5.5	5.5	6.0	6.0
High		6.0	6.0	6.4	6.0
Low		4.5	4.5	4.5	4.5
Number of Analysts		4	4	5	3

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Definitions available in SNL Help.



NYSE:SRE (SNL Inst Key: 4057062)

Source : S&P CapIQ
 Metric : EPS Normalized

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Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:SRE
2015	1.71	1.03	1	1.47	5.21	NA		NA
2016	1.47	0.79	1.02	1.52	5.05	NA		NA
2017	1.74	0.81	1.06	1.39	5.1	16		23
2018	1.83	1.05	1.05	1.72	5.61	16		20.9
2019	2.23	1.49	1.23	2.05	6.83	10		17.1
2020	NA	NA	NA	NA	7.44	1		15.7
2021	NA	NA	NA	NA	7.66	1		15.3

Forward Estimate Statistics - Diluted EPS Normalized (\$)																	
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 FY	2021 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	12/31/2020	12/31/2021
Median	1.65	0.81	1.00	1.43	5.08	1.83	1.05	1.05	1.72	5.62	2.23	1.49	1.23	2.05	6.85	7.44	7.66
High	1.89	0.95	1.29	1.55	5.24	1.96	1.05	1.05	1.72	5.79	2.23	1.49	1.23	2.05	7.00	7.44	7.66
Low	1.56	0.61	0.92	1.06	4.92	1.70	1.05	1.05	1.72	5.38	2.23	1.49	1.23	2.05	6.36	7.44	7.66
Number of Analysts	11	7	6	6	16	2	1	1	1	16	1	1	1	1	10	1	1

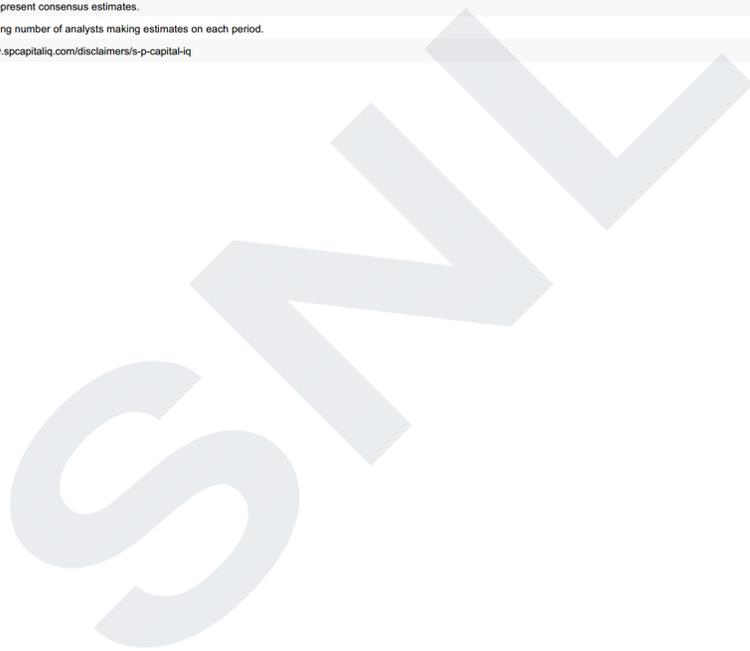
Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		8.0	8.8	10.0	11.5
Median Estimate		8.0	9.5	10.0	11.5
High		11.0	11.4	13.8	12.0
Low		4.9	4.9	4.9	11.0
Number of Analysts		3	4	5	2

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Definitions available in SNL Help.



NYSE:SO (SNL Inst Key: 4004298)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x) NYSE:SO	
2015	0.56	0.71	1.17	0.44	2.89	NA	NA	
2016	0.58	0.74	1.28	0.24	2.89	NA	NA	
2017	0.66	0.73	1.21	0.39	2.97	16	17.1	
2018	0.68	0.76	1.24	0.43	3.11	19	16.3	
2019	0.68	0.79	1.39	0.39	3.25	13	15.6	
2020	NA	NA	NA	NA	3.39	4	15	

Forward Estimate Statistics - Diluted EPS Normalized (\$)																
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	12/31/2020
Median	0.57	0.71	1.21	0.41	2.98	0.68	0.75	1.25	0.43	3.12	0.68	0.79	1.39	0.39	3.25	3.40
High	0.60	0.81	1.30	0.54	3.00	0.74	0.82	1.37	0.53	3.17	0.72	0.80	1.43	0.44	3.30	3.45
Low	0.56	0.70	1.04	0.24	2.93	0.62	0.72	1.12	0.31	3.03	0.65	0.77	1.35	0.33	3.17	3.32
Number of Analysts	14	8	8	8	16	5	5	5	5	19	2	2	2	2	13	4

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		4.4	4.7	4.4	4.3
Median Estimate		4.8	5.0	4.8	5.0
High		5.8	5.8	5.8	5.8
Low		3.0	3.5	2.6	2.6
Number of Analysts		8	8	8	7

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Definitions available in SNL Help.



NYSE:VVC (SNL Inst Key: 4057065)

Source : S&P CapIQ
 Metric : EPS Normalized

Estimates Reported Currency is the currency of the estimates provided by contributing brokers or converted to the currency of the primary trading currency. This may be different from the currency used by the company for financial reporting. The Estimates Reported Currency is used only on the estimates pages.

Mean Estimates & Actuals Summary - Diluted EPS Normalized (\$)								
	Q1	Q2	Q3	Q4	FY	FY # of Analysts	Current Price / Estimate (x)	NYSE:VVC
2015	0.69	0.43	0.48	0.79	2.39	NA		NA
2016	0.58	0.39	0.74	0.84	2.55	NA		NA
2017	0.67	0.45	0.65	0.84	2.62	6		23.5
2018	0.69	0.49	0.68	0.93	2.8	6		22
2019	0.75	0.54	0.76	0.99	3.06	2		20.2
2020	NA	NA	NA	NA	3.23	1		19.1

Forward Estimate Statistics - Diluted EPS Normalized (\$)																
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 FY	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 FY	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 FY	2020 FY
Fiscal Year End	3/31/2017	6/30/2017	9/30/2017	12/31/2017	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	12/31/2019	12/31/2020
Median	0.66	0.46	0.64	0.84	2.62	0.69	0.49	0.68	0.93	2.81	0.75	0.54	0.76	0.99	3.06	3.23
High	0.70	0.48	0.70	0.86	2.64	0.69	0.49	0.68	0.93	2.82	0.75	0.54	0.76	0.99	3.07	3.23
Low	0.61	0.41	0.63	0.82	2.60	0.69	0.49	0.68	0.93	2.75	0.75	0.54	0.76	0.99	3.05	3.23
Number of Analysts	6	4	4	4	6	1	1	1	1	6	1	1	1	1	2	1

Long Term Growth Rate - Diluted EPS Normalized					
	Current 6/6/2017	1 Month Ago 5/5/2017	3 Months Ago 3/6/2017	6 Months Ago 12/6/2016	1 Year Ago 6/6/2016
Mean Estimate		5.7	5.5	5.7	5.2
Median Estimate		6.0	5.5	6.0	5.7
High		6.0	6.0	6.0	6.0
Low		5.0	5.0	5.0	4.0
Number of Analysts		3	2	3	3

Bolded and italicized figures in the Mean Estimates and Actuals Summary grid represent consensus estimates.

Quarterly and semi-annual estimates may not sum to annual values due to differing number of analysts making estimates on each period.

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Definitions available in SNL Help.



AT&T INC. NYSE-T		RECENT PRICE	P/E RATIO	Trailing: 14.7 Median: 14.0	RELATIVE P/E RATIO	DIV/D YLD	VALUE LINE	DATE																
		41.88	14.2		0.73	4.7%		May 22, 2017																
TIMELINESS	3 Lowered 3/17/17	High: 36.2	43.0	41.9	29.5	29.6	31.9	38.6																
SAFETY	1 Raised 3/28/08	Low: 24.2	32.7	20.9	21.4	23.8	27.2	29.0																
TECHNICAL	3 Lowered 3/3/17	LEGENDS 6.0 y "Cash Flow" p sh Relative Price Strength Options: Yes Shaded area indicates recession																						
BETA	.75 (1.00 = Market)	39.0	37.5	36.4	43.9	43.0	40.2	Target Price Range																
2020-22 PROJECTIONS		2020	2021	2022																				
Price	55	55	55	55																				
Gain	(+30%)	(+30%)	(+30%)	(+30%)																				
Ann'l Total Return	11%	11%	11%	11%																				
High	55	55	55	55																				
Low	45	45	45	45																				
Insider Decisions		M J J A S O N D J																						
to Buy	0 0 0 0 0 0 0 0 0 0																							
Options	2 0 7 2 0 0 2 0 1 0																							
to Sell	0 0 1 0 0 0 0 0 0 0																							
Institutional Decisions		2Q2016 3Q2016 4Q2016																						
to Buy	968 882 996																							
to Sell	806 874 832																							
Hld's(000)	33239253259583369879																							
		Percent shares traded	12 8 4																					
		% TOT. RETURN 2/17																						
		THIS STOCK INDEX																						
		1 yr. 18.6 30.5																						
		3 yr. 53.0 22.1																						
		5 yr. 74.7 81.5																						
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22					
16.19	15.60	12.36	12.36	11.31	16.24	19.83	21.05	20.84	21.05	21.38	22.83	24.64	25.53	23.89	26.68	27.05	27.50	Revenues per sh ^E	29.25					
5.32	5.14	3.91	3.77	3.42	4.63	5.36	5.56	5.46	5.60	5.31	5.70	6.10	6.04	6.05	7.07	7.15	7.35	"Cash Flow" per sh	8.25					
2.35	2.16	1.52	1.47	1.72	2.34	2.76	2.16	2.12	2.29	2.20	2.33	2.50	2.50	2.69	2.84	2.95	3.10	Earnings per sh ^A	3.70					
1.02	1.07	1.37	1.25	1.29	1.33	1.42	1.60	1.64	1.68	1.72	1.76	1.80	1.84	1.88	1.92	1.96	2.00	Div'ds Decl'd per sh ^B	2.40					
3.34	2.05	1.58	1.54	1.44	2.14	2.93	3.34	2.81	3.30	3.39	3.49	4.01	4.09	3.26	3.50	3.60	3.70	Cap'l Spending per sh	4.00					
9.69	10.01	11.57	12.29	14.11	29.76	19.09	16.35	17.34	18.94	17.85	16.61	17.50	16.76	19.96	20.06	21.00	22.15	Book Value per sh ^C	27.50					
3354.2	3317.6	3305.2	3300.9	3876.9	3882.0	6043.5	5893.0	5901.9	5911.1	5926.5	5581.4	5226.3	5186.9	6144.9	6139.0	6140.0	6140.0	Common Shs Outst'g ^D	6150.0					
18.3	14.2	15.6	17.2	13.9	12.6	14.2	15.4	12.1	11.7	13.4	14.5	14.2	13.8	12.6	13.8	14.0	14.0	Avg Ann'l P/E Ratio	14.0					
.94	.78	.89	.91	.74	.68	.75	.93	.81	.74	.84	.92	.80	.73	.63	.72	.63	.63	Relative P/E Ratio	.90					
2.4%	3.5%	5.8%	5.0%	5.4%	4.5%	3.6%	4.8%	6.4%	6.3%	5.8%	5.2%	5.1%	5.3%	5.6%	4.9%	4.9%	4.9%	Avg Ann'l Div'd Yield	4.6%					
CAPITAL STRUCTURE as of 12/31/16		119839 124028 123018 124399 126723 127434 128752 132447 146801 163786 166050 169000							17040 12867 12535 13612 13103 13698 13463 13056 15188 17577 18100 19000							Revenues (\$mill) ^E		180000						
Total Debt \$123513 mill. Due in 5 Yrs \$44500 mill.		34.2% 35.4% 32.4% 39.3% 33.6% 32.6% 33.2% 34.6%							32.4% 32.7% 35.0% 35.0%							Income Tax Rate		35.0%						
LT Debt \$113681 mill. LT Interest \$5500 mill.		14.2% 10.4% 10.2% 10.9% 10.3% 10.7% 10.5% 9.9%							10.3% 10.7% 10.9% 11.2%							Net Profit Margin		12.7%						
Pension Assets-12/16 \$42610 mill. Oblig. \$56183 mill.		33.2% 38.7% 38.7% 34.5% 36.7% 41.7% 43.1% 46.7%							48.9% 47.8% 46.5% 45.0%							Long-Term Debt Ratio		39.5%						
Pfd Stock None		66.8% 61.3% 61.3% 65.5% 63.3% 58.3% 56.9% 53.3%							50.7% 51.8% 53.5% 55.0%							Common Equity Ratio		60.5%						
Common Stock 6,142 mill. shares as of 2/10/17		172622 157219 167045 170921 167097 159053 160772 162935							242155 237791 242000 248000							Total Capital (\$mill)		279000						
MARKET CAP: \$257 billion (Large Cap)		95890 99088 100093 103196 107087 109767 110968 112898							124450 124899 125500 126000							Net Plant (\$mill)		130000						
CURRENT POSITION		10.9% 9.3% 8.5% 8.8% 8.9% 9.7% 9.6% 9.1%							7.2% 8.5% 8.5% 9.0%							Return on Total Cap'l		9.0%						
		14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%							Return on Shr. Equity		13.5%						
		14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%							Return on Com Equity		13.5%						
		7.2% 3.5% 2.8% 3.3% 2.8% 3.7% 4.1% 4.0%							4.1% 4.7% 4.5% 5.0%							Retained to Com Eq		5.0%						
		51% 74% 77% 73% 78% 75% 72% 73%							67% 67% 66% 65%							All Div'ds to Net Prof		65%						
CASH ASSETS		8603 5121 5788							23425 30871 32581							BUSINESS: AT&T Inc., formerly SBC Communications, is one of the world's largest telecom holding companies and is the largest in the U.S. Its traditional (SBC only) wireline subsidiaries provide services in 13 states, including California, Texas, Illinois, Michigan, Ohio, Missouri, Connecticut, Indiana, Wisconsin, Oklahoma, Kansas, Arkansas, and Nevada. Also owns Cingular (now AT&T Wire-		less). Acquired PacTel, 4/97; SNET, 10/98; Ameritech, 10/99; AT&T Corp., 11/05; BellSouth, 12/06; DirecTV, 7/15. '16 sales mix: Service, 91%; Equipment, 9%. Has 268,000 empl. BlackRock, 5.5% of common; Off./Dir., less than 1% (3/16 Proxy). Chrmn. & CEO: Randall Stephenson, Inc.: DE. Addr.: 208 S. Akard St., Dallas, Texas, 75202. Tel.: 210-821-4105. Internet: www.att.com.						
OTHER ASSETS		32028 35992 38369							34.2% 35.4% 32.4% 39.3% 33.6% 32.6% 33.2% 34.6%							32.4% 32.7% 35.0% 35.0%							AT&T's proposed merger with Time Warner seems likely to close by year's end. The \$85.4 billion blockbuster, which would combine AT&T's vast broadband capabilities with a formidable lineup of media content from networks like CNN, TNT, and HBO, has not always appeared on solid footing, with President Trump voicing concern that the tie-up would concentrate too much power in one service provider. But the two companies do not compete directly with each other — this would be a vertical transaction — a point that has repeatedly been made by CEOs Randall Stephenson and Jeff Bewkes. And we expect the merger, which was just approved by Time Warner shareholders, to eventually be green-lighted by federal regulators, including the Justice Department. Under terms of the acquisition agreement, Time Warner shareholders would receive \$107.50 for each TWX share held, comprised of \$53.75 a share in cash and \$53.75 a share in AT&T stock. The carrier is faring pretty well on its own. The key wireless business continues to face intense competitive pressures, with promotional activity particularly high dur-	
ACCTS PAYABLE		23592 30372 31138							14.2% 10.4% 10.2% 10.9% 10.3% 10.7% 10.5% 9.9%							10.3% 10.7% 10.9% 11.2%							ing the fourth quarter. Margins are widening, however, thanks to efforts to transition customers to unsubsidized plans. Moreover, results are being buoyed by inroads in Mexico (an important market for AT&T), and by the company's new video streaming service, <i>DirecTV Now</i> . That platform, which will go head-to-head with <i>Hulu</i> and <i>Sling TV</i> , has already added over 200,000 subscribers since debuting in November. And we expect this momentum to persist in the coming periods, despite some outage issues that have come up during the product's rollout. Consequently, we remain confident that share earnings can grow at a mid-single-digit pace in 2017 and 2018. Cash flow will probably continue to be robust, too, which should support AT&T's generous dividend payout. (The stock is still yielding over 4.5%.)	
DEBT DUE		6056 7636 9832							33.2% 38.7% 38.7% 34.5% 36.7% 41.7% 43.1% 46.7%							48.9% 47.8% 46.5% 45.0%							This top-quality issue may appeal to conservative investors with a longer-term view. Our projections do not factor in the Time Warner deal, which would certainly be transformational, establishing the company as a communications giant in terms of both distribution and content.	
OTHER		7634 9808 9606							66.8% 61.3% 61.3% 65.5% 63.3% 58.3% 56.9% 53.3%							50.7% 51.8% 53.5% 55.0%							Justin Hellman	
CURRENT LIAB.		37282 47816 50576							172622 157219 167045 170921 167097 159053 160772 162935							242155 237791 242000 248000							March 17, 2017	
FIX. CHG. COV.		325% 602% 496%							95890 99088 100093 103196 107087 109767 110968 112898							124450 124899 125500 126000								
ANNUAL RATES		Past 10 Yrs. 5 Yrs. Past Est'd '14-'16 to '20-'22							10.9% 9.3% 8.5% 8.8% 8.9% 9.7% 9.6% 9.1%							7.2% 8.5% 8.5% 9.0%								
of change (per sh)		6.5% 4.0% 2.5%							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
Revenues		5.0% 3.0% 4.5%							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
"Cash Flow"		4.0% 4.0% 5.5%							7.2% 3.5% 2.8% 3.3% 2.8% 3.7% 4.1% 4.0%							4.1% 4.7% 4.5% 5.0%								
Earnings		4.0% 2.5% 4.0%							51% 74% 77% 73% 78% 75% 72% 73%							67% 67% 66% 65%								
Dividends		-- 1.0% 6.5%							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
Book Value									14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
QUARTERLY REVENUES (\$ mill.)		Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2014		32476 32575 32957 34439 132447							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2015		32576 33015 33091 42119 146801							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2016		40535 40520 40890 41841 163786							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2017		40900 41050 41400 42700 166050							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2018		41600 41800 42150 43450 169000							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
EARNINGS PER SHARE ^A		Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2014		.71 .62 .62 .55 2.50							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2015		.63 .69 .74 .63 2.69							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2016		.72 .72 .74 .66 2.84							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2017		.75 .76 .77 .67 2.95							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2018		.79 .80 .81 .70 3.10							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
QUARTERLY DIVIDENDS PAID ^B		Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2013		.45 .45 .45 .45 1.80							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2014		.46 .46 .46 .46 1.84							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2015		.47 .47 .47 .47 1.88							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2016		.48 .48 .48 .48 1.92							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								
2017		.49							14.8% 13.4% 12.3% 12.2% 12.4% 14.8% 14.7% 15.0%							12.4% 14.3% 14.0% 14.0%								

(A) Diluted earnings. Excl. nonrecurring gains/(losses): '03, \$1.04; '04, \$0.32; '05, (\$0.30); '06, (\$0.45). Next earnings report due late Apr. (B) Div'ds paid in Feb., May, Aug., and Nov. Incl. one-time div'ds: In '03, \$0.25. Div'd reinvestment plan avail. (C) Incl. goodwill: '16: \$105207 mill., \$17.14/sh. (D) In mill. (E) Starting in '03, proportionate rev. from Cingular no longer incl. in top line.

Company's Financial Strength A++
Stock's Price Stability 100
Price Growth Persistence 25
Earnings Predictability 100

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CHURCH & DWIGHT NYSE-CHD
RECENT PRICE **49.75** P/E RATIO **26.7** (Trailing: 28.2; Median: 20.0) RELATIVE P/E RATIO **1.36** DIV/D YLD **1.5%** VALUE LINE
Date: May 22, 2017 Item No. 73 Attachment 67

TIMELINESS 4 Lowered 3/31/17	High: 10.9 14.3 16.4 15.6 17.8 23.2 29.6 33.5 40.5 45.4 53.7 50.4	Target Price Range 2020-2022	128
SAFETY 1 Raised 7/6/07	Low: 8.2 10.6 11.9 11.4 14.8 16.9 22.1 26.9 30.5 38.7 38.4 43.3		96
TECHNICAL 4 Raised 3/10/17	LEGENDS 16.0 x "Cash Flow" p/sh Relative Price Strength 3-for-2 split 9/04 2-for-1 split 6/11 2-for-1 split 9/16 Options: Yes Shaded area indicates recession		80
BETA .70 (1.00 = Market)			64
2020-22 PROJECTIONS			
Price	Gain	Ann'l Total Return	
High 55	(+10%)	4%	48
Low 45	(-10%)	-1%	40
Insider Decisions			
M J J A S O N D J			24
to Buy 0 0 0 0 0 0 0 0 0 0 0 0			16
Options 4 3 7 5 2 0 0 0 0 2			12
to Sell 4 3 0 5 2 0 0 0 0 0			
Institutional Decisions			
2Q2016 3Q2016 4Q2016	Percent shares traded		
to Buy 284 629 280	18		
to Sell 287 60 331	12		
Hld's(000) 207532 203880 206078	6		

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
4.60	4.37	4.32	5.78	6.87	7.44	8.38	8.64	8.93	9.09	9.66	10.53	11.49	12.36	13.06	13.75	14.05	14.40	Sales per sh ^E	16.00
.35	.40	.44	.51	.66	.74	.85	.97	1.18	1.16	1.31	1.46	1.63	1.77	1.89	2.06	2.15	2.30	"Cash Flow" per sh	2.75
.22	.27	.31	.34	.46	.52	.62	.72	.87	.99	1.11	1.23	1.40	1.51	1.63	1.77	1.90	2.05	Earnings per sh ^A	2.45
.05	.05	.05	.06	.06	.07	.07	.09	.12	.16	.34	.48	.56	.62	.67	.71	.76	.80	Div'ds Decl'd per sh ^B	.88
.15	.16	.13	.14	.15	.18	.18	.35	.48	.22	.27	.27	.24	.26	.24	.20	.25	.30	Cap'l Spending per sh	.50
1.20	1.45	1.79	2.22	2.76	3.30	4.08	4.75	5.68	6.57	7.17	7.43	8.28	7.88	7.78	7.79	8.75	9.90	Book Value per sh ^C	13.20
234.86	239.38	244.72	252.75	252.75	261.44	264.98	280.29	282.20	284.82	284.57	277.56	277.93	266.70	259.91	253.96	254.00	253.00	Common Shs Outst'g ^D	250.00
18.8	19.2	17.9	21.4	19.4	18.1	19.9	19.8	15.8	16.6	18.4	21.2	22.3	23.1	26.0	26.5	26.0	26.5	Avg Ann'l P/E Ratio	20.0
.96	1.05	1.02	1.13	1.03	.98	1.06	1.19	1.05	1.06	1.15	1.35	1.25	1.22	1.31	1.39	1.39	1.39	Relative P/E Ratio	1.25
1.2%	1.0%	.9%	.8%	.7%	.7%	.5%	.6%	.8%	.9%	1.7%	1.9%	1.8%	1.8%	1.6%	1.5%	1.6%	1.5%	Avg Ann'l Div'd Yield	1.8%

CAPITAL STRUCTURE as of 12/31/16																		
Total Debt \$1119.9 mill. Due in 5 Yrs \$726.8 mill.																		
LT Debt \$693.1 mill. LT Interest \$20.0 mill.																		
(Total interest coverage: 26.7x) (25% of Cap'l)																		
Leases, Uncapitalized Annual rentals \$18.8 mill.																		
No Defined Benefit Plan																		
Pfd Stock None																		
Common Stock 254,632,798 shares as of 2/21/17																		
MARKET CAP: \$12.7 billion (Large Cap)																		
CURRENT POSITION (\$MILL.)																		
2014 2015 12/31/16																		
Cash Assets 423.0 330.0 187.8																		
Receivables 322.9 276.2 287.0																		
Inventory (LIFO) 245.9 274.0 258.2																		
Other 40.7 25.8 23.8																		
Current Assets 1032.5 906.0 756.8																		
Accts Payable 507.7 293.9 545.1																		
Debt Due 396.6 357.2 426.8																		
Other 1.0 221.6 6.2																		
Current Liab. 905.3 872.7 1001.9																		

ANNUAL RATES																		
Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '20-'22																		
of change (per sh)																		
Sales 8.0% 6.5% 4.5%																		
"Cash Flow" 12.5% 10.0% 6.5%																		
Earnings 15.0% 12.0% 7.5%																		
Dividends 27.0% 39.0% 4.0%																		
Book Value 13.5% 7.0% 7.5%																		

QUARTERLY SALES (\$ mill.)^E						Full Year
Cal-ender	Mar.	Jun.	Per.	Sep.	Dec.	Per.
2014	782.0	808.3	841.8	865.5	3297.6	3297.6
2015	812.3	847.1	861.8	873.6	3394.8	3394.8
2016	849.0	877.4	870.7	896.0	3493.1	3493.1
2017	860	890	905	920	3575	3575
2018	875	905	925	940	3645	3645

EARNINGS PER SHARE^A						Full Year
Cal-ender	Mar.31	Jun.30	Sep.30	Dec.31		
2014	.37	.33	.43	.39	1.51	1.51
2015	.40	.37	.45	.41	1.69	1.69
2016	.43	.43	.47	.44	1.77	1.77
2017	.46	.45	.51	.48	1.90	1.90
2018	.48	.47	.57	.53	2.05	2.05

QUARTERLY DIVIDENDS PAID^B						Full Year
Cal-ender	Mar.31	Jun.30	Sep.30	Dec.31		
2013	.14	.14	.14	.14	.56	.56
2014	.155	.155	.155	.155	.62	.62
2015	.168	.168	.168	.168	.67	.67
2016	.178	.178	.178	.178	.71	.71
2017	.19					

Following a tough second half of 2016, Church & Dwight shares have bounced back nicely. The stock hit a record high of \$53.70 last summer, only to lose more than 20% of its market value by yearend. Floundering consumer confidence and broader demand trends during that period likely prompted shareholders to take profits, as the top-line growth was somewhat tempered. Still, operational performance remained healthy, and before long investor sentiment shifted and CHD shares began to rally sharply in January of this year. The stock price is now flirting with last-year's peak, and the equity may well reach new heights in 2017.

The recent stock-price rally suggests that the market expects a solid operational performance this year, and therein lies the caveat. Indeed, while CHD effectively regained most of the ground relinquished last year, and the equity price will probably enter new territory over the coming months, it is unclear how the shares will fare versus the year-ahead broader market averages. In fact, the solid showing we expect in 2017 has already been discounted, and it may well need a more significant catalyst to propel the stock ahead of the pack. Hence, CHD is ranked 4 (Below Average) for Timeliness.

Nonetheless, the company is poised for solid revenue and profit gains in 2017 and beyond. As CHD's strategy becomes increasingly levered to higher-growth channels online and globally, the operational outlook improves. Indeed, the company remains focused on launching new brands and providing the necessary marketing support to drive sales. Moreover, its healthy appetite for acquisitions has proven fruitful over the years. Recent purchases include, the ANUSOL and REC-TINOL brands from Johnson & Johnson, Inc. (for \$130 million). In addition, the company acquired the VIVISCAL business from Lifes2Good Holdings Limited for \$160 million. These acquisitions add scale to CHD's growing international segment and are expected to be accretive to earnings by 2018.

However, the stock is already trading within our Target Price Range out to 2020-2022.

Simon R. Shoucair
March 24, 2017

(A) Diluted earnings. Excl. nonrecur. gns.: '02, 2c; '03, 6c; losses: '01, 8c; '08, 4c; '09, 3c; '10, (10c); '11, (5c); '16, (2c). Egs. may not sum due to rounding. Incl. acquisition related charges: '04, 15c. Next egs. rpt. due early May. (B) Div'd. are hist. paid in Mar., June, Sep., and Dec. ■ Dividend reinvestment plan available. (C) Incl. intang. in '16: \$287.9 mill. \$11.32 p/sh. (D) In millions, adjusted for stock splits. (E) Sales from 2002 onward reflect accounting policies EITF 00-14 and EITF 00-25. Excl. amort. after 2009.	Company's Financial Strength	A+
	Stock's Price Stability	100
	Price Growth Persistence	85
	Earnings Predictability	100

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COCA-COLA NYSE-KO

RECENT PRICE **42.66** P/E RATIO **22.9** (Trailing: 22.3; Median: 19.0) RELATIVE P/E RATIO **1.16** DIV/D YLD **3.5%** VALUE LINE **Target Price \$40.00** Date: May 22, 2017 Item No. 73 Attachment 67

TIMELINESS 3 Lowered 4/14/17
SAFETY 1 New 7/27/90
TECHNICAL 5 Lowered 3/31/17
BETA .75 (1.00 = Market)

2020-22 PROJECTIONS

High	55	Gain (+30%)	10%
Low	45	Return (+5%)	5%

Insider Decisions

J	J	A	S	O	N	D	J	F
to Buy	0	0	0	0	0	0	0	0
Options	1	0	1	0	0	2	0	16
to Sell	1	0	0	0	0	2	0	2

Institutional Decisions

2Q2016	3Q2016	4Q2016		
to Buy	729	698	737	
to Sell	783	796	819	
Hld's(000)	2785	12727	14570	27710

Percent shares traded: 15, 10, 5

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
3.53	3.96	4.31	4.56	4.88	5.20	6.22	6.91	6.73	7.66	10.29	10.74	10.64	10.54	10.24	9.76	8.15	7.20	Sales per sh	8.70
.96	.99	1.16	1.23	1.29	1.40	1.54	1.79	1.75	2.09	2.41	2.46	2.58	2.53	2.49	2.37	2.20	2.25	"Cash Flow" per sh	2.95
.80	.83	.98	1.03	1.09	1.19	1.29	1.51	1.47	1.75	1.92	1.97	2.08	2.04	2.00	1.91	1.85	1.90	Earnings per sh A	2.55
.36	.40	.44	.50	.56	.62	.68	.76	.82	.88	.94	1.02	1.12	1.22	1.32	1.40	1.48	1.56	Div'ds Decl'd per sh B	1.85
.15	.17	.17	.16	.19	.30	.36	.43	.43	.48	.65	.62	.58	.55	.59	.53	.55	.45	Cap'l Spending per sh	.50
2.29	2.39	2.89	3.11	3.45	3.65	4.69	4.43	5.38	6.76	6.99	7.34	7.54	6.94	5.91	5.38	5.25	5.00	Book Value per sh C	4.95
4972.5	4942.0	4883.1	4818.7	4738.0	4636.0	4636.0	4624.0	4606.0	4584.0	4526.0	4469.0	4402.0	4366.0	4324.0	4288.0	4235.0	4175.0	Common Shs Outst'g D	4025.0
30.5	30.2	22.6	22.6	19.7	18.5	21.0	17.8	16.6	16.2	17.4	18.8	19.1	20.0	20.6	22.8	22.0	22.0	Avg Ann'l P/E Ratio	19.0
1.56	1.65	1.29	1.19	1.05	1.00	1.11	1.07	1.11	1.03	1.09	1.20	1.07	1.05	1.04	1.20	1.20	1.20	Relative P/E Ratio	1.20
1.5%	1.6%	2.0%	2.2%	2.6%	2.8%	2.5%	2.8%	3.4%	3.1%	2.8%	2.8%	2.8%	3.0%	3.2%	3.2%	3.2%	3.2%	Avg Ann'l Div'd Yield	3.7%

CAPITAL STRUCTURE as of 12/31/16
Total Debt \$45,709 bill. Due in 5 Yrs. \$29.2 bill.
LT Debt \$29,684 bill. Total Int. \$725.0 mill.
(Total interest coverage: 15.7x)

28857	31944	30990	35123	46554	48017	46854	45998	44294	41863	34500	30000	Sales (\$mill)	35000
30.0%	30.3%	30.5%	31.4%	27.9%	26.6%	28.3%	28.1%	27.9%	28.1%	31.5%	37.0%	Operating Margin	38.0%
1163.0	1228.0	1236.0	1443.0	1954.0	1982.0	1977.0	1976.0	1970.0	1787.0	1400	1175	Depreciation (\$mill)	1325
5981.0	7050.0	6824.0	8144.0	8932.0	9019.0	9374.0	9091.0	8797.0	8354.0	8010	8195	Net Profit (\$mill)	10485
24.0%	22.2%	22.8%	22.7%	23.9%	23.1%	23.0%	22.5%	22.5%	24.0%	22.5%	22.5%	Income Tax Rate	24.0%
20.7%	22.1%	22.0%	23.2%	19.2%	18.8%	20.0%	19.8%	19.9%	20.0%	23.2%	27.3%	Net Profit Margin	30.0%
d1120	d812.0	3830.0	3071.0	1214.0	2507.0	3493.0	612.0	6465.0	7478.0	7500	7250	Working Cap'l (\$mill)	3250
3277.0	2781.0	5059.0	14041	13656	14736	19154	19063	28407	29684	29500	29500	Long-Term Debt (\$mill)	29500
21744	20472	24799	31003	31635	32790	33173	30320	25554	23062	22275	20790	Shr. Equity (\$mill)	19840
24.2%	30.6%	23.4%	18.5%	20.2%	19.4%	18.3%	18.7%	16.5%	16.3%	16.0%	17.0%	Return on Total Cap'l	22.0%
27.5%	34.4%	27.5%	26.3%	28.2%	27.5%	28.3%	30.0%	34.4%	36.2%	36.0%	39.5%	Return on Shr. Equity	53.0%
13.0%	17.2%	12.2%	13.1%	14.6%	13.5%	13.3%	12.3%	12.0%	10.0%	7.5%	8.5%	Retained to Com Eq	14.5%
53%	50%	56%	50%	48%	51%	53%	59%	65%	72%	80%	81%	All Div'ds to Net Prof	73%

Pension Assets-12/16 \$8.4 bill. Oblig. \$9.4 bill.

Pfd Stock None

Common Stock 4,288,000,000 shs.

MARKET CAP: \$183 billion (Large Cap)

CURRENT POSITION 2014 2015 12/31/16 (\$MILL.)

Cash Assets	18010	19900	22201
Receivables	4466	3941	3856
Inventory (Avg Cst)	3100	2902	2675
Other	7410	6652	5278
Current Assets	32986	33395	34010
Accts Payable	2089	2795	2682
Debt Due	22682	15806	16025
Other	7603	8329	7825
Current Liab.	32374	26930	26532

ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 of change (per sh)

Sales	7.5%	4.5%	-2.5%
"Cash Flow"	6.5%	3.5%	3.0%
Earnings	6.0%	3.0%	4.5%
Dividends	9.0%	8.5%	6.0%
Book Value	6.0%	-1.0%	-3.5%

QUARTERLY SALES (\$ mill.)

Cal-endar	Mar.Per	Jun.Per	Sep.Per	Dec.Per	Full Year
2014	10576	12574	11976	10872	45998
2015	10711	12156	11427	10000	44294
2016	10282	11539	10633	9409	41863
2017	8750	9500	8600	7650	34500
2018	7100	8100	7700	7100	30000

EARNINGS PER SHARE A

Cal-endar	Mar.Per	Jun.Per	Sep.Per	Dec.Per	Full Year
2014	.44	.64	.53	.43	2.04
2015	.48	.63	.51	.38	2.00
2016	.45	.60	.49	.37	1.91
2017	.44	.58	.47	.36	1.85
2013	.44	.60	.48	.38	1.90

QUARTERLY DIVIDENDS PAID B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	--	.28	.28	.56	1.12
2014	--	.305	.305	.61	1.22
2015	--	.33	.33	.66	1.32
2016	--	.35	.35	.70	1.40
2017	--	.37			

BUSINESS: The Coca-Cola Company is the world's largest beverage company. Markets over 500 nonalcoholic beverage brands through a network of company-owned and independent bottlers/distributors, wholesalers, and retailers. Leading company/licensed brands include Coca-Cola, Diet Coke, Sprite, Fanta, Fresca, Dasani, glaceau vitaminwater, Powerade, and Minute Maid.

The Coca-Cola Company has another eventful year ahead of it. For instance, before 2017 is through, the beverage giant aims to complete the refranchising of its North American bottling operations and finalize the sale of its bottling assets in China. Coke should emerge from this transition as a more-focused, higher-margin business. In the near term, however, these transactions will take a big bite out of revenues (nearly 20%) and pretax profits (6%-8%) in 2017.

The performance of the core business has been a mixed bag. Overall, earnings declined 5% last year, to \$1.91 a share, and a fourth-consecutive annual decline, to \$1.85, seems likely for 2017. Absent the bottling transactions and the probable hit from foreign currency translation (3%-4% of pretax profits), results should look more encouraging. Helped along by improvements in pricing and mix, the company has been making solid progress in mature markets, such as North America. Emerging markets, though, have been more of a challenge due partly to challenging macroeconomic conditions, especially in some Latin American nations. Looking ahead,

Int'l markets accounted for 52% of 2016 net sales; Advertising expenses, 9.5% of 2016 revenues. Has about 100,000 employees. Directors and Officers own 1.5% of stock; Berkshire Hathaway, 9.3%; Vanguard, 6.7%; BlackRock, 5.7% (3/17 Proxy). Chairman and CEO: Muhtar Kent. Inc.: DE. Address: One Coca-Cola Plaza, Atlanta, GA 30313. Tel.: 404-676-2121. Web: www.coca-cola.com.

modest earnings growth ought to resume in 2018, by which time the drag on profits from refranchising should be fairly minimal (1%-2%, pretax).

The dividend has been increased for the 55th consecutive year. The 6% hike in the April payout is a bit modest by past standards, and a high payout ratio (likely about 80% of 2017's profits), means an acceleration in the growth rate will probably have to wait until next decade. On the positive side, capital spending should decline in 2018 in response to refranchising efforts, which ought to free up additional cash to return to shareholders (including ongoing stock buybacks). Meanwhile, management remains on the lookout for small, bolt-on acquisitions that will bolster Coke's portfolio of still beverage brands (e.g., water, tea, and milk products).

These shares will likely have some appeal with conservative investors. The stock is just an Average selection (3) for year-ahead price performance, but carries our Highest rank (1) for Safety, while also offering a solid current income component (yield: 3.5%).

Robert M. Greene
April 21, 2017

(A) Based on diluted shares. Next earnings report due April 25th. Excludes nonrecurring gain/(losses): '01, (1¢); '02, (22¢); '03, (9¢); '04, (3¢); '05, (7¢); '06, (11¢); '08, (27¢); '10, 79¢; '11, (8¢); '13, (18¢); '14, (44¢); '15, (\$0.33); '16, (42¢). (B) Div'ds historically paid about the first April, July, Oct., Dec. ■ Div'd reinvestment plan available. (C) Includes intangibles. In '16: \$21.1 bill., \$4.93/sh. (D) In millions, adjusted for stock split.

GENERAL MILLS NYSE-GIS RECENT PRICE **57.42** P/E RATIO **18.3** (Trailing: 19.0; Median: 16.0) RELATIVE P/E RATIO **0.92** DIV/D YLD **3.4%** VALUE LINE **Target Price Range 2020-2021 2022** Date: May 22, 2017 Item No. 73 Attachment 67 Page 428

TIMELINESS 3 Lowered 1/6/17	High: 29.6 30.8 36.0 36.0 39.0 40.8 41.9 53.1 55.6 59.9 72.9 63.7	Low: 23.5 27.1 25.5 23.2 33.1 34.5 36.8 40.4 46.7 47.4 53.5 57.1	Target Price Range 2020-2021 2022
SAFETY 1 Raised 11/5/04	LEGENDS 1.0 x "Cash Flow" p sh ... Relative Price Strength 2-for-1 split 6/10 Options: Yes Shaded area indicates recession		
TECHNICAL 3 Raised 4/21/17			
BETA .75 (1.00 = Market)	2020-22 PROJECTIONS Price Gain Ann'l Total High 70 (+20%) 8% Low 60 (+5%) 5%		
Insider Decisions J J A S O N D J F to Buy 0 0 0 0 0 0 0 0 0 0 Options 15 7 5 13 0 2 1 2 3 to Sell 0 5 3 0 0 0 0 0 0		% TOT. RETURN 3/17 THIS STOCK VL ARITH. INDEX 1 yr. -4.1 20.2 3 yr. 24.9 22.0 5 yr. 73.3 78.0	
Institutional Decisions 2Q2016 3Q2016 4Q2016 to Buy 490 438 485 to Sell 502 577 545 Hld's(000) 414049 402315 403164		Percent shares traded 24 16 8	

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
12.41	10.83	14.20	14.60	15.24	16.35	18.30	20.23	22.40	22.54	23.08	25.69	27.74	29.25	29.45	27.75	27.15	26.95	Sales per sh ^A	29.70
1.52	1.19	1.85	1.97	2.09	2.13	2.30	2.50	2.78	3.09	3.30	3.47	3.71	3.94	3.93	4.01	4.25	4.45	"Cash Flow" per sh	5.15
1.10	.85	1.33	1.43	1.37	1.45	1.59	1.76	1.99	2.30	2.48	2.56	2.69	2.83	2.86	2.92	3.05	3.25	Earnings per sh ^{A B}	3.85
.55	.55	.55	.55	.62	.67	.72	.79	.86	.96	1.12	1.22	1.32	1.55	1.67	1.78	1.92	2.00	Div'ds Decl'd per sh ^C	2.16
.54	.69	.96	.83	.56	.51	.68	.77	.86	.99	1.01	1.04	.96	1.08	1.19	1.22	1.25	1.20	Cap'l Spending per sh ^D	1.30
.09	4.87	5.64	6.32	7.69	8.11	7.82	9.21	7.89	8.23	9.87	9.90	10.41	10.67	8.35	8.26	8.20	8.95	Book Value per sh ^D	11.75
570.40	734.00	740.00	758.00	738.00	712.00	680.00	675.00	656.00	656.50	644.80	648.50	640.80	612.30	598.70	596.80	575.00	570.00	Common Shs Outst'g ^F	550.00
17.9	27.2	16.6	16.2	17.5	16.8	17.6	16.5	15.2	14.3	14.7	15.1	15.7	17.8	18.6	20.0	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	17.0
.92	1.49	.95	.86	.93	.91	.93	.99	1.01	.91	.92	.96	.88	.94	.94	1.05			Relative P/E Ratio	1.05
2.8%	2.4%	2.5%	2.4%	2.6%	2.8%	2.6%	2.7%	2.9%	2.9%	3.1%	3.2%	3.1%	3.1%	3.1%	3.1%			Avg Ann'l Div'd Yield	3.3%

CAPITAL STRUCTURE as of 2/26/17		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Debt	\$9723.1 mill. Due in 5 Yrs \$5.8 bill.	12442	13652	14691	14797	14880	16658	17774	17910	17630	16563	15600	15350
LT Debt	\$7176.4 mill. LT Interest \$315.0 mill. (Total interest coverage: 9.0X)	19.9%	19.3%	18.9%	21.0%	20.8%	19.5%	19.5%	19.4%	18.2%	20.6%	22.0%	23.5%
Leases, Uncapitalized	Annual rentals \$107.9 mill. Plan Assets-5/16 \$5.5 bill. Oblig. \$6.4 bill.	418.0	459.2	453.6	457.1	472.6	541.5	588.0	585.4	588.3	608.1	615	620
Pfd Stock	None	1144.0	1228.7	1366.9	1571.5	1652.0	1707.3	1788.7	1824.4	1765.2	1787.4	1825	1925
Common Stock	576,135,402 shs. as of 3/14/17 (Options exercisable: 3.9%)	34.3%	36.1%	33.8%	34.3%	31.6%	30.2%	31.9%	33.3%	25.4%	30.3%	29.0%	29.5%
MARKET CAP:	\$33.1 billion (Large Cap)	9.2%	9.0%	9.3%	10.6%	11.1%	10.2%	10.1%	10.2%	10.0%	10.8%	11.7%	12.5%
CURRENT POSITION (\$MILL.)		d2791	d1236	d71.1	d289.1	242.8	d151.8	d995.0	d1030	d1104	d1078	d1500	d1200
Cash Assets	334.2	763.7	899.1										
Receivables	1386.7	1360.8	1427.5										
Inventory	1540.9	1413.7	1461.0										
Other	523.9	399.0	340.4										
Current Assets	3785.7	3937.2	4128.0										
Accts Payable	1684.0	2046.5	1855.3										
Debt Due	1616.2	1373.2	2546.7										
Other	1589.9	1595.0	1341.5										
Current Liab.	4890.1	5014.7	5743.5										

ANNUAL RATES	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
change (per sh)			
Sales	6.5%	5.0%	.5%
"Cash Flow"	6.5%	5.5%	4.5%
Earnings	7.5%	5.0%	5.0%
Dividends	10.5%	11.0%	4.5%
Book Value	2.0%	1.0%	4.5%

Fiscal Year Ends	QUARTERLY SALES (\$ mill.) ^A				Full Fiscal Year	
	Aug.	Per	Nov.	Per	May	Per
2014	4373	4876	4377	4284	17910	
2015	4268	4712	4351	4299	17630	
2016	4208	4425	4002	3928	16563	
2017	3908	4112	3793	3787	15600	
2018	3860	3985	3755	3750	15350	

Fiscal Year Ends	EARNINGS PER SHARE ^{ABE}				Full Fiscal Year	
	Aug.	Per	Nov.	Per	May	Per
2014	.70	.84	.64	.65	2.83	
2015	.61	.80	.70	.75	2.86	
2016	.79	.82	.65	.66	2.92	
2017	.78	.85	.72	.70	3.05	
2018	.86	.97	.74	.68	3.25	

Cal-endar	QUARTERLY DIVIDENDS PAID ^C				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	.33	.33	.38	.38	1.42
2014	.38	.41	.41	.41	1.61
2015	.41	.44	.44	.44	1.73
2016	.44	.46	.48	.48	1.86
2017	.48				

Fiscal 2017 (ends May 28, 2017) has been a challenging year for General Mills. The main problem continues to be the company's inability to deliver consistent top-line growth. In fact, it witnessed sales erosion across each segment in the fiscal third quarter, with the biggest retreat in the North American Retail business. That division posted double-digit declines in the U.S. meals and baking and the yogurt categories. The Yoplait yogurt line is a trouble spot, with competition from the category leaders, including Danone, Chobani, and Fage, making it difficult to gain market share. The business has been a detractor to General Mills' performance for several years.

Top-line weakness has been a problem for an extended stretch. In addition to the aforementioned yogurt challenges, sales of Progresso soup and Pillsbury baking products have been weak. The company decreased advertising spending behind those lines in recent years, but now decided to increase marketing support in an effort to revive sales. In general, we think it will take time for General Mills to rejuvenate its struggling brands, as the company and some of its peers are having a difficult time adapting to changing preferences of consumer, particularly with regard to high-carb cereals. The growing appeal for Greek yogurts has also made it difficult for GIS to revive its struggling traditional yogurt products. Given these factors, we have lowered our bottom-line estimate for fiscal 2017, and are taking a more cautious view of fiscal 2018 than most on Wall Street.

We like some of the company's innovative ideas to drive long-term sales growth. These include the elimination of artificial flavors across its product portfolio by the end of 2017 and the introduction of gluten-free varieties of its iconic products. The company also has made the nation's fast-growing Hispanic population a priority of its marketing plan.

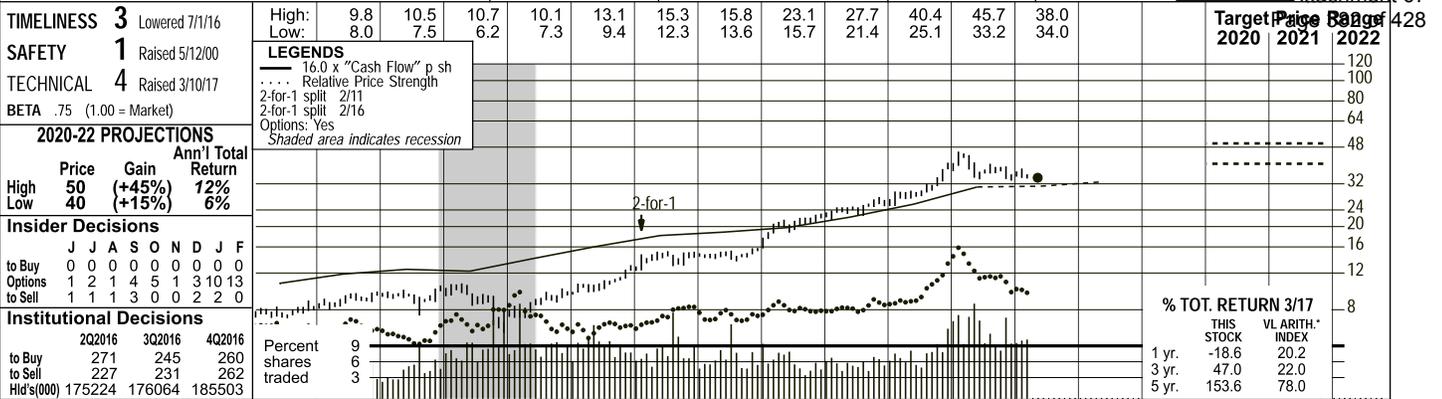
These shares don't stand out for Timeliness. Given the recent top-line weakness, we don't see many near-term catalysts to push this stock higher. That said, these shares should continue to appeal to conservative, income-oriented investors given the well-funded dividend.

William G. Ferguson
April 21, 2017

(A) Fiscal year ends last Sun. in May.	'13, 10¢; '15, (89¢); '16, (15¢); '17 Q1-Q3, (27¢). Next egs. due late June. (C) Div'ds. historically paid in Feb, May, Aug., and Nov. Div'd reinvest. plan available. (D) Incl. intang.	At 2/26/17: \$13.2 bill. or \$22.92/sh. (E) Qtrly. egs. may not sum to total due to change in shares outstanding. (F) In mill., adj. for split.	Company's Financial Strength A+
(B) Diluted egs. Excl. nonrecurring: '01, 4¢; '02, (18¢); '03, (11¢); '04, (5¢); '05, (17¢); '08, 10¢; '09, (9¢); '10, (6¢); '11, 22¢; '12, (21¢).			Stock's Price Stability 100
(C) Div'ds. historically paid in Feb, May, Aug., and Nov.			Price Growth Persistence 65
(D) Div'd reinvest. plan available. (E) Incl. intang.			Earnings Predictability 100

HORMEL FOODS NYSE-HRL

RECENT PRICE **34.30** P/E RATIO **20.2** (Trailing: 20.8 Median: 18.0) RELATIVE P/E RATIO **1.02** DIV/D YLD **2.0%** VALUE LINE **Target Price Range 2020-2022** May 22, 2017 Item No. 73 Attachment 67 Page 428



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
7.44	7.06	7.58	8.67	9.82	10.46	11.41	12.55	12.23	13.57	14.96	15.65	16.60	17.67	17.53	18.02	17.10	17.75	Sales per sh ^A	20.75
.49	.49	.49	.57	.67	.74	.78	.77	.88	1.01	1.13	1.18	1.23	1.39	1.60	1.93	1.95	2.05	"Cash Flow" per sh	2.80
.33	.34	.33	.39	.46	.51	.54	.52	.63	.76	.87	.93	.98	1.12	1.32	1.64	1.70	1.80	Earnings per sh ^{A B}	2.50
.09	.10	.11	.11	.13	.14	.15	.19	.19	.21	.26	.30	.34	.40	.50	.58	.68	.72	Div'ds Decl'd per sh ^C	.84
.14	.12	.12	.15	.19	.26	.23	.23	.18	.17	.18	.25	.20	.30	.27	.48	.55	.60	Cap'l Spending per sh	.75
1.80	2.01	2.26	2.54	2.86	3.28	3.47	3.73	3.97	4.52	5.04	5.37	6.29	6.85	7.57	8.42	8.95	9.50	Book Value per sh ^D	13.50
554.65	553.65	554.38	551.50	551.37	549.36	542.71	538.08	534.37	531.93	527.93	526.09	527.32	527.23	528.41	528.48	529.00	529.50	Common Shs Outst'g ^E	530.00
16.5	18.3	17.0	18.1	16.9	17.0	17.3	18.2	13.0	13.7	15.7	15.6	19.8	21.3	21.6	23.4	<i>Bold figures are Value Line estimates</i>		Avg Ann'l P/E Ratio	18.0
.85	1.00	.97	.96	.90	.92	.92	1.10	.87	.87	.98	.99	1.11	1.12	1.09	1.23			Relative P/E Ratio	1.15
1.7%	1.6%	1.9%	1.6%	1.7%	1.6%	1.6%	2.0%	2.3%	2.0%	1.9%	2.1%	1.8%	1.7%	1.8%	1.5%			Avg Ann'l Div'd Yield	1.9%

CAPITAL STRUCTURE as of 1/29/17
Total Debt \$250.0 mill. Due in 5 Yrs \$250.0 mill.
LT Debt \$250.0 mill. LT Interest \$12.5 mill.
(5% of Cap'l)
Leases, Uncapitalized Annual rentals \$11.1 mill.

Pension Assets-10/16 \$1232.6 mill. Oblig. \$1394.9 mill.

Pfd Stock None
Common Stock 528,913,262 shs. as of 3/5/17

MARKET CAP: \$18.1 billion (Large Cap)

CURRENT POSITION	2015	2016	1/29/17
Cash Assets	347.2	415.1	609.8
Receivables	605.7	591.3	530.9
Inventory (FIFO)	993.3	985.7	958.1
Other	116.8	37.8	20.8
Current Assets	2063.0	2029.9	2119.6
Accts Payable	495.3	481.8	387.7
Debt Due	185.0	--	--
Other	533.7	571.4	532.1
Current Liab.	1214.0	1053.2	919.8

6193.0	6754.9	6533.7	7220.7	7895.1	8230.7	8751.7	9316.3	9263.9	9523.2	9055	9400	Sales (\$mill) ^A	11000
9.7%	9.4%	10.1%	10.6%	10.6%	10.3%	10.4%	11.2%	13.0%	14.9%	15.5%	16.0%	Operating Margin	17.5%
126.7	126.2	127.1	125.6	124.2	119.5	124.9	130.0	133.4	132.0	135	140	Depreciation (\$mill)	150
297.5	285.5	342.8	409.0	474.2	500.1	526.2	602.7	713.8	890.1	900	955	Net Profit (\$mill)	1325
35.8%	37.6%	34.7%	34.9%	33.3%	33.3%	33.6%	34.3%	34.3%	32.4%	33.5%	33.5%	Income Tax Rate	33.5%
4.8%	4.2%	5.2%	5.7%	6.0%	6.1%	6.0%	6.5%	7.7%	9.3%	9.9%	10.2%	Net Profit Margin	12.0%
566.9	657.0	889.7	757.0	1220.0	1534.4	1263.4	1178.1	849.0	976.7	1200	1300	Working Cap'l (\$mill)	1500
350.0	350.0	350.0	--	250.0	250.0	250.0	250.0	250.0	250.0	250	250	Long-Term Debt (\$mill)	250
1884.8	2007.6	2123.5	2406.6	2659.8	2824.9	3316.6	3612.1	3998.2	4448.0	4735	5025	Shr. Equity (\$mill) ^D	7150
13.9%	12.7%	14.4%	17.0%	16.7%	16.5%	14.9%	15.8%	16.9%	19.1%	18.0%	18.0%	Return on Total Cap'l	18.0%
15.8%	14.2%	16.1%	17.0%	17.8%	17.7%	15.9%	16.7%	17.9%	20.0%	19.0%	19.0%	Return on Shr. Equity	18.5%
11.5%	9.5%	11.4%	12.4%	12.9%	12.3%	10.6%	11.1%	11.6%	13.3%	11.5%	11.5%	Retained to Com Eq	12.5%
27%	33%	30%	27%	27%	30%	33%	34%	35%	33%	40%	40%	All Div'ds to Net Prof	34%

BUSINESS: Hormel Foods Corporation is an international manufacturer and marketer of consumer-branded meat and food products, which are sold fresh, frozen, cured, smoked, cooked, and canned. Well-known brand names include: *Hormel, Always Tender, Cure 81, SPAM, Dinty Moore, Jennie-O, Mary Kitchen, Little Sizzlers, Chi-Chi's, Kid's Kitchen, and Skippy*. Distributes products to supermarkets and independent food stores in all 50 states as well as overseas. Has approximately 21,100 employees. The Hormel Foundation owns 48.5% of common stock; all officers/directors as a group, 3.5% (12/16 Proxy). President and CEO: James P. Snee, Inc.; DE. Address: 1 Hormel Place, Austin, MN 55912-3680. Telephone: 507-437-5611. Internet: www.hormel.com.

ANNUAL RATES	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-22
change (per sh)	10 Yrs.	5 Yrs.	to '20-22
Sales	6.5%	5.5%	2.5%
"Cash Flow"	9.5%	10.5%	9.5%
Earnings	11.5%	12.5%	10.5%
Dividends	14.5%	17.5%	9.5%
Book Value	10.0%	11.0%	10.0%

Earnings growth at Hormel Foods will probably be pretty modest in the near term. That's mainly because of pricing pressure on the *Jennie-O Turkey Store* business. In fact, operating profit at the unit declined 25% during the first quarter of fiscal 2017 (year ends October 28th), as turkey prices hit seven-year lows and competition from other meat proteins appeared to intensify. This weakness offset solid showings from the Refrigerated Foods and Specialty Foods divisions. And the commodity crunch seems likely to persist in the coming periods, particularly given Tyson Foods' plans to enter the ground chicken market. Meanwhile . . .

invests more in its consumer brands. **Hormel, notably, has been selling off noncore assets, including the Diamond Crystal Brands and Farmer John businesses.** This is a big reason why sales are apt to drop in the mid-single digits in fiscal 2017. But high-profile consumer labels, like *Skippy* and *Spam*, are being extended, both at home and abroad. This should counteract the divestiture headwinds and bolster the bottom line as we move into the next decade. All in all, we look for share net to climb to \$1.70 this year and \$1.80 in fiscal 2018. Thereafter, growth ought to accelerate as the commodity situation improves, with earnings likely to reach \$2.50 a share by 2020-2022. This projection is on the conservative side, too, as it does not factor in future acquisitions. Hormel, equipped with an excellent balance sheet, has a long history of inking accretive deals, and we would expect further M&A activity in the years to come.

Fiscal Year Ends	QUARTERLY SALES (\$mill.) ^A				Full Fiscal Year
	Jan.Per	Apr.Per	Jul.Per	Oct.Per	
2014	2242.7	2244.9	2284.9	2543.8	9316.3
2015	2395.1	2279.3	2188.6	2400.9	9263.9
2016	2292.7	2300.2	2302.4	2627.9	9523.2
2017	2280.2	2184.8	2210	2380	9055
2018	2365	2270	2295	2470	9400

Pork processing margins, which had been tracking around peak levels, will probably fall back to earth a bit. We see this happening as new capacity comes on line across the broader pork space beginning in the second half of 2017. The added production should drive up hog demand, as well as input costs for Hormel and its fellow sector participants. Still, we believe that the operating margin will gradually widen in time, as the company divests underperforming properties and

The stock is not inexpensive, but it still appears well suited for defensive buy-and-hold investors. Annual dividend hikes should sweeten returns here. *Justin Hellman*
April 21, 2017

Fiscal Year Ends	EARNINGS PER SHARE ^{A B}				Full Fiscal Year
	Jan.Per	Apr.Per	Jul.Per	Oct.Per	
2014	.29	.26	.26	.31	1.12
2015	.35	.34	.27	.36	1.32
2016	.43	.40	.36	.45	1.64
2017	.44	.40	.38	.48	1.70
2018	.47	.42	.40	.51	1.80

invests more in its consumer brands. Hormel, notably, has been selling off noncore assets, including the Diamond Crystal Brands and Farmer John businesses. This is a big reason why sales are apt to drop in the mid-single digits in fiscal 2017. But high-profile consumer labels, like *Skippy* and *Spam*, are being extended, both at home and abroad. This should counteract the divestiture headwinds and bolster the bottom line as we move into the next decade. All in all, we look for share net to climb to \$1.70 this year and \$1.80 in fiscal 2018. Thereafter, growth ought to accelerate as the commodity situation improves, with earnings likely to reach \$2.50 a share by 2020-2022. This projection is on the conservative side, too, as it does not factor in future acquisitions. Hormel, equipped with an excellent balance sheet, has a long history of inking accretive deals, and we would expect further M&A activity in the years to come.

The stock is not inexpensive, but it still appears well suited for defensive buy-and-hold investors. Annual dividend hikes should sweeten returns here. *Justin Hellman*
April 21, 2017

Cal-endar	QUARTERLY DIVIDENDS PAID ^C				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	.085	.085	.085	.085	.34
2014	.10	.10	.10	.10	.40
2015	.125	.125	.125	.125	.50
2016	.145	.145	.145	.145	.58
2017	.17				

historically been paid in the middle of Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available. (D) Includes intangibles. In '16: \$2737.8 mill., \$5.18/sh. (E) In millions, adjusted for splits.

Company's Financial Strength	A
Stock's Price Stability	90
Price Growth Persistence	100
Earnings Predictability	100

KIMBERLY-CLARK NYSE-KMB		RECENT PRICE	P/E RATIO	Trailing: 22.3	RELATIVE P/E RATIO	DIV/D YLD	VALUE LINE	Target Price Range	Page 4 of 428												
TIMELINESS 3 Lowered 11/4/16	High: 68.6	133.54	21.7	(Median: 17.0)	1.11	2.9%	2020	2021	2022												
SAFETY 1 New 7/27/90	Low: 56.6																				
TECHNICAL 5 Lowered 2/10/17	69.7																				
BETA .70 (1.00 = Market)	67.0																				
2020-22 PROJECTIONS		67.2																			
Price	67.4																				
Gain	74.1																				
Ann'l Total Return	88.3																				
High	111.7																				
Low	118.8																				
Insider Decisions		129.9																			
M J J A S O N D J	138.9																				
to Buy	136.2																				
Options																					
to Sell																					
Institutional Decisions																					
2Q2016																					
to Buy																					
to Sell																					
Hld's(000)																					
2001																					
2002																					
2003																					
2004																					
2005																					
2006																					
2007																					
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2021																					
2022																					
27.96	26.56	28.60	31.23	34.46	36.76	43.40	46.94	45.84	48.53	52.68	54.10	55.55	53.99	51.51	51.04	52.35	55.65	Sales per sh	65.55		
4.78	4.81	4.91	5.39	5.74	6.10	6.34	5.98	6.40	6.53	6.78	6.70	7.89	6.40	4.87	8.05	8.45	8.90	"Cash Flow" per sh	10.60		
3.27	3.36	3.38	3.61	3.78	3.90	4.25	4.06	4.52	4.45	3.99	4.42	5.53	3.91	2.77	5.99	6.30	6.60	Earnings per sh A	7.50		
1.12	1.20	1.36	1.60	1.80	1.96	2.08	2.27	2.38	2.58	2.76	2.96	3.24	3.36	3.52	3.68	3.88	3.97	Div'ds Decl'd per sh B	4.30		
2.12	1.70	1.75	1.11	1.54	2.13	2.35	2.19	2.03	2.37	2.45	2.81	2.50	2.84	2.93	2.16	3.00	3.00	Cap'l Spending per sh	3.50		
10.87	11.06	13.49	13.73	12.04	13.38	12.41	9.38	12.96	14.54	13.27	12.81	12.75	2.00	d.48	d.29	.30	1.05	Book Value per sh C	6.85		
519.50	510.80	501.60	482.90	461.50	455.60	420.90	413.60	417.00	406.90	395.70	389.30	380.80	365.30	360.90	356.60	350.00	340.00	Common Shs Outst'g D	325.00		
18.8	17.5	14.9	17.6	16.5	15.9	16.3	15.2	12.2	14.1	16.9	18.2	17.8	28.1	40.6	21.2	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	20.0		
.96	.96	.85	.93	.88	.86	.87	.91	.81	.90	1.06	1.16	1.00	1.48	2.04	1.11			Relative P/E Ratio	1.25		
1.8%	2.0%	2.7%	2.5%	2.9%	3.2%	3.0%	3.7%	4.3%	4.1%	4.1%	3.7%	3.3%	3.1%	3.1%	2.9%			Avg Ann'l Div'd Yield	2.9%		
CAPITAL STRUCTURE as of 12/31/16		18266	19415	19115	19746	20846	21063	21152	19724	18591	18202	18330	18925	Sales (\$mill)	21300						
Total Debt \$7572 mill. Due 5 Yrs \$4625 mill.		18.5%	17.2%	19.4%	18.7%	16.7%	16.8%	19.3%	17.2%	12.7%	22.1%	18.5%	19.0%	Operating Margin	22.0%						
LT Debt \$6439 mill. LT Interest \$350 mill.		806.5	775.0	783.0	813.0	1091.0	857.0	863.0	862.0	746.0	705.0	750	775	Depreciation (\$mill)	1000						
(LT interest earned: 10.9x)		1861.6	1698.0	1884.0	1843.0	1591.0	1750.0	2142.0	1476.0	1013.0	2166.0	2215	2250	Net Profit (\$mill)	2440						
(102% of Cap'l)		21.5%	27.0%	29.0%	30.9%	30.2%	31.7%	31.5%	38.0%	31.3%	30.6%	31.5%	31.5%	Income Tax Rate	31.5%						
Leases, Uncapitalized Annual rentals \$187.0 mill.		10.2%	8.7%	9.9%	9.3%	7.6%	8.3%	10.1%	7.5%	5.4%	11.9%	12.1%	11.9%	Net Profit Margin	11.5%						
Pension Assets-12/16 \$3.53 bill. Oblig. \$4.13 bill.		1168.0	1061.0	932.0	990.0	886.0	498.0	702.0	d667.0	d923.0	d731.0	d650	d475	Working Cap'l (\$mill)	d150						
Pfd Stock None		4393.9	4882.0	4792.0	5120.0	5426.0	5070.0	5386.0	5630.0	6106.0	6439.0	6400	6250	Long-Term Debt (\$mill)	6000						
Common Stock 356,274,872 shs. as of 2/1/17		5223.7	3878.0	5406.0	5917.0	5249.0	4985.0	4856.0	729.0	d174.0	d102.0	100	350	Shr. Equity (\$mill) C	2225						
MARKET CAP: \$47.6 billion (Large Cap)		20.7%	20.9%	19.7%	17.7%	16.1%	18.8%	22.3%	25.4%	19.6%	36.7%	34.0%	34.0%	Return on Total Cap'l	29.5%						
CURRENT POSITION		35.6%	43.8%	34.9%	31.1%	30.3%	35.1%	44.1%	202.5%	202.5%	NMF	NMF	NMF	Return on Shr. Equity	NMF						
2014		17.8%	19.3%	16.6%	13.1%	9.4%	12.0%	18.9%	30.2%	30.2%	30.2%	NMF	NMF	Retained to Com Eq	47.0%						
2015		50%	56%	52%	58%	69%	66%	57%	85%	NMF	61%	61%	60%	All Div'ds to Net Prof	57%						
2016		BUSINESS: Kimberly-Clark develops, manufactures, and markets personal care products (incl. Huggies, Pull-Ups, Little Swimmers, GoodNights, Kotex, Lightdays, Depend and Poise) and consumer tissue products (incl. Kleenex, Scott, Cottonelle, and Viva). KC Professional focuses on workplace health/safety (supporting products incl. apparel, wipers, soaps, sanitizers, tissues and towels), and Health Care provides medical supplies, infection prevention & health education. Wal-Mart accounted for 14% of '16 sales. Employs 42,000. Off/dir. own less than 1% of common; BlackRock, 7.4%; Vanguard, 7.4% (3/17 Proxy). Chairman/CEO: Thomas J. Falk, Inc.: DE. Address: P.O. Box 619100, Dallas, TX 75261. Telephone: 972-281-1200. Internet: www.kimberly-clark.com.																			
2017		Kimberly-Clark has rebounded nicely over the past few quarters. The consumer goods conglomerate faced a difficult operating environment, which hindered the top line. However, an improved product mix and sales volume helped offset lower selling prices. Altogether, the bottom line more than doubled in 2016.																			
2018		The company is well poised for the near term. We look for management's financial discipline and strategic growth initiatives to continue to bear fruit in the coming months. Still, currency headwinds may persist. As such, revenues will likely come in flat in 2017, while share earnings climb 5%. Next year, the top and bottom lines are liable to advance 3% and 5%, respectively.																			
ANNUAL RATES		Restructuring efforts should augur well for profits. The company recently completed a major reorganization campaign (that it began in 2014). And this, combined with its ongoing expense-reduction program Project FORCE, should well position the company for the near term. To wit, this year Kimberly plans to achieve more than \$400 million in savings from these measures. And input cost deflation should also boost operating margins moving forward.																			
Past 10 Yrs.		The company has been widening its footprint. Kimberly will probably invest in its product pipeline, and ramp up innovation in the coming months. It may also increase marketing efforts to bolster its brand equity. Moreover, as part of its Global Business Plan, management will likely turn its attention overseas, specifically targeting undersaturated emerging and developing markets.																			
Past 5 Yrs.		Kimberly-Clark is rewarding its shareholders. The board is increasing the quarterly payout 5%, to \$0.97 a share (payable April 4th). And the company should continue to buy back stock.																			
Est'd '14-'16 to '20-'22		These shares are fairly valued at this juncture. This issue is trading near the low end of our 2020-2022 Target Price Range, so much of the good news we envision is already factored into the recent quotation. Nevertheless, KMB holds good conservative appeal. Plus, thanks to the recent dividend hike, it offers an above-average yield, indicating decent, risk-adjusted total return potential.																			
Sales		Orly Seidman March 24, 2017																			
"Cash Flow"																					
Earnings																					
Dividends																					
Book Value																					
Cal-endar		QUARTERLY SALES (\$ mill.)				Full Year															
		Mar.31 Jun.30 Sep.30 Dec.31																			
2014		4887 4953 5056 4828				19724															
2015		4691 4643 4718 4539				18591															
2016		4476 4588 4594 4544				18202															
2017		4530 4575 4625 4600				18330															
2018		4650 4700 4725 4850				18925															
Cal-endar		EARNINGS PER SHARE A				Full Year															
		Mar.31 Jun.30 Sep.30 Dec.31																			
2014		1.26 1.32 1.49 d.18				3.91															
2015		1.27 d.83 1.41 .91				2.77															
2016		1.50 1.56 1.52 1.40				5.99															
2017		1.55 1.60 1.60 1.55				6.30															
2018		1.60 1.70 1.70 1.60				6.60															
Cal-endar		QUARTERLY DIVIDENDS PAID B				Full Year															
		Mar.31 Jun.30 Sep.30 Dec.31																			
2013		.74 .81 .81 .81				3.17															
2014		.84 .84 .84 .84				3.36															
2015		.88 .88 .88 .88				3.52															
2016		.86 .92 .92 .92				3.64															
2017		.92 .97																			
(A) Dil. earnings. Excl. non-recurring gains/(losses): '01, (\$0.25); '02, (\$0.12); '03, (\$0.05); '04, (\$0.01); '05, (\$0.50); '06, (\$0.65); '07, (\$0.16); '08, (\$0.04). EPS may not sum due to change in shares out. Next earnings report due late April.																					
(B) Div's hist. paid in early Jan., Apr., Jul., and Oct. Div'd reinvestment plan available.																					
(C) Incl. intang. In '16: \$1,480.0 mill., \$4.16/sh. In millions.																					
(D) In millions.																					
(E) Foreign: FIFO.																					
Company's Financial Strength		A++																			
Stock's Price Stability		100																			
Price Growth Persistence		80																			
Earnings Predictability		40																			
To subscribe call 1-800-VALUELINE																					

LILLY (ELI) AND CO. NYSE-LLY RECENT PRICE **84.75** P/E RATIO **21.2** (Trailing: 24.1; Median: 13.0) RELATIVE P/E RATIO **1.08** DIV/D YLD **2.5%** VALUE LINE **Target Price \$85** Date: May 22, 2017 Item No. 73 Attachment 67

TIMELINESS 3 Lowered 4/15/16	High: 59.2 61.0 57.5 40.8 38.1 41.9 54.0 58.4 75.1 92.9 85.4 86.1	Low: 50.2 49.1 28.6 27.2 32.0 33.5 38.3 47.5 50.5 68.3 64.2 73.5	Target Price \$85
SAFETY 1 Raised 10/21/05	LEGENDS 1.0 x "Cash Flow" p sh ... Relative Price Strength Options: Yes Shaded area indicates recession		Target Price \$85
TECHNICAL 4 Raised 3/31/17	Options: Yes Shaded area indicates recession		Target Price \$85
BETA .75 (1.00 = Market)	Options: Yes Shaded area indicates recession		Target Price \$85
2020-22 PROJECTIONS			
Price	Gain	Ann'l Total Return	
High 120	(+40%)	11%	
Low 100	(+20%)	7%	
Insider Decisions			
M J J A S O N D J			
to Buy 1 0 0 1 0 0 0 1 0			
Options 2 2 0 3 3 4 0 13 18			
to Sell 2 2 2 1 0 1 0 4 0			
Institutional Decisions			
2Q2016 3Q2016 4Q2016			
to Buy 519 489 554			
to Sell 475 478 531			
Hld's(000) 831522 818129 817472			
Percent shares traded	18	12	6
% TOT. RETURN 2/17			
1 yr.	THIS STOCK	VL ARITH. INDEX	
3 yr.	50.9	22.1	
5 yr.	148.1	81.5	

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
10.28	9.87	11.20	12.24	12.96	13.87	16.43	17.94	19.00	20.03	20.98	19.76	20.70	17.66	18.06	19.28	20.00	20.45	Sales per sh	24.10
3.08	2.85	2.97	3.24	3.43	3.76	4.33	4.86	5.35	5.70	5.43	4.59	5.33	3.93	4.60	4.75	5.45	5.75	"Cash Flow" per sh	7.35
2.76	2.50	2.58	2.82	2.88	3.18	3.54	4.02	4.42	4.74	4.41	3.39	4.15	2.78	3.43	3.52	4.10	4.40	Earnings per sh ^A	6.10
1.12	1.24	1.34	1.42	1.52	1.60	1.70	1.88	1.96	1.96	1.96	1.96	1.96	1.96	2.00	2.04	2.08	2.12	Div'ds Decl'd per sh ^B	2.24
.79	1.01	1.52	1.68	1.15	.95	.95	.83	.67	.60	.58	.79	.91	1.05	.96	.94	.95	.95	Cap'l Spending per sh	1.00
6.32	7.37	8.69	9.65	9.70	12.05	12.05	5.93	8.29	10.77	11.69	12.92	15.80	13.86	13.18	12.72	14.10	15.45	Book Value per sh	22.75
1123.3	1122.4	1123.7	1131.9	1130.1	1131.7	1134.3	1136.1	1149.0	1152.3	1157.8	1143.6	1116.8	1110.6	1105.3	1100.9	1100.0	1100.0	Common Shs Outst'g ^C	1100.0
28.8	26.0	24.6	23.4	19.1	17.3	15.7	11.4	7.8	7.4	8.4	12.9	12.7	22.2	22.9	21.7	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	18.0
1.48	1.42	1.40	1.24	1.02	.93	.83	.69	.52	.47	.53	.82	.71	1.17	1.15	1.14			Relative P/E Ratio	1.15
1.4%	1.9%	2.1%	2.2%	2.8%	2.9%	3.1%	4.1%	5.7%	5.6%	5.3%	4.5%	3.7%	3.2%	2.5%	2.7%			Avg Ann'l Div'd Yield	2.0%

CAPITAL STRUCTURE as of 12/31/16				2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
Total Debt \$10305.2 mill. Due in 5 Yrs \$3542 mill.				18634	20378	21836	23076	24287	22603	23113	19616	19959	21222	22000	22500	Sales (\$mill)	26500						
LT Debt \$8367.8 mill. LT Interest \$185 mill.				31.4%	34.3%	35.1%	36.2%	31.7%	29.4%	30.3%	24.0%	25.2%	25.3%	26.5%	27.0%	Operating Margin	33.0%						
(37% of Cap'l)				1047.9	1122.6	1297.8	1328.2	1373.6	1462.2	1445.6	1379.0	1427.7	1496.6	1500	1500	Depreciation (\$mill)	1400						
Leases, Uncapitalized Annual rentals \$134.8 mill.				3863.0	4398.6	4851.0	5239.5	4913.5	3784.0	4502.6	2987.6	3656.3	3735.6	4510	4840	Net Profit (\$mill)	6710						
Pension Assets-12/16 \$10.2 bill. Oblig. \$12.5 bill.				21.6%	21.5%	21.0%	22.6%	20.0%	22.8%	20.9%	19.2%	19.2%	22.0%	22.0%	Income Tax Rate	22.0%							
Pfd Stock None				20.7%	21.6%	22.2%	22.7%	20.2%	16.7%	19.5%	15.2%	18.3%	17.6%	20.5%	21.5%	Net Profit Margin	25.3%						
Common Stock 1,103,352,450 shs. as of 2/13/17				6988.6	6656.4	5918.4	7738.6	5317.3	4649.2	4188.1	972.3	4344.0	4114.8	4000	4500	Working Cap'l (\$mill)	6000						
MARKET CAP: \$93.5 billion (Large Cap)				4593.5	4615.7	6634.7	6770.5	5464.7	5519.4	4200.3	5367.7	7972.4	8367.8	8000	7500	Long-Term Debt (\$mill)	6000						
CURRENT POSITION 2014 2015 12/31/16 (\$MILL.)				13664	6735.3	9523.7	12413	13536	14774	17641	15388	14571	14008	15500	17000	Shr. Equity (\$mill)	25000						
Cash Assets				21.6%	39.2%	30.3%	27.6%	26.1%	18.9%	20.8%	14.6%	16.5%	17.1%	19.5%	20.0%	Return on Total Cap'l	22.0%						
Receivables				28.3%	65.3%	50.9%	42.2%	36.3%	25.6%	25.5%	19.4%	25.1%	26.7%	29.0%	28.5%	Return on Shr. Equity	27.0%						
Inventory (LIFO)				14.7%	34.8%	28.3%	24.8%	20.2%	10.8%	13.5%	5.8%	10.5%	11.3%	14.5%	15.0%	Retained to Com Eq	17.0%						
Other				48%	47%	44%	41%	44%	58%	47%	70%	58%	58%	51%	48%	All Div'ds to Net Prof	37%						
Current Assets				BUSINESS: Lilly (Eli) and Co. develops, manufactures, and markets pharmaceuticals (85% of '16 sales) and animal health products (15%). Pharmaceutical segments include Endocrinology, Neuroscience, Oncology, Immunology, and Cardiovascular. Manufacturing and distribution facilities located in the United States, Puerto Rico, and 14 other countries. Products sold in 125 countries worldwide.																			
Accts Payable				Top-selling franchises include <i>Humalog</i> , <i>Alimta</i> , and <i>Cialis</i> . Foreign sales '16, 46%. Has 41,975 employees. Lilly Endowment Inc. owns 11.4% of common stock; Vanguard, 6.0%; BlackRock, 5.7%; Primecap, 5.2%; Wellington, 5.2% (3/17 proxy). Chrmn/Pres/CEO.: David A. Ricks, Inc. IN. Addr.: Lilly Corporate Center, Indianapolis, IN 46285. Tel.: 317-276-2000. Internet: www.lilly.com.																			
Debt Due				Eli Lilly's fourth-quarter results were mixed, but 2017 guidance was relatively in line. Earnings were a few pennies short of the consensus in Q4 as higher-than-expected operating costs offset a solid beat on the top line (reported \$5.76 billion, versus our \$5.54 billion estimate). On a positive note, this did not seem to impact management's 2017 outlook. For the full-year, Lilly expects adjusted earnings to come in at \$4.05-\$4.15 a share on sales of \$21.8 billion-\$22.3 billion (unchanged from Q3 conference call). The guidance reflects SG&A costs of \$6.4 billion-\$6.6 billion, and R&D expenses of \$4.9 billion-\$5.1 billion, and a non-GAAP tax rate of 22%. Continued generic erosion in several mature franchises will likely be a factor this year. Three of Lilly's top-six products posted sales declines in 2016 including, <i>Humalog</i> (-3%), <i>Alimta</i> (-8%), and <i>Cymbalta</i> (-9%). Patent losses also weighed heavily on <i>Zyprexa</i> , as its sales plummeted 23% for the full year and 33% in the fourth quarter. With the company expected to lose exclusivity on its second largest sales generator (<i>Cialis</i>) later this year, further development of newer assets will be imperative. Encouragingly, we view the new product cycle and pipeline as areas of strength. Two diabetes assets highlight the fast-growing new product lineup, <i>Trulicity</i> ('16 sales +272%, to \$926 million) and <i>Jardiance</i> (+235%, to \$202 million). Cancer-fighting drug <i>Cyramza</i> (+60%, to \$614 million) has also shown promise and plaque psoriasis treatment <i>Taltz</i> generated \$113 million in sales since being approved in March, 2016. While some of these assets are further ahead than others, all are considered to have blockbuster potential (annual sales of \$1+ billion). The stock's Timeliness rank is unchanged at 3 (Average). Based on our system, shares of LLY currently do not stand out for year-ahead relative price performance. However, with a solid dividend yield (2.5%), high scores for Safety (1) and Stock Price Stability (85), and a well below-market Beta (.75), we continue to view the equity as an attractive, low-risk income play in the pharmaceutical space. The company's Financial Strength grade is also top notch (A++). <i>Michael Ratty</i>																			
Other				will be imperative. Encouragingly, we view the new product cycle and pipeline as areas of strength. Two diabetes assets highlight the fast-growing new product lineup, <i>Trulicity</i> ('16 sales +272%, to \$926 million) and <i>Jardiance</i> (+235%, to \$202 million). Cancer-fighting drug <i>Cyramza</i> (+60%, to \$614 million) has also shown promise and plaque psoriasis treatment <i>Taltz</i> generated \$113 million in sales since being approved in March, 2016. While some of these assets are further ahead than others, all are considered to have blockbuster potential (annual sales of \$1+ billion). The stock's Timeliness rank is unchanged at 3 (Average). Based on our system, shares of LLY currently do not stand out for year-ahead relative price performance. However, with a solid dividend yield (2.5%), high scores for Safety (1) and Stock Price Stability (85), and a well below-market Beta (.75), we continue to view the equity as an attractive, low-risk income play in the pharmaceutical space. The company's Financial Strength grade is also top notch (A++). <i>Michael Ratty</i>																			
Current Liab.				will be imperative. Encouragingly, we view the new product cycle and pipeline as areas of strength. Two diabetes assets highlight the fast-growing new product lineup, <i>Trulicity</i> ('16 sales +272%, to \$926 million) and <i>Jardiance</i> (+235%, to \$202 million). Cancer-fighting drug <i>Cyramza</i> (+60%, to \$614 million) has also shown promise and plaque psoriasis treatment <i>Taltz</i> generated \$113 million in sales since being approved in March, 2016. While some of these assets are further ahead than others, all are considered to have blockbuster potential (annual sales of \$1+ billion). The stock's Timeliness rank is unchanged at 3 (Average). Based on our system, shares of LLY currently do not stand out for year-ahead relative price performance. However, with a solid dividend yield (2.5%), high scores for Safety (1) and Stock Price Stability (85), and a well below-market Beta (.75), we continue to view the equity as an attractive, low-risk income play in the pharmaceutical space. The company's Financial Strength grade is also top notch (A++). <i>Michael Ratty</i>																			

ANNUAL RATES	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
of change (per sh)			
Sales	3.5%	-1.5%	4.5%
"Cash Flow"	2.5%	-4.0%	9.0%
Earnings	1.0%	-6.5%	11.0%
Dividends	3.0%	.5%	2.0%
Book Value	3.0%	5.5%	9.5%

Cal-endar	QUARTERLY SALES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	4683	4936	4876	5121	19616
2015	4645	4979	4960	5375	19959
2016	4865	5405	5192	5760	21222
2017	5200	5600	5400	5800	22000
2018	5300	5700	5500	6000	22500

Cal-endar	EARNINGS PER SHARE ^{A D}				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	.70	.68	.66	.75	2.78
2015	.87	.90	.89	.78	3.43
2016	.83	.86	.88	.95	3.52
2017	.96	1.04	1.04	1.06	4.10
2018	1.03	1.11	1.12	1.14	4.40

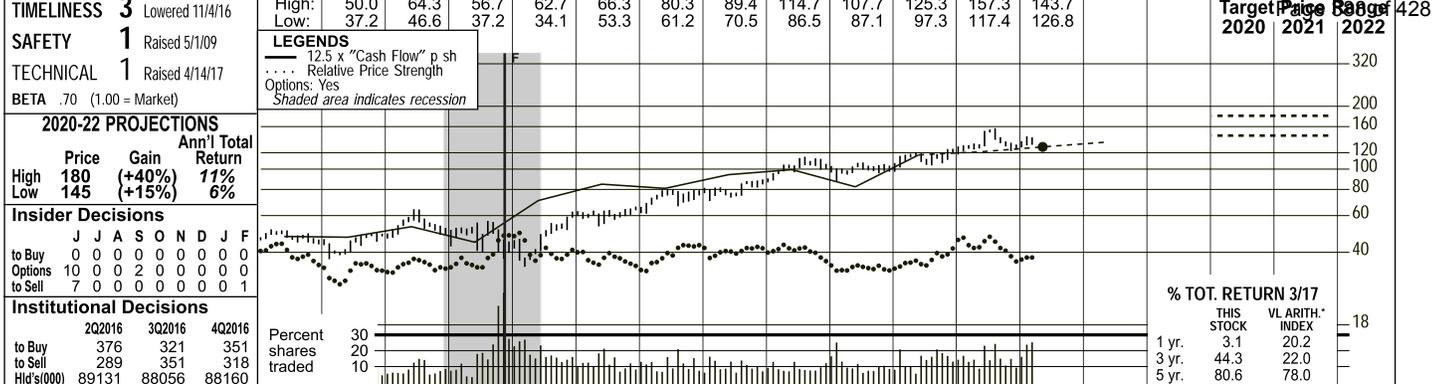
Cal-endar	QUARTERLY DIVIDENDS PAID ^B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	.49	.49	.49	.49	1.96
2014	.49	.49	.49	.49	1.96
2015	.50	.50	.50	.50	2.00
2016	.51	.51	.51	.51	2.04
2017	.52				

(A) Diluted eps (adjusted). Excl. nonrec. gains/(losses): '01, (\$0.21); '08, (\$5.91); '11, (\$0.51); '12, \$0.27; '13, \$0.17; '14, (\$0.55); '15, (\$1.17); '16, (\$0.94). Next eps. rpt. due late April.
(B) Dividends historically paid in mid-March, June, Sept. and Dec. ■ Div'd reinvestment plan available.
(C) In millions.
(D) Earnings may not sum due to rounding.

PUBLIC STORAGE NYSE-PSA		RECENT PRICE	P/E RATIO	(Trailing: 32.6) Median: NMF	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE	Target Price	Page 27 of 428						
TIMELINESS 3 Lowered 7/22/16 SAFETY 1 Raised 1/10/14 TECHNICAL 5 Lowered 3/17/17 BETA .75 (1.00 = Market)		High: 98.1 Low: 67.7	117.2 68.1	102.5 52.5	85.1 45.3	106.1 74.7	136.7 100.0	152.7 129.0	176.7 144.4	190.2 148.0	253.9 182.1	277.6 200.6	231.5 212.5	2022 2021 2020	
2020-22 PROJECTIONS Price Gain Ann'l Total High 295 (+35%) 10% Low 240 (+10%) 6%												% TOT. RETURN 2/17 THIS STOCK VL ARITH. INDEX 1 yr. -5.9 30.5 3 yr. 48.1 22.1 5 yr. 99.3 81.5			
Insider Decisions M J J A S O N D J to Buy 0 0 0 0 0 0 1 0 0 Options 0 0 1 1 0 1 1 0 to Sell 0 0 0 0 1 0 1 1 0		Institutional Decisions 202016 3Q2016 4Q2016 to Buy 289 260 306 to Sell 262 299 275 Hld's(000) 134627 134780 139757										Percent shares traded 15 10 5			
Public Storage was formed and qualified as a real estate investment trust (REIT) in 1980. It reorganized into its current form in June of 2007. It offers storage spaces for lease, generally on a month-to-month basis, for personal and business use, and also has interest in commercial facilities.		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
CAPITAL STRUCTURE as of 12/31/16 Tot. Debt \$390.7 mill. Due in 5 Years \$55.0 mill. Total Interest \$4.5 mill. (Total interest coverage: over 25x) (4% of Cap'l)		30.90	31.44	32.60	31.20	30.41	30.62	30.44	29.90	29.58	29.11	30.50	32.55	Book Value per sh ^D	40.00
No Defined Benefit Pension Plan Pfd. Stock \$4367.5 mill. Pfd. Div'd \$240.4 mill. (46% of Cap'l)		4.74	5.17	5.03	5.22	5.93	6.31	7.53	7.98	8.79	9.70	10.50	11.30	Funds from Ops per sh ^A	13.40
Common Stock 173,638,361 shares as of 2/27/17		2.40	3.82	3.52	2.31	3.29	3.83	4.89	5.25	6.07	6.81	7.50	8.00	Earnings per sh ^A	9.50
MARKET CAP: \$38.6 billion (Large Cap)		2.00	2.20	2.20	3.05	3.65	4.40	5.15	5.60	6.50	7.30	8.00	8.60	Div'ds Decl'd per sh ^B	9.40
FUNDS FLOW (\$mill.) 2014 2015 2016		56.61	46.48	46.48	44.51	43.35	42.71	47.97	49.20	49.49	51.49	54.60	57.30	Real Estate per sh	67.80
Net Profit Plus Noncash Charges 1587.1 1743.7 1893.8 Investments Repaid 427.4 31.0 68.4 Net New Debt -774.7 254.7 71.7 New Equity 689.1 -310.2 241.3 Investments Funded 637.4 471.1 785.1 Dividends Declared 1200.5 1371.0 1505.8		177.42	168.28	169.60	169.25	170.24	171.66	171.78	172.45	172.92	173.29	174.00	174.50	Common Shs Outstanding ^C	177.00
FINANCIAL POSITION 12/31/15 12/31/16		18.00	4.2	13.5	17.9	19.6	22.2	21.3	23.6	23.6	24.6			Premium Over Book	570%
Senior Debt (\$mill.) 319.0 390.7 Subordinated Debt (\$mill.) -- -- Sr Debt/Cap'l Funds .01:1 .04:1 Total Debt/Equity .01:1 .04:1		2.3%	2.8%	3.2%	3.3%	3.1%	3.1%	3.2%	3.1%	3.1%	3.1%			Avg Ann'l P/E Ratio	NMF
QUARTERLY REVENUES (\$ mill.)		1816.5	1745.6	1627.7	1646.7	1752.1	1826.7	1981.7	2381.7	2381.7	2560.5	2850	3050	Avg Ann'l P/FFO Ratio	20.0
Mar.31 Jun.30 Sep.30 Dec.31 Full Year		63.0%	79.9%	63.8%	63.6%	64.6%	67.3%	68.1%	69.6%	69.6%	70.6%	70.0%	70.0%	Avg Ann'l Div'd Yield	3.5%
QUARTERLY EARNINGS PER SHARE^A		457.5	936.4	834.6	672.0	823.8	669.7	844.7	908.2	1053.1	1183.9	1305	1400	Revenues (\$mill)	3650
Mar.31 Jun.30 Sep.30 Dec.31 Full Year		25.2%	53.6%	51.3%	40.8%	47.0%	36.7%	42.6%	41.4%	44.2%	46.2%	45.8%	45.9%	Other Income(\$mill)	Nil
QUARTERLY DIVIDENDS PAID^B		2.0	d8.1	d8.9	7.5	2.4	12.9	--	--	--	--	Nil	Nil	Operating Margin	70.0%
Mar.31 Jun.30 Sep.30 Dec.31 Full Year		9590.9	7821.9	7562.0	7532.8	7379.2	7331.9	8239.8	8485.3	8557.7	8922.6	9500	10000	Net Profit(\$mill)	1680
QUARTERLY FFO PER SHARE^A		8763.1	8715.5	8928.4	8676.6	8288.2	8093.8	8791.7	9480.8	9170.6	9411.9	9650	10325	Net Profit Margin	46.0%
Mar.31 Jun.30 Sep.30 Dec.31 Full Year		42.2%	42.6%	43.7%	43.7%	61.6%	69.7%	68.4%	70.2%	73.9%	75.3%	76.0%	76.0%	Capital Gains(mill)	Nil
Public Storage added to its already-diversified portfolio during 2016. The self-storage REIT acquired 55 facilities for an aggregate \$429 million last year, with the properties containing 4.1 million square feet of space. Elsewhere, it completed 16 in-house developments and expansion projects at a cost of \$269 million, adding 2.3 million square feet to the portfolio. At the end of 2016, PSA had interests in 2,348 locations across 38 states, comprising 154 million square feet, as well as 219 facilities in Western Europe under the Shurgard brand. (Public Storage had a stake in 2,277 stores at the close of 2015, containing 148 million square feet.)		13.2%	11.1%	9.5%	10.0%	10.0%	10.9%	10.3%	11.5%	8.5%	8.5%	9.0%	9.0%	Real Estate(\$mill)	12000
At the same time, the balance sheet remains in excellent shape. Total debt expanded from \$319.0 million at the end of 2015 to a manageable \$390.7 million; the ratio of debt-to-total capital was nominally higher, rising from 3% to a still-enviable 4%; and interest expense was negligible. All told, PSA's rock-solid finances should provide ample borrowing capacity for additional acquisitions and development.		4.7%	10.0%	9.0%	7.4%	9.5%	11.0%	8.8%	9.6%	11.1%	12.1%	13.0%	13.0%	Total Debt (\$mill)	800
As Public Storage is coming off of a record-setting 2016, we expect more stellar results this year. The portfolio performed well last year; average occupancy held even with 2015, at 94.5%; the average realized rent improved 6%, to \$16.65 per occupied square foot; and the cost of operations was kept in check, expanding a modest 3%. Revenues increased 8% in 2016, and ought to climb another 10%-12% in the current year, to \$2.85 billion. Too, funds from operations (FFO) should advance for an eight-straight year in 2017, to an all-time peak of \$10.50 per share, with most of the gain attributable to top-line growth. We're also introducing revenue and FFO estimates for 2018 of \$3.05 billion and \$11.30 per share, respectively, representing improvements of 7% and 8% from our current-year projections. In our view, the recent price represents a good entry point for conservative investors looking to generate current income. The stock carries our Highest rating for Safety (1), the company earns strong marks for Financial Strength (A+), and the dividend yield is competitive on a risk-adjusted basis. PSA is ranked 3 (Average) for Timeliness.		5.2%	10.7%	9.3%	7.7%	9.9%	11.5%	9.6%	9.6%	11.5%	12.6%	13.5%	13.5%	Share Equity (\$mill)	12750
Sharif Abdou		13.2%	11.1%	9.5%	10.0%	10.0%	10.9%	10.3%	11.5%	8.5%	8.5%	9.0%	9.0%	Div'ds Decl'd to FFO	70.0%
April 7, 2017		4.7%	10.0%	9.0%	7.4%	9.5%	11.0%	8.8%	9.6%	11.1%	12.1%	13.0%	13.0%	Expenses to Assets	9.0%
Company's Financial Strength A+		5.2%	10.7%	9.3%	7.7%	9.9%	11.5%	9.6%	9.6%	11.5%	12.6%	13.5%	13.5%	Return on Total Cap'l	12.5%
Stock's Price Stability 95		13.2%	11.1%	9.5%	10.0%	10.0%	10.9%	10.3%	11.5%	8.5%	8.5%	9.0%	9.0%	Return on Shr. Equity	13.0%
Price Growth Persistence 90		4.7%	10.0%	9.0%	7.4%	9.5%	11.0%	8.8%	9.6%	11.1%	12.1%	13.0%	13.0%		
Earnings Predictability 75		5.2%	10.7%	9.3%	7.7%	9.9%	11.5%	9.6%	9.6%	11.5%	12.6%	13.5%	13.5%		

(A) Dil. shares. Represents operating income starting in '06. Egs. and FFO may not add due to rounding and/or change in share count. Excludes disc. ops.: '10, 3¢. Next egs. rep. due in late April.
 (B) Div'ds historically paid in late Mar., Jun., Sep., and Dec. Special div'd \$0.60 paid 12/30/08.
 (C) In millions.
 (D) Excludes preferred equity.
 (E) Target Price Range calculated using Funds From Operations (FFO).
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SMUCKER (J.M.) CO. NYSE-SJM RECENT PRICE **127.77** P/E RATIO **19.4** (Trailing: 19.6 Median: 16.0) RELATIVE P/E RATIO **0.98** DIV/D YLD **2.3%** VALUE LINE **Target Price Range 2020-2022** May 22, 2017 Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
27.63	26.36	28.24	34.91	37.84	37.83	46.22	31.73	38.66	42.27	50.10	55.38	55.17	47.61	67.16	63.55	64.65	67.40	Sales per sh ^A	80.35
2.52	2.86	3.20	3.52	3.97	3.94	4.42	3.73	5.90	7.06	6.75	7.85	8.30	6.87	9.75	10.10	10.70	11.25	"Cash Flow" per sh	13.75
1.37	2.19	2.40	2.60	2.65	2.89	3.15	3.77	4.37	4.79	4.73	5.37	5.64	5.35	5.89	6.45	6.85	7.20	Earnings per sh ^{A B}	9.00
.64	.83	.92	1.02	1.08	1.14	1.22	1.31	1.45	1.68	1.92	2.08	2.32	2.56	2.68	2.92	3.00	3.10	Div'ds Decl'd per sh ^C	3.60
.94	1.00	2.00	1.50	1.11	1.00	1.40	.92	1.15	1.58	2.49	1.94	2.75	2.07	1.73	2.05	1.95	2.10	Cap'l Spending per sh	2.55
11.26	22.59	24.13	28.88	30.34	31.62	32.95	41.71	44.71	46.35	46.82	48.35	49.46	59.27	60.26	63.45	67.15	70.75	Book Value per sh ^D	83.55
24.87	49.77	50.17	58.54	56.95	56.78	54.62	118.42	119.12	114.17	110.28	106.49	101.70	119.58	116.31	116.40	116.00	115.00	Common Shs Outst'g ^E	112.00
22.4	16.5	18.4	18.1	17.1	16.5	16.9	12.0	12.5	13.2	16.2	16.0	18.3	19.6	20.1	Bold figures are Value Line estimates			Avg Ann'l P/E Ratio	18.0
1.15	.90	1.05	.96	.91	.89	.90	.72	.83	.84	1.02	1.02	1.03	1.03	1.01				Relative P/E Ratio	1.15
2.1%	2.3%	2.1%	2.2%	2.4%	2.4%	2.3%	2.9%	2.7%	2.7%	2.5%	2.4%	2.2%	2.4%	2.3%				Avg Ann'l Div'd Yield	2.2%

CAPITAL STRUCTURE as of 1/31/17				2014	2015	1/31/17												2018	20-22
Total Debt \$5087.0 mill. Due in 5 Yrs \$1780 mill.				14.1%	17.5%	22.1%	23.0%	20.1%	20.5%	21.4%	19.2%	20.0%	20.7%	21.5%	22.0%	Sales (\$mill) ^A	9000		
LT Debt \$4945.0 mill. LT Interest \$167.0 mill.				62.6	119.8	181.9	239.6	208.4	250.9	256.4	268.4	430.1	425	445	465	Operating Margin	22.5%		
(Total interest coverage: 7.7x)				178.9	321.4	520.3	566.5	535.6	584.5	588.0	552.9	704.2	750	795	825	Depreciation (\$mill)	530		
Leases, Uncapitalized Annual rentals \$39.4 mill.				33.1%	32.9%	33.1%	29.6%	35.3%	32.6%	32.8%	26.6%	29.1%	32.5%	32.5%	33.0%	Net Profit (\$mill)	1010		
(41% of Cap'l)				7.1%	8.6%	11.3%	11.7%	9.7%	9.9%	10.5%	9.7%	9.0%	10.2%	10.6%	10.6%	Income Tax Rate	33.0%		
Pension Assets-4/16 \$505.6 mill.				536.8	337.7	744.7	1154.3	1026.5	998.4	648.1	1029.7	360.4	675	900	1000	Net Profit Margin	11.2%		
Oblig. \$745.9 mill.				789.7	910.0	900.0	1304.0	2020.5	1967.8	1879.8	5944.9	5146.0	4900	4750	4650	Working Cap'l (\$mill)	1775		
Pfd Stock None				1799.9	4939.9	5326.3	5292.4	5163.4	5148.8	5029.6	7086.9	7008.5	7385	7790	8135	Long-Term Debt (\$mill)	5000		
Common Stock 116,441,146 shs.				7.7%	6.0%	8.9%	9.1%	8.0%	8.9%	9.1%	4.5%	6.5%	7.0%	7.0%	7.0%	Share Equity (\$mill)	9355		
as of 2/20/17				9.9%	6.5%	9.8%	10.7%	10.4%	11.4%	11.7%	7.8%	10.0%	10.0%	10.0%	10.0%	Return on Total Cap'l	7.5%		
MARKET CAP: \$14.9 billion (Large Cap)				6.2%	4.3%	6.6%	7.0%	6.2%	7.0%	7.0%	4.2%	5.5%	5.5%	5.5%	6.0%	Return on Shr. Equity	11.0%		
CURRENT POSITION				38%	34%	32%	34%	40%	38%	40%	46%	45%	45%	44%	43%	Retained to Com Eq	6.5%		
(\$MILL.)				38%	34%	32%	34%	40%	38%	40%	46%	45%	45%	44%	All Div'ds to Net Prof	40%			

BUSINESS: The J.M. Smucker Co. is a leading manufacturer of jams, jellies, coffee, and peanut butter. Also produces cooking oils, ice-cream toppings, juices, baking ingredients, and pet foods. In addition to the Smucker's brand, the company markets products under numerous other brands including Jif, Crisco, Folgers, Pillsbury, Dunkin' Donuts, Dickinson's, Carnation, Borden, Eagle Brand, Bick's, Uncrustables, R.W. Knudsen, Hungry Jack, Martha White, Meow Mix and Milk-Bone. Has about 6,910 employees. Smucker family owns 3.8% of stock. Off/dir. own 3.5%; The Vanguard Group 9.2% (7/16 Proxy). Chrmn.: Richard Smucker. CEO: Mark Smucker, Inc.: Ohio. Address: One Strawberry Lane, Orville, OH 44667. Telephone: 330-682-3000. Internet: www.jmsmucker.com.

We are once again lowering our fiscal 2016 (ends April 30, 2017) earnings estimate for J.M. Smucker Company. Smucker continues to be plagued by top-line softness. Much of the recent setback has been the result of weakness in the Retail Coffee and Retail Pet Foods segments. The Coffee segment witnessed sales and operating profit declines of 7% and 12%, respectively, in the fiscal third quarter. Reduced Folgers sales offset gains in the Dunkin' Donuts and Cafe Bustelo lines. Likewise, sales of pet foods fell, with the primary culprit being a decline in pet snacks volume. In general, the Coffee and Pet Foods units were hurt by price cuts and aggressive promotional activity by its main competitors. **Our outlook for fiscal 2017 now is a bit more pessimistic than it was earlier this year.** As noted above, recent sales trends have been very disappointing, and we think a recovery may be several quarters away. The main problem will likely be the pet foods business, where industry leaders (Nestle and Mars) continue to be very aggressive with pricing and promotions. On the other hand, we expect the U.S. Retail Coffee segment to show improvement in the coming fiscal year. The recent decision by Kraft Heinz to raise prices for its Maxwell House coffee line should drive more customers back to Folgers. Nevertheless, we are still lowering our fiscal 2017 bottom-line estimate by \$0.15 a share, to \$6.85. (Note: Our per-share presentation includes the amortization of intangible assets.) **The recent top-line weakness has forced Smucker to rethink its strategy.** The main difference going forward will be to shift focus from product-line extensions to new platforms. New products include Folgers Perfect Measures, Dunkin' Donuts Cold Brews, Milk Bone Farmer's Medley, and ready-to-drink Numi tea. Smucker plans to use majority of its savings from its aggressive cost-cutting initiatives on product development. **Smucker stock doesn't stand out for Timeliness.** We don't see many near-term catalysts to push these shares notably higher. That said, this high-quality stock should continue to appeal to conservative, income-oriented investors. *William G. Ferguson* April 21, 2017

Fiscal Year Begins	Jul.31	Oct.31	Jan.31	Apr.30	Full Fiscal Year
2014	1323.8	1481.8	1440.0	1447.1	5692.7
2015	1952.0	2077.7	1973.9	1807.6	7811.2
2016	1815.8	1913.9	1878.8	1791.5	7400
2017	1840	1940	1900	1820	7500
2018	1900	2000	1965	1885	7750

Fiscal Year Begins	Jul.31	Oct.31	Jan.31	Apr.30	Full Fiscal Year
2014	1.34	1.53	1.54	.98	5.35
2015	1.32	1.62	1.76	1.19	5.89
2016	1.57	1.76	1.70	1.42	6.45
2017	1.62	1.83	1.85	1.55	6.85
2018	1.70	1.90	1.97	1.63	7.20

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.52	.52	.58	.58	2.20
2014	.58	.58	.64	.64	2.44
2015	.64	.64	.67	.67	2.62
2016	.67	.67	.75	.75	2.84
2017	.75				

(A) FY ends April 30th of the following calendar year. (B) Dil. egs. Excl. nonrecur./disc. loss: '01, 13c; '02, 17c; '03, 19c; '04, 36c; '05, 20c; '06, 13c; '07, 15c; '08, 65c; '09, 22c; '10, 74c; '11, 67c; '12, 37c; '13, 22c; '14, \$2.02; '15, 13c; '16 Q1-Q3, 89c. Egs. may not sum due to share change. Next earnings report due early June. (C) Div'd paid in Mar., June, Sept., Dec. (D) Div'd reinvest. plan avail. Paid \$5-a-shr. spcl. div'd., 10/08. (E) Incl. intang. In FY '15: \$108.21/sh. (F) Merged with Folgers. **Company's Financial Strength** A++ **Stock's Price Stability** 95 **Price Growth Persistence** 90 **Earnings Predictability** 95 **To subscribe call 1-800-VALUELINE**

SYSCO CORP. NYSE:SY

RECENT PRICE **52.08** P/E RATIO **20.7** (Trailing: 22.2; Median: 18.0) RELATIVE P/E RATIO **1.05** DIV/D YLD **2.6%** VALUE LINE **Target Price Range 2020-2022** Item No. 73 Attachment 67

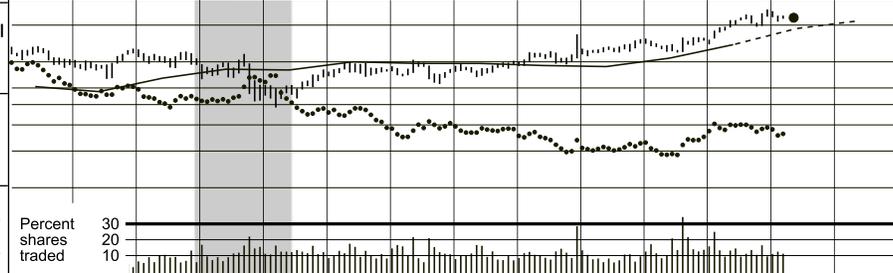
TIMELINESS 3 Raised 3/10/17
SAFETY 1 Raised 11/13/98
TECHNICAL 2 Lowered 4/21/17
BETA .75 (1.00 = Market)

High: 37.0 36.7 35.0 29.5 32.0 32.8 32.4 43.4 41.2 42.0 57.1 55.9
Low: 26.5 29.9 20.7 19.4 27.0 25.1 27.0 30.5 34.1 35.4 38.8 49.9

LEGENDS
--- 12.0 x "Cash Flow" p sh
... Relative Price Strength
Options: Yes
Shaded area indicates recession

2020-22 PROJECTIONS

Price	Gain	Ann'l Total Return
High 65	(+25%)	8%
Low 55	(+5%)	4%



Target Price Range	2020	2021	2022
	120	100	80
	64	48	32
	24	20	16
	12	8	

% TOT. RETURN 3/17

THIS STOCK INDEX	VL ARITH. INDEX
1 yr. 13.2	20.2
3 yr. 56.9	22.0
5 yr. 101.6	78.0

Insider Decisions

J	J	A	S	O	N	D	J	F
to Buy	1	0	0	0	0	0	0	0
Options	4	13	2	1	16	19	2	1
to Sell	5	2	2	1	2	5	2	3

Institutional Decisions

2Q2016	3Q2016	4Q2016
to Buy 426	391	434
to Sell 430	464	495
Hld's(000) 430127	424527	422174

Percent shares traded: 30, 20, 10

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
32.75	35.73	40.61	46.09	48.18	52.72	57.27	62.41	62.46	63.30	66.35	72.33	75.77	79.36	81.91	90.01	102.80	109.60	Sales per sh ^A	138.95
1.27	1.47	1.63	1.87	2.03	1.92	2.23	2.46	2.44	2.67	2.62	2.63	2.57	2.54	2.78	3.22	3.85	4.20	"Cash Flow" per sh	5.40
.90	1.01	1.18	1.37	1.47	1.36	1.60	1.81	1.77	1.99	1.96	1.90	1.67	1.58	1.84	2.10	2.45	2.70	Earnings per sh ^B	3.55
.28	.36	.40	.48	.56	.66	.74	.85	.94	.99	1.03	1.07	1.11	1.16	1.19	1.23	1.30	1.38	Div'ds Decl'd per sh ^C	1.60
.51	.64	.68	.83	.62	.83	.99	.86	.79	1.01	1.07	1.34	.87	.89	.91	.94	1.10	1.25	Cap'l Spending per sh	1.45
3.23	3.26	3.41	4.03	4.39	4.93	5.36	5.67	5.85	6.51	7.94	8.00	8.86	8.99	8.85	6.22	4.70	4.25	Book Value per sh ^E	3.35
665.14	653.54	643.66	636.54	628.57	618.90	611.84	601.23	590.03	588.38	592.70	585.95	586.11	586.12	594.32	559.60	535.00	520.00	Common Shs Outst'g ^D	475.00
28.2	27.1	24.3	25.9	23.6	23.4	20.8	17.2	14.3	13.8	15.0	15.1	19.2	22.2	20.8	20.3	<i>Bold figures are Value Line estimates</i>		Avg Ann'l P/E Ratio	17.0
1.45	1.48	1.39	1.37	1.26	1.26	1.10	1.04	.95	.88	.94	.96	1.08	1.17	1.05	1.06			Relative P/E Ratio	1.05
1.1%	1.3%	1.4%	1.4%	1.6%	2.1%	2.2%	2.7%	3.7%	3.6%	3.5%	3.7%	3.5%	3.3%	3.1%	2.9%			Avg Ann'l Div'd Yield	2.7%

CAPITAL STRUCTURE as of 12/31/16
Total Debt \$8322.6 mill. Due in 5 Yrs \$2574.2 mill.
LT Debt \$8313.7 mill. LT Interest \$330.0 mill.
(Total interest coverage: 9.1x)

35042	37522	36853	37243	39323	42381	44411	46517	46861	50367	55000	57000
5.9%	6.0%	6.1%	6.4%	5.9%	5.4%	4.9%	4.6%	4.8%	5.2%	5.6%	5.7%
362.6	372.5	382.3	390.0	402.6	416.9	512.5	556.1	553.0	589.2	710	745
1001.1	1106.2	1055.9	1181.6	1152.0	1121.6	992.4	931.5	1100.2	1214.1	1340	1425
38.3%	38.3%	40.4%	36.2%	37.0%	37.1%	35.9%	36.9%	35.6%	34.8%	35.0%	34.8%
2.9%	2.9%	2.9%	3.2%	2.9%	2.6%	2.2%	2.0%	2.3%	2.4%	2.4%	2.5%
1260.5	1675.7	2120.5	2067.1	2157.8	2661.2	2458.1	2314.4	2094.7	5619.4	3325	3000
1758.2	1975.4	2467.5	2472.7	2279.5	2763.7	2640.0	2384.2	2271.8	7336.9	9000	9000
3278.4	3409.0	3449.7	3827.5	4705.2	4685.0	5191.8	5266.7	5260.2	3479.6	2520	2210
20.8%	21.5%	18.8%	19.7%	17.3%	15.8%	13.5%	13.0%	15.4%	11.8%	13.0%	14.0%
30.5%	32.4%	30.6%	30.9%	24.5%	23.9%	19.1%	17.7%	20.9%	34.9%	53.0%	64.5%
16.9%	17.9%	14.7%	15.7%	11.8%	10.6%	6.6%	5.0%	7.7%	14.8%	25.0%	31.5%
44%	45%	52%	49%	52%	56%	65%	72%	63%	58%	53%	52%

Leases, Uncapitalized Annual rentals \$49.9 mill.
Pension assets-6/16 \$3115.0 mill.
Oblig. \$4284.8 mill.

Pfd Stock None
Common Stock 540,382,552 shs.

MARKET CAP: \$28.1 billion (Large Cap)

CURRENT POSITION 2015 2016 12/31/16 (\$MILL.)

Cash Assets	5130.0	3919.3	847.3
Receivables	3353.4	3381.0	3963.5
Inventory (FIFO)	2691.8	2639.2	3031.5
Other	319.1	114.4	168.9
Current Assets	11494.3	10053.9	8011.2
Accts Payable	2882.0	2936.0	3549.6
Debt Due	4979.3	8.9	8.9
Other	1538.3	1489.6	1493.8
Current Liab.	9399.6	4434.5	5052.3

ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '20-'22

change (per sh)	5.5%	5.5%	9.0%
Sales	4.0%	-2.0%	11.5%
"Cash Flow"	3.0%	-5.0%	11.5%
Earnings	7.5%	4.0%	5.0%
Dividends	6.0%	3.5%	-13.5%
Book Value			

BUSINESS: Sysco Corporation is the leading distributor of food, equipment, supplies, and related products to the North American foodservice industry. It has approx. 425,000 customers in the U.S. and Canada. Brakes Group (acq'd 7/16) has leading market positions in the U.K., France, and Sweden. The company serves restaurants, educational institutions, hospitals, nursing homes, and

hotels. Sysco has 197 distribution facilities and self-service centers in the U.S., Canada, and Ireland. Has about 52,000 employees. Nelson Peiz (Triam Fund) owns 8.0% of common stock outstanding; other offs. and dirs., .8% (10/16 proxy). CEO: William J. DeLaney. Incorp.: DE. Address: 1390 Enclave Parkway, Houston, TX 77077-2099. Telephone: 281-584-1390. Internet: www.sysco.com.

QUARTERLY SALES (\$ mill.) ^A

Fiscal Year Ends	Sep.Per	Dec.Per	Mar.Per	Jun.Per	Full Fiscal Year
2014	11714	11238	11278	12287	46517
2015	12445	12087	11747	12402	48681
2016	12563	12154	12003	13648	50367
2017	13969	13457	13250	14324	55000
2018	14500	14000	13750	14750	57000

A recent acquisition has made a strong impression at Sysco. Last July's \$3.1 billion purchase of Brakes Group made the company a significant player in the U.K., France, and Sweden. These operations contributed \$0.11 a share to earnings in the first half of fiscal 2017, including \$0.07 in the December quarter. (Year ends July 1st.) Management has noted, though, that the Brakes business is more seasonal than domestic operations and would likely be a slight drag on profits in the March quarter and contribute little to the bottom line in the June period.

have been lackluster, with volume declines at multiunit customers contributing to a slight decline in division revenues in the December period.

We look for earnings to climb 10% in fiscal 2018. Profit accretion from the Brakes deal should expand next fiscal year, and Sysco also sees ample room for improvement in the rest of its operations. Indeed, management anticipates that efforts begun in 2015 to boost local volumes, improve gross margins, and control operating expenses will provide sizable incremental benefits to operating income before the end of next fiscal year.

EARNINGS PER SHARE ^{AB}

Fiscal Year Ends	Sep.Per	Dec.Per	Mar.Per	Jun.Per	Full Fiscal Year
2014	.48	.36	.31	.43	1.58
2015	.51	.41	.40	.52	1.84
2016	.52	.48	.46	.64	2.10
2017	.67	.58	.50	.70	2.45
2018	.73	.64	.56	.77	2.70

The U.S. Foodservice division has been making good progress. Adjusted operating income in this segment, which accounts for about two-thirds of total revenues, rose 9% in December quarter. An improving product mix, better pricing strategies, cost deflation, and good expense control spearheaded the gains, and continued progress in most of these areas, along with the boost provided by share repurchases, should keep earnings on the rise in the second half of fiscal 2017. In all, full-year share net ought to climb 17%, to \$2.45. On the downside, top-line trends

This stock will likely have some appeal with conservative accounts. Aside from carrying our Highest rank (1) for Safety, this equity offers an above-average dividend yield and prospect of steady increases in the payout to 2020-2022. That said, 3- to 5-year capital appreciation potential for these neutrally ranked shares looks unexciting, suggesting buy-and-hold investors should await a more attractive entry point before establishing a position here.

Robert M. Greene
April 21, 2017

QUARTERLY DIVIDENDS PAID ^C

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.28	.28	.28	.28	1.12
2014	.29	.29	.29	.29	1.16
2015	.30	.30	.30	.30	1.20
2016	.31	.31	.31	.31	1.24
2017	.33				

(A) Fiscal year ends Saturday closest to June 30th. (B) Diluted earnings. Excludes nonrecurring gains/(losses): '15, (\$0.69); '16, (\$0.46). (C) Dividends historically paid late January, April, July, October. ■ Dividend reinvestment plan available. (D) In millions. (E) Includes intangibles. In '16, \$4.16/share.

VERIZON NYSE-VZ

RECENT PRICE **49.44** P/E RATIO **12.7** (Trailing: 12.8; Median: 14.0) RELATIVE P/E RATIO **0.65** DIV/D YLD **4.7%** VALUE LINE

High: 38.9 46.2 44.3 34.8 36.0 40.3 48.8 54.3 53.7 50.9 56.9 54.8
Low: 30.0 35.6 23.1 26.1 26.0 32.3 36.8 41.5 45.1 38.1 43.8 47.8

TIMELINESS **2** Raised 1/20/17
SAFETY **1** Raised 9/28/07
TECHNICAL **3** Lowered 3/10/17
BETA .75 (1.00 = Market)

2020-22 PROJECTIONS

High	90	Gain	(+80%)	Ann'l Total Return	19%
Low	75		(+50%)		15%

Insider Decisions

M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0
Options	0	0	0	0	1	0	0	0
to Sell	1	1	1	1	1	1	1	0

Institutional Decisions

2Q2016	3Q2016	4Q2016	Percent shares traded
954	915	988	24
795	836	839	16
Hld's(000)	260434825548242602176		8

© VALUE LINE PUB. LLC

2001E	2002	2003	2004	2005	2006	2007F	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22		
24.73	24.63	24.46	25.73	25.59	30.29	32.56	34.27	38.02	37.68	39.10	40.53	29.11	30.58	32.31	30.90	32.25	31.70	Revenues per sh	33.55	
8.11	7.93	7.55	7.64	7.24	7.07	7.40	7.65	8.12	8.01	7.96	7.85	6.79	7.94	5.80	5.80	5.85	5.85	"Cash Flow" per sh	6.15	
3.00	3.05	2.62	2.59	2.56	2.54	2.34	2.54	2.40	2.21	2.15	2.32	4.00	3.35	3.99	3.87	3.90	4.00	Earnings per sh (A)	4.65	
1.54	1.54	1.54	1.54	1.62	1.62	1.65	1.78	1.87	1.93	1.96	2.02	2.08	2.16	2.23	2.29	2.32	2.36	2.36	Div's Decl'd per sh (B)	2.48
6.39	4.36	4.29	4.79	5.24	5.88	6.11	6.07	6.01	5.82	5.73	5.66	4.01	4.14	4.36	4.18	4.20	4.25	4.25	Cap'l Spending per sh	4.45
11.98	11.88	12.08	13.56	13.56	16.68	17.62	14.68	14.67	13.64	12.69	11.60	9.38	2.96	4.03	4.00	4.00	4.00	4.00	Book Value per sh	6.00
2717.2	2745.8	2769.4	2770.0	2926.8	2909.9	2871.0	2840.6	2835.7	2828.1	2835.5	2858.3	4141.1	4155.4	4073.2	4076.7	4050.0	4000.0	4000.0	Common Shs Outst'g (C)	3950.0
17.3	13.0	13.7	14.8	13.2	13.4	17.6	13.7	12.7	13.8	17.1	18.1	12.2	14.5	11.8	13.3	11.8	13.3	11.8	Avg Ann'l P/E Ratio	17.5
.89	.71	.78	.78	.70	.72	.93	.82	.85	.88	1.07	1.15	.69	.76	.59	.70	.59	.70	.59	Relative P/E Ratio	1.10
3.0%	3.9%	4.3%	4.0%	4.8%	4.8%	4.0%	5.1%	6.1%	6.3%	5.3%	4.8%	4.3%	4.4%	4.7%	4.5%	4.7%	4.5%	4.7%	Avg Ann'l Div'd Yield	3.1%

CAPITAL STRUCTURE as of 12/31/16

Total Debt \$108078 mill. Due in 5 Yrs \$32097mill.	93469	97354	107808	106565	110875	115846	120550	127079	131620	125980	125500	126800	Revenues (\$mill)	132500
LT Debt \$105433 mill. LT Interest \$1795 mill.	6854.0	7235.0	6805.0	6256.6	6086.8	5970.4	11497	13337	16324	13608	13750	16000	Net Profit (\$mill)	18370
Incl. \$950.0 mill. capitalized leases.	35.6%	34.4%	33.1%	19.5%	2.7%	--	19.6%	29.9%	34.6%	32.5%	34.0%	34.0%	Income Tax Rate	35.0%
(Total interest coverage: 7.1x)	7.3%	7.4%	6.3%	5.9%	5.5%	5.2%	9.5%	10.5%	12.4%	10.8%	11.0%	12.6%	Net Profit Margin	13.9%
(81% of Total Cap'l.)	25.4%	37.3%	39.5%	34.2%	36.9%	35.8%	48.4%	89.0%	85.3%	81.0%	80.0%	80.0%	Long-Term Debt Ratio	80.0%
Leases, Uncapitalized Annual rentals \$2822 mill.	45.5%	33.1%	29.8%	29.2%	26.4%	24.9%	21.0%	9.9%	13.5%	19.0%	19.0%	20.0%	Common Equity Ratio	20.0%
Pension Assets-12/16 \$14663 mill.	111072	125864	139418	132164	136211	133151	185074	124212	121547	120000	121000	121500	Total Capital (\$mill)	125500
Oblig. \$21112 mill.	85294	86546	91466	87711	88434	88642	88956	89947	83541	85000	85500	86000	Net Plant (\$mill)	91000
Pfd Stock None	8.8%	8.3%	7.2%	7.6%	7.2%	7.5%	9.0%	11.0%	13.7%	11.5%	11.5%	11.5%	Return on Total Cap'l	14.0%
Common Stock 4,076,731,752 shs.	13.6%	17.3%	16.4%	16.2%	16.9%	18.0%	29.6%	108.4%	NMF	NMF	NMF	NMF	Return on Shr. Equity	13.0%
MARKET CAP: \$202 billion (Large Cap)	13.6%	17.3%	16.4%	16.2%	16.9%	18.0%	29.6%	108.4%	NMF	NMF	NMF	NMF	Return on Com Equity	13.0%
CURRENT POSITION	4.1%	5.4%	3.7%	2.2%	1.5%	2.2%	14.3%	45.0%	47.4%	48.0%	48.0%	48.0%	Retained to Com Eq	45.0%
(\$MILL.)	70%	69%	77%	87%	91%	88%	52%	59%	52%	69%	68%	59%	All Div'ds to Net Prof	53%

BUSINESS: Verizon Communications was created by the merger of Bell Atlantic and GTE in June of 2000. It is a diversified telecom company with a network that covers a population of about 298 million and provides service to nearly 98.2 million. Acquired MCI, 1/06; Alltel, 1/09; Verizon Wireless, 2/14. Also the largest provider of print and on-line directory information. Has a wireline presence in 28 states & Washington, D.C.; a wireless presence in 50 states & D.C.; operations in 19 countries. 2016 revenue breakdown: wireline (includes telecom & business), 29%; domestic wireless, 71%. Has approximately 160,900 employees. Chairman and CEO: Lowell McAdam, Inc.; Delaware. Addr.: 1095 Avenue of the Americas, NY, NY 10036. Tel.: 212-395-1000. Internet: www.verizon.com.

ANNUAL RATES

Past 10 Yrs.	Past 5 Yrs.	Est'd '13-'15 to '20-'22	
Revenues	2.0%	-3.5%	2.0%
"Cash Flow"	--	-1.5%	NMF
Earnings	4.0%	9.5%	3.0%
Dividends	3.0%	3.0%	2.0%
Book Value	-8.5%	-17.5%	5.5%

QUARTERLY REVENUES (\$mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	30818	31483	31586	33192	127079
2015	31984	32224	33158	34254	131620
2016	32171	30532	30937	32340	125980
2017	31000	30650	31250	32600	125500
2018	31300	31000	31575	32925	126800

EARNINGS PER SHARE A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.84	.91	.89	.71	3.35
2015	1.02	1.04	1.04	.89	3.99
2016	1.06	.94	1.01	.86	3.87
2017	1.01	1.01	1.00	.88	3.90
2018	1.03	1.04	1.03	.90	4.00

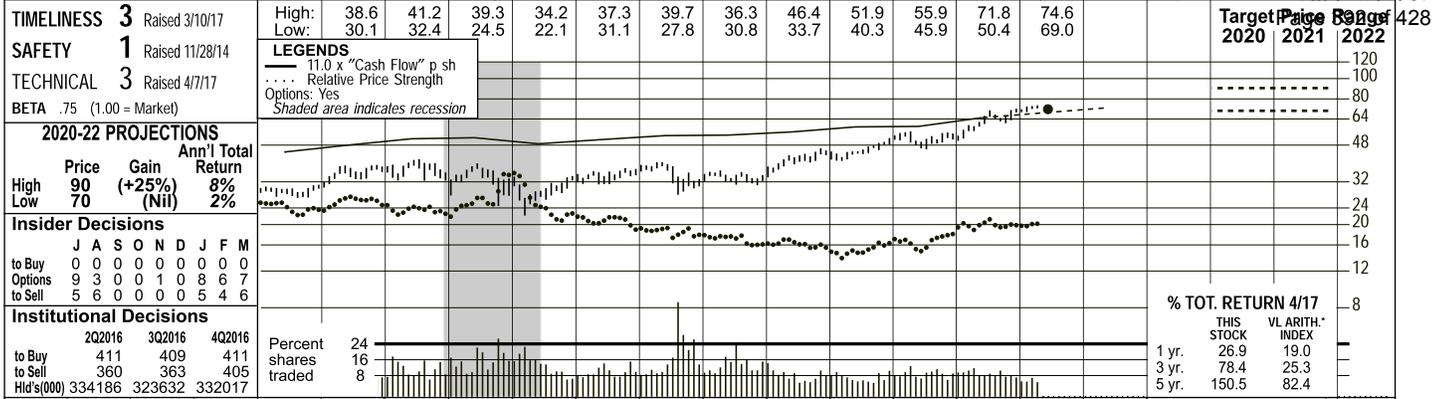
QUARTERLY DIVIDENDS PAID B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.515	.515	.515	.53	2.08
2014	.53	.53	.53	.55	2.16
2015	.55	.55	.565	.565	2.23
2016	.565	.565	.58	.58	2.29
2017	.58				

Verizon seems poised for an underwhelming performance in 2017. To wit, this Dow-30 component posted fourth-quarter earnings of \$0.86 a share, well below our estimate and three cents below the year-ago result, on a 5.6% drop in revenue. These uninspiring results come as no great surprise, as we had warned in our December review that the outlook for the next couple of years was nothing to write home about, due to the combined effects of the April 1st sale of the company's high-margined wireline operations in California, Florida, and Texas to Frontier Communications, the ongoing shift of wireless customers to device payment plans, and the ramping up of its new business model. **In the meantime, the company has a number of pending transactions in the hopper.** Verizon expects its acquisition of XO Communications to close during the March period, while the sale of its data centers to Equinix is slated to be completed in the June interim. Lastly, the terms of the Yahoo acquisition were recently amended, with the purchase price pared by \$350 million, given recent data breaches at Yahoo. This \$4.48 billion deal

ought to close in the second quarter too. **Verizon's board of directors is certainly dedicated to boosting shareholder value.** In early March, the board authorized the repurchase of up to 100 million shares of its outstanding common stock. A previous buyback program, which expired on February 28th, had authorized the repurchase of 100 million shares, yet only 2.8 million shares were bought back. The new program will end when the aggregate number of shares bought back hits the 100 million mark, or at the close of business on February 28, 2020, whichever occurs first. **High-quality Verizon stock has something for everyone.** The issue's Timeliness rank has moved up a notch since our December review, and it is now pegged to outperform the year-ahead market averages. And, at the recent quotation, the equity's 3- to 5-year appreciation potential is almost twice that of the average selection under our review. Lastly, income-seeking investors will certainly be pleased by Verizon's dividend yield, which is more than double the Value Line median. *Kenneth A. Nugent*
March 17, 2017

WASTE MANAGEMENT NYSE-WM RECENT PRICE **71.25** P/E RATIO **22.6** (Trailing: 23.8 Median: 17.0) RELATIVE P/E RATIO **1.16** DIV/D YLD **2.4%** VALUE LINE **Target Price Range 2020-2022** May 22, 2017 Item No. 73 Attachment 67



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
18.03	18.74	20.09	21.95	23.67	25.04	26.61	27.28	24.26	26.34	29.05	29.40	30.12	30.52	28.98	30.98	32.85	34.25	Revenues per sh	39.00
3.35	3.42	3.47	3.78	4.05	4.36	4.68	4.74	4.43	4.64	4.86	4.87	5.04	5.34	5.36	5.91	6.25	6.60	"Cash Flow" per sh	7.55
1.16	1.31	1.24	1.41	1.55	1.82	2.07	2.19	2.00	2.10	2.14	2.08	2.15	2.48	2.53	2.91	3.15	3.50	Earnings per sh A	4.00
.01	.01	.01	.75	.85	.88	.96	1.08	1.16	1.26	1.36	1.42	1.46	1.50	1.54	1.64	1.70	1.75	Div'ds Decl'd per sh B	2.00
2.11	2.16	2.08	2.21	2.14	2.49	2.42	2.49	2.43	2.32	2.88	3.25	2.74	2.51	2.76	3.05	2.75	2.80	Cap'l Spending per sh	3.15
8.59	8.93	9.66	10.47	11.08	11.66	11.58	12.03	12.93	13.18	13.18	13.69	12.29	12.79	11.95	12.06	12.25	12.70	Book Value per sh C	14.00
628.02	594.60	576.12	570.21	552.25	533.68	500.12	490.74	486.12	475.05	460.53	464.22	464.32	458.54	447.18	439.32	435.00	432.00	Common Shs Outst'g D	410.00
23.9	19.6	19.8	20.4	18.7	19.4	17.7	15.4	14.6	16.3	16.4	16.2	18.9	18.2	20.4	21.3	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	20.0
1.22	1.07	1.13	1.08	1.00	1.05	.94	.93	.97	1.04	1.03	1.03	1.06	.96	1.03	1.13			Relative P/E Ratio	1.25
.0%	.0%	.0%	2.6%	2.9%	2.5%	2.6%	3.2%	4.0%	3.7%	3.9%	4.2%	3.6%	3.3%	3.0%	2.6%			Avg Ann'l Div'd Yield	2.5%

CAPITAL STRUCTURE as of 3/31/17		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		20-22
Total Debt \$9042 mill. Due in 5 Yrs \$2918 mill. LT Debt \$8646 mill. LT Interest \$376 mill. (LT int. earned: 5.9x)		13310	13388	11791	12515	13378	13649	13983	13996	12961	13609	14300	14800	Revenues (\$mill)	16000						
(61% of Cap'l)		26.4%	25.7%	27.1%	25.8%	24.9%	24.7%	24.3%	25.1%	26.1%	27.3%	26.5%	26.5%	Operating Margin	27.0%						
Leases, Uncapitalized Annual rentals \$109 mill.		1259.0	1238.0	1166.0	1194.0	1229.0	1297.0	1333.0	1292.0	1245.0	1301.0	1325	1335	Depreciation (\$mill)	1410						
No Defined Benefit Pension Plan		1080.0	1087.0	986.0	1011.0	1007.0	966.0	1008.0	1155.0	1153.0	1297.3	1390	1525	Net Profit (\$mill)	1680						
Pfd Stock None.		36.4%	38.1%	34.9%	35.0%	33.6%	34.0%	30.0%	29.8%	32.7%	34.3%	35.0%	35.0%	Income Tax Rate	35.0%						
Common Stock 439,316,000 shs. MARKET CAP: \$31.3 billion (Large Cap)		8.1%	8.1%	8.4%	8.1%	7.5%	7.1%	7.2%	8.3%	8.9%	9.5%	9.7%	10.3%	Net Profit Margin	10.5%						
CURRENT POSITION 2015 2016 3/31/17		d118.0	d701.0	109.0	d3.0	d689.0	d613.0	d515.0	156.0	d165.0	d418.0	d350	d280	Working Cap'l (\$mill)	d135						
		8008.0	7491.0	8124.0	8674.0	9125.0	9173.0	9500.0	8345.0	8728.0	8893.0	8795	8795	Long-Term Debt (\$mill)	8595						
		5792.0	5902.0	6285.0	6260.0	6070.0	6354.0	5707.0	5866.0	5345.0	5297.0	5335	5495	Shr. Equity (\$mill)	5730						
		9.7%	9.8%	8.3%	8.4%	8.2%	7.8%	8.2%	9.8%	9.6%	10.5%	11.0%	12.0%	Return on Total Cap'l	13.0%						
		18.6%	18.4%	15.7%	16.2%	16.6%	15.2%	17.7%	19.7%	21.6%	24.5%	26.0%	27.5%	Return on Shr. Equity	29.5%						
		10.1%	9.4%	6.6%	6.5%	6.1%	4.8%	5.7%	7.9%	8.6%	10.8%	12.0%	14.0%	Retained to Com Eq	14.5%						
		46%	49%	58%	60%	63%	68%	68%	60%	60%	56%	54%	50%	All Div'ds to Net Prof	50%						

BUSINESS: Waste Management is North America's largest provider of comprehensive waste management environmental services. It serves resid., comm., ind., & muni. customers in N.Amer. Sold waste-to-energy service business in 12/14. It owns/operates about 248 landfills, 95 material recovery facilities (MRFs), 600 collection operations and 310 transfer stations in N. Amer.; '16 sales mix consisted of collection (65%), landfill fees (15%), and recycling and transfer (20%); commercial and industrial customers account for about 43% of revenues. Has 41,200 employees. Off/dir. control less than 1.0% of stock (3/17 proxy). Chairman.: John C. Pope. CEO: James Fish. Inc.: DE. Address.: 1001 Fannin St., Suite 4000, Houston, TX 77002. Tel.: 713-512-6200. Internet: www.wm.com.

Waste Management's first-quarter results were in line with our estimates. The top line clocked in 8% higher on a year-over-year basis, at \$3.44 billion. The increase came mainly from better-than-expected collection revenues (where the commercial and industrial collections were the primary drivers of revenues). Furthermore, the bottom line advanced nearly 14% over the prior-year tally on an adjusted basis, at \$0.66 a share, owing to improved income from its Solid Waste segment, along with better recycling commodity market prices.

We are maintaining our share-earnings estimate for this year at \$3.15 but raising next year's figure by \$0.10, to \$3.50. The company can still benefit from an increase in infrastructure activities especially over the next two quarters, since construction activities, take place mostly during the summer months. Such undertakings are likely to produce debris, the collection and recycling of which should benefit its bottom line. Additionally, a lower share count due to the ongoing share repurchases should further boost the bottom line. However, we remain

wary of the volatility in the recycling commodity prices and therefore have left our share-net estimate for 2017 untouched. Although we see more acquisitions on WM's radar going forward, we have not taken benefits from such purchases into account as per the Value Line norm. Nevertheless, the aforementioned share buybacks, divestiture of unprofitable business lines, and gains from past acquisitions should bear fruit for the bottom line in 2018.

This equity is now ranked to perform in line with the broader market averages. While the stock's long-term appreciation potential remains well below average, we still like Waste Management for its strong fundamentals and stability. With a perfect score for Price Stability (100) and a below-market Beta of 0.75, WM is a safe choice for most conservative and long-term investors. Also, an above-average mark for Financial Strength (A), adds a cherry on top. Plus, WM has a good dividend yield and we expect payments to rise over the next 3 to 5 year, as the company is constantly working toward shareholder value creation.

Emma Jalees
May 26, 2017

Cal-ender	Q1	Q2	Q3	Q4	Full Year
2014	3396	3561	3602	3437	13996
2015	3040	3315	3360	3246	12961
2016	3176	3425	3548	3460	13609
2017	3440	3660	3700	3500	14300
2018	3550	3750	3800	3700	14800

Cal-ender	Q1	Q2	Q3	Q4	Full Year
2014	.49	.60	.72	.67	2.48
2015	.48	.67	.67	.71	2.53
2016	.58	.74	.84	.75	2.91
2017	.66	.84	.90	.75	3.15
2018	.75	.90	1.00	.85	3.50

Cal-ender	Q1	Q2	Q3	Q4	Full Year
2013	.365	.365	.365	.365	1.46
2014	.375	.375	.375	.375	1.50
2015	.385	.385	.385	.385	1.54
2016	.41	.41	.41	.41	1.64
2017	.425	.425			

(A) Based on diluted shares. Next earnings report due late July. Excludes extraord. losses: '01, \$0.36; '03, \$0.18; '10, \$0.12; '11, \$0.10; '12, \$0.22; '13, \$1.94; '15, \$0.88. Excl. extraord. gains: '02, \$0.02; '04, \$0.20; '05, \$0.54; '06, \$0.28; '07, \$0.16; '09, \$0.01; '14, \$0.31; '15 Q2, \$0.10; '16, \$0.26; '17 Q1, \$0.01.

(B) Dividends usually paid in late March, June, Sept., and Dec. Div. reinvestment plan avail. (C) Incl. intangs. At '16: 6806 mill., \$15.43. (D) In millions.

Company's Financial Strength A
Stock's Price Stability 100
Price Growth Persistence 45
Earnings Predictability 100

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90 Days Ago

HSBC Securities: Reduce to Hold 9/26/2016

EPS Revisions				
	Current Qtr (Jun 2017)	Next Qtr (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days				N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates				
	Industry	Sector	S&P 500	
Current Qtr.	2.80%	N/A	N/A	0.20
Next Qtr.	2.70%	N/A	N/A	0.21
Current Year	2.50%	N/A	N/A	0.08
Next Year	1.70%	N/A	N/A	0.12
Next 5 Years (per annum)	7.90%	N/A	N/A	0.10
Past 5 Years (per annum)	4.31%	N/A	N/A	N/A

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90 Days Ago

Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current year (2017)	Next year (2018)
N/A	N/A	N/A	N/A

EPS Revisions

	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current year (2017)	Next year (2018)
Up Last 7 Days	N/A	N/A		
Up Last 30 Days	N/A			
Down Last 30 Days		N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates

	2017	2018	2019	2020
Current Qtr.	-9.30%	N/A	N/A	0.20
Next Qtr.	10.60%	N/A	N/A	0.21
Current Year	9.00%	N/A	N/A	0.08
Next Year	7.30%	N/A	N/A	0.12
Next 5 Years (per annum)	8.24%	N/A	N/A	0.10
Past 5 Years (per annum)	9.65%	N/A	N/A	N/A

90 Days Ago				
EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	
Up Last 30 Days				
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A
Growth Estimates	KO	Industry	Sector	S&P 500
Current Qtr.	-3.30%	N/A	N/A	0.20
Next Qtr.	N/A	N/A	N/A	0.21
Current Year	-1.00%	N/A	N/A	0.08
Next Year	4.80%	N/A	N/A	0.12
Next 5 Years (per annum)	4.83%	N/A	N/A	0.10
Past 5 Years (per annum)	-2.68%	N/A	N/A	N/A

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EPS Revisions		Current Qtr. (May 2017)	Next Qtr. (Aug 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days		N/A	N/A	N/A	N/A
Up Last 30 Days		N/A	N/A		N/A
Down Last 30 Days		N/A	N/A	N/A	N/A
Down Last 90 Days		N/A	N/A	N/A	N/A

Growth Estimates		GIS	Industry	Sector	BK2016
Current Qtr.		9.10%	N/A	N/A	0.20
Next Qtr.		7.70%	N/A	N/A	0.21
Current Year		4.80%	N/A	N/A	0.08
Next Year		5.60%	N/A	N/A	0.12
Next 5 Years (per annum)		6.21%	N/A	N/A	0.10
Past 5 Years (per annum)		4.34%	N/A	N/A	N/A

90 Days Ago e f t

EPS Revisions				
	Current Qtr. (Apr. 2017)	Next Qtr. (Jul. 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A
Growth Estimates				
	EPS	Revenue	EPS	Revenue
Current Qtr.	N/A	N/A	N/A	0.20
Next Qtr.	2.80%	N/A	N/A	0.21
Current Year	1.80%	N/A	N/A	0.08
Next Year	4.20%	N/A	N/A	0.12
Next 5 Years (per annum)	9.88%	N/A	N/A	0.10
Past 5 Years (per annum)	15.28%	N/A	N/A	N/A

90 Days Ago



EPS Revisions	Current Qtr. (Q1-2017)	Next 2Qs (Q2-2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A			
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	K	Industry	Sector	S&P 500
Current Qtr.	2.20%	N/A	N/A	0.20
Next Qtr.	-3.10%	N/A	N/A	0.21
Current Year	4.80%	N/A	N/A	0.08
Next Year	7.70%	N/A	N/A	0.12
Next 5 Years (per annum)	5.67%	N/A	N/A	0.10
Past 5 Years (per annum)	2.01%	N/A	N/A	N/A

90 Days Ago




EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days				
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	KMB	Industry	Factor	S&P 500
Current Qtr.	-2.00%	N/A	N/A	0.20
Next Qtr.	3.90%	N/A	N/A	0.21
Current Year	4.00%	N/A	N/A	0.08
Next Year	7.20%	N/A	N/A	0.12
Next 5 Years (per annum)	6.07%	N/A	N/A	0.10
Past 5 Years (per annum)	2.79%	N/A	N/A	N/A

90 Days Ago   

EPS Revisions	Current Qtr (Jun 2017)	Next Qtr (Sep 2017)	Current Yr (2017)	Next Yr (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days				
Down Last 30 Days	N/A	N/A	N/A	
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	LLY	Industry	Market	S&P 500
Current Qtr.	22.10%	N/A	N/A	0.20
Next Qtr.	19.30%	N/A	N/A	0.21
Current Year	17.00%	N/A	N/A	0.08
Next Year	6.10%	N/A	N/A	0.12
Next 5 Years (per annum)	12.33%	N/A	N/A	0.10
Past 5 Years (per annum)	-0.45%	N/A	N/A	N/A

90 Days Ago

EPS Revisions

	Current Qtr. (2017)	Next Qtr. (2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days				
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates

	PG	Industry	Sector	\$KPI Index
Current Qtr.	-1.30%	N/A	N/A	0.20
Next Qtr.	5.80%	N/A	N/A	0.21
Current Year	4.90%	N/A	N/A	0.08
Next Year	6.80%	N/A	N/A	0.12
Next 5 Years (per annum)	5.97%	N/A	N/A	0.10
Past 5 Years (per annum)	-0.54%	N/A	N/A	N/A

90 Days Ago   

EPS Revisions	Current Qtr. (Mar 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	0	0	0	N/A
Up Last 30 Days	0	0	0	
Down Last 30 Days	N/A	N/A	N/A	
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	PSA	Industry	Factor	S&P 500
Current Qtr.	11.20%	N/A	N/A	0.20
Next Qtr.	5.60%	N/A	N/A	0.21
Current Year	7.00%	N/A	N/A	0.08
Next Year	8.90%	N/A	N/A	0.12
Next 5 Years (per annum)	11.10%	N/A	N/A	0.10
Past 5 Years (per annum)	15.47%	N/A	N/A	N/A

90 Days Ago   

EPS Revisions

	Current Qtr. (Apr 2017)	Next Qtr. (Jul 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days				
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates

	SJM	Industry	Sector	S&P 500
Current Qtr.	18.80%	N/A	N/A	0.20
Next Qtr.	2.70%	N/A	N/A	0.21
Current Year	27.00%	N/A	N/A	0.08
Next Year	3.80%	N/A	N/A	0.12
Next 5 Years (per annum)	4.91%	N/A	N/A	0.10
Past 5 Years (per annum)	8.07%	N/A	N/A	N/A

90 Days Ago w f t

EPS Revisions	Current Qtr. (per 2017)	Next Qtr. (per 2017)	Current year (per 17)	Next Year	YTD
Up Last 7 Days	N/A	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A	N/A

Growth Estimates	S&P	Industry	Sector	S&P 500
Current Qtr.	12.50%	N/A	N/A	0.20
Next Qtr.	9.00%	N/A	N/A	0.21
Current Year	17.60%	N/A	N/A	0.08
Next Year	11.30%	N/A	N/A	0.12
Next 5 Years (per annum)	12.16%	N/A	N/A	0.10
Past 5 Years (per annum)	4.39%	N/A	N/A	N/A

90 Days Ago Facebook | Twitter

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days				
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	VZ	Industry	Sector	S&P 500
Current Qtr.	2.10%	N/A	N/A	0.20
Next Qtr.	-4.00%	N/A	N/A	0.21
Current Year	-2.60%	N/A	N/A	0.08
Next Year	2.10%	N/A	N/A	0.12
Next 5 Years (per annum)	2.46%	N/A	N/A	0.10
Past 5 Years (per annum)	12.36%	N/A	N/A	N/A

90 Days Ago e f t

EPS Revisions	Current Qtr. (Jul 2017)	Next Qtr. (Oct 2017)	Current Year (2016)	Next Year (2017)
Up Last 7 Days	0.00%	0.00%	0.00%	0.00%
Up Last 30 Days	0.00%	0.00%	0.00%	0.00%
Down Last 30 Days				
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	WMT	Industry	Factor	SKP F21
Current Qtr.	N/A	N/A	N/A	0.20
Next Qtr.	-1.00%	N/A	N/A	0.21
Current Year	0.90%	N/A	N/A	0.08
Next Year	5.50%	N/A	N/A	0.12
Next 5 Years (per annum)	5.50%	N/A	N/A	0.10
Past 5 Years (per annum)	-2.90%	N/A	N/A	N/A

90 Days Ago

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days				
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	AM	Industry	Factor	BKPS
Current Qtr.	9.50%	N/A	N/A	0.20
Next Qtr.	4.80%	N/A	N/A	0.21
Current Year	9.30%	N/A	N/A	0.08
Next Year	9.10%	N/A	N/A	0.12
Next 5 Years (per annum)	10.41%	N/A	N/A	0.10
Past 5 Years (per annum)	9.88%	N/A	N/A	N/A



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AT&T Inc. (T)

(Real Time Quote From BATS)

\$38.29 USD

Volume: 7 251,167

Zacks Rank

3-Hold

Open: \$38.12

Style Scores

Value: **A** | Growth: **B** | Momentum: **F** | VGM:

Updated May 25, 2017 02:18 PM ET

Prior Close: \$38.15

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Research for T

Estimates

Next Report Date	7/20/17	Current Year	2.92
Current Quarter	0.74	Next Year	3.01
Earnings FSP	0.00%	EPS (TTM)	2.86
EPS Last Quarter	0.74	P/E (F1)	13.06
Last EPS Surprise	0.00%	ABR	2.42

Growth Estimates

	T	IND	S&P
Current Qtr (06/2017)	2.78	NA	NA
Next Qtr (09/2017)	2.33	NA	NA
Current Year (12/2017)	2.90	-0.20	22.70
Next Year (12/2018)	3.10	19.60	7.40
Past 5 Years	4.60	5.50	2.80
Next 5 Years	4.40	14.10	NA
PE	13.06	-14.90	18.40
PEG Ratio	2.95	-1.06	NA

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Chart for T



Premium Research for T

Zacks Rank

Hold

Zacks Industry Rank

Bottom 25%(198 out of 265)

Zacks Sector Rank

Top 44% (7 out of 16)

Style Scores

Value: **A** | Growth: **B** | Momentum: **F** | VGM:

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Sales Estimates



Church & Dwight Company, Inc. (CHD)

(Real Time Quote From BATS)

\$51.30 USD

Volume: 433.686 **Zacks Rank**

Open: \$50.85 **Style Scores**

Updated May 25, 2017 02:18 PM ET

Prior Close: \$50.73

2-Buy

Value: **D** | Growth: **A** | Momentum: **D** | VGM:

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Church & Dwight Company, Inc. (CHD) Quote Overview » Estimates » Church & Dwight Company, Inc. (CHD) Detailed Estimates

Detailed Estimates

Detailed Estimates

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Research for CHD

Estimates

Next Report Date	8/3/17	Current Year	1.93
Current Quarter	0.38	Next Year	2.08
Earnings ESP	0.00%	EPS (TTM)	1.86
EPS Last Quarter	0.46	P/E (F1)	26.33
Last EPS Surprise	13.04%	ABR	3.02

Growth Estimates

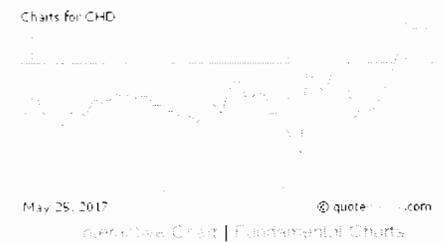
	CHD	IND	S&P
Current Qtr (06/2017)	-10.37	NA	NA
Next Qtr (09/2017)	10.83	NA	NA
Current Year (12/2017)	8.90	7.90	22.70
Next Year (12/2018)	7.80	9.10	7.40
Past 5 Years	9.80	3.00	2.80
Next 5 Years	9.20	10.00	NA
PE	26.33	24.20	18.40
PEG Ratio	2.87	2.42	NA

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Chart for CHD



Premium Research for CHD

Zacks Rank

Buy

Zacks Industry Rank

Top 11%(30 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: **D** | Growth: **A** | Momentum: **D** | VGM:

Research Reports for CHD

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Friday In a Week In a Month In 3 Months

CHD

Price: \$51.30

Change: +0.50 (+1.0%)

Volume: 433.686

Market Cap: \$1.1B

EPS: 1.86

P/E: 26.33

Dividend: \$0.00

Yield: 0.00%

52-Week High: \$52.00

52-Week Low: \$48.00



Coca-Cola Company (The) (KO)

(Real Time Quote From BATS)

\$45.40 USD

Volume: 7,933,934

Zacks Rank

3-Hold

-0.37%

Open: \$45.00

Style Scores

Value: D | Growth: F | Momentum: B | VGM:

Updated May 25, 2017 02:18 PM ET

Prior Close: \$45.03

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Coca-Cola Company (The) (KO) Quote Overview » Estimates » Coca-Cola Company (The) (KO) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for KO

Estimates

Next Report Date	7/26/17	Current Year	1.88
Current Quarter	0.57	Next Year	1.97
Earnings ESP	1.75%	EPS (TTM)	1.89
EPS Last Quarter	0.44	P/E (F1)	23.94
Last EPS Surprise	-2.27%	ABX	2.67

Growth Estimates

	KO	IND	S&P
Current Qtr (06/2017)	-4.26	NA	NA
Next Qtr (09/2017)	-1.17	NA	NA
Current Year (12/2017)	-1.50	4.70	22.70
Next Year (12/2018)	4.60	10.20	7.40
Past 5 Years	0.20	-2.60	2.80
Next 5 Years	6.20	12.40	NA
PE	23.94	24.50	18.40
PEG Ratio	3.86	1.98	NA

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Chart for KO



Premium Research for KO

Zacks Rank

▼ Hold

Zacks Industry Rank

Top 42%(112 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: D | Growth: F | Momentum: B | VGM:

Research Reports for KO

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Friday In a Week In a Month In 3 Months

Sales Estimates



General Mills, Inc. (GIS)

(Real Time Quote From BATS)

\$56.87 USD

-0.04 (-0.07%)

Updated May 25, 2017 02:22 PM ET

Volume: 1,152,738

Open: \$56.89

Prior Close: \$56.91

Zacks Rank

Style Scores

Add to portfolio

4-Sell

Value: B | Growth: C | Momentum: A | VGM

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General Mills, Inc. (GIS) Quote Overview » Estimates » General Mills, Inc. (GIS) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for GIS

Estimates

Next Report Date	7/5/17	Current Year	3.07
Current Quarter	0.72	Next Year	3.25
Earnings ESP	0.00%	EPS (TTM)	3.01
EPS Last Quarter	0.71	P/E (F1)	18.56
Last EPS Surprise	1.11	APR	3.00

Growth Estimates

	GIS	IND	S&P
Current Qtr (05/2017)	9.60	NA	NA
Next Qtr (08/2017)	8.01	NA	NA
Current Year (05/2017)	5.00	7.80	22.70
Next Year (05/2018)	6.00	13.40	7.40
Past 5 Years	3.60	3.80	2.80
Next 5 Years	7.40	10.20	NA
PE:	18.56	-26.50	18.40
PEG Ratio	2.49	-2.60	NA

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Chart for GIS



Premium Research for GIS

Zacks Rank

Sell

Zacks Industry Rank

Bottom 24%(202 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: B | Growth: C | Momentum: A | VGM:

Research Reports for GIS

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Sales Estimates



Hormel Foods Corporation (HRL)

(Real Time Quote From BATS)

\$ **33.14 USD**

Volume: 5,341,722

Zacks Rank

3-Hold

-2.26 (-6.38%)

Open: \$34.05

Style Scores

Value: C | Growth: B | Momentum: C | VGM:

Updated May 25, 2017 02:22 PM ET

Prior Close: \$35.40

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Detailed Estimates

Research for HRL

Estimates

Next Report Date	*BMO 5/25/17	Current Year	1.67
Current Quarter	0.40	Next Year	1.69
Earnings ESP	0.00%	EPS (TTM)	1.65
EPS Last Quarter	0.40	P/E (F1)	21.22
Last EPS Surprise	-4.35%	ABR	2.25

*BMO = Before Market Open *AMC = After Market Close

Growth Estimates

	HRL	IND	S&P
Current Qtr (04/2017)	0.00	NA	NA
Next Qtr (07/2017)	3.89	NA	NA
Current Year (10/2017)	1.70	11.70	22.70
Next Year (10/2018)	1.10	-5.40	7.40
Past 5 Years	13.90	23.70	2.80
Next 5 Years	9.30	9.30	NA
PE	21.22	14.40	18.40
PEG Ratio	2.27	1.55	NA

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Chart for HRL

Charts for HRL



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Premium Research for HRL

Zacks Rank

Hold

Zacks Industry Rank

Top 42% (112 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: C | Growth: B | Momentum: C | VGM:

Research Reports for HRL

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[Friday](#) [In a Week](#) [In a Month](#) [In 3 Months](#)

Sales Estimates



Kellogg Company (K)
(Real Time Quote From BATS)

\$72.91 USD

Volume: 1,504,427 **Zacks Rank**

4-Sell

Open: \$72.85

Style Scores

Value: C | Growth: C | Momentum: D | VGM:

Updated May 25, 2017 02:22 PM ET

Prior Close: \$72.52

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Kellogg Company (K) Quote Overview » Estimates » Kellogg Company (K) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for K

Estimates

Next Report Date	8/3/17	Current Year	3.93
Current Quarter	0.93	Next Year	4.25
Earnings FSP	0.00%	EPS (TTM)	3.85
EPS Last Quarter	1.01	P/E (F1)	18.47
Last EPS Surprise	4.95%	ABP	3.23

Growth Estimates

	K	IND	S&P
Current Qtr (06/2017)	2.20	NA	NA
Next Qtr (09/2017)	-3.30	NA	NA
Current Year (12/2017)	5.00	7.80	22.70
Next Year (12/2018)	8.40	13.40	7.40
Past 5 Years	2.00	3.80	2.80
Next 5 Years	6.00	10.20	NA
PF	18.47	-26.50	18.40
PEG Ratio	3.10	-2.60	NA

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Chart for K



Premium Research for K

Zacks Rank

▼ Sell

Zacks Industry Rank

Bottom 24%(202 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: C | Growth: C | Momentum: D | VGM:

Research Reports for K

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Sales Estimates



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Kimberly-Clark Corporation (KMB)

(Real Time Quote From BATS)

\$129.73 USD

Volume: 790,885

Zacks Rank

3-Hold

Open: \$128.04

Style Scores

Value: **C** | Growth: **B** | Momentum: **D** | VGM:

Updated May 25, 2017 02:22 PM ET

Prior Close: \$128.03

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Detailed Estimates

Detailed Estimates

Enter Symbol

Research for KMB

Estimates

Next Report Date	BMO 7/25/17	Current Year	6.29
Current Quarter	1.51	Next Year	6.73
Earnings FSP	0.00%	EPS (TMY)	6.07
EPS Last Quarter	1.54	P/E: (F1)	20.34
Last EPS Surprise	1.25%	ADJ	3.22

*BMO = Before Market Open *AMC = After Market Close

Growth Estimates

	KMB	IND	S&P
Current Qtr (06/2017)	-1.31	NA	NA
Next Qtr (09/2017)	4.93	NA	NA
Current Year (12/2017)	4.40	10.50	22.70
Next Year (12/2018)	6.90	10.00	7.40
Past 5 Years	4.20	3.90	2.80
Next 5 Years	6.90	11.10	NA
PE	20.34	13.50	18.40
PEG Ratio	2.96	1.22	NA

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Chart for KMB

Charts for KMB



May 25, 2017

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Premium Research for KMB

Zacks Rank

Hold

Zacks Industry Rank

Top 17% (44 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: **C** | Growth: **B** | Momentum: **D** | VGM:

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KMB

Friday In a Week In a Month In 3 Months

Sales Estimates



Eli Lilly And Company (LLY)

(Real Time Quote From BATS)

\$78.08 usd

Volume: 741,111 **Zacks Rank**

Open: 578.31 **Style Scores**

Updated May 25, 2017 02:22 PM ET Prior Close: 577.96

Add to portfolio

3-Hold

Value: **B** | Growth: **C** | Momentum: **C** | VGM:

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Eli Lilly and Company (LLY) Quote Overview » Estimates » Eli Lilly and Company (LLY) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for LLY

Estimates

Next Report Date	*BMO 7/25/17	Current Year	4.11
Current Quarter	1.03	Next Year	4.35
Earnings ESP	0.00%	EPS (TTM)	3.67
EPS Last Quarter	0.96	P/E (F1)	18.97
Last EPS Surprise	2.08%	ABR	1.81

*BMO = Before Market Open *AMC = After Market Close

Growth Estimates	LLY	IND	S&P
Current Qtr (06/2017)	20.27	NA	NA
Next Qtr (09/2017)	18.94	NA	NA
Current Year (12/2017)	16.80	3.10	22.70
Next Year (12/2018)	5.90	7.70	7.40
Past 5 Years	-3.40	2.30	2.80
Next 5 Years	11.90	8.90	NA
PE	18.97	17.10	18.40
PEG Ratio	1.59	1.92	NA

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Chart for LLY

Charts for LLY



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Premium Research for LLY

Zacks Rank **Hold**

Zacks Industry Rank Top 20% (53 out of 265)

Zacks Sector Rank Bottom 13% (14 out of 16)

Style Scores

Value: **B** | Growth: **C** | Momentum: **C** | VGM:

Research Reports for LLY

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Sales Estimates

Friday In a Week In a Month In 3 Months

LLY



Procter & Gamble Company (The) (PG)

(Real Time Quote From BATS)

\$86.76 USD

Volume: 2,448,844 **Zacks Rank**

3-Hold

Open: \$86.58 **Style Scores**

Value: D | Growth: F | Momentum: D | VGM:

Updated May 25, 2017 02:22 PM ET Prior Close: \$86.50

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Detailed Estimates

Detailed Estimates

Enter Symbol

Research for PG

Estimates

Next Report Date	8/1/17	Current Year	3.86
Current Quarter	0.78	Next Year	4.11
Earnings ESP	1.28%	EPS (TTM)	3.86
EPS Last Quarter	0.94	P/E (F1)	22.42
Last EPS Surprise	2.13%	ABR	2.15

Growth Estimates

	PG	IND	S&P
Current Qtr (06/2017)	-0.76	NA	NA
Next Qtr (09/2017)	6.31	NA	NA
Current Year (06/2017)	5.20	7.90	22.70
Next Year (06/2018)	6.40	9.10	7.40
Past 5 Years	-0.80	3.00	2.80
Next 5 Years	7.90	10.00	NA
P/E	22.42	24.20	18.40
PEG Ratio	2.85	2.42	NA

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Chart for PG

Charts for PG



Premium Research for PG

Zacks Rank

Hold

Zacks Industry Rank

Top 11%(30 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: D | Growth: F | Momentum: D | VGM:

Research Reports for PG

[Analyst | Snapshot](#)

(= Change in last 30 days)

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Friday In a Week In a Month In 3 Months



Public Storage (PSA)

(Real Time Quote From BATS)

\$217.14 USD

-0.43 (-0.20%)

Updated May 25, 2017 02:22 PM ET

Volume: 693,437

Open: \$217.76

Prior Close: \$217.57

Zacks Rank

Style Scores

Add to portfolio

4-Sell

Value: F | Growth: B | Momentum: C | VGM:

[View All Zacks Rank #1 Strong Buys](#)

Public Storage (PSA) Quote Overview » Estimates » Public Storage (PSA) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for PSA

Estimates

Next Report Date	7/26/17	Current Year	10.34
Current Quarter	2.56	Next Year	10.88
Earnings ESP	0.00%	EPS (TTM)	9.84
EPS Last Quarter	2.43	P/E (F1)	21.03
Last EPS Surprise	-3.70%	ASR	3.14

Growth Estimates

	PSA	IND	S&P
Current Qtr (06/2017)	9.49	NA	NA
Next Qtr (09/2017)	5.36	NA	NA
Current Year (12/2017)	5.70	0.30	22.70
Next Year (12/2018)	5.10	6.60	7.40
Past 5 Years	11.50	7.60	2.80
Next 5 Years	5.00	5.90	NA
PE	21.03	33.20	18.40
PEG Ratio	4.22	5.63	NA

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Chart for PSA



Premium Research for PSA

Zacks Rank

▼ Sell

Zacks Industry Rank

Bottom 29%(188 out of 265)

Zacks Sector Rank

Bottom 38% (10 out of 16)

Style Scores

Value: F | Growth: B | Momentum: C | VGM:

Research Reports for PSA

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Sales Estimates



J.M. Smucker Company (The) (SJM)

(Real Time Quote From BATS)

\$128.14 USD

Volume: 430,053

Zacks Rank

4-Sell

Open: \$127.54

Prior Close: \$127.75

Style Scores

Value: B | Growth: B | Momentum: B | VGM:

Updated May 25, 2017 02:22 PM ET

View All Zacks Rank #1 Strong Buys

Add to portfolio

J.M. Smucker Company (The) (SJM) Quote Overview » Estimates » J.M. Smucker Company (The) (SJM) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for SJM

Estimates

Next Report Date	^{BMO} 6/8/17	Current Year	7.64
Current Quarter	1.73	Next Year	7.83
Earnings F/SP	0.98%	EPS (TTM)	7.77
FPS Last Quarter	1.73	P/E (F1)	16.31
Last EPS Surprise	0.00%	BBP	2.81

^{BMO}: Before Market Open ^{AMC}: After Market Close

Growth Estimates

	SJM	IND	S&P
Current Qtr (04/2017)	-7.04	NA	NA
Next Qtr (07/2017)	3.32	NA	NA
Current Year (04/2017)	16.20	7.80	22.70
Next Year (04/2018)	2.60	13.40	7.40
Past 5 Years	6.90	3.80	2.80
Next 5 Years	6.20	10.20	NA
PE	16.31	-26.50	18.40
PEG Ratio	2.63	-2.60	NA

Learn More About Estimate Research

See Brokerage Recommendations

See Earnings Report Transcript

Chart for SJM

Charts for SJM



Interactive Chart | Fundamental Charts

Premium Research for SJM

Zacks Rank

▼ Sell

Zacks Industry Rank

Bottom 24%(202 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: B | Growth: B | Momentum: B | VGM:

Research Reports for SJM

Analyst | Snapshot

() = Change in last 30 days

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Friday In a Week In a Month In 3 Months

SJM

Sales Estimates



Sysco Corporation (SY)

(Real Time Quote From BATS)

\$ **54.34** USD

Volume: 1,422,769

Zacks Rank

3-Hold

10:29:23

Open: \$54.30

Style Scores

Value: **B** | Growth: **C** | Momentum: **A** | VGM:

Updated May 25, 2017 02:22 PM ET

Prior Close: \$54.22

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Add to portfolio

Sysco Corporation (SY) Quote Overview » Estimates » Sysco Corporation (SY) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for SY

Estimates

Next Report Date	*BMO 8/14/17	Current Year	2.47
Current Quarter	0.71	Next Year	2.74
Earnings I:SP	1.41%	EPS (T1M)	2.40
EPS Last Quarter	0.51	P/E (F1)	21.91
Last EPS Surprise	0.00%	ABR	2.33

*BMO = Before Market Open *AMC = After Market Close

Growth Estimates

	SY	IND	S&P
Current Qtr (06/2017)	11.20	NA	NA
Next Qtr (09/2017)	6.47	NA	NA
Current Year (06/2017)	17.80	7.80	22.70
Next Year (06/2018)	10.90	13.40	7.40
Past 5 Years	1.30	3.80	2.80
Next 5 Years	8.20	10.20	NA
P/E	21.91	-26.50	18.40
PEG Ratio	2.68	-2.60	NA

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Chart for SY

Charts for SY



May 25, 2017 [Interactive Chart](#) | [Fundamental Charts](#)

Premium Research for SY

Zacks Rank

▼ Hold

Zacks Industry Rank

Bottom 24% (202 out of 265)

Zacks Sector Rank

Bottom 19% (13 out of 16)

Style Scores

Value: **B** | Growth: **C** | Momentum: **A** | VGM:

Research Reports for SY

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SY

Friday In a Week In a Month In 3 Months

Sales Estimates



Verizon Communications Inc. (VZ)

(Real Time Quote From BATS)

\$45.28 USD

Volume: 7,854,377

Zacks Rank

3-Hold

Open: \$45.05

Style Scores

Value: **A** | Growth: **D** | Momentum: **F** | VGM:

Updated May 25, 2017 02:22 PM ET

Prior Close: \$45.04

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Add to portfolio

Verizon Communications Inc. (VZ) Quote Overview » Estimates » Verizon Communications Inc. (VZ) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for VZ

Estimates

Next Report Date	7/25/17	Current Year	3.77
Current Quarter	0.96	Next Year	3.85
Earnings ESP	1.04%	EPS (TTM)	3.76
EPS Last Quarter	0.98	P/E (F1)	11.96
Last EPS Surprise	-3.06%	ARF	2.68

Growth Estimates

	VZ	IND	S&P
Current Qtr (06/2017)	2.54	NA	NA
Next Qtr (09/2017)	-4.54	NA	NA
Current Year (12/2017)	-2.50	-0.20	22.70
Next Year (12/2018)	2.20	19.60	7.40
Past 5 Years	13.10	5.50	2.80
Next 5 Years	9.00	14.10	NA
P/E	11.96	-14.90	18.40
P/FG Ratio	1.33	-1.06	NA

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Chart for VZ

Charts for VZ



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Premium Research for VZ

Zacks Rank

Hold

Zacks Industry Rank

Bottom 25%(198 out of 265)

Zacks Sector Rank

Top 44% (7 out of 16)

Style Scores

Value: **A** | Growth: **D** | Momentum: **F** | VGM:

Research Reports for VZ

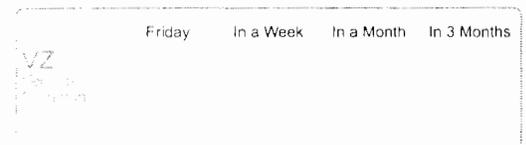
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Sales Estimates



Wal-Mart Stores, Inc. (WMT)

(Real Time Quote From BATS)

\$78.39 USD

Volume: 3,539,728

Zacks Rank

3-Hold

Open: \$78.36

Style Scores

Value: A | Growth: A | Momentum: C | VGM:

Updated May 25, 2017 02:22 PM ET

Prior Close: \$78.15

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Add to portfolio

Wal-Mart Stores, Inc. (WMT) Quote Overview » Estimates » Wal-Mart Stores, Inc. (WMT) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for WMT

Estimates

Next Report Date	8/17/17	Current Year	4.35
Current Quarter	1.06	Next Year	4.59
Earnings ESP	0.00%	EPS (TTM)	4.35
EPS Last Quarter	0.96	P/E (F1)	17.95
Last EPS Surprise	4.12%	BBP	2.36

Growth Estimates

	WMT	IND	S&P
Current Qtr (07/2017)	-0.86	NA	NA
Next Qtr (10/2017)	-0.74	NA	NA
Current Year (01/2018)	0.80	1.30	22.70
Next Year (01/2019)	5.30	14.50	7.40
Past 5 Years	-0.90	-1.10	2.80
Next 5 Years	6.10	7.40	NA
PE	17.95	21.50	18.40
PEG Ratio	2.93	2.91	NA

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Chart for WMT



Premium Research for WMT

Zacks Rank

▼ Hold

Zacks Industry Rank

Top 21%(56 out of 265)

Zacks Sector Rank

Bottom 25% (12 out of 16)

Style Scores

Value: A | Growth: A | Momentum: C | VGM:

Research Reports for WMT

Analyst | Snapshot

() = Change in last 30 days

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Sales Estimates



Waste Management, Inc. (WM)

(Real Time Quote From BATS)

\$71.63 USD

Volume: 775.552 **Zacks Rank**

2-Buy

Open: \$71.49 **Style Scores**

Value: **B** | Growth: **A** | Momentum: **B** | VGM:

Updated May 25, 2017 02:26 PM ET Prior Close: \$71.38

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Add to portfolio

Waste Management, Inc. (WM) Quote Overview » Estimates » Waste Management, Inc. (WM) Detailed Estimates

Detailed Estimates

Detailed Estimates

Enter Symbol

Research for WM

Estimates

Next Report Date	7/26/17	Current Year	3.18
Current Quarter	0.81	Next Year	3.44
Earnings FSP	0.00%	EPS (TTM)	2.99
EPS Last Quarter	0.66	P/E (F1)	22.47
Last EPS Surprise	0.00%	ABR	2.00

Growth Estimates	WM	IND	S&P
Current Qtr (06/2017)	10.00	NA	NA
Next Qtr (09/2017)	4.05	NA	NA
Current Year (12/2017)	9.20	17.00	22.70
Next Year (12/2018)	8.20	26.90	7.40
Past 5 Years	6.50	-3.10	2.80
Next 5 Years	9.50	13.40	NA
PE	22.47	24.50	18.40
PEG Ratio	2.37	1.83	NA

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Chart for WM

Charts for WM



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Premium Research for WM

Zacks Rank Buy

Zacks Industry Rank Top 17%(44 out of 265)

Zacks Sector Rank Top 44% (7 out of 16)

Style Scores

Value: **B** | Growth: **A** | Momentum: **B** | VGM:

Research Reports for WM Analyst | Snapshot

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Sales Estimates



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Market Results
Through 2016

Preview Version

2017

Valuation Handbook

U.S. Guide to Cost of Capital (Preview Version)

This document is an abbreviated "Preview Version" of the key year-end (December 31, 2016) valuation data available in the hardcover *2017 Valuation Handbook – U.S. Guide to Cost of Capital*.

This document is made available to purchasers who have pre-ordered the *2017 Valuation Handbook – U.S. Guide to Cost of Capital*. The purpose of this document is to provide key year-end 2016 valuation data to pre-order purchasers while the hardcover *2017 Valuation Handbook – U.S. Guide to Cost of Capital* is being printed.

The *2017 Valuation Handbook – U.S. Guide to Cost of Capital* will ship in mid-March 2017, and will include two sets of valuation data:

- Data previously available in the *SBBI® Valuation Yearbook*; and
- Data available in the *Duff & Phelps Risk Premium Report*.

WILEY

DUFF & PHELPS

CRSP Deciles Size Premia Study: Key Variables

As of December 31, 2016

Yield (Risk-free Rate)

Long-term (20-year) U.S. Treasury Coupon Bond Yield 2.72%

Equity Risk Premium¹

Long-horizon expected equity risk premium (historical): large company stock total returns minus long-term government bond income returns 6.94

Long-horizon expected equity risk premium (supply-side): historical equity risk premium minus price-to-earnings ratio calculated using three-year average earnings 5.97

Duff & Phelps recommended equity risk premium (conditional): The Duff & Phelps recommended ERP was developed in relation to (and should be used in conjunction with) a 3.5% "normalized" risk-free rate.² 5.50

CRSP Deciles Size Premium³

Decile	Market Capitalization of Smallest Company (in millions)	Market Capitalization of Largest Company (in millions)	Size Premium (Return in Excess of CAPM)
Mid-Cap 3-5	\$2,392.689	\$10,711.194	1.02%
Low-Cap 6-8	569.279	2,390.899	1.75
Micro-Cap 9-10	2.516	567.843	3.67

Breakdown of CRSP Deciles 1-10

Decile	Market Capitalization of Smallest Company (in millions)	Market Capitalization of Largest Company (in millions)	Size Premium (Return in Excess of CAPM)
1-Largest	\$24,361.659	\$609,163.498	-0.35%
2	10,784.101	24,233.747	0.61
3	5,683.991	10,711.194	0.89
4	3,520.566	5,676.716	0.98
5	2,392.689	3,512.913	1.51
6	1,571.193	2,390.899	1.66
7	1,033.341	1,569.984	1.72
8	569.279	1,030.426	2.08
9	263.715	567.843	2.68
10-Smallest	2.516	262.891	5.59

Breakdown of CRSP 10th Decile

Decile	Market Capitalization of Smallest Company (in millions)	Market Capitalization of Largest Company (in millions)	Size Premium (Return in Excess of CAPM)
10a	\$127.296	\$262.891	4.09%
10w	190.553	262.891	3.10
10x	127.296	190.383	5.33
10b	\$2.516	\$127.279	8.64%
10y	73.561	127.279	7.21
10z	2.516	73.504	11.63

¹ See Chapter 3 for complete methodology.

² See Exhibit 3.13.

³ See Chapter 7 for complete methodology.

Note: Examples on how these variables can be used are found in Chapter 8.

Sources of underlying data: 1.) CRSP U.S. Stock Database and CRSP U.S. Indices Database © 2017 Center for Research in Security Prices (CRSP[®]), University of Chicago Booth School of Business. 2.) Morningstar Direct database. Used with permission. All rights reserved. Calculations performed by Duff & Phelps, LLC.

Average Equity Returns Authorized January 1990 - December 2016

Year	Period	Electric Utilities		Gas Utilities	
		ROE %	(# Cases)	ROE %	(# Cases)
1990	Full Year	12.70	(44)	12.67	(31)
1991	Full Year	12.55	(45)	12.46	(35)
1992	Full Year	12.09	(48)	12.01	(29)
1993	Full Year	11.41	(32)	11.35	(45)
1994	Full Year	11.34	(31)	11.35	(28)
1995	Full Year	11.55	(33)	11.43	(16)
1996	Full Year	11.39	(22)	11.19	(20)
1997	Full Year	11.40	(11)	11.29	(13)
1998	Full Year	11.66	(10)	11.51	(10)
1999	Full Year	10.77	(20)	10.66	(9)
2000	Full Year	11.43	(12)	11.39	(12)
2001	Full Year	11.09	(18)	10.95	(7)
2002	Full Year	11.16	(22)	11.03	(21)
2003	Full Year	10.97	(22)	10.99	(25)
2004	Full Year	10.75	(19)	10.59	(20)
2005	Full Year	10.54	(29)	10.46	(26)
2006	Full Year	10.32	(26)	10.40	(15)
2007	Full Year	10.30	(38)	10.22	(35)
2008	Full Year	10.41	(37)	10.39	(32)
2009	Full Year	10.52	(40)	10.22	(30)
2010	Full Year	10.37	(61)	10.15	(39)
2011	Full Year	10.29	(42)	9.92	(16)
2012	Full Year	10.17	(58)	9.94	(35)
	1st Quarter	10.28	(14)	9.57	(3)
	2nd Quarter	9.84	(7)	9.47	(6)
	3rd Quarter	10.06	(7)	9.60	(1)
	4th Quarter	9.91	(21)	9.83	(11)
2013	Full Year	10.03	(49)	9.68	(21)
	1st Quarter	10.23	(8)	9.54	(6)
	2nd Quarter	9.83	(5)	9.84	(8)
	3rd Quarter	9.87	(12)	9.45	(6)
	4th Quarter	9.78	(13)	10.28	(6)
2014	Full Year	9.91	(38)	9.78	(26)
	1st Quarter	10.37	(9)	9.47	(3)
	2nd Quarter	9.73	(7)	9.43	(3)
	3rd Quarter	9.40	(2)	9.75	(1)
	4th Quarter	9.62	(12)	9.68	(9)
2015	Full Year	9.85	(30)	9.60	(16)
	1st Quarter	10.29	(9)	9.48	(6)
	2nd Quarter	9.60	(7)	9.42	(6)
	3rd Quarter	9.76	(8)	9.47	(4)
	4th Quarter	9.57	(18)	9.60	(8)
2016	Full Year	9.77	(42)	9.50	(24)

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Average Equity Returns Authorized January 1980 - December 1989

(Return Percent - No. of Observations)

Period	Electric Utilities	Gas Utilities	Telephone Utilities
1980 1st Quarter	13.97 (21)	13.45 (13)	12.83 (6)
2nd Quarter	14.25 (25)	14.35 (19)	12.83 (10)
3rd Quarter	14.30 (28)	13.87 (12)	12.83 (12)
4th Quarter	14.32 (33)	14.38 (23)	12.83 (12)
1980 Full Year	14.23(104)	14.05 (57)	12.84 (40)
1981 1st Quarter	14.87 (21)	14.69 (9)	13.86 (10)
2nd Quarter	15.03 (40)	14.61 (10)	14.16 (12)
3rd Quarter	15.31 (26)	14.88 (18)	14.37 (12)
4th Quarter	15.58 (36)	15.70 (25)	14.71 (20)
1981 Full Year	15.22(123)	15.11 (60)	14.32 (64)
1982 1st Quarter	15.71 (29)	15.55 (15)	14.66 (12)
2nd Quarter	15.60 (35)	15.62 (18)	15.00 (17)
3rd Quarter	15.83 (27)	15.72 (22)	15.61 (11)
4th Quarter	15.97 (34)	15.82 (30)	15.68 (14)
1982 Full Year	15.78(125)	15.62 (63)	15.12 (64)
1983 1st Quarter	15.53 (26)	15.41 (16)	14.75 (15)
2nd Quarter	15.10 (16)	14.84 (14)	14.78 (17)
3rd Quarter	15.39 (23)	15.24 (18)	14.69 (9)
4th Quarter	15.35 (28)	15.41 (20)	14.72 (20)
1983 Full Year	15.38 (95)	15.25 (65)	14.79 (71)
1984 1st Quarter	15.08 (19)	15.39 (6)	14.15 (12)
2nd Quarter	15.07 (15)	15.07 (7)	14.75 (10)
3rd Quarter	15.38 (22)	15.57 (12)	14.98 (10)
4th Quarter	15.69 (19)	15.83 (12)	14.70 (7)
1984 Full Year	15.32 (75)	15.31 (39)	14.50 (38)
1985 1st Quarter	15.51 (15)	15.03 (8)	14.83 (10)
2nd Quarter	15.27 (12)	15.44 (4)	14.89 (10)
3rd Quarter	14.81 (14)	14.84 (8)	14.88 (10)
4th Quarter	15.11 (17)	14.44 (13)	14.88 (14)
1985 Full Year	15.20 (58)	14.75 (34)	14.89 (46)
1986 1st Quarter	14.35 (14)	14.05 (4)	14.06 (9)
2nd Quarter	14.27 (16)	13.39 (9)	14.03 (10)
3rd Quarter	13.18 (10)	13.00 (5)	13.88 (5)
4th Quarter	13.52 (9)	13.82 (7)	13.82 (5)
1986 Full Year	13.93 (49)	13.46 (26)	13.86 (31)
1987 1st Quarter	12.82 (12)	12.81 (7)	12.86 (1)
2nd Quarter	13.15 (10)	13.15 (5)	12.81 (4)
3rd Quarter	13.17 (16)	12.58 (6)	12.88 (4)
4th Quarter	12.79 (19)	12.73 (12)	12.86 (4)
1987 Full Year	12.99 (57)	12.74 (39)	12.85 (19)
1988 1st Quarter	12.74 (8)	12.84 (5)	12.79 (2)
2nd Quarter	12.70 (7)	12.48 (4)	12.89 (1)
3rd Quarter	12.88 (8)	12.78 (9)	12.97 (2)
4th Quarter	12.98 (10)	12.88 (13)	12.90 (7)
1988 Full Year	12.79 (35)	12.85 (31)	12.92 (12)
1989 1st Quarter	13.04 (9)	12.99 (4)	12.86 (8)
2nd Quarter	13.22 (7)	13.25 (2)	12.79 (3)
3rd Quarter	12.38 (2)	12.56 (7)	12.75 (2)
4th Quarter	12.84 (9)	12.94 (16)	12.83 (7)
1989 Full Year	12.97 (27)	12.85 (31)	12.87 (18)

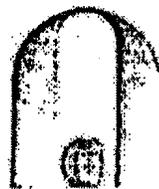
*Special Research Study
January 1986*

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<u>Year</u>	<u>ROE</u>	<u>Year</u>	<u>ROE</u>
1974	13.1	1980	14.1
1975	13.2	1981	15.2
1976	13.1	1982	15.8
1977	13.3	1983	15.4
1978	13.2	1984	15.4
1979	13.5	1985	15.2

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