The Equity Risk Premium in 2012

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ABSTRACT

We analyze the history of the equity risk premium from surveys of U.S. Chief Financial Officers (CFOs) conducted every quarter from June 2000 to March 2012. The risk premium is the expected 10-year S&P 500 return relative to a 10-year U.S. Treasury bond yield. While the risk premium sharply increased during the financial crisis peaking in February 2009, the premium steadily fell until the second quarter 2010. The current surveys show that the premium has increased to near to the levels during the financial crisis. The survey also provides measures of cross-sectional disagreement about the risk premium, skewness, and a measure of individual uncertainty. We find that dispersion of beliefs is above average as well as individual uncertainty. We find little relation between our survey-based risk premium and a measure of the implied cost of capital that relies on individual firms' forecasted future cash flows. We also present evidence on the determinants of the long-run risk premium. Our analysis suggests the level of the risk premium closely tracks both market volatility (reflected in the VIX index) as well as credit spreads. However, the most recent data show a puzzling divergence between VIX and our measure of the risk premium. Our analysis suggests that market volatility is inexplicably low.

JEL Classification: *G11, G31, G12, G14*

Keywords: *Cost of capital, financial crisis, equity premium, long-term market returns, long-term equity returns, expected excess returns, disagreement, individual uncertainty, skewness, asymmetry, survey methods, risk and reward, TIPs, VIX, Credit spreads, Implied cost of capital.*

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1. Introduction

We analyze the results of the most recent survey of Chief Financial Officers (CFOs) conducted by Duke University and *CFO* Magazine. The survey closed on June 4, 2010 and measures expectations beginning in the first quarter of 2012. In particular, we poll CFOs about their long-term expected return on the S&P 500. Given the current 10-year T-bond yield, we provide estimates of the equity risk premium and show how the premium changes through time. We also provide information on the disagreement over the risk premium as well as average confidence intervals.

2. Method

2.1 Design

The quarterly survey of CFOs was initiated in the third quarter of 1996.[1] Every quarter, Duke University polls financial officers with a short survey on important topical issues (Graham and Harvey, 2009). The usual response rate for the quarterly survey is 5%-8%. Starting in June of 2000, a question on expected stock market returns was added to the survey. Fig. 1 summarizes the results from the risk premium question. While the survey asks for both the one-year and ten-year expected returns, we focus on the ten-year expected returns herein, as a proxy for the market risk premium.

The executives have the job title of CFO, Chief Accounting Officer, Treasurer, Assistant Treasurer, Controller, Assistant Controller, or Vice President (VP), Senior VP or Executive VP of Finance. Given that the overwhelming majority of survey respondents hold the CFO title, for simplicity we refer to the entire group as CFOs.

2.2 Delivery and response

In the early years of the survey, the surveys were faxed to executives. The delivery mechanism was changed to the Internet starting with the December 4, 2001 survey. Among other things, we now collect the respondents' IP addresses (though not their identity or company) and are able examine consistency of responses across different surveys. Respondents are given four business days

[1] The surveys from 1996Q3-2004Q2 were partnered with a national organization of financial executives. The 2004Q3 and 2004Q4 surveys were solely Duke University surveys, which used Duke mailing lists (previous survey respondents who volunteered their email addresses) and purchased email lists. The surveys from 2005Q1 to present are partnered with *CFO Magazine*. The sample includes both the Duke mailing lists and the *CFO* subscribers that meet the criteria for policy-making positions.

to fill out the survey, and then a reminder is sent allowing another four days. Usually, two-thirds of the surveys are returned within two business days.

The response rate of 5-8% could potentially lead to a non-response bias. There are five reasons why we are not overly concerned with the response rate. First, our response rate is within the range that is documented in many other survey studies. Second, Graham and Harvey (2001) conduct a standard test for non-response biases (which involves comparing the results of those that fill out the survey early to the ones that fill it out late) and find no evidence of bias. Third, Brav, Graham, Harvey and Michaely (2005) conduct a captured sample survey at a national conference in addition to an Internet survey. The captured survey responses (to which over two-thirds participated) are qualitatively identical to those for the Internet survey (to which 8% responded), indicating that non-response bias does not significantly affect their results. Fourth, Brav et al. contrast survey responses to archival data from Compustat and find archival evidence for the universe of Compustat firms that is consistent with the responses from the survey sample. Fifth, Campello, Graham, and Harvey (2010) show that the December 2008 response sample is fairly representative of the firms included in the commonly used Compustat database.

2.3 Data integrity

In each quarter, we trim the top two and bottom two risk premium observations. Given that we have, on average, 347 responses each quarter, this implies a less than 1% trim in each of the tails. In addition, of the over 16,000 survey observations, there was only a single observation (in the June 2000 survey) that we consider not credible. The trimmed and untrimmed data are very similar with the exception of the June 2000 survey.

There are two other steps that we take. First, for the purpose of some of our statistics, we require that the expected risk premium forecast be no more than the best-case scenario and no less than the worst-case scenario. If the ordering is violated, then the observation is deleted. Second, there are a few instances in which respondents report in decimals rather than percentages. In these cases, we change the inputs to adhere to the survey format rather than deleting the observations.

2.4 The 2012 results

The expected market return questions are a subset of a larger set of questions in the quarterly survey of CFOs. The survey usually contains between eight and ten questions. Some of the questions are repeated every quarter and some change through time depending on economic conditions. The historical surveys can be accessed at http://www.cfosurvey.org. Appendix 1 shows the risk premium question in the most recent survey.

While the survey is anonymous, we collect demographic information on seven firm characteristics, including industry, sales revenue, number of employees, headquarters location, ownership (public or private), and proportion of foreign sales.

During the past ten years, we have collected 16,666 responses to the survey. Panel A of Table 1 presents the date that the survey window opened, the number of responses for each survey, the 10-year Treasury bond rate, as well as the average and median expected excess returns. There is relatively little time variation in the risk premium. This is confirmed in Fig. 1, which displays the historical risk premiums contained in Table 1. The current premium, 4.48%, is close to the peak premium of 4.74% observed in February 2009. The March 2012 survey shows that the expected annual S&P 500 return is 6.45% (6.45=4.48+1.97).[2]

Panel B of Table 1 presents some summary statistics that pool all responses through the history of the survey. The overall average ten-year risk premium return is 3.45%.[3] The standard deviation is 3.20% based on the individual responses and 0.59% based on the quarterly averages.

The cross-sectional standard deviation across the individual CFO forecasts in a quarter is a measure of the disagreement or dispersion of the participants in each survey. Dispersion sharply increased during the global financial crisis. The average disagreement in 2005 was 2.38%. Disagreement increased in 2006 to 2.42%. As the crisis began in 2007, disagreement increased to

[2] See, for example, Ghysels (1998), Welch (2000, 2001, 2009), Ghysels (1998), Fraser (2001), Harris and Marston (2001), Pástor and Stambaugh (2001), Fama and French (2002), Goyal and Welch (2003), Graham and Harvey (2003), Ang and Bekaert (2005), Fernandez (2004, 2006, 2009) for studies of the risk premium.

[3] Using the Ibbotson Associates data from January 1926 through July 2010, the arithmetic (geometric) average return on the S&P 500 over and above the 30-day U.S. Treasury bill is 7.75% (5.80%). Using data from April 1953-July 2010, the arithmetic (geometric) risk premium is 6.27% (5.12%). The risk premium over the 10 year bond should be reduced by 212 basis points for the arithmetic premium and 174 basis points for the geometric premium. Fama and French (2002) study the risk premium on the S&P 500 from 1872-2000 using fundamental data. They argue that the ex ante risk premia is between 2.55% and 4.32% for 1951-2000 period. Ibbotson and Chen (2001) estimate a long-term risk premium between 4 and 6%. Also see Siegel (1999), Asness (2000), Heaton and Lucas (2000) and Jagannathan, McGratten and Scherbina (2001).

2.56. In 2008, the level of disagreement increased to 2.75%. The peak disagreement was recorded in 2009 (average 3.34% and second quarter was 4.74%). The most recent observation is 2.97% which is lower than 2009 but higher than before the crisis. Indeed, the only year with disagreement above 3% is 2009.

We also report information on the average of the CFOs' assessments of the one in ten chance that the market will exceed or fall below a certain level. In the most recent survey, the worst case total return is 0.34% which is considerably lower than the average of 2.03%. The best-case return is 10.98% which is slightly lower than the average of 11.22%.

With information on the 10% tails, we construct a probability distribution for each respondent. We use Davidson and Cooper's (1976) method to recover each respondent's probability distribution:

$$\text{Variance} = ([x(0.90)\text{-}x(0.10)]/2.65)^2$$

where $x(0.90)$ and $x(0.10)$ represent the 90^{th} and 10^{th} percentiles of the respondent's distribution. Keefer and Bodily (1983) show that this simple approximation is the preferred method of estimating the variance of a probability distribution of random variables, given information about the 10^{th} and 90^{th} percentiles. Like disagreement, the average of individual volatilities peaked in February 2009. The current level, 4.02%, is elevated and higher than the average during 2009. This reinforces the considerable uncertainty that exists today about economic prospects.

There is also a natural measure of asymmetry in each respondent's response. We look at the difference between each individual's 90% tail and the mean forecast and the mean minus the 10% tail. Hence, if the respondent's forecast of the excess return is 6% and the tails are -8% and +11%, then the distribution is negatively skewed with a value of -9% (=5%-14%). As with the usual measure of skewness, we cube this quantity and standardize by dividing by the cube of the individual standard deviation. In every quarter's survey, there is on average negative skewness in the individual forecasts. The average asymmetry -0.59 which is lower than the average of -0.42.

Overall, the survey points to: (a) reduction in the risk premium from peak levels, (b) record low total market returns, and (c) near record levels of uncertainty.

Table 1

Summary statistics based on the responses from the 48 CFO Outlook Surveys from June 2000 to March 2012

A. By quarter

Survey date	Survey for	Number of survey responses	10-year bond yield	Average risk premium	Median risk premium	Disagreement (standard deviation of risk premium estimates)	Average of individual standard deviations	Average of individuals' worst 10% market return scenario	Average of individuals' best 10% market return scenario	Skewness of risk premium estimates	Average of individuals' asymmetry
6-Jun-00	2000Q3	206	6.10	4.35	3.9	2.99				0.81	
7-Sep-00	2000Q4	184	5.70	4.65	4.3	2.70				0.49	
4-Dec-00	2001Q1	239	5.50	4.20	4.5	2.31				0.37	
12-Mar-01	2001Q2	137	4.90	4.46	4.1	2.59				0.38	
7-Jun-01	2001Q3	204	5.40	3.79	3.6	2.43				0.49	
10-Sep-01	2001Q4	198	4.80	3.77	3.2	2.53				-0.11	
4-Dec-01	2002Q1	275	4.70	3.98	3.3	2.34				0.66	
11-Mar-02	2002Q2	234	5.30	2.88	2.7	2.17	3.21	3.66	12.23	0.30	-0.28
4-Jun-02	2002Q3	321	5.00	3.18	3.0	2.59	3.41	3.11	12.15	1.96	-0.39
16-Sep-02	2002Q4	363	3.90	4.00	4.1	2.27	3.36	3.10	12.01	1.03	-0.25
2-Dec-20	2003Q1	283	4.20	3.71	3.8	2.39	3.19	3.38	11.83	1.31	-0.28
19-Mar-03	2003Q2	180	3.70	3.66	3.3	2.12	3.57	1.92	11.40	0.49	-0.60
16-Jun-03	2003Q3	368	3.60	3.89	4.4	2.34	3.74	2.17	12.07	0.89	-0.33
18-Sep-03	2003Q4	165	4.30	3.21	3.7	1.87	2.80	3.34	10.78	-0.02	-0.42
10-Dec-03	2004Q1	217	4.36	3.83	3.6	2.22	3.24	3.35	11.94	0.74	-0.46
24-Mar-04	2004Q2	202	3.70	4.10	4.3	2.06	3.46	2.84	12.00	-0.03	-0.28
16-Jun-04	2004Q3	177	4.75	3.04	3.3	2.28	3.06	3.11	11.20	0.96	-0.39
12-Sep-04	2004Q4	177	4.25	3.24	3.3	2.32	3.13	2.70	10.98	0.64	-0.47
5-Dec-04	2005Q1	291	4.35	3.20	3.2	2.63	3.00	3.16	11.10	2.01	-0.36
28-Feb-05	2005Q2	275	4.28	3.19	3.2	2.47	2.99	3.23	11.16	1.49	-0.32
31-May-05	2005Q3	318	4.07	2.98	2.9	2.21	3.17	2.50	10.88	0.50	-0.25
29-Aug-05	2005Q4	325	4.20	2.93	2.8	2.20	3.23	2.26	10.82	0.96	-0.50
21-Nov-05	2006Q1	342	4.52	2.39	2.5	2.14	3.40	2.35	11.38	0.57	-0.23
6-Mar-06	2006Q2	278	4.61	2.57	2.4	2.37	3.43	2.11	11.18	1.11	-0.36
1-Jun-06	2006Q3	500	5.05	2.69	3.0	2.69	3.26	3.10	11.70	2.00	-0.23
11-Sep-06	2006Q4	465	4.79	2.50	2.2	2.47	3.29	2.57	11.28	1.37	-0.32
21-Nov-06	2007Q1	392	4.58	3.21	3.4	2.92	3.31	2.98	11.75	1.93	-0.29
1-Mar-07	2007Q2	388	4.55	3.13	3.5	2.39	3.31	2.79	11.56	1.83	-0.38
1-Jun-07	2007Q3	419	4.90	2.94	3.1	2.12	3.20	3.10	11.58	0.61	-0.38
7-Sep-07	2007Q4	486	4.48	3.35	3.5	2.81	3.08	3.39	11.54	1.80	-0.33
30-Nov-07	2008Q1	465	4.04	3.78	4.0	2.73	3.25	2.99	11.60	1.47	-0.32
7-Mar-08	2008Q2	388	3.61	3.97	4.4	2.97	3.16	3.11	11.50	2.28	-0.29
13-Jun-08	2008Q3	390	4.15	3.12	2.9	2.72	3.28	2.49	11.20	2.02	-0.41
5-Sep-08	2008Q4	439	3.69	3.53	3.3	2.59	3.22	2.37	10.90	1.05	-0.41
28-Nov-08	2009Q1	545	3.10	4.12	3.9	3.10	3.66	1.77	11.47	1.66	-0.36
26-Feb-09	2009Q2	452	2.75	4.74	4.3	4.11	4.23	1.27	12.40	1.82	-0.47
29-May-09	2009Q3	440	3.29	3.57	3.7	3.14	3.65	1.41	11.07	1.74	-0.40
11-Sep-09	2009Q4	546	3.37	3.05	2.6	3.00	3.84	0.60	10.76	1.23	-0.45
11-Dec-09	2010Q1	460	3.47	3.23	2.5	3.55	3.83	0.67	10.85	2.41	-0.52
26-Feb-10	2010Q2	485	3.69	2.79	2.3	3.39	3.94	0.34	10.77	1.82	-0.67
4-Jun-10	2010Q3	449	3.31	3.00	2.7	3.07	3.86	0.36	10.58	2.62	-0.63
10-Sep-10	2010Q4	461	2.71	2.84	2.3	2.54	4.15	-1.11	9.90	0.72	-0.65
10-Dec-10	2011Q1	415	3.18	2.89	2.8	2.70	3.85	0.25	10.45	1.50	-0.54
4-Mar-11	2011Q2	431	3.47	2.98	2.5	2.90	4.13	-0.23	10.72	2.50	-0.70
3-Jun-11	2011Q3	419	3.01	3.09	3.0	2.90	3.82	0.19	10.30	2.07	-0.67
9-Sep-11	2011Q4	406	2.17	3.63	2.8	3.12	3.74	0.04	9.97	2.36	-0.53
16-Dec-11	2012Q1	452	1.94	3.85	3.1	3.04	4.01	0.04	9.97	1.66	-0.34
1-Mar-12	2012Q2	411	1.97	4.48	4.0	2.97	4.02	0.34	10.98	2.25	-0.59
Average of quarters		347	4.07	3.45	3.31	2.64	3.48	2.03	11.22	1.27	-0.42
Standard deviation			0.94	0.59	0.64	0.43	0.37	1.29	0.62	0.74	0.13

B. By individual responses

Survey for										
All dates	16,663		3.40	3.20	2.81	3.49	-0.42	11.26	1.66	-0.42

2.5 Recessions, the financial crisis and risk premia

Our survey now spans two recessions: March 2001-September 2001 as well as the recession that begins in December 2007. Financial theory would suggest that risk premia should vary with the business cycle. Premiums should be highest during recessions and lowest during recoveries. Previous research has used a variety of methods including looking at ex post realized returns to investigate whether there is business-cycle like variation in risk premia.

While we only have 48 observations and this limits our statistical analysis, we do see important differences. During recessions, the risk premium is 3.93% and during non-recessions, the premium falls to 3.27%. The current recession officially ended in June 2009.

The recession that began in December 2007 is a much worse than normal recession. For example, the recession of 2001 was relatively mild and lasted only three quarters. The current recession is more than double the length and includes some of the highest unemployment since the Second World War. Nevertheless, the risk premium is not really much different during this recession than during the 2001 recession.

2.6 Interviews

To further explore the risk premium, we conduct brief interviews on the topic of the cost of capital and the risk premium to understand the question that CFOs believe they are answering. We conducted 12 interviews over the 2003-2005 period.[4] We gain a number of insights from the interviews. There is remarkable consistency in the CFOs' views.

First, the CFOs closely track both their company's stock and the market. They are often called upon internally (e.g., Board of Directors) or externally (analyst conference calls) to explain their company's stock price. As a result, they need to try to separate out the systematic and idiosyncratic variation in their company's stock returns. To do this, they attempt to understand the forces that might cause systematic variation in the market.

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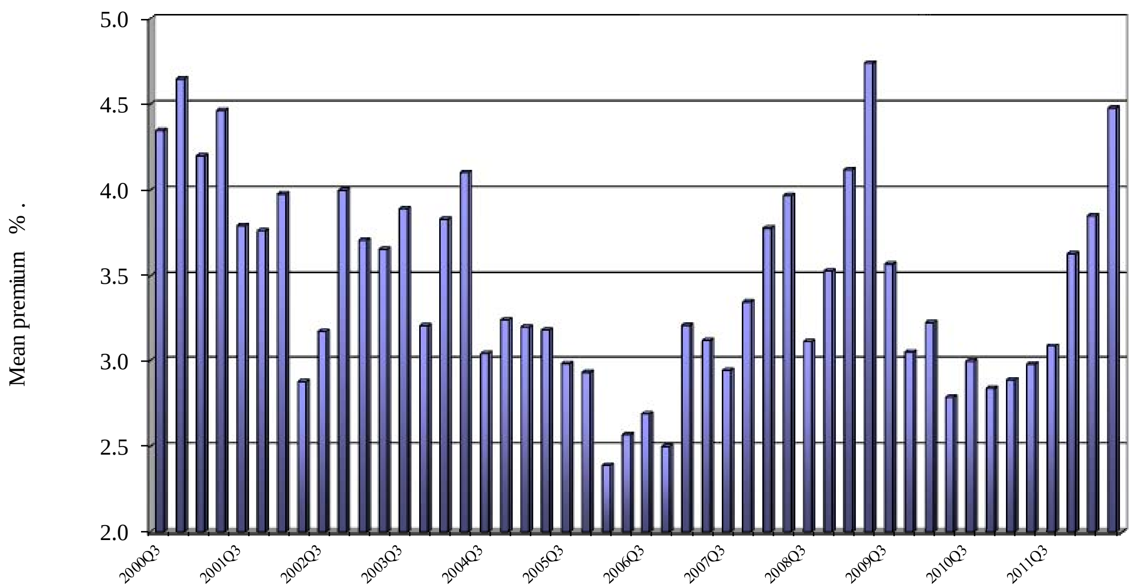
[4] Three of these interviews exclusively focused on the risk premium question. Eight interviews were non-exclusive and based on surplus time available in the interviews in Brav et al. (2005) and Graham, Harvey and Rajgopal (2005). The remaining interview was conducted in 2005.

Second, the CFOs believe that the "risk premium" is a longer-term measure of expected excess returns and best covered by our question on the expected excess return over the next ten years – rather than the one-year question. Three-fourths of the interviewees use a form of the Capital Asset Pricing Model (which is consistent with the evidence in Graham and Harvey, 2001). They use a measure of the risk premium in their implementation of the CAPM. Often their 10-year risk premium is supplemented so that that company's hurdle rate exceeds their expected excess return on the S&P 500. Also, while not specified in the question, CFOs interpret the 10-year expected market return as the return to a buy-and-hold strategy. As a result, our survey measures the geometric rather than arithmetic average return.

Figure 1
10-year forecasted S&P 500 returns over and above the 10-year Treasury bond yield



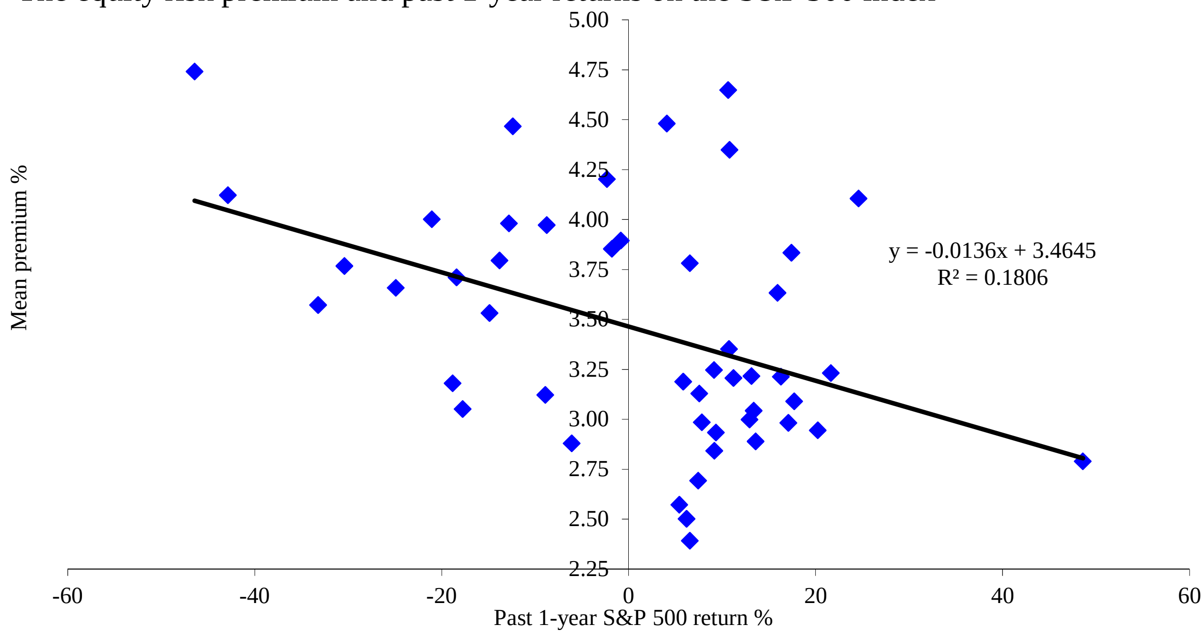
2.7 Explaining variation in the risk premium

While we document the level and a limited time-series of the long-run risk premium, statistical inference is complicated by the fact that the forecasting horizons are overlapping. First, we have no way of measuring the accuracy of the risk premiums as forecasts of equity returns. Second, any inference based on regression analysis is confounded by the fact that from one quarter to the next, there are 44 common quarters being forecasted. This naturally induces a moving-average process.

We do, however, try to characterize the time-variation in the risk premium without formal statistical tests. Figure 2 examines the relation between the mean premium and previous one-year returns on the S&P 500.

Figure 2

The equity risk premium and past 1-year returns on the S&P 500 index

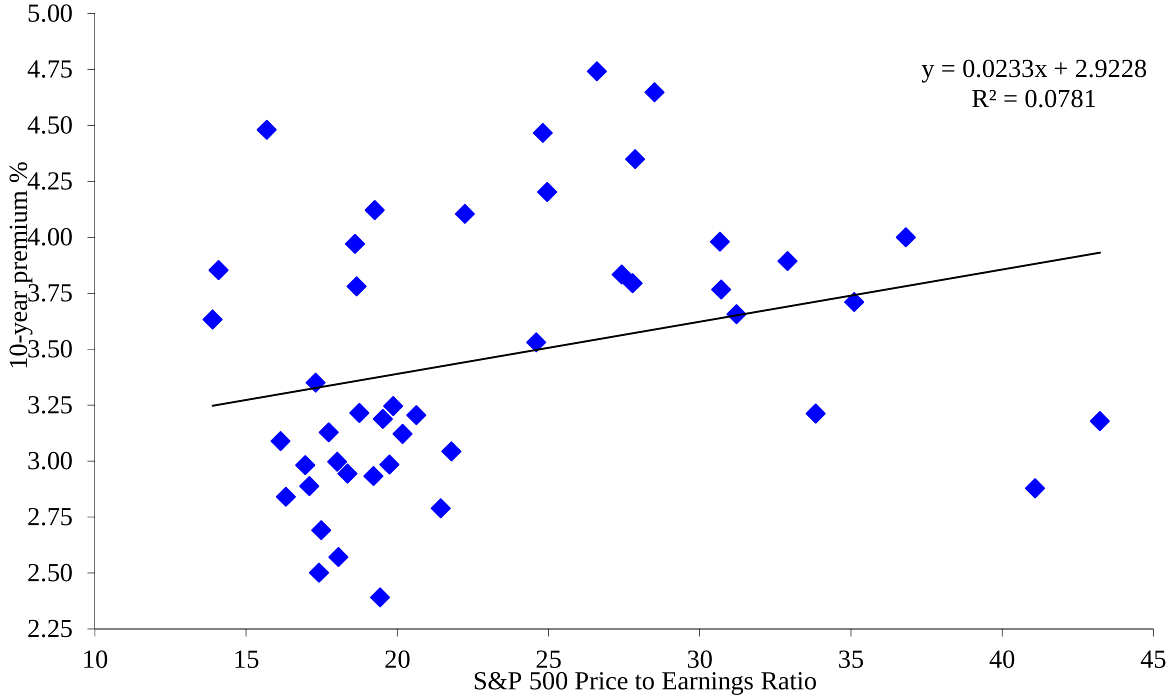


The evidence suggests that there is a weak negative correlation between past returns and the level of the long-run risk premium. This makes economic sense. When prices are low (after negative returns), expected return increase.

An alternative to using past-returns is to examine a measure of valuation. Figure 3 examines a scatter of the mean premium versus the price-to-earnings ratio of the S&P 500.

Figure 3a

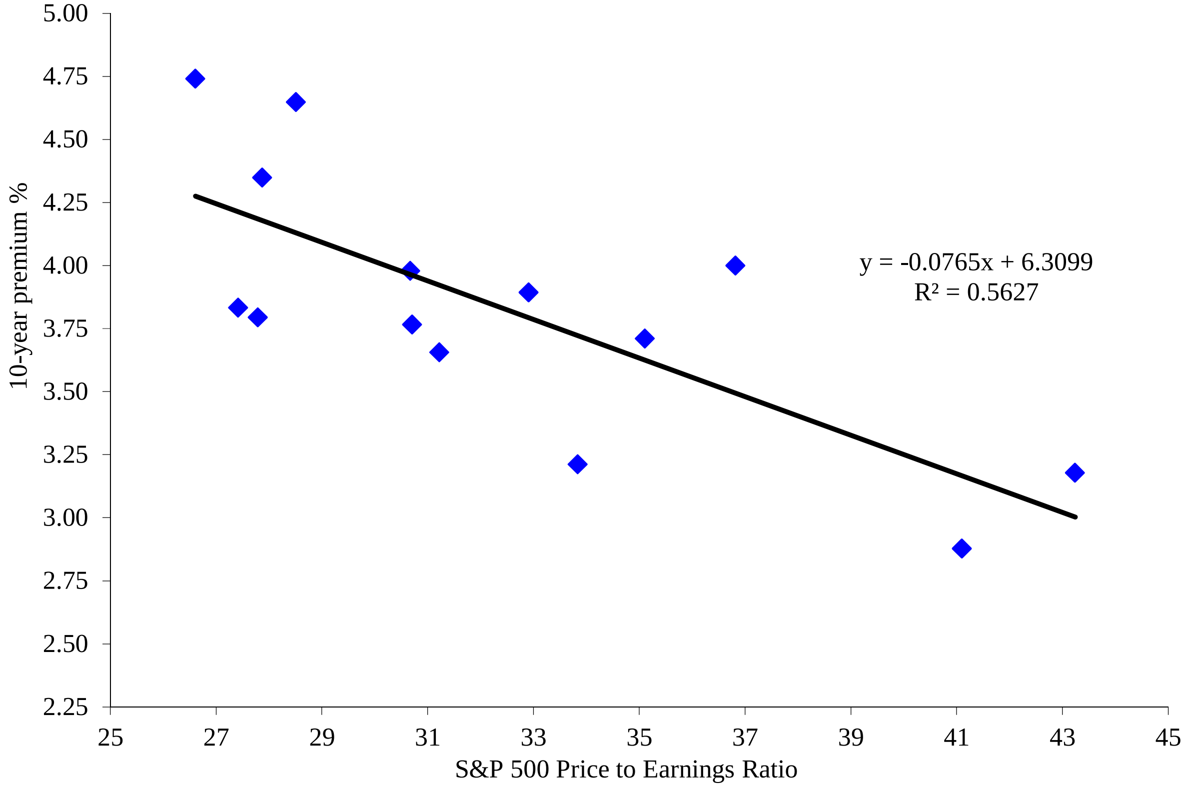
The equity risk premium and the S&P 500 price-to-earnings ratio: full sample



Looking at the data in Figure 3a, it appears that the inference is complicated by a non-linear relation. At very high levels of valuation, the expected return (the risk premium) was low. Figures 3b shows the a subset of the data where the PE level>25. In all graphs, three observations are excluded with PE ratio of 85, 123 and 130.

Figure 3b

The equity risk premium and the S&P 500 price-to-earnings when PE>25



The non-linear relation is not a quirk of the PE ratio that we use. Figure 3c uses the forward and actual P/E ratios that S&P constructs from bottom up data. There are no observations excluded in this graph.

Figure 3c

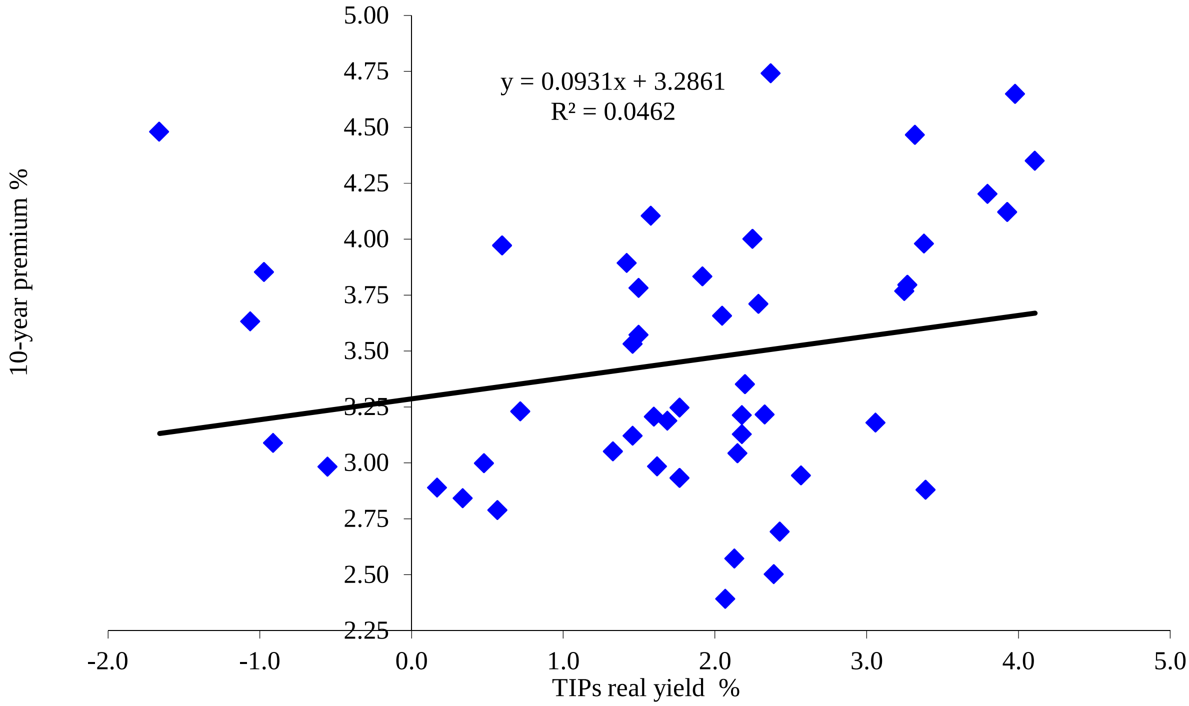
The equity risk premium and the forward S&P 500 price-to-earnings ratio

We have also examined other fundamental ratios like dividend to price ratio, book to market, as well as other version of the earnings to price ratio. All have a V shaped pattern (E/P is V shaped and P/E is inverted V-shaped.)

Next we looked at the real yield on Treasury Inflation Indexed Notes. The risk premium is like an expected real return on the equity market. It seems reasonable that there could be a correlation between expected real rates of return stocks and bonds. Figure 4 examines the 10-year on the run yield on the Treasury Inflation Indexed Notes.

Figure 4

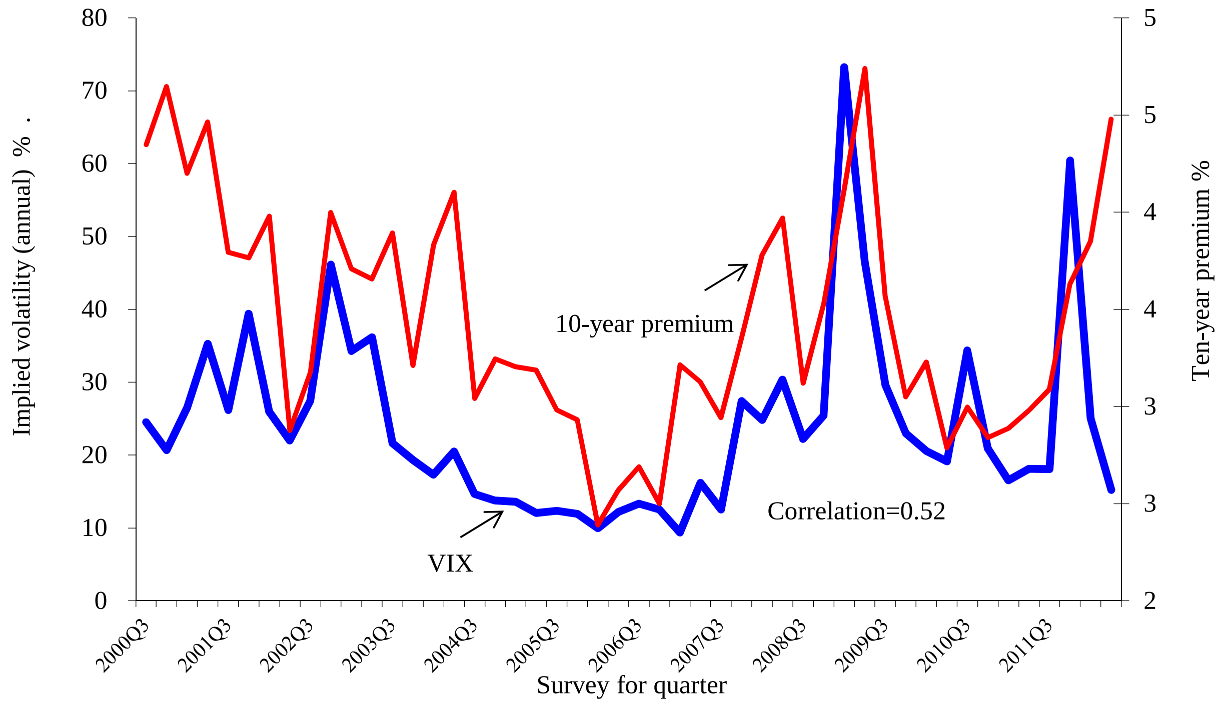
The equity risk premium and the real yield on Treasury Inflation Indexed Notes



In this case, there is a weak positive correlation. Lower TIPS yields are associated with lower equity risk premiums. If we exclude the recent negative TIPS yields, the R-square increases to 21%. Nevertheless, the analysis is only suggestive that the long-run equity premium and real interest rates move together.

Finally, we consider two measures of risk and the risk premium. Figure 5 shows that over our sample there is evidence of a strong positive correlation between market volatility and the long-term risk premium. We use a five-day moving average of the implied volatility on the S&P index option (VIX) as our volatility proxy. The correlation between the risk premium and volatility is 0.52. If the closing day of the survey is used, the correlation is roughly the same. Asset pricing theory suggests that there is a positive relation between risk and expected return. While our volatility proxy doesn't match the horizon of the risk premium, the evidence, nevertheless, is suggestive of a positive relation.

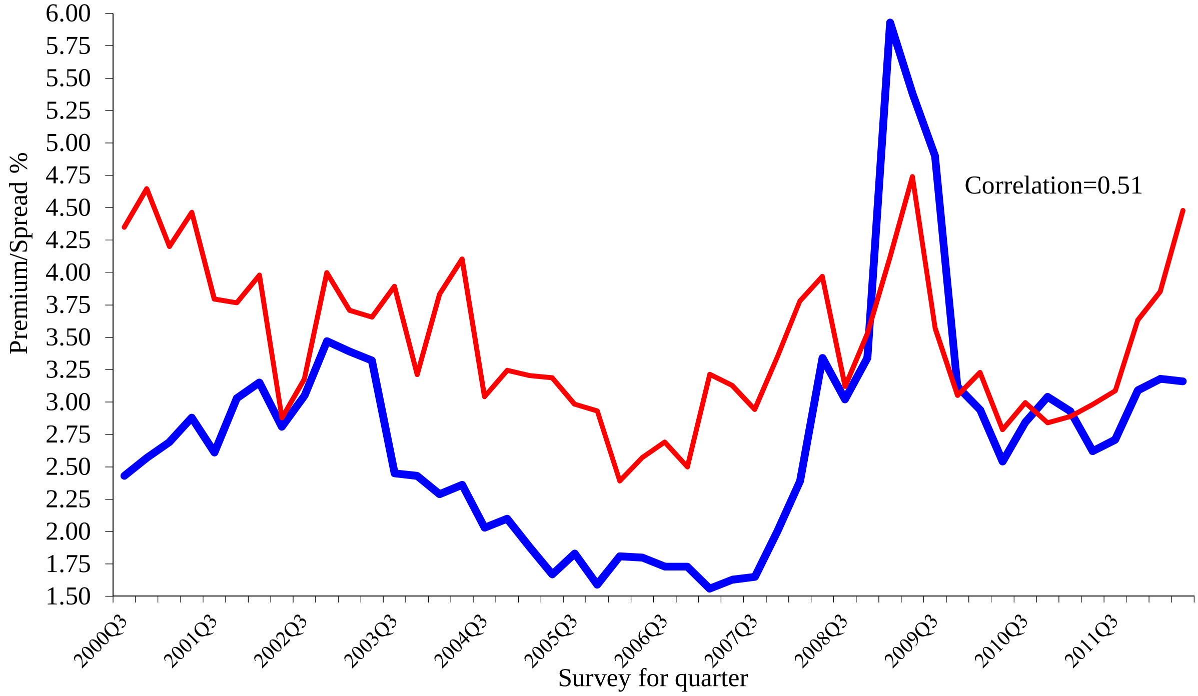
Figure 5
The equity risk premium and the implied volatility on the S&P 500 options (VIX)



We also consider an alternative risk measure, the credit spread. We look at the correlation between Moody's Baa rated bond yields less the 10-year Treasury bond yield and the risk premium. Figure 6 shows a highly significant relation between the time-series with a correlation of 0.51.

Figure 6

The equity risk premium and credit spreads



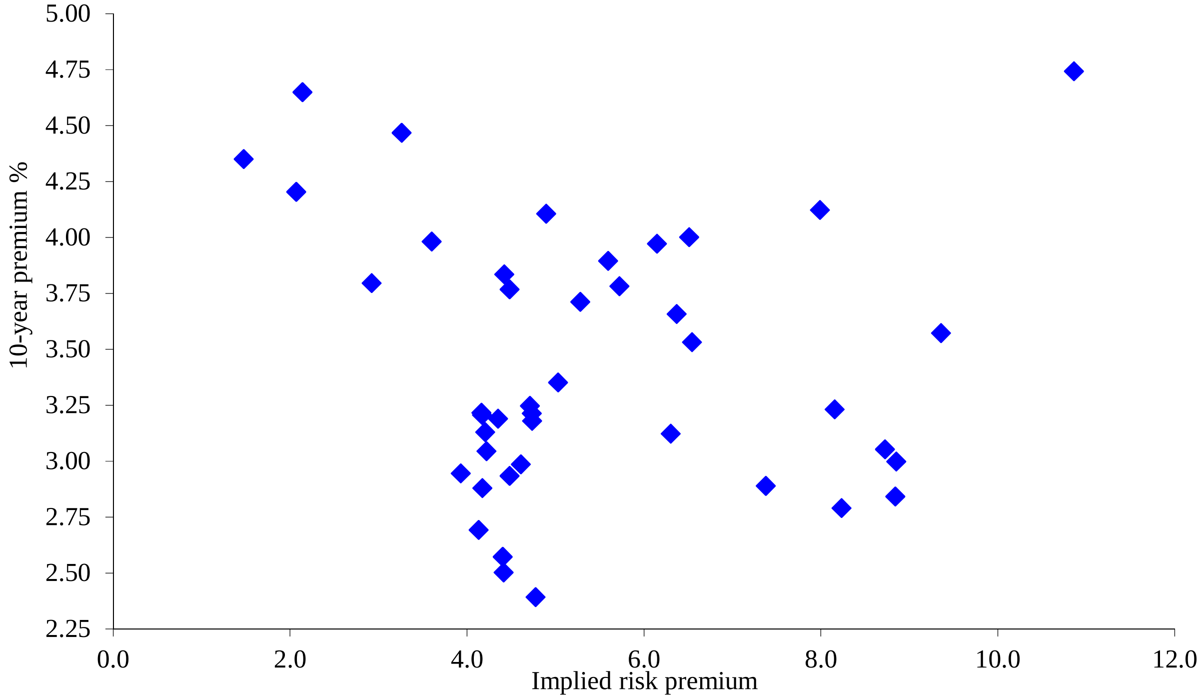
2.8 The Risk premium and the implied cost of capital

A large number of papers have proposed a bottom up measure of the cost of capital by looking by comparing the stock price to the forecasted cash flows. The implied cost of capital is the discount rate that ensures that the present value of the cash flows is equal to the current stock price.

Figure 7 examines the relation between the implied cost of capital from Swaminathan, Ng and Li (2012) and our surveyed cost of capital. We used their implied cost of capital and subtracted the 10-year bond yield to come up with an "implied risk premium". It is obvious that the implied risk premium is much different from the survey measure. Indeed, the most striking difference is the scale. The implied risk premium is often more than double the survey risk premium.

Figure 7

The equity risk premium and the implied risk premium



2.9 Other survey questions

The March 2012 survey contains a number of other questions. http://www.cfosurvey.org presents the full results of these questions. The site also presents results conditional on demographic firm characteristics. For example, one can examine the CFOs views of the risk premium conditional on the industry in which the CFO works.

2.10 Risk premium data and corporate policies

New research by Ben-David, Graham and Harvey (2012) uses the one-year and 10-year risk premium forecasts as a measure of optimism and the 80% confidence intervals as a direct measure of overconfidence. By linking email addresses that respondents provide to archival corporate data, Ben-David et al. find that the tightness of the confidence intervals is correlated with corporate investment. Overconfident managers invest more.

Campello, Graham and Harvey (2010) use the survey during the financial crisis and the higher risk premiums to examine the implications of financial constraints on the real activities of the firm. They provide new evidence on the negative impact of financial constraints on firms' investment plans.

Campello, Giambona, Graham and Harvey (2011) use the survey during to study how firms managed liquidity during the financial crisis.

Graham, Harvey and Puri (2011a) administer a psychometric test using the survey instrument and link CEO optimism and risk aversion to corporate financial policies.

Graham, Harvey and Puri (2011b) use survey data to study how capital is allocated within the firm and the degree to which CEOs delegate decision making to CFOs.

2.11 CFO Survey compared to other surveys

Table 2 compares the predictive ability of the Duke-CFO survey with other popular surveys. The table reports the correlations between the current quarter Duke-CFO survey of either optimism about the economy or optimism about the firm's prospects with the subsequent quarter's realization for five surveys: UBS-Gallup, CEO Survey, Conference Board Consumer Confidence, University of Michigan Consumer Confidence and ISM Purchasing Manager's Index. Both of the Duke-CFO optimism measures significantly predict all five of these popular barometers of economic confidence. Related analysis shows that our CFO survey anticipates economic activity sooner (usually one quarter sooner) than do the other surveys.

Table 2
The ability of the Duke CFO survey to predict other surveys

	Predictive correlations	
Survey	Optimism about economy	Optimism about firm's prospects
UBS-Gallup	0.289	0.380
CEO Survey	0.814	0.824
Conference Board Consumer Confidence	0.513	0.767
University of Michigan Consumer Confidence	0.341	0.253
ISM Purchasing Managers Index	0.694	0.497

3. Conclusions

We provide a direct measure of 10-year excess market returns based on a multi-year survey of Chief Financial Officers. Importantly, we have a 'measure' of expectations. We do not claim it is the true market expectation. Nevertheless, the CFO measure has not been studied before.

While there is relatively little time-variation in the risk premium, a number of patterns emerge. We offer evidence that the risk premium is higher during recessions and non-recessions. Given the recent global economic crisis, the risk premium has hit a record high for our ten years of surveys. We also present evidence on disagreement. With higher disagreement, people often have less confidence in their forecasts. While the risk premium has decreased since the peak during the crisis, our measures of disagreement are still elevated suggesting considerable uncertainty persists.

While we have 16,663 survey responses over 12 years, much of our analysis uses summary statistics for each survey. As such, with only 48 unique quarters of predictions and a variable of interest that has a 10-year horizon, it is impossible to evaluate the accuracy of the market excess return forecasts. Indeed, the March 11, 2002 10-year annual forecast was 8.18% -- far higher than the realized return. There is some weak correlation between past returns, real interest rates and the of risk premium. In contrast, there is significant evidence on the relation between two common measures of economic risk and the risk premium. We find that both the implied volatility on the S&P index as well as a commonly used measure of credit spreads are highly correlated with our measured equity risk premium.

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Appendix A

Excerpt from the Survey Instrument

12. On February 17, 2012 the annual yield on 10-yr treasury bonds was 2.0%. Please complete the following:

a. Over the next 10 years, I expect the average annual S&P 500 return will be:

Worst Case: There is a 1-in-10 chance the actual average return will be less than:	**Best Guess**: I expect the return to be:	Best Case: There is a 1-in-10 chance the actual average return will be greater than:
____ %	____ %	____ %

b. During the next year, I expect the S&P 500 return will be:

Worst Case: There is a 1-in-10 chance the actual return will be less than:	**Best Guess**: I expect the return to be:	Best Case: There is a 1-in-10 chance the actual return will be greater than:
____ %	____ %	____ %

Please check one from each category that best describes your company:

a. Industry

☐ Retail/Wholesale	☐ Tech [Software/Biotech]
☐ Mining/Construction	☐ Banking/Finance/Insurance
☐ Manufacturing	☐ Service/Consulting
☐ Transportation/Energy	☐ Healthcare/Pharmaceutical
☐ Communications/Media	☐ Other: ________

b. Sales Revenue	c. Number of Employees
☐ Less than $25 million	☐ Fewer than 100
☐ $25-$99 million	☐ 100-499
☐ $100-$499 million	☐ 500-999
☐ $500-$999 million	☐ 1,000-2,499
☐ $1-$4.9 billion	☐ 2,500-4,999
☐ $5-$9.9 billion	☐ 5,000-9,999
☐ More than $10 billion	☐ More than 10,000

d. Where are you personally located?	**e. Ownership**
Northeast U.S. Mountain U.S. Midwest U.S. South Central U.S. South Atlantic U.S. Pacific U.S. Canada Central/Latin America Europe Asia Other	Public, NYSE Public, NASDAQ/AMEX Private Government Nonprofit
f. Foreign Sales	**g. What is your company's credit rating?**
0% 1-24% 25-50% More than 50%	Check here if you do not have a rating, and please estimate what your rating would be.

h. Your job title (e.g., CFO, Asst. Treasurer, etc.)

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