

Managerial Miscalibration

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OBJECTIVE

EXPECTATIONS OF EXECUTIVES

- | Understand how top executives form expectations and whether they are overconfident
- | Focus on miscalibration, a form of overconfidence
- | Explore the distribution of expected outcomes
- | All executives predict the same objects: S&P 500 returns in 1 and 10 years
- | Measure executives' miscalibration directly through their predictions
- | Compare to miscalibration about S&P 500 to miscalibration about firms' projects
- | Study firm policies with respect to executives' miscalibration

MAIN RESULTS

- | 10-year panel with 13,300 CFOs' expected S&P500 returns and **80%** confidence intervals
- | 1-year and 10-year forecasts

- | Severe miscalibration: CFOs' probability distributions are too narrow
- | Realized returns are within confidence intervals only **36%** of the time
- | Confidence intervals expand downwards during times of high market uncertainty

- | Executives' stock market miscalibration is correlated with miscalibration about own firm prospects
- | Firms with miscalibrated executives pursue aggressive investment and debt policies

DATA

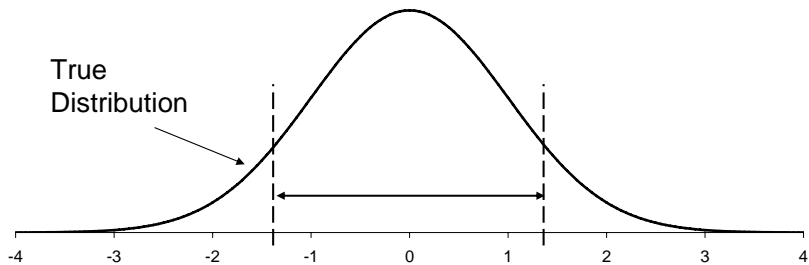
SURVEYED EXECUTIVES

- | 40 quarterly surveys (2001Q2-2011Q1)
- | Population: CFOs and top financial executives
- | Response rate: 5-8%
- | 13,346 responses (330 responses/quarter)

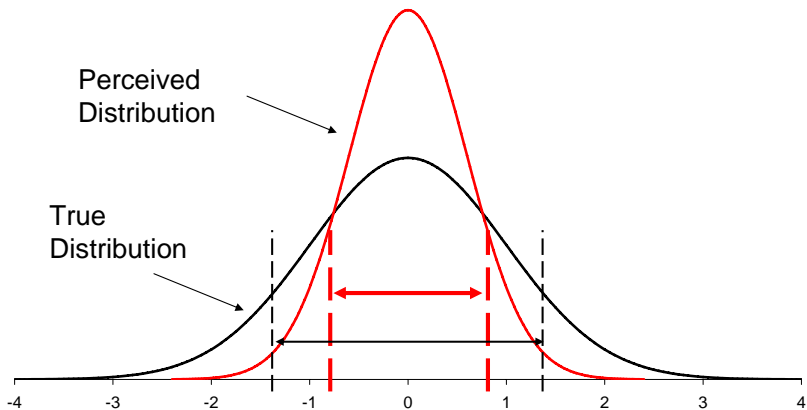
FIRMS

- | 32% of responses from self-identified public firms
- | 3,335 matched to CRSP (1,061 unique firms)
- | Large firms: 61% belong to Q5 Compustat sales; 20% belong to Q4

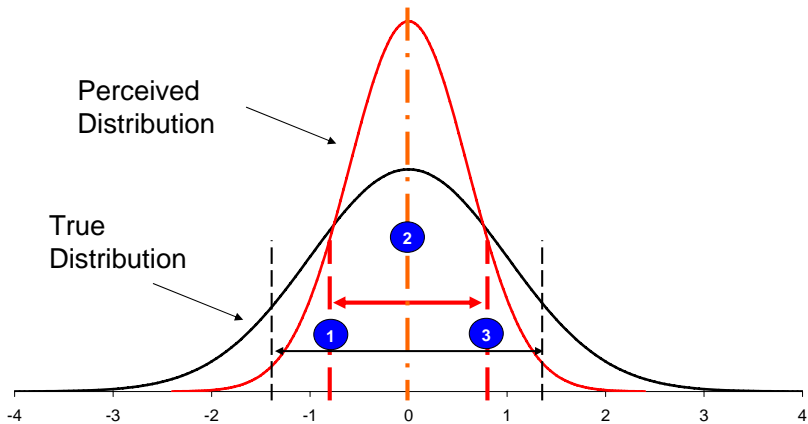
METHOD OF MEASURING MISCALIBRATION



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SURVEY TO ELICIT PERCEIVED DISTRIBUTION OF RETURNS

CFOSURVEY.ORG - Microsoft Internet Explorer provided by Olin School of Business

http://www.cfosurvey.org/

CFOSURVEY.ORG

10. On November 10, 2006 the annual yield on 10-yr treasury bonds was 4.6%. 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:
<input type="text"/>	<input type="text"/> %	<input type="text"/>

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:
<input type="text"/>	<input type="text"/> %	<input type="text"/>

Done

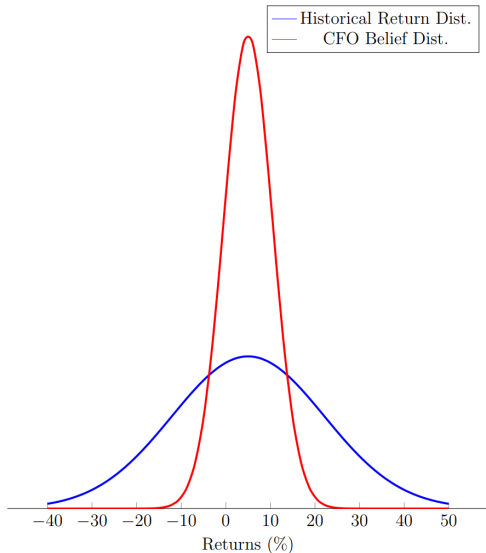
Internet 150%

RESULTS: PERCEIVED VS REALIZED RETURN VOLATILITY

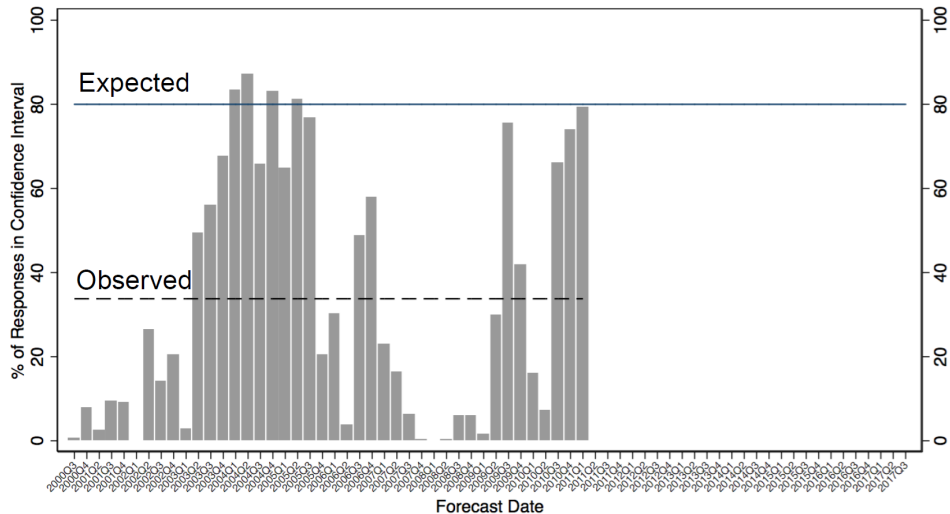
- Imputed volatility based on Keefer and Bodily (1983):

$$\sigma = \frac{P_{90} - P_{10}}{2.65}$$

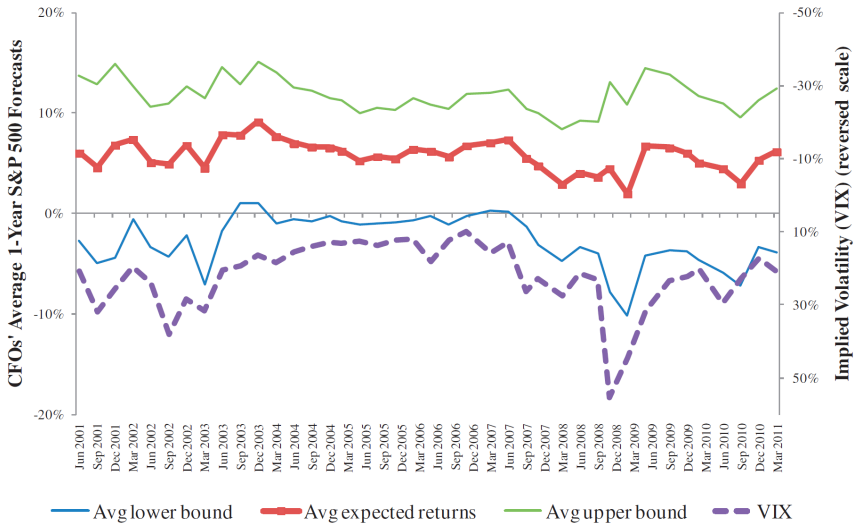
- While historical data shows that 80% confidence interval should be 42.2% wide, CFOs provide confidence intervals with an average width of 14.5% only.



% HITTING CONFIDENCE INTERVAL



SENSITIVITY OF LOWER CONFIDENCE BOUND



MISCALIBRATION AND FIRM POLICIES

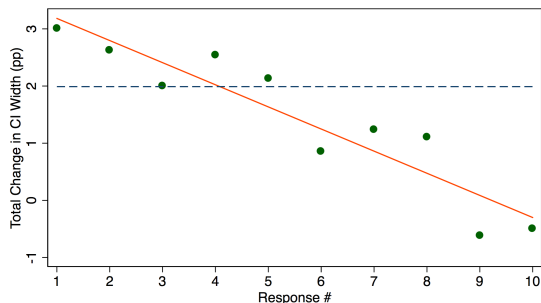
Dependent variable:	Investment intensity (%)		Leverage (%)	
	(1)	(2)	(3)	(4)
Miscalibration ST	0.235 (0.257)		1.324*** (0.358)	
Optimism ST	0.336 (0.384)		-0.027 (0.454)	
Miscalibration LT		0.600** (0.242)		0.538 (0.450)
Optimism LT		0.837* (0.418)		0.227 (0.632)
Firm characteristics	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Survey Date FE	Yes	Yes	Yes	Yes
Observations	2,547	2,511	2,601	2,565
Adj R ²	0.114	0.116	0.316	0.310

OUT-OF-SAMPLE VALIDATION

- | Boutros, Ben-David, Graham, Harvey, Payne, 2019, [The Persistence of Miscalibration](#), Working Paper
- | Extends analysis to 2017
- | Realized returns hit confidence intervals only 24% of the time
- | Study examines learning rate of CFOs making multiple predictions
- | CFOs adjust their confidence intervals after realized return “misses” their prior confidence interval
- | Adjustment, however, is small and CFOs remain highly miscalibrated even after many iterations
- | Feedback, therefore, appears to have limited effect in this context

SLOW AND DECELERATING LEARNING RATE

- | Figure shows the average adjustment following a “miss” in previous forecast. Dashed horizontal line shows average change in confidence interval across forecasters who missed.
- | By the 9th quarter of learning, no further learning appears to occur



Source: Boutros, Ben-David, Graham, Harvey, Payne, 2019, [The Persistence of Miscalibration](#), Working Paper

