Views of Financial Economists On The Equity Premium And On Professional Controversies

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Abstract

The consensus of 226 academic financial economists forecasts an arithmetic equity premium of 7 percent per year over 10 and 30 year horizons; and 6 percent to 7 percent over 1 and 5 year horizons. Pessimistic and optimistic 30-year scenario forecasts average 2 percent and 13 percent. Respondents claim to revise their forecast downward when the stock market rises. They perceive the profession's consensus to be higher than it really is and are influenced by this perception. There is agreement that markets are efficient and lack arbitrage opportunities, and that government intervention in financial markets is detrimental.

The *equity premium* is perhaps the single most important number in financial economics: the rate by which risky stocks are expected to outperform safe fixed-income investments, such as bonds or bills. It is the main input both in *asset allocation* decisions—how much of one's portfolio an investor should put into stocks versus bonds—and in the *capital asset pricing model* (CAPM)—the model used by most practitioners in computing an appropriate hurdle rate for accepting investment projects.

The academic finance profession has been teaching asset allocation and CAPM budgeting for many years. But oddly, it has been relatively quiet in recommending an appropriate "standard" for the equity premium, the key input to these models. This is unfortunate, in that without a good estimate of the equity premium, the mainstream theories are really quite useless from a practical perspective. The main reason for the scarcity of good justifications and recommendations for a "good practical estimate" is, of course, that financial economists neither know what the correct equity premium is, nor is there a consensus on how it should be estimated. Existing estimates are discussed in more detail in Section I.

This paper intends to supplement existing equity premia estimates with a "common practice estimate," the consensus in the academic profession. Although this consensus is itself likely to be a weighted estimate obtained by other methods, the distribution of estimated values among academics is itself interesting. The consensus estimate can be a number of some relevance in classroom, courtroom, and boardroom discussions, even if it may not be the best estimate of the equity premium itself. Then again, if there was agreement on how to calculcate the best estimate, there would be no need for a survey of financial economists to begin with. Still, surveys in general and this survey in particular have shortcomings, and these are discussed in Section II, which describes the design of the survey.

Section III discusses the principal survey results, i.e., the consensus view about the equity premium among the 226 responding financial economists. In brief, the most important findings are: The arithmetic 30-year equity premium consensus forecast is about 7 percent. It is between 0.5 and 1.5 percent lower on the 1-year horizon, depending on the central statistic. The consensus perception of a pessimistic outcome (at 1 in 20 probability assessments) over 30 years is 2 to 3 percent; the optimistic equivalent is 12 to 13 percent. There is evidence for a "false consensus effect," in that economists seem to incorrectly anchor their forecast to what they perceive the consensus to be—and this perceived consensus is about 0.5 to 1 percent above the actual consensus. Finally, economists claim that increases in the stock market would, on the margin, cause them to reduce their forecast of the equity premium. Section IV briefly discusses the answers to a set of issues of interest to both financial academics and financial practitioners. The strongest consensus obtains that markets are efficient and lack arbitrage opportunities, and that government intervention in financial markets is detrimental. Section V concludes with a summary of the findings.

I Existing Estimates of The Equity Premium

Cochrane (1997) and Siegel and Thaler (1997) provide comprehensive surveys of the macroeconomics and finance literature about the equity premium *puzzle*—the question as to why stocks have historically performed so well relative to bonds. This section briefly discusses existing methods to estimate the equity premium.

A Equity Premium Measurement Issues

Unfortunately, there is neither a uniformly accepted precise definition nor agreement on how the equity premium should be computed and applied.

First, the *geometric average* is earned by a buy-and-hold investment strategy that is long on stocks and short on interest-bearing securities, while the arithmetic average is earned by a strategy that rebalances investment to a fixed amount each year. Mathematically, the geometric mean is *always* lower than the arithmetic mean. For example, a 50 percent decrease followed by a 100 percent increase leaves an investor with a 0 percent geometric return, although the arithmetic average would suggest a positive 25 percent return. Historically, the 30-year geometric mean equity premium has been about 2 percent lower than the arithmetic mean (see Appendix A for more detail). It is not clear whether the arithmetic or the geometric average should be used in capital budgeting applications using the CAPM (Indro and Lee (1997)).

Second, stocks are long-term investments, and the most common method to compute the equity premium—subtracting a short-term bond return from a long-term equity return—is neither parsimonious nor necessarily a fair investment holding-period comparison.[1] Subtracting off the return to long-term bonds instead of the return to short-term bonds for a 30-year equity premium computation decreases the

long-term equity premium by between 1 percent and 2 percent. Shiller (1989) subtracts a bond index that splices corporate bonds with treasuries. This, too, results in a lower equity premium.

Lacking formal agreement on how the equity premium should be computed and used, even identical views on the implied equity premium can easily lead different individuals to respond with and themselves use different estimates for the same task. This paper describes arithmetic equity premia relative to short-term bills, unless otherwise indicated.

B Historical Average Equity Premia

Insert Table I here

Perhaps the most popular method to obtain an estimate of the equity risk premium is an extrapolation of historically realized equity premia into the future. Table I shows that practitioners can advocate a whole range of estimates as "their" equity premium choice. The use of Ibbotson equity premia estimates seems to particularly widespread. For example, the most popular finance textbook, Brealey and Myers (1996, p.146), recommended 8.2 percent to 8.5 percent in 1996, as sourced from the *Ibbotson 1995 Yearbook*. As of December 1998, Table I shows that the equivalent 1926–1998 Ibbotson historical arithmetic equity premium average has risen to 9.4 percent. Shiller (1989, Chapter 26) has assembled a longer data set, which can justify as low an equity premium average as 4.3 percent, using geometric averages over the entire 129 year history.

Yet, historical averages have limits. Even from a theoretical perspective, an observer could interpret recently high historical stock returns to be indicative of *lower* (not higher) future stock returns. If the true expected rate of return on stocks were to have fallen over the last couple of years because investors were unexpectedly streaming into the stock market and competing away previously higher expected

rate of returns or because investors became less risk-averse or because volatility declined, recent increases in stock prices (high stock returns) would soon be followed by *lower* stock returns in the future. There is also the more mundane non-stationarity problem that 50-year old equity premia may have little relevance to the world today. But stock returns are so volatile that shorter time-series have too high a standard deviation to be useful estimators. For example, a 95 percent confidence interval (plus or minus 2 standard errors) for the *true* equity premium average over the 1994–1998 period ranges from +7.6 percent to +30.4 percent—not a useful range for practical capital budgeting purposes.

C Predictive Regressions

An alternative popular method to estimate future expected returns relies on the observation that, in the very long run, expected corporate payouts and expected investment returns must be equal. The stock price today must be the present value of all future dividend payouts (or earnings). Many researchers (e.g., Campbell and Shiller (1988), Fama and French (1988), Blanchard (1993)) have used this to predict future equity returns and equity premia with dividend-yields (and, to a lesser extent, other variables).[2] As of 1999, a regression of annual data from 1927–1997 yields

$$EQP_y = -11.5\% + 3.95 \left(\frac{D_{y-1}}{P_{y-2}} \right) + \text{noise}_y \ . \tag{1}$$

where EQP_y is the equity premium (here the difference between the return on a value-weighted stock index and short-term treasury investments), in year y, and D_{y-1}/P_{y-2} is the lagged dividend yield. As of 1999, with a dividend yield of below 1.5 percent, this regression predicts one-year ahead forecast of less than –10 percent. (Longer period forecasts converge to the historical average.) Variations of such "conditional models" predict equity premia ranging from about –10 percent to

about 0 percent. These are not comfortable estimates: After all, why would anyone hold equity if stocks did not offer higher expected returns than bills? And, what does this imply for firms' capital budgeting decisions—should firms place a lower hurdle rate on riskier projects?

D Theoretical Arguments

Yet another popular approach to estimating the expected equity premium relies on calculations of what reasonable expected rates of returns are necessary to entice the average investor to be roughly indifferent between investing in stocks and bonds, given historical aggregate volatility and covariances. Assuming reasonable risk aversion for such an investor (and introspection), such estimates typically arrive at estimates of about 1 percent to 3 percent (Mehra and Prescott (1985)).

Unfortunately, these calculation have predicted about 1 percent to 3 percent for decades while the historical 1926–1998 average has increased to an all-time high of 9.4 percent. This puzzle deepens even further if the average investor is not tax-exempt, because equity capital gains face lower effective tax rates than bond interest receipts. Cochrane (1997) and Siegel and Thaler (1997) both conclude that economic theory has great difficulty in explaining such high figures (even with high degrees of risk aversion and all sorts of modifications to standard consumer choice models).[3] Still, they remain skeptical about the continued presence of an equity premium in the (often quoted) 6 to 8 percent range.

E Popular Views

Small investor surveys tend to find equity *premium* expectations between 10 percent and 15 percent per year. On 10/10/1997, *The New York Times* reports that a

Montgomery Asset Management telephone survey found an expected 1-year stock *market return* of 22 percent. On 7/28/1999, *The New York Times* reports that a similar *Paine-Webber* survey found expected stock market returns in excess of 20 percent for both the 1-year and 10-year horizons. On 11/15/1999, the *Financial Times* reports a *Gallup/Paine-Webber* poll which found "only" a 16 percent expected stock market return over both 1 and 10 year horizons.[4]

In contrast, professionals tend to be more conservative. A survey of pension fund executives and other institutional investors by *Pensions and Investments* (1/12/98, page 1) found an expected equity premium of 3 percent, and the 1997 *Greenwich Associates* survey of fund professionals found an expected 5-year equity premium of 4 to 6 percent.[5]

Individual organizations tend to be in line with professional investors. *Financial Engines* appears to use a short-term equity premium of about 6 percent. *McKinsey* seems to recently have standardized on an equity premium arithmetic figure of 5 percent to 5.5 percent for valuation purposes. The *Social Security Administration Office* assumes a $7\%-3\% = 4\%$ geometric equity premium, based on a dated historical average. Naturally, those arguing that rescuing *Social Security* requires an asset reallocation into equities contend that the 4 percent equity premium is too low, based on observed historical averages; others consider this figure too high (Diamond (1999)).

For a sampling of finance textbooks, Copeland, Koller, and Murrin (1995, p.260) recommends a 5 to 6 percent geometric average. Grinblatt and Titman (1998, p.174) uses 10 percent in an example, but, after giving a discussion, is notably silent on giving *any* estimate (cf. p. 176). Ross, Westerfield, and Jaffe (1993, p.257) recommends 8.5 percent. Van Horne (1992, p.214) recommends 3 to 7 percent. Weston, Chung, and Siu (1997, p.190) recommends 7.5 percent.

F Summary

In sum, there are wide discrepancies in estimates of the *expected* equity premium, ranging all the way from –10 percent to +20 percent depending on the source of the forecast. Such disagreement about the expected equity premium can lead to absurd consequences in the classroom, courtroom, and boardroom: The same project may require passing a hurdle rate of 10 percent in one company and 20 percent in another; the same investor may receive retirement advice that suggests vastly different retirement ages, saving needs, and investment policies; and politicians may or may not advocate different reforms of the social security system, each based on a different estimate of the equity premium and each backed up by a generally accepted estimation method.

The goal of this survey is to provide a "meta-estimate," i.e., a weighted average of estimates used by financial economists, which could become a focal point different from the aforementioned estimates. Although this consensus has no claim that it offers the correct best ex-ante estimate, it is at least an appropriate "common-practice" estimate among one group of well-informed individuals, usually asked to provide such estimates in their ordinary course of instruction and without financial incentives to radiate biased estimates.

II The Survey Design

This paper summarizes the results of two surveys, henceforth referred to as the first and second survey.

A The First Survey

The first survey is printed in Appendix B. This paper reports statistics for [a] forecasts of the mean and 5 percent and 95 percent confidence interval for the equity risk premium (stocks minus equivalent horizon bonds), for a 1-year, 5-year, 10-year, and 30-year horizon; [b] an estimate of the mean that other academics would provide on this survey; and [c] views regarding nine issues of relevance to the academic finance literature.

It was posted on the author's WWW site (http://linux.agsm.ucla.edu/) in October 1997. In addition, a hardcopy was mailed to finance professors at 11 universities with large finance faculties, associate editors at three major journals, and the author's colleagues at UCLA. Almost all of the responses came from the mailings, not from visitors to the WWW site. There were 114 valid completed forms, the first arriving in October 1997, the last in February 1998.

To correct the major ambiguity in the first survey, whether participants had responded with a geometric or arithmetic average, respondents were contacted by email in October 1998 and asked whether their 30-year answers were arithmetic or geometric averages, and for whether their views on the 30-year equity premium forecast had changed. 85 participants responded to the request for clarification; only 29 did not. Overall figures provided in the tables reflect appropriate adjustments to the first survey estimates, as described in Appendix A, to make them equivalent to answers to the second survey.

B The Second Survey

The second survey is printed in Appendix C. It was shorter and corrected several shortcomings of the first survey. It elicited explicitly both geometric and arithmetic 30-year averages, requested an equity premium defined as the difference between stocks and *short-term* bills, added a question about how an increase in equity prices would influence a researchers' views, added questions on the 100-year equity premium and 30-year inflation, on whether the respondent considered himself an expert or had published on the subject, survey completion time and clarity of the survey. This second version was posted both on the author's aforementioned WWW site and the *Journal of Finance* WWW site, and elicited 112 responses by Ph.D. level financial economists.[6] The first response was received in January 1999, the last in May 1999. Reported figures in the tables break out responses to this second (more accurate) survey.

C Problems

This survey admittedly suffers from a number of problems. First, economists were not properly incentiviced to reveal their best estimate. However, the cost of jotting down a number that all finance professors have to tell students on a daily basis is low. The majority of professors contacted were willing to participate. Even though it is possible that participants represent a biased sample, a visual inspection reveals a fairly large subset of professors at many leading universities. Second, this survey was *not* a controlled experiment, but an attempt to take the pulse of the profession. The survey did not permit anonymous responses, and none was received. I was clearly identified as the person asking the question. Most finance professors would be unlikely to answer a survey sent by someone they do not know. Indeed, most responses were received only after private email reminders. Third, second

survey participants answered one year later—after a significant market rise and after the first writeup of this paper was available. Yet, even if the circulated first draft of the paper had changed some participants' views, this paper would be interested more in their revised than in their original views. Fourth, the presence of the Brealey and Myers historical figures on the right of each question may have induced respondents to anchor on them. In defense, the Ibbotson numbers are familiar to most finance professors, and their presence may have increased the survey response rate by allowing participants to answer without delaying until they could find the time to verify the Ibbotson numbers. (Moreover, these figures were originally intended to clarify whether I was asking for a geometric or arithmetic average.) Fifth, the questions in the first survey were ambiguously phrased and required email clarification and adjustments. Unfortunately, it is not possible to find a fresh set of participants to replenish the pool. Fortunately, clarified *adjusted* answers to the first survey are very close to the answers of the second survey.

III The Academic Equity Premium Consensus

A Long-Horizon Equity Premia

Insert Figure 1 here

The bottom-right panel of Figure 1 plots the distribution of 226 answers to the 30-year arithmetic forecast for the equity premium using the largest set of answers. Impulse lines within the bars on the 30-year graph plot the distribution of answers to the second survey only.

Insert Table II here

Table II shows that various central statistics (the mean, the 5% and 95% truncated mean, and median) suggest an academic expected arithmetic 30-year equity premium consensus of about 7 percent.[7] Figure 1 shows that the mode response is about 8 percent. Still, only about 20 percent of participants on either the first

or the second survey picked an (unadjusted[8]) number between 8 percent and 8.9 percent (8.5 percent being the largest), equal to the historical Ibbotson estimate quoted by the questionaire itself. The historical average does seem to have strong influence, but about 80 percent of participants provided their own estimate instead. The standard deviation of the expected 30-year premium is about 2.0 percent,[9] the first quartile is 6 percent, the third quartile is 8.4 percent. There is a pronounced clustering between 5 percent and 9 percent, but there are more individuals below 5 percent than there are above 9 percent. Remarkably, Figure 1 does not indicate multi-modality—the profession does not divide neatly into two or three camps each of which forecasts its own number. Most individuals choose a convex combination of the above-mentioned forecast methods, with most of the weight on the long-term historical average.

As to differences between the first and second survey, 112 second-survey respondents offered an equity premium estimate of 6.7 to 7.0 percent, depending on the central statistic. Adding in the email-clarified responses (for a total of 197 clear responses), the mean 30-year equity premium forecast rises back to the 7.1 percent, equal to the average of all 226 respondents. The (relatively small) difference of 0.4 percent can thus be mostly attributed to a sampling variation across individuals (perhaps due to increased stock market level by the time the second survey was run; see Section III.E), and only secondarily to remaining miscorrection in the adjustment calculation.

In sum, 6.8 percent to 7.0 percent is a robust estimate for the consensus about the 30 year arithmetic equity premium among financial economists. However, there is considerable disagreement across economists.

Not reported in the table:

Geometric Averages: About half the respondents offered explicitly a geometric 30-year equity premium forecast. *The academic consensus for the geometric 30-year equity premium is around 5.2 percent per year.*

100-Year Equity Premium Forecast: Among 45 responses to the (optional) request for 100-year forecasts on the second survey, the 100-year arithmetic equity-premium forecast mean was 6.5 percent, which was about 1 percent less than the same respondents' 30-year forecast mean.

Stock Market Forecast: Respondents to the second survey offered a 30-year *arithmetic stock market forecast* of 11 percent (standard deviation 2.1 percent).

Recent Updating: Among 85 first-survey respondents contacted by email about a year later, only 9 individuals chose to reduce their estimates, 4 individuals chose to increase their estimates.

B Shorter-Horizon Equity Premia

Table II shows that the largest set of adjusted responses, 170 in total,[10] indicates an arithmetic 10-year equity premium forecast of 7 percent (standard deviation: 2 percent). For the 58 individuals answering this question on the second survey, the average was slightly lower and practically identical to these respondents' 30-year arithmetic equity premium forecast, both 6.8 percent. (The average difference between 10-year and 30-year arithmetic equity premia forecasts when both are available is 0.2 percent.) It is fair to characterize any difference between 10 and 30 year equity premia forecasts as insignificant.

However, the two shorter term arithmetic equity premium forecasts of 1-year and 5-years are lower, both in economic and statistical terms.[11] Relative to the 10-year and 30-year forecasts of about 7.1 percent, the 5-year untruncated forecast mean is

about 0.5 percent lower and the 1-year untruncated mean forecast is about 1 percent lower. (Truncated mean differences are smaller and but the average differences for respondents for which both are available are 0.7 percent and 1.4 percent.) This is primarily due to a more frequent presence of negative forecasts rather than a left shift of the distribution. Twelve (two) respondents recommend an estimate that suggests that they believe treasury bills will outperform stocks over the next year (next five years). Compared to the long-term forecast, there is also considerably more disagreement among economists for what the best short-term equity premium forecast is. The truncated standard deviation *across* financial economists rises from the 1.7 percent for 30-year forecasts to about 2.5 percent on a one-year forecast; the untruncated standard deviation rises even more.

C Optimistic and Pessimistic Scenarios

Respondents were also asked to provide their 5th percentile and 95th percentile scenarios for the equity premium. This was an optional question, so the number of responses to these questions is lower than the number of responses to the earlier question about the 30-year mean forecast. Most finance professors are unlikely to have given much thought to this question, because they do not usually have to provide such figures. Consequently scenario estimates are intrinsically less reliable than economists' own expected forecasts This unreliability is reflected in a much wider dispersion of answers and some inconsistencies.[12] The reader should focus primarily on the more robust statistics based on medians and truncated means and not on the simple means.

Figure 2 graphs the expected, most optimistic, and most pessimistic scenario when individuals are sorted by their 30-year arithmetic forecast. The statistics are provided in Table III. The top half of Table III shows that the most optimistic arithmetic 30-year equity premium scenario consensus is somewhere between 11 per-

Insert Figure 2 here

Insert Table III here

cent and 13 percent per year. (For 56 answers to the second survey, the median and mean is about 11 percent.) Shorter-term optimistic-case scenarios are successively more optimistic, but the magnitude depends strongly on the central statistic used. The 10-year optimistic scenario arithmetic equity premium forecast lies at around 15 percent, the five-year optimistic scenario lies at around 20 percent, and the one-year optimistic scenario lies between 25 and 30 percent. In the minds of many academics, the most recent three years were rather unusual (one in twenty) realizations *each*.

The bottom half of Table III shows that the pessimistic arithmetic 30-year equity premium scenario (at the 5 percent level) consensus is between 2 percent and 3 percent (median) per year. (For 55 answers to the second survey, the median and mean is about 4 percent—*higher* than it is in the overall sample [not lower as is the mean forecast].) Shorter-term pessimistic-case scenarios are successively more pessimistic. The 10-year pessimistic scenario forecast lies around 0 percent, the five-year pessimistic scenario lies around –8 percent, and the one-year pessimistic scenario lies between –20 percent and –25 percent.

It is remarkable that even at a probability of 1 in 20, financial economists tend not to believe that a meltdown of Japanese style proportion that lasts for 10 to 30 years. Indeed, the confidence of financial economists is remarkable: the typical *pessimistic* 1-in-20 case 30-year scenario foreseen by financial economists is about the equity premium which Mehra and Prescott (1985) consider to be consistent with reasonable risk aversion; which is consistent with the hypothesis that recent high stock returns are simply reflections of lower required future equity returns; and which is predicted by both Siegel (1999) and myself personally.[13]

There is a negative correlation between the optimistic and pessimistic estimates across economists—economists who indicate a more positive optimistic scenario also indicate a more negative pessimistic scenario. Thus, variation in optimistic/pessimistic

scenarios are driven more by differences in confidence than by differences in estimates of the mean. The correlation between the pessimistic and mean equity premium forecast is *positive*—economists with higher equity premium mean forecasts also provided more favorable pessimistic scenarios. Thus, the pessimistic estimates to the survey tend less to reflect disagreement on where the economy lies in terms of the risk-return tradeoff—in which case one would expect individuals indicating a more positive equity premium mean to also indicate a more negative possible outcome—but across-economist views about the attractiveness of the stock market.

The term structure of volatility that can be extracted from these extreme forecasts is roughly consistent with a random walk with a volatility of about 15 percent.

D The Perceived Consensus

What equity premium do financial economists believe their peers are recommending? This is interesting for a number of reasons. Economists are likely to weigh their otherwise private estimates against what they perceive to be a common consensus, and come up with a posterior estimate that averages the two. An incorrect perception of the estimates of others can delay the process of collective adjustment. If one believes everyone else believes the equity premium to be 8 percent, then one may be reluctant to quickly adjust one's view away from 8 percent. In this sense, this survey may aid the profession's aggregation of opinions. Further, the perception might indicate the extent to which this survey is informative to researchers. If economists' personal views and views of the profession's consensus already coincided, this paper would be less informative and economists' estimate could be considered more reliable.

Table IV shows that economists' perceived consensus is not monotonic in the

Insert Table IV here

horizon, although differences are small. The belief is that the 30-year and 5-year equity premium consensus are about 7.5 percent, about 8 percent for the 10-year consensus, and 6 percent for the one-year consensus. Comparing this to the equity premia forecasts themselves (on the left side), the popular view is that their own consensus is between one-half and one percent higher than what it actually is. Except on the 1-year horizon (which has fewer responses and higher standard series deviation), the difference is statistically significant. Note also that economists believe more in their ability to judge the consensus than to judge the equity premium itself, even over 30-years. However, there is still substantial disagreement among economists.

Insert Table V here

The influence of this overestimate is further explored in Table V. The left part of the table provides the univariate means and standard deviations *for the set of researchers with both a forecast and a consensus estimate.* Again, the misperception is between 0.5 to 1.0 percent. However, economists' own estimates need not be influenced by their perceptions of the prevailing consensus—for example, everyone may invariably believe others use the Ibbotson 8 percent figure and have their own equity premium forecast be unaffected thereby. To explore whether there is an "anchoring" effect, i.e., whether economists have a perception of the consensus and shade their own equity premium forecast toward this perception,[14] Table V described the results of a regression with the demeaned consensus on the demeaned forecasts. A coefficient of one indicates perfect shading, a coefficient of zero perfect irrelevance.

The regressions reported on the right side of Table V show that the same economists indicating they believe the professional consensus to be higher also offer a higher equity premium forecast themselves. This is especially pronounced on the 1-year horizon and on the 30-year horizon. It is weaker on the 5-year and 10-year

horizons. Perhaps financial economists often use either short horizon (1-year) or long horizon (30-year) rates, but less often use either 5-year or 10-year rates.

In sum, the regressions are consistent with an attempt by economists to provide a forecast that lies between their personal estimate and their perceived consensus belief. If this is the case, the results of this survey may help economists improve their "anchoring" their own predictions relative to the profession, which would cause a downward revision in the aggregate consensus forecast.

E Other Statistics

The most interesting remaining question concerns the influence of market movements. Almost all finance professors subscribe to the view that markets follow a random walk in the short-run. Updating of equity premia opinions is likely to be a very slow process and changes in opinion are likely to be marginal only. Still, participants on the second survey were also asked to indicate whether they would be positively, negatively, or not at all influenced by stock market movements *on the margin*. Coding this feedback rule as $+1$, -1, and 0, respectively, the mean response by 112 participants to this question was -0.367, with a standard deviation of 0.5. Thus, the average participant claims that a bull market leads him/her to predict a lower future equity premium.[15]

Finally, the second survey asked whether financial economists considered themselves to be relatively better informed with respect to the equity premium and whether they have published in the area. There were 51 responses indicating no prior relevent publication, 13 of who considered themselves less qualified (mean arithmetic 30-year equity premium: 6.6 percent), 3 of whom considered themselves better qualified (mean: 7.3 percent), and 35 of whom considered themselves equally qualified (mean: 7.3 percent). Of the 17 individuals who indicated a relevant publi-

cation, 6 considered themselves better qualified (mean: 6.4 percent), 11 considered themselves equally qualified (mean: 6.6 percent). Thus, lower forecasts tend to be either by individuals who had published related work or individuals who felt ill qualified to answer the survey.

IV Questions Debated in Academic Finance

The first survey took the opportunity to add a set of questions that asked their views on issues that are commonly debated in the academic literature, and on which most researchers who attend finance conferences and seminars are likely to have an interest in (or at least an opinion on). Answers could range from "1" (strongly disagree) to "3" (neither agree nor disagree) to "5" (strongly agree). Table VI lists both the questions and the received responses.

Insert Table VI here

The first question asked whether the stock market is more likely to follow a random walk or more likely to have long horizon negative autocorrelation. It turns out that more professors have an opinion ("agree" or "disagree") than no opinion ("neither agree nor disagree"), but when they do this opinion is roughly evenly split. The jury is still out.

The second question concerned the use of the capital asset pricing model (CAPM) for capital budgeting purposes. Although a sizeable minority of professors do not believe it is "good enough" to be used for capital budgeting purposes, a majority feels it is.

The third question asked whether size and book/market values are more likely to be characteristics (in the Daniel and Titman (1997) sense) or more likely to be risk-factors (in the Fama and French (1993) sense). The respondents mildly favored the view that they are characteristics.

The fourth question asked whether the factors/characteristics (size/book-market/price-earnings/momentum) are likely to be useful for portfolio selection in the future. The profession does not have a strong view on this issue. This ambivalent view is remarkable, given the large number of publications and strong ongoing interest in detecting past "anomalies." Prior to conducting this survey, it had seemed to the author that the common working hypothesis in finance is that at least the major anomalies are universally viewed to represent persistent phenomena. This survey does not confirm this.

The fifth and sixth question asked whether markets are basically efficient and arbitrage-free. There was much agreement here: financial economists feel that, by-and-large, financial markets are efficient. The sixth question asked whether economists believe in arbitrage opportunities—an ability to make money without risk. Apparently, the respondents did pay attention, and also marked a strong view in favor of absence of arbitrage.

The only question that elicited more support than absence of arbitrage was the question about whether governments should intervene more in financial markets. The profession strongly feels that this would be counterproductive.

Finally, two questions related to corporate finance. The eighth question asked whether large Fortune-500 firms have too little debt in the capital structure, and whether share repurchases dominate dividends as a means of payout. The profession has no views on whether large Fortune-500 firms would be better off with more debt in their capital structure. But they perceive dividends to be an unwise mechanism for corporation to disburse funds relative to share repurchases.

In sum, it is remarkable how weak the views of financial economists are, even on issues as absence of arbitrage that are typically seen as relatively uncontroversial: about one quarter of the participants responded with a value between strong disagree and "neither agree nor disagree." On most questions, there was neither strong

agreement nor strong disagreement by many participants, even when central issues in finance and stark positions were concerned.

V Conclusion

This paper presents the results of the first comprehensive survey of financial economists. 226 finance professors shared their forecasts and perspectives on the equity premium and some related issues. The primary findings are:

1. The average arithmetic 30-year equity premium consensus forecast hovers around 7 percent. On the one hand, this is not as high as the current historical 9.4 percent arithmetic average quoted by Ibbotson or even as high as the Brealey and Myers (1996, p.146) quoted average of 8.4 percent per year. Practitioners who would prefer to base their estimates on the perceived academic consensus should thus use a lower 7 percent arithmetic premium instead.

   On the other hand, the 7 percent equity premium consensus forecast seems too high for comfort among macroeconomists who argue that stock prices have risen because rational informed investors now require and expect lower future equity rates of return. These rational informed investors are *not* the finance professors surveyed here. Indeed, the 1 percent to 3 percent theoretical estimate is roughly the academic consensus for a worst-case (1 in 20) 30-year scenario.

2. There is a term-structure of equity premia *forecasts*: short-term forecasts are lower than long-term forecasts. (Unfortunately, this consensus also prevailed on the first survey in early 1998!).

3. There is evidence for a "false consensus effect." On average, finance professors believe that their consensus is about 0.5 to 1 percent higher than it actually

is, especially on shorter horizons; and there is a strong correlation between a researcher's perception of the consensus and his/her own estimate. This is evidence that participants "anchored" their own responses on their perceptions of the professional consensus—and it may indicate that the publication of this paper may shade down the equity premium consensus forecast among financial economists.

4. On average, financial economists claim to revise their forecast down as markets increase ("negative feedback").

5. There is strong agreement among financial economists that the government ought to decrease its intervention and regulation of public securities markets, and that markets are by-and-large efficient and arbitrage-free. They also would mildly recommend to corporations to use more share repurchases and fewer dividends. And they have no strong views, one way or another, whether the stock market follows a random walk, whether firms can reasonably use the CAPM for capital budgeting, whether large firms should use more debt financing, whether size and book/market are risk factors or characteristics, or even whether size and book/market will continue to predict stock returns in the future.

A Adjustments

The first survey considered the request for an average, paired with the well-known Brealey and Myers/Ibbotson 8 percent estimate, to mean "arithmetic;" and considered the use of a long-term bond for long-horizon premia (rather than short-term bonds) to be the relevant definition. Because neither is a standard in this literature, this introduced ambiguities in the first (but not second) survey.

Geometric vs. Arithmetic Averages: A Taylor approximation yields

$$\frac{\left[(1+r)^T - 1\right] - T \cdot r}{T} \sim \left(\frac{T-1}{2}\right) r^2 + \left[\frac{(T-1)\cdot(T-2)}{6}\right] r^3 + O(r)^4 \qquad (2)$$

which can be used to adjust geometric and arithmetic averages. Because market returns are not perfectly serially uncorrelated (see Roll (1983)), the historical 1926–1997 differences provide a better adjustment:

Number of Holding Years	1	2	3	4	5	10	30
Equity Premium	0.0%	1.0%	1.4%	1.7%	1.8%	1.9%	1.8%

To correct the casual distinction between geometric versus arithmetic averages, I emailed participants of the survey with a request for clarifications of answers received to the first survey. This revealed that about a third of respondents had originally quoted a geometric average. To adjust answers to the first survey, for the 25 individuals who indicated that their answer was for a geometric average (out of 85 who responded to the request for clarification), the historically appropriate adjustment of 1.8 percent (see footnote A) was added to 5-year, 10-year, and 30-year estimates. For the 31 individuals who did not respond to the request for clarification, the following adjustment was computed. Among the 85 received clarification responses, a regression was fitted with the dependent variable being a dummy indi-

cating whether the response was geometric (G_i) and the independent variable being the quoted 30-year forecast (Q_i):

$$G_i = 0.823 - 0.0877 \cdot Q_i + \text{noise}_i \tag{3}$$

The fitted estimate was used as a "probability" adjustment ($p_g(Q_i) \equiv \hat{G}_i$) to translate the original answers by the 31 participants who had not responded to the request for clarification into arithmetic averages (a_i):

$$a_i = Q_i + p_g(Q_i) \cdot 1.8\% \tag{4}$$

for 5-year, 10-year, and 30-year forecasts. Of course, no adjustment was necessary for 1-year forecasts.

Bonds Vs. Bills: Historically, over the 1926–1998 period, long-term bonds offered a geometric return of about 5.3 percent (arithmetic: 5.8 percent), whereas short-term bills offered a return of about 3.8 percent. However, these averages can be deceptive. The return on both instruments over the 1926–1981 period was identical; the long-term bond has been a much better performer only since 1981. Over the sampling period (October 1997 to May 1999), the *quoted* yield difference between the short-term and long-term bond was about 1.1 percent. (Other bond features, e.g. the value of a long-term call feature, reduce this figure.)

The first survey asked for the difference between the equity premium and the long bond, whereas the second survey asked for the difference between the equity premium and short-term treasuries. To translate all quoted first survey forecasts into bill-adjusted equity premia, a reasonable adjustment into treasury bill-adjusted rates was added (1 percent for the 5-year, 10-year, and 30-year forecasts, and 0.5 percent for the 1-year forecasts).[16] A reader interested in using an equity premium forecast relative to a bond rather than a bill should subtract about 0.5 percent to

the one-year bill-quoted equity premia, and about 1 percent to the longer-term bill rates. These adjustments were applied to all quoted figures *from the first survey*: long-horizon and short horizon equity premia, optimistic and pessimistic scenarios, and consensus estimates.

Other Adjustments: In addition, there were 5 extreme outliers on the first survey, in which the respondent quoted either 12 percent or 1,500 percent. I sent emails to these respondents to ask them if this was their correct estimate of the per-annum equity premium. All 5 respondents replied that they had misread the survey, either assuming that I had asked for the market expected return (not net of the risk-free rate), or that I had asked for a compound figure. Although it is possible that they meant to say 12 percent and I unduly influenced them, this is unlikely—these particular finance professors happened to have made their relevant views on this issue publicly known in other venues. In 4 cases, the answer in the survey was corrected. In 1 case, the respondent indicated that his numbers were wrong, but that he was too busy to fill out the survey again. This answer has been removed from the survey. The second survey had some automatic checks to alert respondents to extremely large or small estimates, primarily useful for catching individuals quoting total rather than average returns.

Perceived Clarity: The second survey also gathered some descriptive statistics. For 110 responses, the average time spent on the survey was about 3.5 minutes. On a scale of 1 to 10, with 1 indicating perfect clarity and 10 indicating perfect opacity, the mean was 1.8. There was a small negative correlation between perceived clarity and equity premia mean estimates, and a small positive correlation between time spent and equity premia mean estimates. In a regression, the coefficients indicate that an individual who felt one point more confused and an individual who spent about 2 minutes less indicated an arithmetic equity premium mean of about 0.25 percent less.

Other Adjustments: Residual adjustment error is likely to play only a small role. Sampling variation and the bull-market of 1998 probably account for much of the 0.4% difference between the overall survey figures and the second survey figures. This difference is well within the range of disagreement among economists' answers.

B The First Survey

(enclosed)

C The Second Survey

(enclosed)

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Notes

[−1] Contact: ivo.welch@agsm.ucla.edu. (http://linux.agsm.ucla.edu/). This paper was UCLA/Anderson Finance Working Paper 10-98. I am grateful for comments from Shlomo Benartzi, Michael J. Brennan, John Cochrane, David Wessels, Amit Goyal, Mark Grinblatt, Jay Ritter, Robert Shiller, Jeremy Siegel, René Stulz, Richard Thaler, and Fred Weston. I thank Patrick Cunningham for providing information about Greenwich Associates' survey of fund managers.

[1] Abel (1999) decomposes the equity premium into a risk and a term premium. Not surprisingly, the term premium accounts for about 25 percent of the observed equity premium.

[2] "Fortunately," aside from a number of statistical problems, such models have predicted consistently poorly *out-of-sample* at least since 1946. Goyal and Welch (1999) show that this is because simple linear models are unstable—the coefficients have declined over time.

[3] In addition to models based on standard representative agent utility maximization, these summary papers also discuss other, more "radical" explanations, such as behavioral explanations, e.g., as in Benartzi and Thaler (1995), and ex-post survival bias, e.g., as in Jorion and Goetzman (1999).

[4] Not surprisingly, investors have poured into the stock market in unprecedented numbers. On page 130 of the *1996 Mutual Fund Fact Book*, the *Investment Company Institute* reports a strong positive correlation between stock market rallies and mutual fund net inflows. In 1995, investors poured in $164B, e.g., up from $2.8B just after the crash (in 1988), up from a $40B/year average throughout the 1980s, and up from net outflows during the 1970s. (In general, the more aggressive the equity fund investment style, the larger the net fund inflows in the 1990s.) Aggregate net inflows into the three major public equity markets (equity issues minus dividends

and repurchases and bankruptcies) have seen multi-year levels unprecedented since the great depression.

[5]Fund managers predicted the S&P500 stock *index* (i.e., without dividends which account for about 1 to 2 percent per year) to offer a 10.4 percent mean, a 9.8 percent median. A range of 8 percent to 14 percent represents about two-third of the distribution. The survey was taken in September and October 1997, and encompassed 2,309 funds of which about 75 percent responded. It is published in "What Now?," by Greenwich Associates. Prior academic research on investment expectation can be found in Shiller (1999), Kon-Ya, Shiller, and Tsutsui (1996), Kon-Ya, Shiller, and Tsutsui (1991), Pound and Shiller (1989) and Shiller (1987). An update of Kon-Ya, Shiller, and Tsutsui (1996) shows a one-year stock market expectation of 6.6 percent by U.S. respondents, but high year-to-year variability.

[6]14 responses were from individuals who were not financial economists with a Ph.D. (mostly finance Ph.D. students. Their 30-year arithmetic average forecast was 5.3 percent on average, with a median of 5.9 percent).

[7]There is one outlier of 15 percent, which is responsible for an 0.04 percent higher estimate. In correlation and regression computations, this observation was eliminated.

[8]This is the only exception where the frequency of *unadjusted* estimates to the first survey is quoted. This is because the question is how many individuals just copied the provided 8 percent Ibbotson estimate provided by the survey. The median and mean unadjusted response to the first survey was about 6 percent, not 8 percent.

[9]Nordhaus (1994) surveys a set of economic and natural researchers about the potential impact of global warning, and finds remarkably high dispersion in expert

opinion. This equity premium survey mirrors this dispersion in expert opinion in finding high across-expert dispersion.

[10]In the second survey, shorter-term equity premia estimates were optional. There is no real difference between statistics computed over all reported answers, or only for those individuals where both shorter and longer equity premia forecasts were available. See Appendix A for more details.

[11]About 20 percent of survey participants offered an expected premium term structure that was monotonically increasing in horizon; 50 percent had the expected premium term structure monotonically decreasing. This decline in forecast by horizon is comforting in another sense: many financial economists did not just copy the provided Ibbotson estimate, but instead provided their own estimate. The number of unadjusted 8 percent answers drops from the 20 percent for the 30-year estimate to about 15 percent for the 1-year estimate.

[12]There were 4 responses for which the optimistic scenario was not better than the average forecast, and 1 response for which the pessimistic scenario was not worse than the average forecast. These 5 responses were first eliminated.

[13]To avoid economists' 7 percent consensus from becoming the "Welch number," I must take the unusual step of quoting my own personal estimate: 2 to 3 percent arithmetically over 30 years (see also Welch (1999)).

[14]Naturally, economists may settle on their own forecast and believe it is also held by the profession. Ross, Greene, and House (1977, p.280) reported a series of studies, in which subjects show a tendency to "see their own behaviors choices and judgments as relatively common and appropriate to existing circumstances while viewing alternative responses as uncommon, deviant, or inappropriate." Marks and Miller (1987) summarize this literature and describe some explanations. However, in this equity premium survey context (in which there is no temporal precedence),

it is not even clear if there is a philosophical difference between this view (in which own choices influences the consensus perception) and the view stated in the text.

[15]Respondents indicating that they follow a positive feedback rule are also more optimistic about the market. 66 individuals indicate they are not influenced by stock market movements on the margin, and provide 7.3 percent as their equivalent average; 43 individuals follow a negative feedback rule, with 5.7 percent as their equivalent average; and only 2 individuals follow a positive feedback rule (with 4 percent and 8 percent as their average arithmetic 30-year equity premium estimates). The fact that there is a correlation between the indicated feedback rule and the forecast should not be surprising, given the stellar recent stock market performance.

[16]This is lower than the historical 1.5 percent difference because some participants may have assumed a definition of equity premia, without reading the question more carefully. (This adjustment adds 112/226*1.0 percent~0.5 percent to the overall average.) The closeness of first survey and second survey results, especially after adjusting for the rising equity market, further indicates that this issue has been dealt with appropriately.

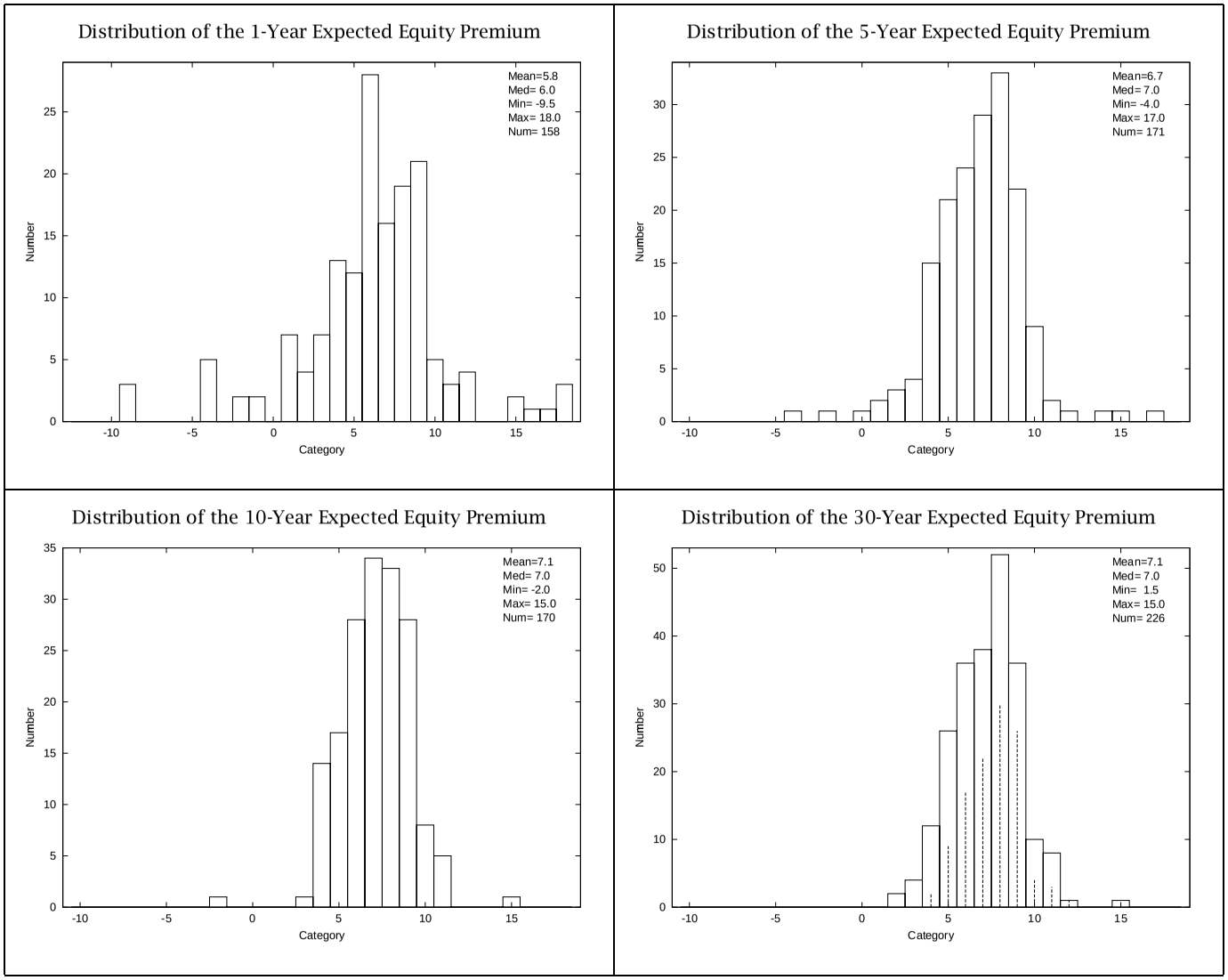


Figure 1. The distribution of arithmetic equity premia forecasts by financial economists. The surveys from which these histograms were computed are reproduced in the Appendix. Statistics are over both the first and second survey (after adjustments to first survey responses explained in Appendix A). The bottom right graph reports responses to the second survey as impulse lines inside the bars.

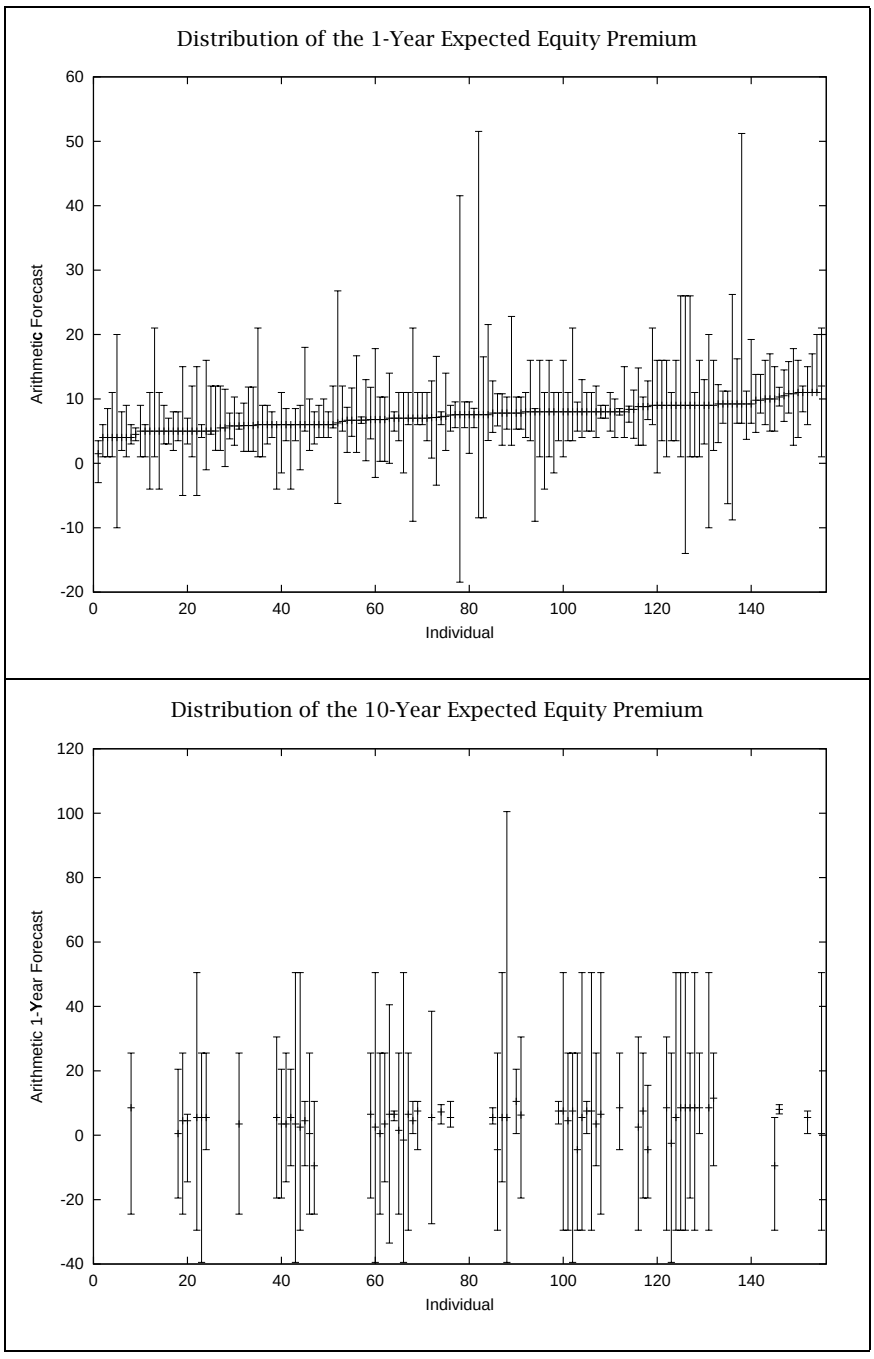


Figure 2. The Pessimistic-Scenario, Average, and Optimistic-Scenario 30-Year Arithmetic Equity Premium Forecast by 226 financial economists. Forecasts from the first survey were adjusted, as explained in Appendix A. In both figures, individuals are indexed (lined up) identically, sorted by their mean forecast. Clustering in 1-year responses is induced because of discreteness in 30-year responses and the sorting procedure.

Table I

Historical Stock Market and Equity Premium Performance

Ibbotson estimates are published in the Ibbotson *Year-End Summary Report 1998*. They are based on the S&P500 return with dividends ("large company stocks") and 30-day to maturity treasury bills. Shiller indices are published in Shiller (1989, Chapter 26) and updated on *http://www.econ.yale.edu/~shiller/chapt26.html*. They are based on the dividend-adjusted S&P500 index (formerly called the *S&P composite index*) and a short interest rate *spliced from corporates and treasuries*, and computed from January to January index averages (of the following year), not December to December closing prices. Thus, the last price used in the computations is an average January 1999 index price. The indices differ primarily due to the use of different interest rates.

Geometric means are computed as

$$g_T = \sqrt[T]{\frac{\prod_{y=1}^{T}(1+\mathrm{rm}_y)}{\prod_{y=1}^{T}(1+\mathrm{rf}_y)}},$$

where rm_y is the market return and rf_y is the risk-free rate in year y. Arithmetic statistics are computed from a T-year series of $(\mathrm{rm}_y - \mathrm{rf}_y)$ in a standard fashion.

Unreported: averages computed using the value-weighted stock market index obtained from CRSP have means of about 0.3% more and standard deviations of about 2% more than equivalent S&P returns. Unreported: Inflation from 1926–1997 was about 3.1%.

Table I

Historical Stock Market and Equity Premium Performance (cont'd)

Stock Market Return Historical Averages								
			Geo.	Arithmetic				
Source	Time-Frame	#Years	Mean	Mean	Stddev	Min	Max	Stderr
Shiller	1870-1998	129	9.3%	10.8%	17.8%	-42.9%	54.9%	1.6%
Shiller	1899-1998	100	10.2%	11.9%	18.6%	-42.9%	54.9%	1.9%
Ibbotson	*1926-1998*	*73*	*11.2%*	*13.2%*	*20.3%*	*n/a*		*2.4%*
Shiller	1926-1998	73	11.0%	12.8%	19.3%	–42.9%	55%	2.3%
Shiller	1949-1998	50	13.3%	14.3%	15.1%	–21%	46%	2.1%
Shiller	1974-1998	25	14.8%	15.9%	15.5%	-20.8%	38.6%	3.1%
Shiller	1994-1998	5	23.8%	24.5%	13.4%	0.0%	35.1%	7.4%
Equity Premia Historical Averages								
			Geo.	Arithmetic				
Source	Time-Frame	#Years	Mean	Mean	Stddev	Min	Max	Stderr
Shiller	1870-1998	129	4.3%	6.0%	18.5%	-45.4%	53.4%	1.6%
Shiller	1899-1998	100	5.3%	7.1%	19.1%	-45.4%	53.4%	1.9%
Ibbotson	*1926-1998*	*73*	*7.1%*	*9.4%*		*n/a*		
Shiller	1926-1998	73	6.1%	8.0%	19.8%	-45.4%	53.4%	2.3%
Shiller	1949-1998	50	6.9%	8.2%	16.1%	-31.8%	44.1%	2.3%
Shiller	1974-1998	25	6.5%	7.9%	16.3%	-31.8%	31.3%	3.3%
Shiller	1994-1998	5	18.4%	19.0%	12.7%	-0.0%	28.6%	5.7%

Table II

Univariate Statistics For Arithmetic Equity Premia Forecasts

The table presents the distribution of arithmetic equity premia forecasts by financial economists. The surveys themselves are reproduced in the Appendix. The "S2" line reports only responses to the second survey. Other lines report statistics from both surveys after adjustments to first survey responses, as explained in Appendix A. Mean5 and Stddev5 are the mean and standard deviations after each series is truncated at its 5th and 95th percentile.

Description	Mean5	*Mean*	Stddev5	*Stddev*	Min	Q1	Median	Q3	Max	N
30-Year Forecast	7.1%	*7.2%*	1.7%	*2.0%*	1.5%	6%	7%	8.4%	15%	226
30-Year Forecast (S2)	6.7%	*6.8%*	2.0%	*2.2%*	1.5%	5%	7%	8%	15%	112
10-Year Forecast	7.0%	*7.1%*	1.9%	*2.0%*	–2%	6%	7%	8.4%	15%	170
5-Year Forecast	6.7%	*6.7%*	2.0%	*2.6%*	–4%	5%	7%	8.0%	17%	171
1-Year Forecast	6.5%	*5.8%*	2.4%	*4.5%*	–9.5%	4%	6%	8.5%	18%	158

Table III

Univariate Statistics For Arithmetic Equity Premia Optimistic and Pessimistic Outcome Forecasts

The table presents the distribution of arithmetic equity premia pessimistic and optimistic scenarios (at the 5% level) by financial economists. The surveys themselves are reproduced in the Appendix. The "S2" line reports only responses to the second survey. Other lines report statistics from both surveys after adjustments to first survey responses, as explained in Appendix A. Mean5 and Stddev5 are the mean and standard deviations after each series is truncated at its 5th and 95th percentile.

Description	Mean5	*Mean*	Stddev5	*Stddev*	Min	Q1	Median	Q3	Max	N
Optimistic 30-Year Scenario	12.8%	*13.3%*	4.9%	*6.7%*	3.5%	9%	11.2%	16%	51.5%	158
Optimistic 10-Year Scenario	15.4%	*16.5%*	5.5%	*10.9%*	6%	11%	15.4%	19.1%	101.2%	104
Optimistic 5-Year Scenario	21.2%	*23.1%*	11.5%	*22.3%*	8%	11%	17.8%	26%	201%	101
Optimistic 1-Year Scenario	28.6%	*29.2%*	14.9%	*17.0%*	6%	17%	26%	51%	101%	71
Pessimistic 30-Year Scenario	2.2%	*2.2%*	4.0%	*4.5%*	–18.5%	1%	3.2%	5%	11%	159
Pessimistic 10-Year Scenario	–0.8%	*-1.0%*	5.4%	*6.2%*	–24%	–4%	1%	2.8%	8.9%	106
Pessimistic 5-Year Scenario	–8.3%	*–9.0%*	10.2%	*12.4%*	–59%	–14%	–7.2%	0.3%	8.9%	102
Pessimistic 1-Year Scenario	–19.2%	*–19.6%*	13.5%	*11.9%*	–39%	–29%	–24%	–9%	6.5%	72

Table IV

Univariate Statistics For Economists' Arithmetic Equity Premia Consensus Estimates

The table presents the distribution of economists' perception of the prevailing equity premia forecast. The surveys themselves are reproduced in the Appendix. The "S2" line reports only responses to the second survey. Other lines report statistics from both surveys after adjustments to first survey responses, as explained in Appendix A. Mean5 and Stddev5 are the mean and standard deviations after each series is truncated at its 5th and 95th percentile.

Actual		Perceived									
Mean	Description	Mean5	*Mean*	Stddev5	*Stddev*	Min	Q1	Median	Q3	Max	N
7.1%	Perception 30-Year	7.6%	*7.6%*	1.5%	*1.7%*	1%	6.5%	7.8%	9%	12%	216
6.7%	Perception 30-Year (S2)	7.5%	*7.4%*	1.6%	*1.9%*	1%	6%	7%	9%	12%	112
7.0%	Perception 10-Year	8.1%	*8.2%*	1.3%	*1.4%*	4%	7%	8%	9%	12%	101
6.7%	Perception 5-Year	7.7%	*7.6%*	1.6%	*1.7%*	1%	7%	8%	9%	11%	99
6.5%	Perception 1-Year	6.0%	*6.0%*	2.3%	*2.4%*	0%	6%	7%	8%	12%	69

Table V

Statistics For Economists' Arithmetic Equity Premia Consensus Estimates

The left side of the table presents the mean and standard deviation of economists' arithmetic equity premia forecasts (A_i) and their perceptions of the prevailing equity premia consensus forecast (C_i), provided an individual supplied both an equity premium estimate and a consensus estimate for the same horizon. The right side provides OLS regression output when the demeaned arithmetic forecast ($\hat{A}_i - \bar{\hat{A}}_i$) is regressed on this economist's demeaned perception of the professional consensus about the same-horizon arithmetic forecast ($\hat{C}_i - \bar{\hat{C}}_i$). The surveys themselves are reproduced in the Appendix. The "S2" line reports only responses to the second survey. Other lines report statistics from both surveys after adjustments to first survey responses, as explained in Appendix A.

	Univariate Statistics, Common				$\hat{A}_i - \bar{\hat{A}}_i = \alpha_0 + \alpha_1(\hat{C}_i - \bar{\hat{C}}_i) + e_i$			
Description	Mean_A	Stddev_A	Mean_C	Stddev_C	α_0	α_1	(s.e.(α_1))	N
30-Year	7.1%	1.9%	7.6%	1.7%	0.0	0.62	(0.06)	214
30-Year (S2)	6.7%	2.1%	7.4%	1.9%	0.0	0.73	(0.08)	111
10-Year	7.2%	1.8%	8.2%	1.4%	0.0	0.31	(0.12)	99
5-Year	6.7%	2.3%	7.7%	1.7%	0.0	0.28	(0.14)	97
1-Year	4.7%	4.2%	6.0%	2.4%	0.0	0.79	(0.19)	67

Table VI

Questions on Issues Debated in Academic Finance

	Description	Univariate Statistics		Response Count					
				Disagree				Agree	
		Mean	Stddev	#1	#2	#3	#4	#5	Total
Q1	I believe that the true stock-market index's 3-5-year return autocorrelations are zero (random walk [ala Richardson, choose agree]), rather than negative (ala Fama-French, Shiller, choose disagree).	2.85	1.1	7	42	17	31	5	102
Q2	I believe that the CAPM is good enough an approximation of reality as to deserve use in capital budgeting contexts.	3.41	1.1	5	22	19	51	13	110
Q3	I believe that size/book-market/price-earnings/ momentum power can explain cross-sectional returns primarily because they are **risk** factors (in the Fama-French sense) and not just firm **characteristics** (in the Daniel-Titman sense).	2.64	1.2	18	33	19	20	7	97
Q4	I believe that size/book-market/price-earnings/ momentum factors are **stationary** enough, so that they will work well in the future in explaining cross-sectional expected return differences.	2.77	1.0	9	37	24	26	3	99

Table VI

Questions on Issues Debated in Academic Finance (cont'd)

Q5	I believe that, by and large, public securities market prices are efficient.	3.84	0.8	1	9	13	71	16	110
Q6	I believe that, by and large, public securities market prices offer arbitrage opportunities.	2.16	0.9	22	60	17	8	2	109
Q7	I believe that, by and large, government regulation and intervention of public securities markets should be increased. (Please select **middle** if intervention should be held steady, and **strongly disagree** if intervention should be decreased.)	2.13	0.8	29	39	40	0	1	109
Q8	I believe that Fortune-500 U.S. corporations, by-and-large, have too little debt in their capital structure.	3.09	1.0	4	26	23	30	6	89
Q9	I believe that Fortune-500 U.S. corporations, by-and-large, should use share repurchases instead of dividends as payout means.	3.68	1.0	4	7	21	42	18	92

Figure Captions

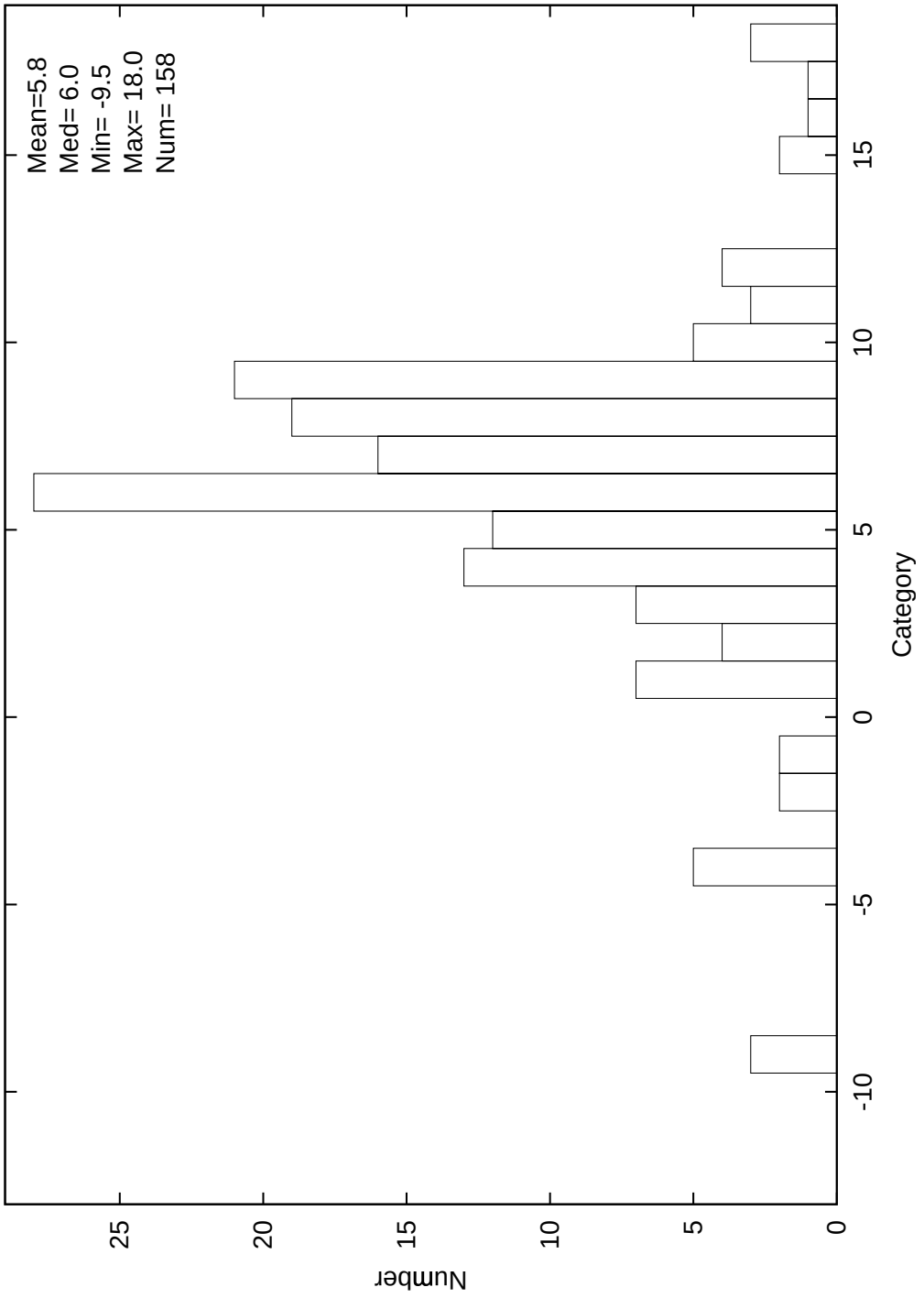
Figure 1: **The distribution of arithmetic equity premia forecasts by financial economists.**

The surveys from which these histograms were computed are reproduced in the Appendix. Statistics are over both the first and second survey (after adjustments to first survey responses explained in Appendix A). The bottom right graph reports responses to the second survey as impulse lines inside the bars.

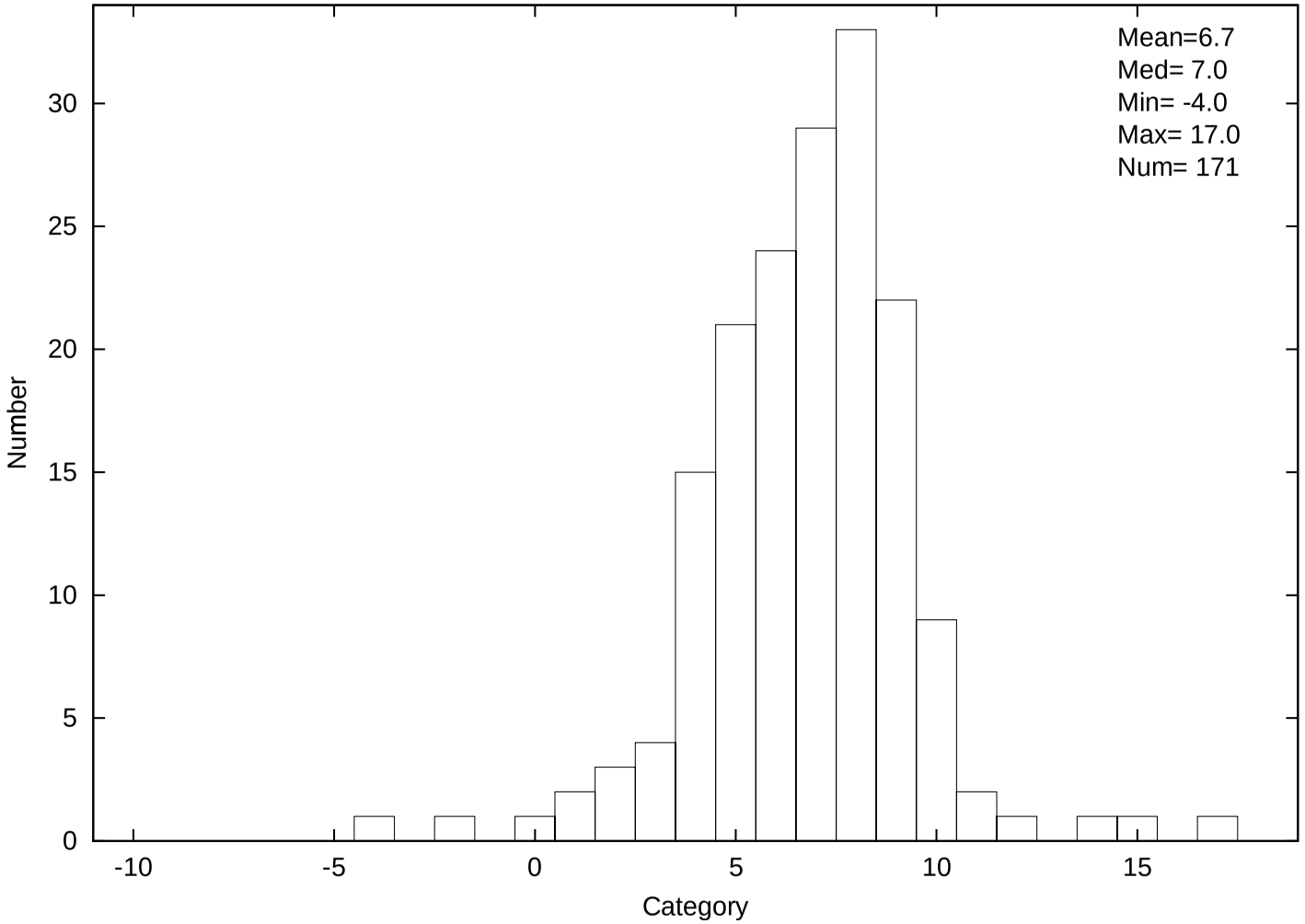
Figure 2: **The Pessimistic-Scenario, Average, and Optimistic-Scenario 30-Year Arithmetic Equity Premium Forecast by 226 financial economists.**

Forecasts from the first survey were adjusted, as explained in Appendix A. In both figures, individuals are indexed (lined up) identically, sorted by their mean forecast. Clustering in 1-year responses is induced because of discreteness in 30-year responses and the sorting procedure.

Typesetter: Larger Repeat 'Distribution of the 1-Year Expected Equity Premium from Fig.1'



Typesetter: Larger Repeat 'Distribution of the 5-Year Expected Equity Premium from Fig.1'



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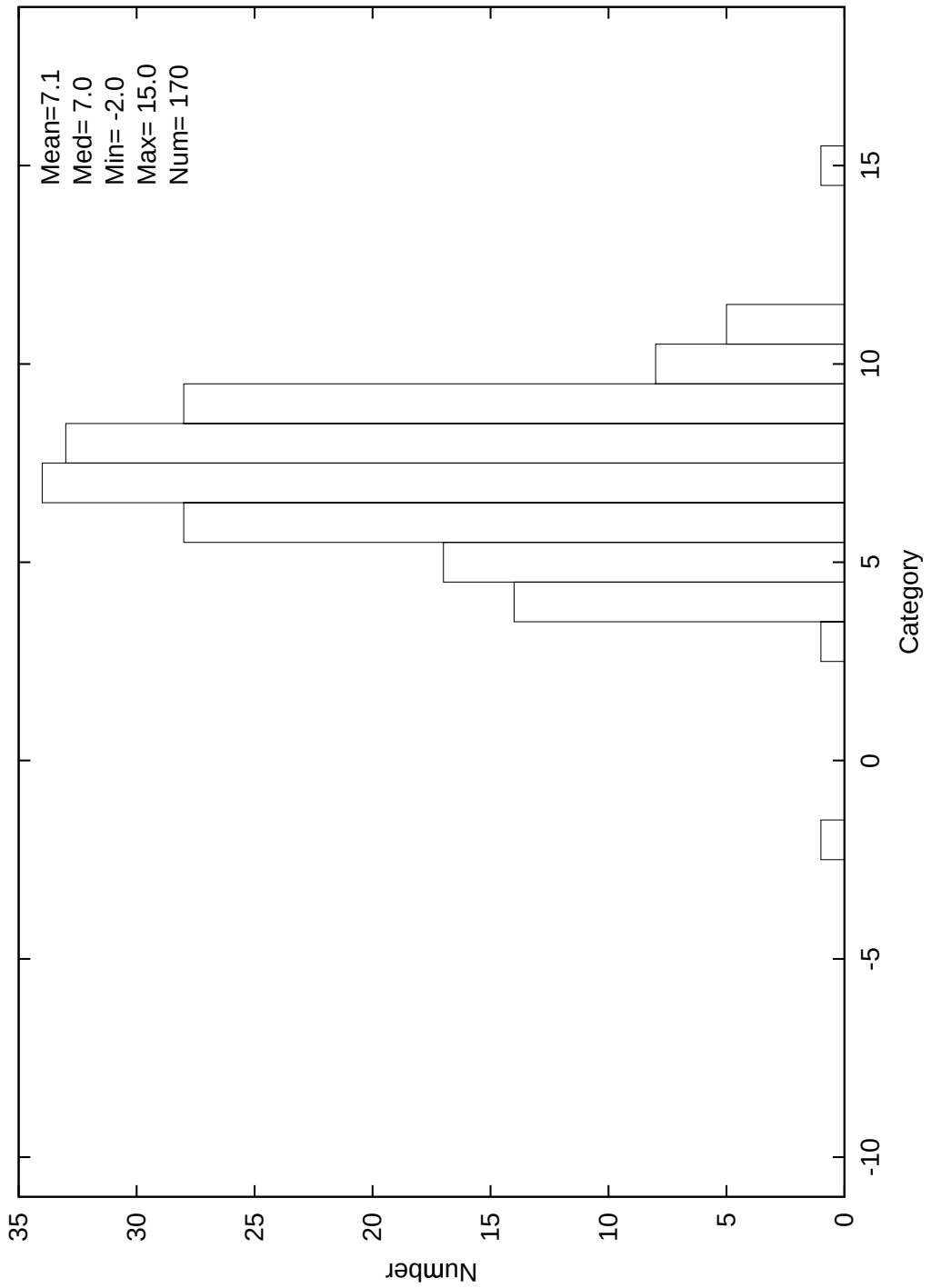

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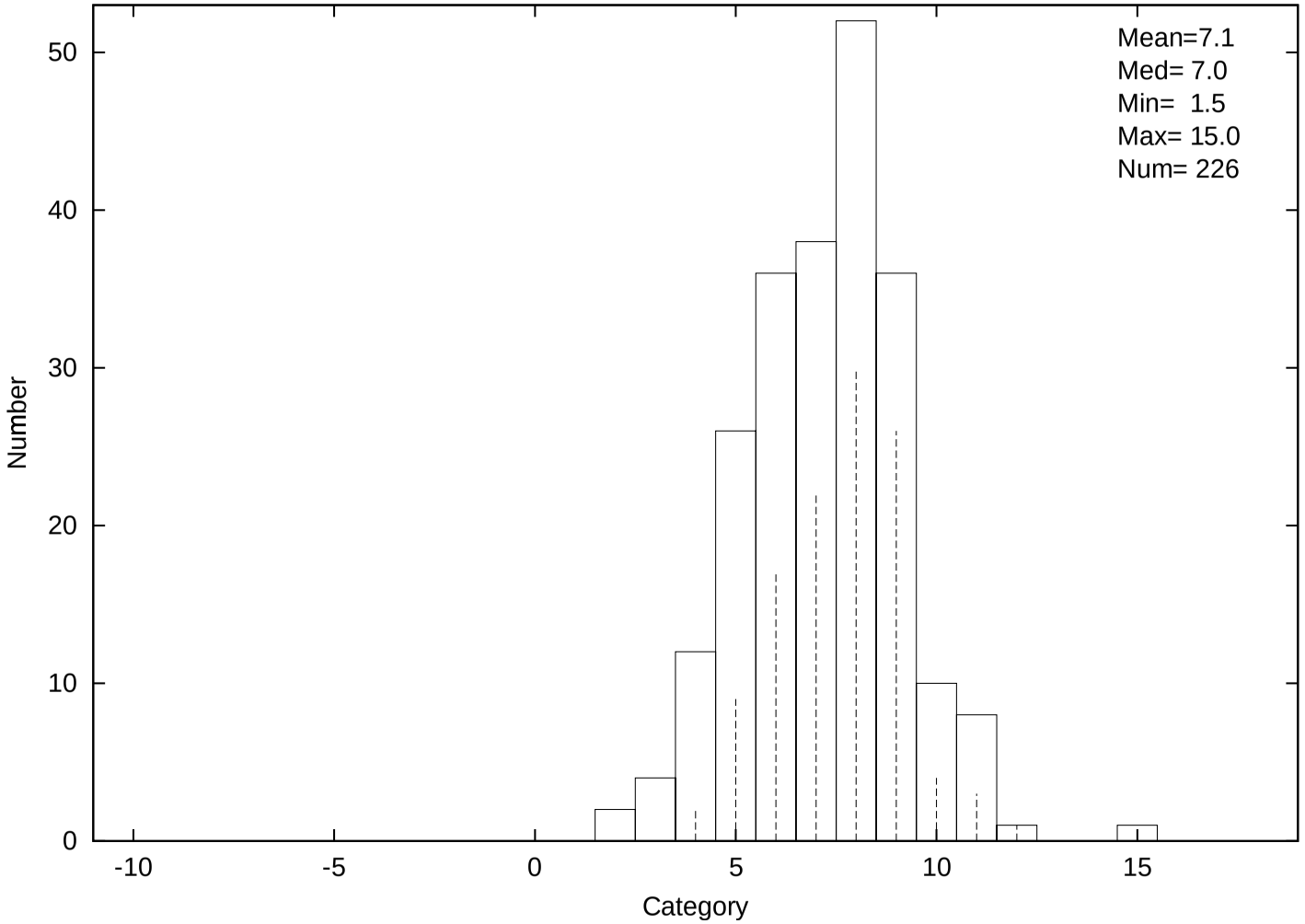

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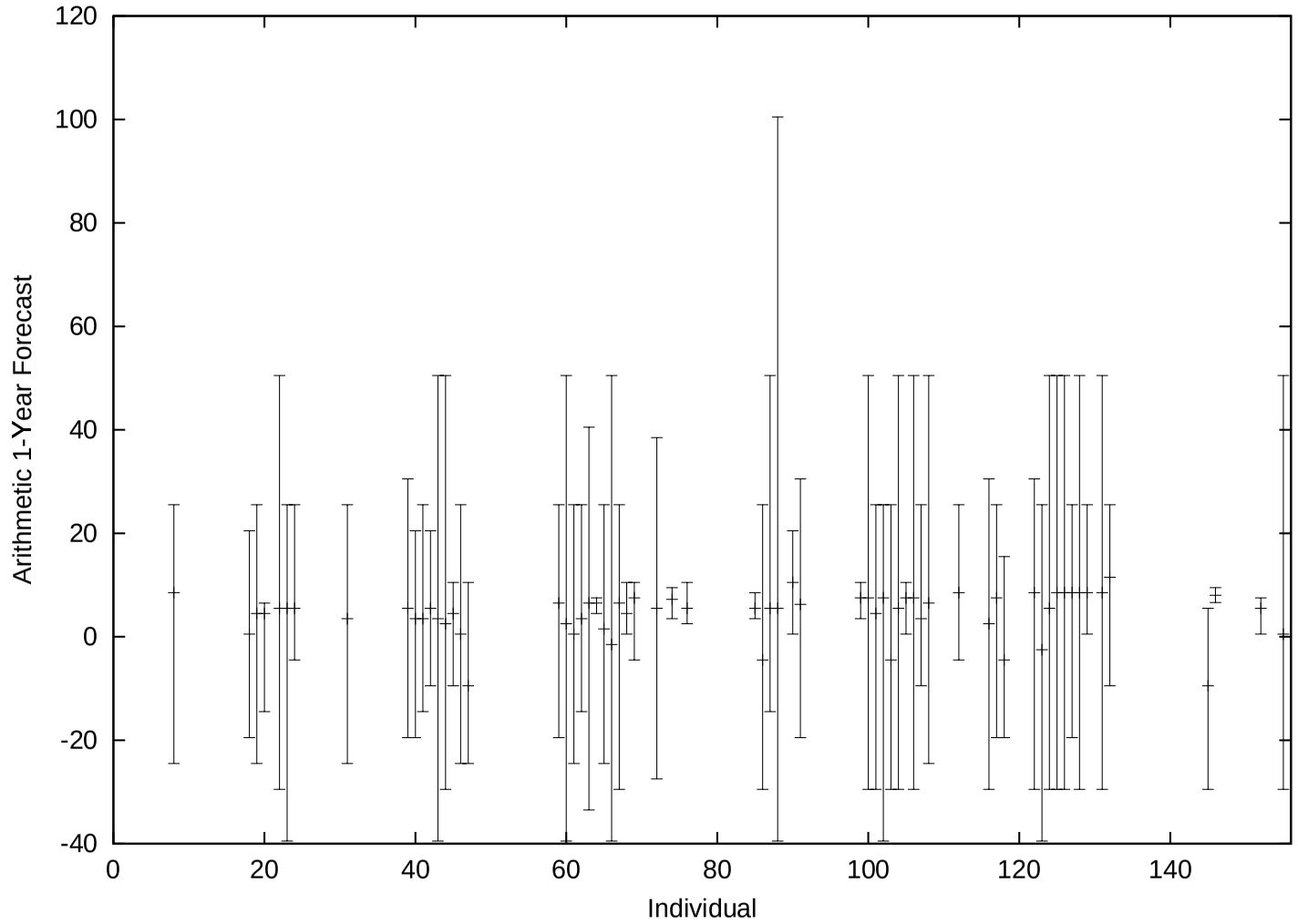

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