Investment Professionals' Interest Rate Forecasts Have Been Too High Every Year for the Past 21 Years

by Steve Kihm and Mikhaila Calice

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WHY DO WE KEEP USING THOSE FORECASTS TO SET UTILITY RATES OF RETURN?[1]

Steve Kihm, DBA, CFA, Consultant to
RMI Pearl Street Station Finance Lab

Mikhaila N. Calice, MPA, Ph.D. Candidate
University of Wisconsin-Madison

Overview

Most utility regulators use investment professionals' interest rate forecasts, such as those reported by *Blue Chip Economic Indicators*[2] or the *Survey of Professional Forecasters*,[3] to estimate costs of equity for utilities. This practice is inconsistent with both finance theory and the empirical evidence, leading us away from, not toward likely estimates of future rates.

Finance theory predicts, and the empirical evidence confirms, that professionals' interest rate forecasts will be less accurate than simply using the current market rate as the forecast of future rates (random walk model). What the theory does not explain is why in practice those professionals' forecasts are so much less accurate than the market. As Mitchell and Pearce (2007) report:

> Our finding that the *Wall Street Journal's* panel of economists cannot predict changes in interest rates and exchange rates more accurately than a random walk model is not surprising, given the efficiency of financial markets. What is perhaps surprising is that many of the panel forecast significantly worse than the random walk model, especially when predicting the long-term interest rate. (p. 853)

There is likely useful forecast information about *other variables* (e.g., housing starts, GDP) to be found in the reports listed above, but forecasts of long-term interest rates are not among the useful figures if accuracy is the goal. Stark (2010) of the Philadelphia Fed, which publishes the *Survey of Professional Forecasters*, provides a candid self-assessment as to which of the forecasted variables provide information that can improve upon that contained in using a no-change forecast, that is, one based on current market values.

> The survey's projections easily outperform no-change forecasts for all variables *except long-term interest rates*. (p. 2) Emphasis added.

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[1] The authors thank Julian Mueller-Herbst for his helpful and insightful comments on an initial draft of this policy brief.

[2] The *Blue Chip* forecasts are provided by Wolters Kluwer.

[3] The *Survey of Professional Forecasters* is published quarterly by the Federal Reserve Bank of Philadelphia.

No one, including academic theorists, those conducting empirical research, or even those who gather and report the figures, suggests that the professionals' interest rate forecasts deserve any consideration when forecasting future rates. The current market interest rate is the best forecast of future yields and is so by a wide margin in terms of accuracy.

This policy brief demonstrates that in terms of simply predicting the *direction* of interest rate changes, using data going back as far as the early 1980s, the professionals have been wrong twice as often as they have been right. A coin flip would likely have been correct 50% of the time. In this century, applying professionals' interest rate forecasts in estimating costs of equity would have on average *overstated those required returns by 105 basis points*[4] *every year for the past 21 years*. This suggests that the forecasts are not only inaccurate they are systematically biased in a way that substantially harms consumers when they are used to set utility rates of return.

The combined knowledge of those who comprise the $46 trillion bond market reflects all the relevant information, more than the subset of investment professionals who provide extra-market interest rate forecasts could ever hope to know. And the small minority of professionals who can see things more clearly than the market, which will be a tiny proportion of investment professionals, have no incentive to reveal their forecasts. So the predictions we see reported are those of the professionals who essentially do not know where interest rates are headed and their performance confirms that assertion.

This leads us to two critically important questions.

(1) Are regulators aware of how inaccurate professionals' interest rate forecasts are?

(2) Do they know the extent to which using those forecasts to set utility rates of return has harmed utility consumers?

<u>The Current Interest Rate is a Forecast of the Future Rate; It is the Most Accurate Forecast</u>

Investment professionals' forecasts of interest rates are typically treated in regulatory circles as the best indicators of future interest rates. The unsubstantiated assertion is that the forecasts of those whose job it is to track Federal Reserve policies and analyze overall macroeconomic conditions must be better than the naïve forecast of no change in rates. In other words, even though forecasting interest rates is challenging, surely the professionals' forecasts are "better than nothing," or so the argument goes.

Is there any evidence or theoretical support for this practice?

No.

Rather than being "nothing at all" the current market rate reflects all of the relevant macroeconomic, political, social, and environmental factors that could

[4] One hundred basis points equal one percentage point. That is, if the yield on the 10-year U.S. Treasury Note rises from 2% to 3%, it has increased by 100 basis points.

affect future rates. To use the market rate is not the lazy route—it is the scientific approach.

The idea that the professionals' forecasts contain useful *additional* information about future rates rests on the faulty assumption that investors in the bond market are not doing the same things the professionals are—tracking Federal Reserve policies and analyzing overall macroeconomic conditions. Bond prices and interest rates are determined by institutional investors—investment professionals in their own right. There is no information left to process once the market rate is established.

Any forecast other than the current rate moves us away from, not toward, the most likely future rate. As Brealey, Myers, and Allen (2006) state in *Principles of Corporate Finance*:

> In an efficient market, you can trust prices, *for they impound all available information about the value of each security*…There is no way for most investors to achieve consistently superior rates of return. To do so you not only need to know more than *anyone* else; you need to know more than *everyone* else…If you operate on the basis that you are smarter than others at predicting currency changes or interest rate moves, you will trade a consistent financial policy for an elusive will-o'-the wisp. (p. 350) First emphasis added; remaining emphasis in original.

What is often lost on many is that the current market rate, that which impounds all the relevant information, is the market's forecast. Thus, we do not need a second forecast because the optimal (most accurate) one is revealed in the market. To consider current factors such as changing Federal Reserve policies, the impacts of the COVID-19 pandemic, the current run-up in near-term inflation, or the war in Ukraine, is not helpful because the market is aware of all of those items and has included their likely impacts in the current interest rate.

As we discuss later, the fact that all relevant information is embedded in the current interest rate leaves investment professionals who wish to provide the most accurate interest rate forecasts with no story to tell—except that we should use the current interest rate—which in turn undercuts the notion that they can provide useful information on that variable. This leads to the following situation as described by portfolio manager Larry Swedroe (2010).

> There are only three types of interest rate forecasters: Those that don't know where rates are going. Those that don't know they don't know. Those that know they don't know but get paid lots of money to pretend they do.

Following up on this point, while it is difficult for almost everyone to out-guess the combined wisdom of the market as to where rates are headed, it is possible that a tiny proportion of investors could do so. But that presents a different issue, one that further undercuts the accuracy of the reported forecasts. Only those who cannot accurately forecast interest rates should be willing to share their projections, as explained by economist Michael Belongia (1987) of the St. Louis Federal Reserve Bank.

> The key issue, however, really is not whether experts have more (or better) information than the public, but whether individuals who consistently can forecast interest rates more accurately than the market are likely to make their forecasts public. The reason has to do with individual self-interest. Quite simply, why would anyone reveal valuable insight about the future when he [she] could increase his wealth directly by appropriately trading in financial markets using this information? (p. 10)

Brealey, Myers, and Allen (2006) tell us that most people cannot beat the market in terms of interest rate forecast accuracy. The market rate embeds the predictions of the smart money among bond investors. That current market rate embodies all the information processing power of institutional bond investors. Belongia's (1987) paper extends this idea, telling us that anyone who can forecast interest rates accurately will not reveal their projections.

What we get with the revealed forecasts of professionals is then the predictions of those who really have no idea where rates are headed. While that might seem like hyperbole, unfortunately it is a spot-on description of the essential nature of those forecasts. The fact is that professional forecasts of interest rates are likely among the worst (least accurate) predictors of future yields we could find. We would be far more accurate flipping a coin to predict directional changes.

Consider the following performance of the investment professionals' year-ahead forecasts of the yield on the 10-year U.S. Treasury note reported in the Philadelphia Federal Reserve Bank's *Survey of Professional Forecasters*[5] year by year from 2000 to 2021. Here we contrast the professional forecasts with the market-based forecast, by using the current rate as the forecast of the future rate (referred to by a variety of synonyms, including the *market rate*, *naive*, *no-change*, *random-walk*, or *spot forecast*). To use the current rate does not assume that interest rates will not change—we all know they will. *What it does assume is that once investors have considered all the relevant information, the same information the forecasting professionals consider, there is a 50% chance that future interest rates will be higher than that rate and a 50% chance that they will be lower*.

Notice in the table below that when using the market rate as the forecast in some years the figure turned out to be too high and in others it was too low. We cannot expect perfection in any interest rate forecast. But note that in addition to also missing the mark in terms of the level, the professionals' forecasts manifested a different characteristic. They did not produce that offsetting error balance. They were always too high. That is a sign of a bad forecast.

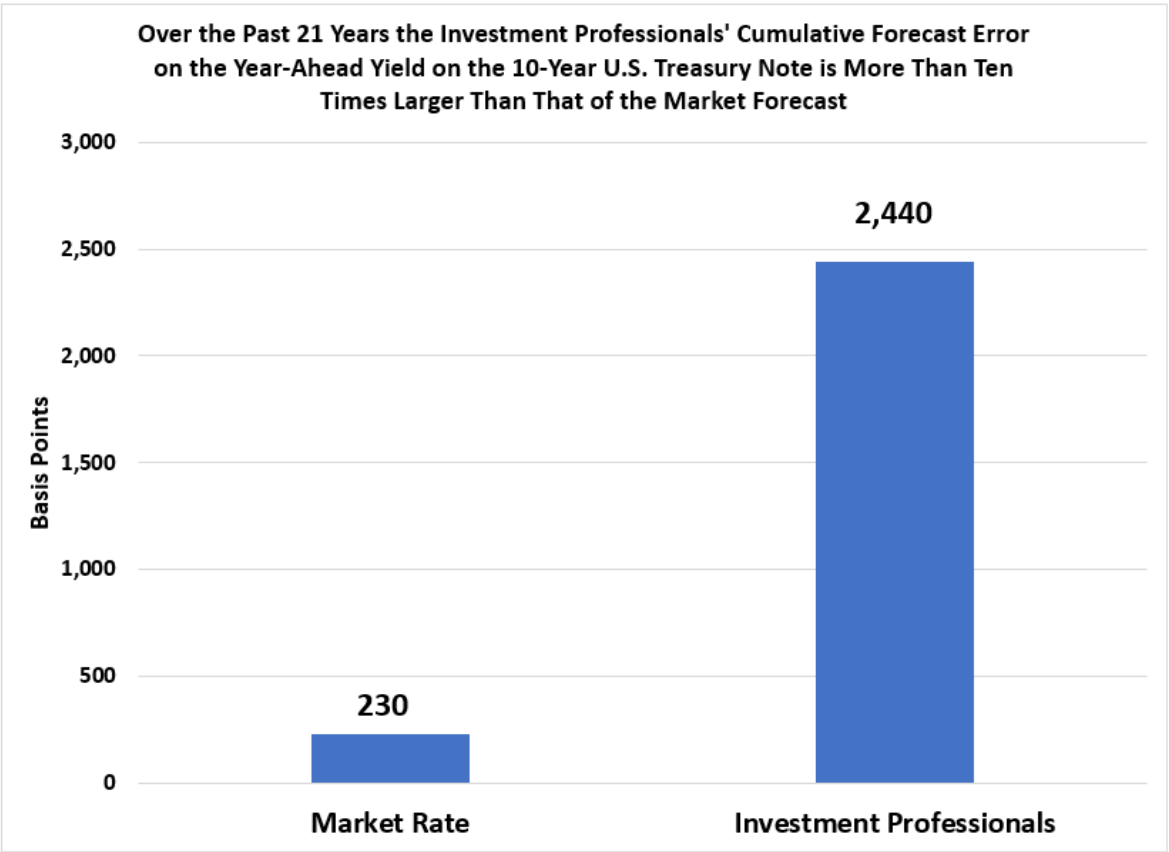
[5] This analysis an update of that the authors conducted under contract to Lawrence Berkeley National Laboratory, which was presented to the Hawaii Public Utilities Commission and its staff during in-house finance training for that organization (Honolulu, HI, August 19, 2019).

Comparison of Market Interest Rate and Professional Forecasts of Yield on 10-Year U.S. Treasury Note Yield
(Professional Forecasts from *Survey of Professional Forecasters*)

Year Forecast Made	Year Being Forecast	Current Rate	Professional Forecast	Actual Yield	Error Using Market Rate	Error Using Professional Forecasts	Direction of Market Rate Error	Direction of Professional Rate Error
2000	2001	6.5%	6.3%	6.0%	0.5%	0.3%	too high	too high
2001	2002	5.1%	5.3%	5.0%	0.1%	0.3%	too high	too high
2002	2003	4.9%	5.5%	4.6%	0.3%	0.9%	too high	too high
2003	2004	3.9%	5.1%	4.0%	-0.1%	1.1%	too low	too high
2004	2005	4.1%	5.3%	4.3%	-0.2%	1.0%	too low	too high
2005	2006	4.2%	5.3%	4.3%	-0.1%	1.0%	too low	too high
2006	2007	4.6%	5.0%	4.8%	-0.2%	0.2%	too low	too high
2007	2008	4.7%	5.0%	4.6%	0.1%	0.4%	too high	too high
2008	2009	3.7%	4.4%	3.7%	0.0%	0.7%	too high	too high
2009	2010	2.9%	3.6%	3.3%	-0.4%	0.3%	too low	too high
2010	2011	3.7%	5.0%	3.2%	0.5%	1.8%	too high	too high
2011	2012	3.6%	4.9%	2.8%	0.8%	2.1%	too high	too high
2012	2013	2.0%	4.0%	1.8%	0.2%	2.2%	too high	too high
2013	2014	2.0%	3.8%	2.4%	-0.4%	1.4%	too low	too high
2014	2015	2.7%	4.4%	2.5%	0.2%	1.9%	too high	too high
2015	2016	2.0%	4.1%	2.1%	-0.1%	2.0%	too low	too high
2016	2017	1.8%	3.5%	1.8%	0.0%	1.7%	too low	too high
2017	2018	2.4%	3.6%	2.3%	0.1%	1.3%	too high	too high
2018	2019	2.9%	3.7%	2.9%	0.0%	0.8%	too low	too high
2019	2020	2.6%	3.4%	2.1%	0.5%	1.3%	too high	too high
2020	2021	1.5%	2.7%	0.9%	0.6%	1.8%	too high	too high

Those who think that the professionals are offering useful information should consider these results. The market rate forecast, the one finance theory suggests will be the most accurate, was too high in predicting next year's rate in 12 of the 21 years listed in the table, or 57% of the time, and too low in the remaining 9 years (43% of the time). In contrast, professionals' forecasts were too high *21 years in a row*, or 100% of the time. If the forecasts are used to set utility rates of return, which is widespread practice, those that are too high hurt consumers; those that are too low hurt investors. If the forecasts are too high in some years and too low in other years, the average error might be small, a fair result for both parties. But if the errors lie consistently in one direction, their impacts accumulate with devastating effect with one party gaining considerably at the expense of the other.

This means that for the market rate forecast, in the 12 years for which the prediction was too high there was an offset—the 9 years in which the prediction was too low. This suggest that the market forecast is unlikely to manifest a statistically significant systematic bias. The alternating nature of the high and low predictions attenuates the cumulative forecast error over time. But there was no such offset with the professional forecasts—they were too high every year. This consistent bias created a massive cumulative forecast error for the professionals as the annual deviations from actual rates accumulated year after year with no offset, ballooning to extremely elevated levels. The figure below illustrates the comparison of total cumulative forecast errors under the two methods.



This is nothing short of a travesty for consumers. By using professional forecasts to guide return on equity determinations, an approach with no basis of support in corporate finance, regulators who have applied that practice *have on average overcharged consumers by 105 basis points every year for 21 years.*

If the professionals randomly guessed (up 50 basis points or down 50 basis points) every year, they would produce a much more accurate forecast than these actual results. It would take effort to produce forecasts that are this inaccurate.

More Evidence of the Terrible Interest Rate Forecasting Record of Investment Professionals

As predicted by finance theory (see Brealey, Myers, and Allen (2006); Reichenstein (2006)), study after study has shown that investment professionals are not just somewhat less accurate than the market in forecasting interest rates—they are horrendously bad forecasters. For example, Brooks and Gray (2004) reported in *The Journal of Portfolio Management* the results of their study of professional forecasts of long-term Treasury bond yields reported by the *Wall Street Journal*. The study included 43 six-month forecast periods, spanning the years 1982 through 2003. The authors state:

> Forecasts of future stock market prices, interest rates, and inflation rates appear on a regular basis in all the media…*In the absence of hard information, it would seem that expert opinion has to be a better basis for decision-making than nothing at all.*

> Or is it?
>
> We analyze these bond yield forecasts to determine whether the consensus forecast is helpful to anyone making decisions based on this forecast. *The analysis suggests it is helpful only to the extent that one should believe the opposite of the forecast change in yield*. (p. 113) Emphasis added.

This reinforces our description of the professionals as "horrendously bad" in terms of forecasting accuracy. In fact, the professionals are so inaccurate that they cannot even beat a coin flip in terms of getting the direction of the interest rate changes correct. Mitchell and Pearce (2007) writing in the *Journal of Macroeconomics* reinforce this finding, reporting a 33% accuracy rate among the professionals in terms of predicting the direction of interest rate changes. It would then actually improve our accuracy, directionally speaking, to assume the opposite of what professional forecasters suggest. If they predict that interest rates will rise it is more likely that they will fall. That is the sort of forecasts we obtain when one double counts economic information when forecasting interest rates.

Lest you think the forecast accuracy varies by source, consider the following review of the accuracy of interest rate forecasts offered by the *Blue Chip* service, as reported by Baghestani (2007) in the *International Review of Economics and Finance*.

> Our findings further indicate that Blue Chip forecasts cannot match the success of random walk forecasts. In addition to being biased, Blue Chip consensus forecasts of the CBR [corporate bond rate] and TBR [10-year Treasury bond yield] are inefficient since they lack the predictive information in random walk forecasts. (p. 630)

Again, the *Blue Chip* forecasts of *other variables* may be useful, but the interest rate forecasts are not helpful.

Why Are Investment Professionals So Bad at Forecasting Interest Rates?

These results create a nagging feeling among economists as to how investment professionals continue year after year, decade after decade, to develop these terribly inaccurate forecasts. Several possible explanations have been offered.

One reason the professionals' forecasts may be consistently wrong in the same direction could be attributed to escalation of commitment bias. This is a common characteristic of decision makers in business settings where rather than adapting when the chosen strategy is failing, executives tend to double down on it, investing more resources, essentially throwing good money after bad. The more often the executive is wrong, the more they commit to the flawed strategy. As Chulkov and Barron, 2019, reported in *Applied Economics*, in many cases the only way to de-escalate the commitment is to replace the overly committed CEO.

In the case of interest rate forecasts, the professionals may take feedback from the market as a sign that "the market does not get it." Eventually those buying bonds will see that interest rates must rise, they believe. So the professionals keep forecasting increases. They have been waiting for 21 years for the market to see things clearly. That is delusional thinking.

The professionals who manifest escalation of commitment are subject to what professional poker player and decision scientist Annie Duke says is the paradox of experience. In an interview on the *Behavioral Science* program, she stated:

> Sometimes we have an experience that actually is informative (for example, when our expectations are violated) and we should update our priors, but we don't, because of confirmation bias. And that sets up the paradox of experience, which is that experience is necessary for learning but it is not sufficient.

We would think that experienced professionals would be good at their job. But learning is never automatic. To say that a professional has experience forecasting interest rates is not informative if the person does not adapt based on his or her mistakes. If the professionals make the same directional error 21 years in a row, they are not adapting.

There is additional theorizing as to why the professionals are so bad at forecasting. Surprisingly, it may be that no one expects them to be able to forecast interest rates (which then casts further doubt on the validity of the forecasts). The fact is that interest rate forecasting is at best a minor responsibility of investment professionals. Back to Belongia (1987) at the St. Louis Fed.

> Forecasting interest rates may be a trivial portion of an economist's overall function; his [her] compensation may be based primarily on analytical performance in other areas. It is unlikely, however, that economists are employed primarily for their ability to predict interest rates more accurately than the market. (p. 15)

Recall the quote earlier from the research conducted at the Philadelphia Fed of the usefulness of its reported forecasts—the forecasts of all variables, *other than those of interest rates*, are helpful. If the professionals provide useful information for nine of the ten variables reported in the *Survey of Professional Forecasters* they may be quite valuable to their organizations.

Mitchell and Pearce (2007) offer two additional possible explanations for the terrible forecast accuracy of the professionals:

> The explanation of this result we favor is that many of the economists face incentives that reward the exceptionally right guess but do not equally penalize the exceptionally wrong guess. An alternative explanation is that even if the economists know the random walk model to be more accurate over time, adopting the random walk forecast leaves them with no story to spin about their forecasts. Always telling customers that you predict no change in interest rates or exchange rates may simply be too truthful to keep one employed. (p. 853)

These are all interesting explanations of the reasons *why* the forecasts are so inaccurate, but they are not particularly relevant here. They will not help the professionals forecast more accurately—nothing will. The evidence is overwhelming that these forecasts are terrible and will continue to be because they rely on double counting of economic

information already embedded in the current rate. Those forecasts will never be able to compete against the financial juggernaut that is the $46 trillion bond market.

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