The Asymmetric Fed Information Effect: Monetary Policy and Firm Investment*

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Abstract

We disentangle the conventional discount-rate channel of monetary policy from the information firms infer from Federal Reserve actions and ask which force governs corporate investment. Linking high-frequency FOMC announcement surprises to management investment guidance, earnings-call transcripts, managers' perceived cost of capital, and realized capital expenditures, we trace policy shocks from firms' beliefs to their investment decisions. Using raw surprises, hawkish shocks predict greater economic optimism and higher planned and realized investment, consistent with a Fed information effect. These relationships weaken or reverse once surprises are purged of information observable before the announcement. We show that this reversal masks a pronounced asymmetry. Unexpected easings continue to worsen firms' economic outlook even after purging, indicating that rate cuts convey adverse information about fundamentals, while simultaneously lowering perceived financing costs. Unexpected tightenings, by contrast, raise financing costs and generate conventional contractionary revisions in expectations. Pooling easings and tightenings therefore obscures a Fed information effect concentrated on the easing side, with important implications for the transmission of monetary policy to real investment.

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1 Introduction

How does monetary policy affect firm investment? This is a central question in economics and finance, yet the underlying transmission mechanism remains incompletely understood. The conventional discount-rate channel provides a simple prediction: because monetary policy directly affects interest rates and firms' cost of capital, an unexpected tightening should reduce investment, while an unexpected easing should stimulate it (Bernanke and Blinder, 1992; Bernanke and Kuttner, 2005). Monetary policy actions, however, may also convey information about the economy. As emphasized by Romer and Romer (2000) and Nakamura and Steinsson (2018), firms may infer from a policy action something about the Federal Reserve's assessment of economic fundamentals. This information effect works against the conventional discount-rate channel. An unexpected rate cut makes capital cheaper but may also signal that the economy is weaker than firms had believed; an unexpected rate increase raises financing costs but may signal stronger economic conditions. The response of investment therefore depends not only on the change in the price of capital but also on what firms learn from the policy action.

Distinguishing these channels empirically is challenging. Observing realized investment alone reveals their net effect but not the mechanism through which that effect operates. Ideally, one would observe how the same monetary policy surprise changes managers' perceptions of their cost of capital, their expectations about the aggregate economy, their investment plans, and ultimately their realized investment. These objects are rarely available together. Moreover, the debate over the measurement of monetary policy shocks further complicates the problem. Nakamura and Steinsson (2018) show that high-frequency monetary policy surprises are followed by revisions in professional forecasts consistent with a Fed information effect. Bauer and Swanson (2023a), however, argue that these surprises are partly predictable from macroeconomic information available before FOMC meetings. Once this predictable component is removed, much of the apparent information effect disappears. Thus, both the mechanism of firm-level transmission and the appropriate interpretation of high-frequency monetary policy surprises remain unsettled.

In this paper, we study these questions by combining high-frequency FOMC surprises with several measures that allow us to trace monetary policy through the firm's decision process. We measure firms' investment expectations using management capital-expenditure guidance from Capital IQ, benchmarked against the I/B/E/S analyst consensus prevailing immediately before each FOMC announcement. We use large language models to extract managers' expectations about the aggregate U.S. economy from earnings-call transcripts. We complement these measures with firm-level estimates of managers' perceived cost of capital and investment hurdle rates from Gormsen and Huber (2025b), and with realized capital expenditures

from Compustat. Our core expectations sample spans 2005–2022, while our realized-investment panel extends from 1990 to 2024. Together, these data allow us to observe not only whether investment changes after a monetary policy surprise, but also how managers' beliefs and investment plans change along the way.

We begin with standard high-frequency, or "raw," monetary policy surprises. In a pooled linear specification, the results initially point toward a strong Fed information effect. Hawkish surprises are associated with upward revisions in firms' investment expectations and with higher subsequent realized investment. Managers also express more optimistic views about the aggregate economy following hawkish surprises. These responses are difficult to explain through the conventional discount-rate channel alone, particularly because managers' perceived cost of capital rises following an unexpected tightening. Taken at face value, the evidence suggests that favorable information about economic fundamentals embedded in a hawkish announcement more than offsets the contractionary effect of higher financing costs.

The picture changes sharply when we replace raw surprises with the "clean" monetary policy surprises advocated by Bauer and Swanson (2023a,b), which remove the component predictable from information available before the FOMC announcement. The positive response of investment expectations disappears and becomes weakly negative. More strikingly, an unexpected tightening now makes managers substantially more pessimistic about the economy while raising their perceived cost of capital. Viewed through a pooled linear specification, the clean-surprise results appear to restore the conventional transmission mechanism and to support the Bauer–Swanson critique: the information effect found with raw surprises seems to arise from public information correlated with the Fed's policy decision rather than information revealed by the decision itself.

Our central result is that this apparent reversal is generated by an overlooked asymmetry between monetary easing and tightening. Standard pooled specifications constrain positive and negative monetary policy surprises to have equal and opposite effects. Once we relax this restriction, a remarkably stable pattern emerges under both raw and clean surprises. Unexpected *easings* make managers more pessimistic about the economy. Because an easing would conventionally improve economic conditions, this response points to an information effect: managers interpret an unexpected rate cut as adverse news about economic fundamentals. Importantly, this response survives the Bauer–Swanson cleansing procedure. Unexpected *tightenings* also worsen managers' economic outlook, but in this case the response is consistent with the conventional contractionary effects of tighter monetary policy. Thus, the Fed information effect is not symmetric. It is concentrated on the easing side.

Perceived financing costs behave very differently. Tightening surprises raise firms' perceived cost of capital, while easing surprises lower it, under both raw and clean shock measures. The financing-cost channel

therefore operates in the conventional direction on both sides of the policy distribution. The asymmetry arises from the information conveyed about economic fundamentals. This distinction has direct implications for investment. Following an unexpected easing, the two forces work against one another: lower financing costs encourage investment, while the adverse information inferred from the policy action discourages it. Following an unexpected tightening, higher financing costs and a deteriorating economic outlook instead operate in the same direction. Consistent with this mechanism, easing surprises generate little increase in investment plans and can even reduce investment, while clean tightening surprises reduce both planned and realized investment.

This asymmetry also explains why pooled estimates are so sensitive to the construction of monetary policy shocks. A single linear coefficient attempts to summarize economically different responses on the two sides of the policy distribution. With raw surprises, variation associated with easing can make the pooled relationship look like a conventional Fed information effect in which hawkish surprises predict stronger economic expectations and investment. With clean surprises, the tightening-side contractionary response becomes more prominent and the pooled coefficient reverses. Once easing and tightening surprises are estimated separately, however, the underlying patterns are much more stable. The contrast between raw and clean surprises is therefore not evidence that one series reveals an information effect while the other eliminates it. Rather, pooling masks an information effect that operates primarily through unexpected monetary easing.

We provide three pieces of additional evidence. First, managers who discuss monetary policy or macroeconomic conditions in post-FOMC earnings calls exhibit stronger belief responses, especially following easings. Because these attention measures are observed after the announcement, we interpret them as descriptive heterogeneity rather than causal evidence, but the pattern is consistent with monetary-policy information being more salient among managers engaged with macroeconomic developments.

Second, we revisit Bauer and Swanson (2023a) using Blue Chip forecasts. Their pooled specification reproduces the familiar result that the Fed information effect largely disappears after cleansing. Once easing and tightening surprises are separated, however, the same asymmetry emerges as in our firm-level data. Even after cleansing, unexpected easings lead forecasters to raise expected unemployment, consistent with adverse information about fundamentals, whereas clean tightenings raise expected unemployment and lower expected GDP, consistent with conventional contractionary transmission. Thus, the Fed information effect survives the Bauer–Swanson correction but is concentrated on the easing side.

Finally, we explore asymmetric learning under uncertainty as a possible mechanism. Managers may place greater weight on downside signals, so an unexpected easing can convey not only cheaper financing but also evidence that the Fed perceives economic weakness that firms had not fully recognized. Consistent with

this mechanism, more cyclical firms, whose cash flows are more exposed to aggregate conditions, respond more strongly to monetary surprises. Most notably, even after cleansing, high-beta firms become more pessimistic and revise investment plans downward more strongly following unexpected easings. Because easing lowers financing costs, this negative response points to adverse information about aggregate fundamentals rather than the conventional cost-of-capital channel alone.

Our paper makes two main contributions. First, we provide new evidence on how monetary policy affects corporate investment by tracing policy surprises through managers' beliefs, perceived financing costs, investment plans, and realized capital expenditures. Firms respond not only to changes in the price of capital but also to the information they infer from Federal Reserve actions. Because these forces offset one another following easing but reinforce one another following tightening, monetary easing and tightening need not have symmetric effects on investment. In particular, the stimulative effect of an unexpected easing may be weakened by the adverse signal about economic fundamentals conveyed by the policy action.

Our analysis complements several strands of research on firm-level monetary transmission. Closest to our emphasis on information, Hsu et al. (2025) show that the Fed information effect influences firm investment through expected profitability, with stronger effects among more cyclical firms. Whereas they infer fundamentals from analyst forecasts, we directly measure managers' expectations about the aggregate economy, perceived cost of capital, and stated investment plans, allowing us to observe both the information and financing-cost forces within the firm's decision process. Related work using firm expectations or investment plans includes Enders et al. (2019), who show that German firms revise production and price expectations following monetary policy announcements, and Selgrad and Siani (2025), who show that U.S. firms adjust investment plans in response to monetary policy, particularly at longer horizons. Our distinctive finding is that the information effect itself is asymmetric: it is concentrated in unexpected easings and survives the cleansing of monetary policy surprises.

A broader literature emphasizes financial heterogeneity in the investment response to monetary policy. Ottonello and Winberry (2020) show that firms with lower default risk and lower debt burdens respond more strongly to monetary shocks; Cloyne et al. (2023) emphasize collateral values, net worth, and financial frictions; and Döttling and Ratnovski (2023) show that intangible-intensive firms respond less strongly, particularly when financially constrained. Particularly related to our asymmetric results, Pérez-Orive et al. (2026) show that multiple financing constraints make tightening affect borrowing and investment more strongly than easing, while Acharya et al. (2026) show that corporate leverage amplifies the contractionary effects of tightening and that prior easing can increase vulnerability by encouraging leverage accumulation. These papers highlight financing-based sources of heterogeneous or asymmetric transmission. We identify

a distinct informational source: an unexpected easing lowers perceived financing costs but simultaneously conveys adverse information about fundamentals, whereas tightening raises financing costs and worsens economic expectations. Our mechanism therefore complements existing explanations for why monetary easing may have weaker effects on corporate activity than monetary tightening.

Second, we contribute to the debate over the Fed information effect. Nakamura and Steinsson (2018) show that high-frequency monetary policy surprises predict revisions in professional forecasts consistent with the Fed revealing information about economic fundamentals. Bauer and Swanson (2023a), however, argue that these surprises are partly predictable from information available before FOMC meetings and that the apparent information effect largely disappears once this predictable component is removed.

We show that these seemingly conflicting findings can be reconciled once easing and tightening surprises are allowed to have different effects. With pooled shocks, raw surprises produce the familiar information-effect pattern, while cleansed surprises generate conventional contractionary responses. Once shocks are decomposed by sign, however, firm managers and professional forecasters tell a consistent story: unexpected easings convey adverse information about economic fundamentals even after cleansing, whereas unexpected tightenings generate conventional contractionary revisions in expectations. We recover the same asymmetry in the Blue Chip forecast data used by Bauer and Swanson (2023a). Thus, cleansing does not eliminate the Fed information effect; rather, the effect is asymmetric and concentrated on the easing side, and pooling easing and tightening surprises can cause it to appear or disappear depending on the construction of the monetary policy shock.

2 Data and Methodology

Our empirical strategy links high-frequency monetary policy surprises to three firm-level outcomes measured in windows following the same FOMC announcement: managers' expectations of their own capital expenditures, managers' expectations of aggregate economic conditions, and managers' perceived cost of capital. We then trace these expectational responses through to realized investment. To do so, we construct a dataset by merging several sources, described below. Our core expectations sample spans 2005-2022, reflecting the joint availability of management guidance and earnings-call transcripts in Capital IQ, while our realized-investment panel extends from 1990 to 2024. This section describes the construction of each measure and presents our baseline econometric specifications.

2.1 FOMC Announcements and Monetary Policy Surprises

We measure monetary policy shocks using high-frequency changes in asset prices around FOMC announcements. Announcement dates and times are obtained from the Federal Reserve Board website.[1] Our baseline series follows Acosta et al. (2025). The shock is constructed as the first principal component of price changes in a portfolio of interest-rate futures spanning the first year of the term structure, including monthly federal funds futures and quarterly Eurodollar futures. Price changes are measured over a 30-minute window around each FOMC press release, from 10 minutes before to 20 minutes after the announcement. The first principal component summarizes these movements into a single "policy news," capturing both the target-rate decision and revisions to forward guidance. We normalize the measure so that a unit shock corresponds to a 100-basis-point increase in the one-year Treasury yield. The identifying assumption is standard in the high-frequency event-study literature (Gürkaynak et al., 2005; Nakamura and Steinsson, 2018): within a sufficiently narrow window, the FOMC announcement is the dominant source of news reaching financial markets. We sign the shocks so that positive values represent hawkish, or contractionary, surprises. We refer to this series as *Fed rate surprises*.

A central concern with raw high-frequency surprises, emphasized by Bauer and Swanson (2023a), is that they may not be orthogonal to publicly available information at the time of the announcement. If market participants underestimate the responsiveness of the Federal Reserve's policy rule to incoming macroeconomic data, measured surprises may be predictable from pre-meeting observables. Regressions of firm outcomes on such surprises may then conflate the causal effect of policy policy with the effects of the economic news to which the Federal Reserve is responding. To address this concern, we construct a second, filtered series following Bauer and Swanson (2023a,b). Specifically, we orthogonalize the raw surprises with respect to macroeconomic and financial variables prior to each announcement and use the resulting residual as our shock measure. We refer to this series as *Clean Fed rate surprises*. Throughout the paper, we report results using both the raw and filtered series.

Because the effects of monetary policy on firm beliefs need not be symmetric between tightening and easing, our central specifications decompose each shock series into positive and negative components:

$$MPS_t^+ = \max\{MPS_t, 0\}, \qquad MPS_t^- = \min\{MPS_t, 0\}, \tag{1}$$

allowing hawkish and dovish surprises to enter with separate coefficients.

[1] Available at http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm.

2.2 Firm-Level Investment Expectations

To examine how monetary policy shapes firms' investment plans, we measure revisions in firm-level investment expectations around FOMC announcements. Our proxy for *post-FOMC* expectations is management capital expenditure guidance from Capital IQ, restricted to guidance issued within one of two post-FOMC windows: a tight 30-day window and the full inter-meeting period ending immediately before the next announcement. Unlike external forecasts or backward-looking accounting outcomes, management guidance reflects the information set and stated capital allocation intentions of the decision-makers themselves shortly after the arrival of policy news. It therefore provides a natural measure for testing whether monetary policy surprises alter firms' own assessments of investment opportunities.

Because firms issue guidance infrequently, comparable management guidance is rarely available immediately before an FOMC meeting. We therefore proxy *pre-FOMC* expectations using the I/B/E/S analyst consensus forecast of capital expenditures prevailing immediately before the announcement. Analysts update their forecasts continuously in response to public information, making the pre-meeting consensus a timely benchmark for firms' expected investment. Comparing post-FOMC management guidance with this benchmarke removes slow-moving and anticipated components of investment plans and isolates revisions occurring after the policy announcement. Our measure, *Changes in Investment Exp.*, is the percentage difference between post-FOMC guidance and the pre-FOMC consensus for the same firm and fiscal period. Because guidance horizons vary across firms and announcements, all specifications control for the forecast horizon, defined as the time between the guidance date and the end of the relevant fiscal period.

2.3 Firm-Level Expectations Regarding the Aggregate Economy

Leveraging the capabilities of large language models (LLMs), we construct a novel dataset measuring firm-level expectations about the U.S. economy from managers' statements during earnings conference calls. Earnings calls are particularly well suited for this purpose. They occur frequently relative to surveys and cover a broad cross-section of publicly listed firms. Moreover, managers' statements on these calls are subject to securities-law scrutiny, giving them strong incentives to communicate their views accurately. We obtain all earnings-call transcripts from January 2005 through December 2022 from Capital IQ (event type 48). We restrict attention to calls held within the two post-FOMC windows defined above and, when multiple versions of a transcript are available, use the most recently updated version.

We quantify the expectations expressed in these transcripts using DeepSeek (version 3.2). The LLM offers two important advantages over dictionary-based methods. First, it can distinguish statements about the

aggregate economy from those concerning the firm's own performance. Second, it can account for context, including negation, hedging, and conditional language. We implement a staged classification procedure. The model first determines whether managers express a forecast or expectation about the aggregate economy. When such a statement is identified, the model classifies its sentiment into one of five categories ranging from *Extremely Positive* to *Extremely Negative* and provides a supporting explanation and direct quotation from the transcript. We map these categorical classifications onto a numerical scale (e.g., Positive $= +1$, Negative $= -1$) and denote the resulting variable *Exp. on Economy*.

We validate this measure in two ways. First, trained research assistants independently annotate 200 randomly sampled transcripts, and the LLM classifications agree with the human annotations in 92% of cases. Second, the cross-sectional average of *Exp. on Economy* comoves closely with GDP growth forecasts from the Survey of Professional Forecasters. Appendix section A provides the exact prompts, implementation details, representative outputs, and validation results.

Finally, we use the same framework to construct a measure of managerial *attention to monetary policy*. This indicator equals one if the earnings call explicitly discusses the Federal Reserve or monetary policy. In Section 5.4, we use this measure to test whether the transmission of policy surprises is stronger among firms whose managers demonstrably pay attention to monetary policy.

2.4 Firm-Level Perceived Cost of Capital and Discount Rate

We measure firms' perceived financing costs and investment hurdle rates using the dataset of Gormsen and Huber (2025b). The explicit cost-of-capital figures hand-colelcted by the authors from earnings calls are relatively sparse and potentially subject to selection from voluntary disclosure. We therefore use their *predicted* values, which cover the universe of Compustat firms at the firm-quarter level. These predictions are obtained by projecting the hand-collected perceptions, using Lasso, onto 153 firm characteristics from Jensen et al. (2023) together with country and year fixed effects. The predicted values closely track confidential responses from the Duke CFO Survey, with a regression slope close to one.

We use two measures from this dataset. The *Perceived Cost of Capital (CoC)* is the firm's internal estimate of its weighted average cost of capital, which Gormsen and Huber (2025b) show is an important determinant of long-run capital allocation. The *Discount Rate* is the hurdle rate managers apply when evaluating new investment opportunities. It is substantially higher than the perceived cost of capital—15.3% versus 8.7% in the underlying sample—reflecting additional wedges such as overhead costs, financial constraints, and the option value of delaying investment.

To align these quarterly estimates with FOMC announcements, we assign each firm-quarter observation

to the firm's earnings announcement date and treat the corresponding values as revealed at that time. This timing conversion is consistent with Gormsen and Huber (2025b), whose training data are drawn directly from earnings-call transcripts.

2.5 Realized Investment and Other Variables

We measure realized investment using quarterly Compustat data, with the growth rate of capital expenditures as our dependent variable. This choice differs from Ottonello and Winberry (2020), who study changes in the capital stock. Because the capital stock is a slow-moving state variable, investment growth provides a sharper measure of the flow decision that can respond to monetary policy news at the frequency of FOMC announcements. We construct two samples. The first is a long firm-quarter panel spanning 1990–2024, in which quarterly investment growth is regressed on monetary policy surprises accumulated over the quarter. The second is an event-window sample that links realized investment to a specific FOMC announcement through firms that issue investment guidance within 30 days after the meeting. In this guidance-matched sample, we additionally define *Actual Investment* as the percentage difference between realized capital expenditures and the pre-FOMC analyst consensus forecast. This measure places realized investment and revisions in investment expectations on the same scale, allowing us to trace changes in expectations through to subsequent outcomes.

Firm-level controls are drawn from Compustat and CRSP and include *Tobin's Q*, return on assets (*ROA*), *Asset Growth*, *Leverage*, and firm size (*Size*), measured as the natural logarithm of market capitalization. All firm-level controls are measured as of the most recent fiscal quarter preceding the FOMC announcement and winsorized to limit the influence of outliers. Macroeconomic controls—*Inflation*, the *Unemployment Rate*, and the *Lagged Prime Rate*—are obtained from the Federal Reserve Bank of St. Louis and control for prevailing macroeconomic conditions and the systematic component of monetary policy.

2.6 Summary Statistics

Table 1 reports summary statistics for the key variables over the 2005–2022 sample. Panel A uses the 30-day post-FOMC window, while Panel B uses the full inter-meeting window.

Changes in Investment Exp. contains 8,426 observations in the 30-day window, with a mean of -0.001, indicating that management guidance is, on average, closely aligned with the pre-FOMC analyst consensus. The sample expands to 13,339 observations in the inter-meeting window, with a similarly negligible mean of 0.001. *Actual Investment* contains 8,645 observations in Panel A and has a mean of 0.029, indicating that

realized capital expenditures exceed pre-FOMC analyst forecasts by approximately 2.9% on average. The average *Forecast Horizon* is approximately 153 days in the 30-day window.

The transcript-based measures yield substantially larger samples. *Exp. on Economy* contains 24,340 observations in the 30-day window with a mean of 0.210, indicating a generally positive outlook among managers. The mean rises slightly to 0.229 in the inter-meeting window, based on 39,977 observations. *Perceived Cost of Capital* and *Discount Rate* average 8.6% and 11.3%, respectively, with 62,753 observations. Both exceed the average market-based *WACC* of 8.0%, based on 45,880 observations, consistent with the wedges documented by Gormsen and Huber (2025b).

The sample covers firms with substantial variation in characteristics. Average log firm size is 7.12, and average *Tobin's Q* is 1.98. The median firm is profitable, with an *ROA* of 3.3%, although mean *ROA* is -0.2% because of a left tail of loss-making firms. Average leverage is 0.227. At the macroeconomic level, the sample period is characterized by average *Inflation* of 2.17%, an average *Unemployment Rate* of 6.32%, and an average lagged prime rate of 3.86%.

Panel C summarizes the distribution of monetary policy shocks over our main sample period, 2005–2022. Raw Fed rate surprises have a mean of 0.0042, a standard deviation of 0.0488, and a skewness of -1.1425, indicating substantial left skewness. Clean Fed rate surprises have a mean of 0.0067, a standard deviation of 0.0446, and a skewness of 0.1205, indicating slightly lower volatility and a markedly more symmetric distribution than the raw surprise measure.

3 Monetary Policy Surprises and Firm Decisions

Monetary policy announcements can affect firm investment through two competing channels. Under the conventional discount rate channel (Bernanke and Blinder, 1992; Bernanke and Kuttner, 2005), an unexpected tightening raises firms' financing costs and reduces the attractiveness of marginal investment projects, implying a *negative* response of investment expectations to hawkish surprises. Under the Fed information effect (Nakamura and Steinsson, 2018; Romer and Romer, 2000), however, the same surprise may convey favorable information about economic fundamentals. If firms interpret an unexpected tightening as a signal that the Federal Reserve views the economy as stronger than previously thought, their investment expectations may instead *rise*. The sign of the response therefore provides a first indication of which force is more important in the data. We begin with raw high-frequency monetary policy surprises in this section and, in the next, address the concern that these surprises may contain information predictable from pre-announcement economic conditions.

3.1 Raw FOMC Surprises and Firm Investment Expectations

We begin by examining the relationship between monetary policy surprises and firms' investment plans. We estimate

$$\Delta s_{i,t} = \alpha + \beta \Delta i_t + \gamma' X_{i,t-1} + \delta_i + \epsilon_{i,t}, \tag{2}$$

where $\Delta s_{i,t}$ is the revision in investment expectations for firm i following the FOMC announcement at time t, measured as the percentage difference between the firm's post-FOMC capital expenditure guidance from Capital IQ and the pre-FOMC analyst consensus from I/B/E/S. The monetary policy surprise, Δi_t, is the first principal component of changes in money-market futures rates spanning approximately a one-year horizon, following Nakamura and Steinsson (2018) and Acosta et al. (2025). The vector $X_{i,t-1}$ contains macroeconomic conditions at the time of the announcement—inflation, unemployment, and the lagged prime rate—as well as lagged firm characteristics, including Tobin's Q, asset growth, size, leverage, and ROA. The term δ_i denotes firm fixed effects. The coefficient of interest, β, measures the response of firms' investment expectations to the monetary policy surprise.

Table 2 reports the results. Columns (1)–(3) measure expectation revisions over a 30-day post-FOMC window, while columns (4)–(6) extend the window to the next FOMC announcement. Throughout, t-statistics in parentheses are based on standard errors clustered at the firm level.

The central finding is a robust *positive* relationship between Fed rate surprises and revisions in investment expectations. In the baseline specification in column (1), the coefficient on the surprise is 34.22 ($t = 2.71$): following an unexpected tightening, firms revise their investment guidance *upward* relative to the pre-announcement consensus. The estimate remains stable as controls are added, rising to 36.47 with macroeconomic controls in column (2) and to 38.37 with firm-level controls, the forecast horizon, and firm fixed effects in column (3). The same pattern appears over the longer inter-meeting window, with coefficients ranging from 33.98 to 36.61, all statistically significant at the 1% level.

The magnitude is economically substantial. Because the shock is normalized so that one unit corresponds to a 100-basis-point increase in the one-year Treasury yield, the fully specified coefficient of 38.37 implies that a 25-basis-point tightening surprise is associated with an upward revision of approximately 9.6 percentage points in expected investment, roughly one half of the standard deviation of *Changes in Investment Exp.* reported in Table 1. The similar estimates across the two event windows also indicate that the positive relationship is not confined to guidance issued immediately after the announcement.

The positive sign is difficult to reconcile with a pure discount-rate channel. Holding other forces fixed, an unexpected increase in interest rates should raise the cost of capital and reduce desired investment. Instead,

firms revise investment plans upward. This pattern is consistent with firms extracting favorable information about economic fundamentals from a hawkish FOMC surprise, analogous to the Fed information effect documented by Nakamura and Steinsson (2018) for professional forecasters.

The control variables are also consistent with this interpretation. Higher inflation at the time of the announcement is associated with downward revisions, with coefficients around -3 across specifications, consistent with inflationary pressure weighing on firms' investment plans. Tobin's Q enters positively (2.874 and 2.739 in the full specifications), consistent with firms with stronger investment opportunities revising their capital expenditure plans upward.

This interpretation is not yet causal, however. As emphasized by Bauer and Swanson (2023a), raw high-frequency surprises may partly capture the Federal Reserve's endogenous response to publicly available economic information. Firms and the Fed could therefore respond in the same direction to common news even in the absence of firms learning anything from the announcement itself. Before addressing this identification concern, we first ask whether the revisions in stated investment plans are followed by corresponding changes in realized investment.

3.2 Raw FOMC Surprises and Actual Investment

A natural question is whether revisions in management guidance translate into actual capital allocation. Table 3 examines the response of realized investment to Fed rate surprises using two complementary samples. Columns (1) and (2) use a long firm-quarter panel from 1990 to 2024, aggregating monetary policy surprises within each quarter and examining subsequent investment growth. Columns (3) and (4) return to the FOMC event-study design, restricting the sample to firms that issue guidance within the 60-day window following an announcement. In this sample, actual investment is measured relative to the pre-FOMC analyst consensus—the same benchmark used to construct revisions in investment expectations—allowing a direct comparison between revised plans and realized outcomes.

Both samples point in the same direction: realized investment *rises* following tightening surprises. In the long panel, the coefficient on the Fed rate surprise is 476.9 ($t = 24.38$) without controls and 451.6 ($t = 21.16$) after including firm fixed effects and the full set of firm-level and macroeconomic controls. Because this specification aggregates shocks to the quarterly level and uses a different scaling of investment, these coefficients are not directly comparable with those in the expectations regressions.

The event-study sample provides a more direct comparison. The coefficient is 47.98 ($t = 4.02$) without controls and 37.10 ($t = 3.68$) with the full specification. The latter is close to the corresponding coefficients in Table 2, which range from 36.61 to 38.37. The firm-level controls also behave as expected: investment

rises with Tobin's Q and asset growth and falls with size and leverage, consistent with standard investment regressions.

Although the underlying samples are not identical, the similarity in the estimated responses suggests that firms' upward revisions in investment plans are subsequently reflected in realized capital expenditures. The key result is therefore that the positive response to tightening surprises appears not only in what managers say they intend to invest but also in subsequent investment spending. This evidence strengthens the puzzle for a pure discount-rate mechanism and motivates a direct examination of the beliefs through which monetary policy announcements may affect investment.

3.3 Economic Outlook and Perceived Cost of Capital

We next examine two firm-level beliefs corresponding to the competing channels. The information channel predicts that hawkish surprises improve firms' assessment of economic fundamentals, whereas the discount rate channel predicts that they raise firms' perceived cost of financing costs. Table 4 examine both responses. The economic outlook measure (*Exp. on Economy*) is extracted from post-FOMC earnings calls using large language models. The predicted *Perceived Cost of Capital* measure is constructed following Gormsen and Huber (2025a), using firm characteristics to predict managers' perceived financing costs from a model trained on the cost-of-capital statements collected from earnings calls.

The economic-outlook results are consistent with a strong information component in raw FMOC surprises. Over the 30-day window, the coefficient on the Fed rate surprise is 377.4 ($t = 17.03$) without controls and 242.4 ($t = 11.75$) with firm fixed effects and the full control set of controls, in columns (1) and (2). Thus, managers express a favorable view of the economy following an unexpected tightening. The relationship remains positive over the window extending to the next FOMC announcement, with coefficients of 274.2 and 231.4 in columns (5) and (6). The macroeconomic controls behave as expected: higher inflation and unemployment are both associated with a more pessimistic stated outlook, providing additional validation for the LLM-based measure. Taken together with Tables 2 and 3, the results reveal a coherent pattern: hawkish surprises are followed by more optimistic assessments of the economy, upward revisions in investment plans, and higher realized investment.

At the same time, the cost-of-capital results show that the conventional discount-rate channel is also present. In the specification with firm fixed effects over the 30-day window, column (4), a tightening surprise raises predicted perceived cost of capital by 3.650 ($t = 5.09$). The sign is precisely what the discount-rate channel predicts. The relationship is much weaker over the longer window, however: the coefficient falls to 0.434 and is statistically insignificant in column (8).

These results suggest that the two channels operate simultaneously. Firms appear to perceive tighter monetary policy as raising financing costs, but they also become more optimistic about aggregate economic conditions. Because planned and realized investment rise on net following hawkish surprises, the favorable-fundamentals component is sufficiently strong to offset the investment-reducing force associated with higher perceived financing costs. The evidence does not by itself quantify the relative contribution of the two channels, but it shows that focusing on financing costs alone misses an important component of firms' response to FOMC announcements.

All of these results, however, are based on raw Fed rate surprises. If these surprises partly reflect the Federal Reserve's systematic response to economic information already observable before the meeting, as Bauer and Swanson (2023a) argue, then the positive association between hawkish surprises and managerial optimism need not imply that firms learn about fundamentals from the Fed. Firms and the Fed may instead be responding to the sam e underlying information. The next section addresses this concern by re-estimating the analysis using monetary policy surprises orthogonalized with respect to pre-announcement macroeconomic and financial conditions.

4 A Turning Point: Clean Monetary Policy Surprises

4.1 Investment Expectations and Clean Fed Rate Surprises

The evidence in Section 3 shows that firms revise their investment plans upward following hawkish rate surprises, a pattern difficult to reconcile with the discount-rate channel but consistent with a Fed information effect. This interpretation, however, faces an important identification concern raised by Bauer and Swanson (2023a). High-frequency rate surprises, although isolated from other news arriving within the narrow announcement window, may still be predictable from macroeconomic and financial information available before the FOMC meeting. If markets underestimate the responsiveness of the Federal Reserve's policy rule to incoming data, a hawkish surprise will systematically coincide with favorable economic news even if the Fed possesses no private information. Under this interpretation, the positive relation between rate surprises and firms' investment expectations in Table 2 could arise because firms and the Fed respond to the same public information, rather than because firms extract information from the policy action itself.

To address this concern, we use the orthogonalized monetary policy surprises of Bauer and Swanson (2023b), who remove the component of raw surprises predictable from six macroeconomic and financial variables prior to each FOMC announcement. As emphasized by Bauer and Swanson (2023a), this predictable component may reflect the Fed's systematic response to incoming economic news rather than an exogenous

policy shock. The resulting residual therefore provides a cleaner measure of unexpected monetary policy. We re-estimate the baseline specifications from Table 2, replacing raw surprises with these clean surprises.

Table 5 reports the results, and the contrast with Table 2 is striking. The positive and highly significant relation between raw rate surprises and changes in investment expectations disappears. Over the 30-day event window, the coefficient on clean Fed rate surprises is *negative*: -17.67 ($t = -2.53$) without controls and -14.60 ($t = -2.09$) with macroeconomic controls. It becomes statistically insignificant, as -10.28 ($t = -1.43$), once firm characteristics and firm fixed effects are included. Over the window extending to the next FOMC announcement, the estimates are uniformly small and statistically indistinguishable from zero. By comparison, the corresponding coefficients using raw surprises in Table 2 ranged from 34 to 38 and are significant at the 1% level in every specification. Removing the predictable component therefore does more than attenuate the positive relation: the positive effect disappears, and several point estimates turn negative.

At first glance, these results appear to support the critique of Bauer and Swanson (2023a) in the context of firm investment. Once the component of monetary policy surprises predictable from pre-announcement public information is removed, firms no longer increase their investment expectations following hawkish surprises. If anything, the negative point estimates are directionally consistent with the conventional discount-rate channel. One might therefore conclude that the information effect documented in Section 3 simply reflects omitted public information.

We argue, however, that this conclusion is premature. The sharp instability of the pooled coefficient across the two shock measures—strongly positive for raw surprises but weakly negative for clean surprises—raises a further question. The pooled linear specification imposes symmetry: a hawkish and a dovish surprise of the same magnitude are assumed to have equal and opposite effects on firm expectations. If the Fed information effect and the discount-rate channel operate differently during tightening and easing surprises, this restriction can obscure the underlying responses. Changes in the composition of the shock induced by orthogonalization can then substantially alter the pooled coefficient even when the underlying asymmetric responses are stable. Before examining this possibility in Section 5, we first show that the reversal generated by clean surprises is not confined to investment expectations. It appears even more strongly in firms' expectations about the aggregate economy.

4.2 Expectations of the Economy and the Cost of Capital

The information-effect interpretation in Section 3 rested on more than the investment results. Hawkish raw surprises were also followed by more optimistic assessments of the aggregate economy, while their effect on perceived cost of capital was positive in the short run but faded over the longer window. If the investment

results reverse because raw surprises contain information predictable from pre-announcement economic conditions, the same reversal should be especially apparent in firms' expectations about the economy, since these beliefs are precisely what incoming macroeconomic news should affect. Table 6 therefore repeats the analysis using firms' expectations of the economy and their perceived cost of capital as dependent variables.

The economic-outlook results show an even sharper reversal than the investment results. Whereas hawkish raw surprises were associated with significantly more optimistic views of the economy in Table 4, the coefficient on clean Fed rate surprises is negative and highly significant across all specifications. Over the 30-day window, the coefficient is -136.2 ($t = -9.55$) without firm fixed effects and -115.1 ($t = -8.57$) with the full set of controls and firm fixed effects. The pattern persists over the window extending to the next FOMC announcement, with coefficients of -76.14 ($t = -7.25$) and -50.53 ($t = -5.13$), respectively. Thus, once the predictable component of the surprise is removed, an unexpected tightening is associated with a more pessimistic, rather than more optimistic, assessment of aggregate economic conditions. This pattern is consistent with the conventional contractionary effects of tighter monetary policy.

The cost-of-capital results point in the same direction. Under raw surprises, hawkish shocks raise perceived cost of capital over the 30-day window, but the effect weakens substantially and becomes insignificant over the longer window in the fixed-effects specification. Under clean surprises, by contrast, the response is uniformly positive and highly significant. Hawkish clean surprises raise perceived cost of capital by 6.793 ($t = 16.14$) and 5.106 ($t = 12.12$) over the 30-day window, and by 4.793 ($t = 16.38$) and 4.845 ($t = 15.85$) over the window extending to the next announcement.

Taken together with Table 5, the clean-surprise results present a remarkably coherent picture. Hawkish shocks raise firms' perceived cost of capital, worsen their assessment of aggregate economic conditions, and weakly reduce their investment plans. Viewed in isolation, these results appear to restore the conventional monetary-policy transmission mechanism and leave little role for a Fed information effect.

We are thus left with two internally coherent but sharply different accounts of how firms respond to monetary policy, depending on whether the predictable component of high-frequency surprises is retained or removed. Rather than choosing between the two shock measures and declaring one correct and the other contaminated, we show in the next section that the apparent contradiction arises from the symmetry imposed by the pooled specification. Once we allow tightening and easing surprises to have different effects, the raw and clean results can be reconciled within a single underlying structure.

5 Resolution: Asymmetric Responses to Easing and Tightening Surprises

The contrast between the raw- and clean-surprise results is difficult to understand within a linear specification that constrains easing and tightening surprises to have equal and opposite effects. We therefore relax this restriction by decomposing each monetary policy surprise into its positive and negative components:

$$y_{i,t} = \beta^{+} MPS(+)_t + \beta^{-} MPS(-)_t + \Gamma' X_{i,t-1} + \Lambda' Z_t + \alpha_i + \varepsilon_{i,t}, \tag{3}$$

where $MPS_t^{+} = \max\{MPS_t, 0\}$ and $MPS_t^{-} = \min\{MPS_t, 0\}$ denote tightening and easing surprises, respectively. The pooled specifications in Sections 3 and 4 impose the restriction $\beta^{+} = \beta^{-}$. Equation (3) allows us to relax this restriction and estimate the responses to tightening and easing surprises separately.

This decomposition turns out to be central to understanding the apparent contradiction between raw and clean surprises. Firms respond very differently to monetary tightening and easing. Unexpected easings convey adverse information about economic fundamentals, while unexpected tightenings worsen firms' economic outlook through conventional contractionary forces. At the same time, perceived financing costs respond to policy surprises in the conventional direction under both tightening and easing. A pooled specification combines these distinct responses into a single coefficient, whose sign can therefore change substantially across alternative shock measures even when the underlying asymmetric responses remain similar.

5.1 Asymmetric Responses of Economic Expectations and Perceived Cost of Capital

We begin with the two firm-level beliefs through which monetary policy may affect investment: expectations about aggregate economic conditions and perceived financing costs. Table 7 reports the decomposition over the 30-day window using raw Fed rate surprises in columns (1)–(4) and clean Fed rate surprises in columns (5)–(8). For comparison, the odd-numbered specifications reproduce the corresponding pooled estimates from Tables 4 and 6.

Consider first firms' expectations of the economy under raw surprises. The pooled coefficient of 242.4 masks sharply different responses to tightening and easing surprises. The coefficient on $MPS(+)$ is -257.3 ($t = -5.98$): an unexpected tightening makes firms substantially more pessimistic about the economy, consistent with the conventional contractionary effects of tighter monetary policy. The coefficient on $MPS(-)$ is 542.6 ($t = 17.18$). Since $MPS(-)$ takes negative values, this estimate implies that an unexpected easing also makes firms more pessimistic. In this case, however, the direction of the response is inconsistent with the conventional stimulative effect of an easing and instead points to an information effect: firms appear to interpret an unexpected rate cut as a signal that the Federal Reserve is more concerned about

economic conditions than they had previously believed.

Importantly, this asymmetric pattern survives the Bauer–Swanson orthogonalization. Under clean surprises, the coefficient on $MPS(+)$ is -354.0 ($t = -16.62$), while the coefficient on $MPS(-)$ is 214.6 ($t = 7.50$). Both retain their signs and remain highly significant. Cleaning strengthens the negative response to tightening surprises and attenuates, but does not eliminate, the adverse information conveyed by easing surprises.

This decomposition helps explain the instability of the pooled coefficients. With raw surprises, the strong easing-side response pushes the pooled coefficient positive, producing the estimate of 242.4. With clean surprises, the tightening-side response becomes relatively more prominent and the pooled coefficient turns negative, to -115.1. The two pooled estimates therefore summarize different combinations of two underlying responses with opposite coefficient signs. Neither pooled coefficient, by itself, adequately describes how firms respond separately to tightening and easing surprises.

The perceived cost of capital displays a different pattern that is essentially symmetric. Under raw surprises, the coefficients on $MPS(+)$ and $MPS(-)$ are 2.978 ($t = 2.19$) and 3.987 ($t = 4.13$), respectively. Under clean surprises, the corresponding coefficients are 4.137 ($t = 6.86$) and 6.687 ($t = 8.10$). Thus, unlike firms' expectations about the economy, perceived cost of capital responds in the conventional direction on both sides of the policy distribution, with coefficients of broadly similar magnitude.

Taken together, the two sets of results reveal an important distinction between the channels. The financing-cost channel operates in the conventional direction under both tightening and easing: higher rates raise firms' perceived cost of capital and lower rates reduce it. The response of economic expectations, by contrast, is asymmetric in its interpretation. An unexpected easing worsens firms' economic outlook despite lowering financing costs, consistent with firms extracting adverse information about fundamentals from the Fed's action. An unexpected tightening also worsens the outlook, but in this case the response goes in the same direction as the conventional contractionary effect of tighter monetary policy.

The key implication is that easing and tightening need not have mirror-image effects on investment. We examine this prediction next.

5.2 Asymmetric Responses of Investment Expectations

Table 8 examines how these two belief responses combine in firms' investment plans. Columns (1) and (2) use raw Fed rate surprises, while columns (3) and (4) use clean surprises.

The pooled estimates reproduce the puzzle that motivated our analysis. The coefficient on the raw surprise is 28.63 ($t = 2.01$), whereas the coefficient on the clean surprise is -13.61 ($t = -1.85$). Once

tightening and easing surprises are separated, however, the source of this instability becomes clearer.

Consider first easing surprises. An unexpected rate cut produces two opposing forces. The decline in perceived cost of capital makes investment more attractive, but the adverse information conveyed by the easing worsens firms' expectations about aggregate economic conditions. The net investment response therefore depends on which force is stronger.

Under raw surprises, the coefficient on $MPS(-)$ is 70.03 ($t = 2.96$). Since MPS(-) takes negative values, an unexpected easing leads firms to revise their investment guidance *downward*. Thus, for raw easing surprises, the information associated with the policy action is sufficiently strong to outweigh the investment stimulus associated with lower perceived financing costs. The coefficient on $MPS(+)$ is negative but statistically insignificant, at -27.87 ($t = -1.14$). This muted response is consistent with raw tightening surprises containing both contractionary policy effects and favorable public information correlated with the Fed's decision.

Cleaning the surprise changes the relative importance of the two sides. The coefficient on $MPS(+)$ becomes significantly negative, at -25.89 ($t = -2.14$): a clean tightening surprise reduces firms' investment plans. This result is consistent with the two responses documented above operating in the same direction: tightening raises perceived financing costs and worsens firms' expectations about aggregate economic conditions.

By contrast, the coefficient on $MPS(-)$ falls to 2.714 ($t = 0.18$). The near-zero response is consistent with two offsetting forces. Even clean easing surprises worsen firms' economic outlook, while at the same time reducing their perceived cost of capital. The investment stimulus from cheaper financing may therefore be offset by the adverse information firms infer from the easing. The estimates do not separately identify the quantitative contribution of these two forces, but they show that a monetary easing need not generate the mirror image of a monetary tightening.

The asymmetry has an important implication for monetary-policy transmission. The effect of easing on firm investment may be weakened because the favorable financing-cost effect is accompanied by adverse information about economic fundamentals. Under tightening, by contrast, higher financing costs and deteriorating economic expectations operate in the same direction. We next examine whether these asymmetric responses in investment plans are reflected in actual capital expenditures.

5.3 From Expectations to Realized Investment

Guidance measures firms' stated investment plans; realized capital expenditures reveal whether those plans translate into actual resource allocation. Table 9 therefore regresses realized investment—measured, as

in the FOMC sample of Table 3, relative to the pre-FOMC analyst consensus—on the pooled monetary policy shock and its positive and negative components. Columns (1) and (2) use raw surprises, while columns (3) and (4) use clean surprises, with the same firm fixed effects and controls as before.

The pooled estimates reproduce the same instability observed for investment expectations. The coefficient on the raw surprise is 23.43 ($t = 3.99$), while the coefficient on the clean surprise is an insignificant 1.372 ($t = 0.26$).

The decomposition of raw surprises shows that the positive pooled coefficient is driven by the easing domain. The coefficient on $MPS(-)$ is 39.59 ($t = 3.82$). Since $MPS(-)$ is negative, an unexpected easing is followed by *lower* realized investment relative to the pre-FOMC consensus. The coefficient on $MPS(+)$ is small and insignificant, as -4.598 ($t = -0.37$). This pattern closely mirrors the results for investment guidance in Table 8: raw easing surprises reduce both planned and subsequently realized investment, while the response to raw tightening surprises is muted.

The clean-surprise results again reveal separate responses hidden by the pooled estimate. The coefficient on MPS^{+} is -21.42 ($t = -1.90$), indicating that clean tightening surprises reduce realized investment, with a magnitude similar to their effect on guidance (-25.89 in Table 8). The coefficient on MPS^{-} is 25.55 ($t = 2.00$), implying that clean easing surprises are also followed by lower realized investment.

The realized-investment response to clean easing is stronger than the corresponding response of investment guidance, for which the coefficient is only 2.714 and statistically insignificant. This difference suggests that the effects associated with easing surprises may continue to affect capital spending after managers issue their initial guidance. We interpret this comparison cautiously, however, because the two estimates need not identify the same adjustment margin and sampling differences may also contribute to the difference in magnitudes.

Overall, the expectations and realized-investment results tell a consistent story. Easing surprises convey adverse information about fundamentals, which can offset or even reverse the investment stimulus from lower financing costs. Tightening surprises raise financing costs and worsen economic expectations, producing a more conventionally contractionary investment response. The asymmetric belief responses therefore appear to matter for real capital allocation, rather than being confined to managerial language.

5.4 Manager Attention and the Asymmetric Belief Response

The interpretation above raises a natural question: are the asymmetric belief responses particularly strong among managers who discuss monetary policy? We explore this question using indicators for whether a firm's post-FOMC earnings call mentions particular macroeconomic topics. Because these indicators are

measured after the FOMC announcement, the exercise should be interpreted as descriptive heterogeneity rather than as a causal test of attention: the monetary policy surprise itself may affect whether managers choose to discuss the Fed or related topics.

Table 10 interacts these mention indicators with the positive and negative components of the clean monetary policy shock. Columns (1)–(7) define the indicators using references to monetary policy and the Fed jointly, monetary policy alone, the Fed alone, market conditions, real output, inflation, and currency, respectively.

The heterogeneity is strongest in the easing domain, where our earlier results identify the information effect. Across columns (1)–(3), the interaction between MPS^- and the mention indicator is large, positive, and highly significant: 229.8 ($t = 4.13$) for joint mentions of monetary policy and the Fed, 227.0 ($t = 4.06$) for monetary policy alone, and 353.4 ($t = 3.34$) for the Fed alone. Because MPS^- takes negative values, these estimates imply that firms whose managers discuss monetary policy become more pessimistic following an easing surprise than firms whose managers do not.

Interactions with references to market conditions and real output in columns (4) and (5) have the same sign and are also significant, consistent with the asymmetric response being stronger among managers whose calls contain more discussion of macroeconomic conditions. The interaction with currency references in column (7) is close to zero. We do not interpret currency as a formal placebo, since exchange rates themselves respond to monetary policy, but the contrast suggests that the heterogeneity is not equally strong across all macroeconomic topics.

The tightening domain shows a broadly similar pattern of stronger pessimistic responses among firms whose managers discuss relevant macroeconomic topics, although the evidence is less uniform. The interactions between MPS^+ and the mention indicators are negative in all cases except currency. They are significant for market conditions (-133.9, $t = -2.24$) and inflation (-181.6, $t = -3.24$), and marginally significant for the joint monetary policy and Fed indicator (-77.41, $t = -1.65$). The particularly strong interaction with inflation is consistent with managers who discuss inflation responding more negatively to unexpected tightening.

Two features of the table are noteworthy. First, the baseline coefficients on MPS^+ and MPS^- remain large and significant across the specifications, with magnitudes broadly similar to those in Table 7. The heterogeneous responses associated with topic mentions therefore amplify rather than generate the basic asymmetry. Second, the signs of the interactions are remarkably consistent: the easing-domain interaction is positive in all seven columns, while the tightening-domain interaction is negative in every column except currency. Although the post-announcement measurement of attention prevents a causal interpretation, the

pattern is consistent with managers who engage more explicitly with monetary policy and macroeconomic conditions exhibiting stronger belief responses.

5.5 The Same Asymmetry in the Bauer–Swanson Setting

A natural concern is that the asymmetric responses documented above may be specific to our setting: publicly listed firms that issue guidance, expectations extracted from earnings calls by large language models, or the 2005–2022 sample. To examine the external validity of the result, we return to the empirical setting of Bauer and Swanson (2023a): monthly Blue Chip forecast revisions for unemployment, GDP, and CPI regressed on monetary policy surprises over January 1990 to June 2019. We ask whether allowing easing and tightening surprises to have different effects also changes the interpretation of the evidence in that setting.

Panel A of Table 11 replicates Panel C of Table 1 in Bauer and Swanson (2023a). Consistent with their results and with the original evidence in Nakamura and Steinsson (2018), a hawkish raw surprise is followed by a downward revision to unemployment forecasts (-0.230, significant at 5%) and an upward revisions to CPI forecasts (0.434, significant at 10%), the standard pattern associated with a Fed information effect in professional forecasts. Panel C reproduces the main Bauer–Swanson result: after the surprise series is cleansed of its predictable component, the coefficients for unemployment, GDP, and CPI become small and insignificant (0.113, -0.553, and -0.188, respectively). Under a symmetric specification, the information effect therefore appears to disappear.

Panels B and D show that allowing for asymmetry changes this interpretation. Decomposing the raw surprise in Panel B reveals that the information effect in Blue Chip forecasts is concentrated on the easing side. The coefficient on $MPS(-)$ for unemployment is -0.478 ($t = -3.83$). BEcause $MPS(-)$ takes negative values, an unexpected easing leads forecasters to revise expected unemployment *upward*. The coefficient on $MPS(+)$, by contrast, is statistically insignificant for all three variables. Thus, the pooled unemployment coefficient of -0.230 combines a strong easing-side response with little response to tightening surprises.

Panel D applies the same decomposition to the clean surprises. The pooled null in Panel C again masks economically different responses. On the tightening side, a clean hawkish surprise raises unemployment forecasts (0.876, $t = 2.44$) and lowers GDP forecasts (-2.001, $t = -2.01$), consistent with the conventional contractionary effects of tighter monetary policy. On the easing side, the coefficient on clean MPS^- for unemployment remains negative and statistically significant, at -0.433 ($t = -2.74$). Thus, even after removing the component of monetary policy surprises predictable from pre-announcement information, an unexpected easing leads professional forecasters to revise unemployment upward.

Allowing for asymmetric responses also substantially increases the explanatory power of these regres-

sions. For unemployment, the R^2 rises from 0.005 in the pooled clean-surprise specification to 0.083 when easing and tightening are separated; for GDP, it rises from 0.020 to 0.071. The improvement reinforces the idea that a single pooled coefficient obscures economically important heterogeneity between the two sides of monetary policy.

These results qualify the apparent disagreement between Nakamura and Steinsson (2018) and Bauer and Swanson (2023a). Both analyses impose symmetry between easing and tightening surprises. Under that restriction, raw surprises reveal an information effect, while cleansed surprises largely eliminate it. Once the two directions of monetary policy are allowed to transmit differently, however, the professional-forecast evidence closely parallels our firm-level results. Unexpected easings continue to convey adverse information about economic fundamentals even after orthogonalization, while unexpected tightenings generate conventional contractionary responses.

The Fed information effect is therefore not eliminated by cleansing the monetary policy surprise. Rather, it is asymmetric and concentrated on the easing side. Pooling easing and tightening surprises masks this asymmetry and can make the estimated information effect appear or disappear depending on the construction of the shock.

6 Economic Mechanism

What generates the asymmetric information effect? One possible mechanism is asymmetric learning under uncertainty. Firm managers are uncertain about the underlying state of the economy and may place greater weight on information that signals downside risk. Such behavior can arise from ambiguity aversion or, more generally, from a desire to guard against adverse states when the economic outlook is uncertain. In this setting, a monetary policy action conveys information not only about expected economic conditions but also about the possibility that fundamentals are worse than managers had previously perceived.

An unexpected monetary easing can therefore carry particularly strong informational content. A rate cut may lead managers to infer that the Federal Reserve has become concerned about weakness in aggregate demand, financial conditions, or other downside risks not fully incorporated into their own information sets. If managers are especially sensitive to adverse signals, they will revise their economic outlook downward. This information effect works against the conventional financing-cost channel: the easing lowers firms' perceived cost of capital and thereby encourages investment, but at the same time signals weaker fundamentals and discourages investment.

The same logic need not operate symmetrically following an unexpected tightening. A rate increase

may contain favorable information about current economic conditions, but managers need not place equal weight on such upside information. Moreover, tighter monetary policy itself raises financing costs and weakens future demand. The favorable information potentially conveyed by a hawkish action may therefore be relatively muted, while its conventional contractionary effects remain. This mechanism can generate an information effect concentrated on the easing side even when positive and negative monetary policy surprises are measured symmetrically.

A natural cross-sectional implication is that the informational content of monetary policy should matter more for firms whose fundamentals are more exposed to aggregate economic conditions. When an easing signals a weaker economy, firms whose cash flows are highly cyclical have more at stake and should revise both their economic outlook and investment plans downward more strongly. More generally, cyclical firms should also respond more strongly to the conventional contractionary effects of tightening because their future cash flows are more sensitive to aggregate demand. Thus, greater cyclicality should amplify responses on both sides of the shock distribution, but the easing-side response is particularly informative for our proposed mechanism: a stronger negative response to an unexpected easing among cyclical firms is difficult to explain through the decline in financing costs alone and instead points to adverse information about fundamentals.

We proxy firms' exposure to aggregate conditions using CAPM beta, estimated from weekly stock returns over the preceding five years and standardized within each FOMC date. We interact beta with the positive and negative components of the monetary policy surprise. Table 12 reports the results. Panel A examines firms' expectations about the economy, while Panel B examines investment expectations, using both raw and clean surprises and both event windows.

Panel A shows that cyclicality amplifies firms' revisions in economic outlook on both sides of the shock distribution. Consider first raw surprises over the 30-day window in column (1). The direct effects reproduce the asymmetry documented in Table 7: expectations deteriorate following tightening surprises (-105.9 on $MPS(+)$) and also following easing surprises (304.7 on $MPS(-)$, recalling that $MPS(-)$ takes negative values). Both responses become stronger as beta rises. The coefficient on $MPS(+) \times Beta$ is -71.63 ($t = -2.44$), implying that more cyclical firms respond more negatively to tightening surprises. More important for the information mechanism, the coefficient on $MPS(-) \times Beta$ is 43.52 ($t = 2.28$): high-beta firms become more pessimistic following an unexpected easing, consistent with their attaching greater importance to the adverse aggregate information contained in the policy action.

The same broad pattern appears over the window extending to the next FOMC meeting and, importantly, with the clean Bauer–Swanson surprises. The tightening-side interaction is particularly strong under clean shocks: -98.46 ($t = -4.34$) over the 30-day window and -62.55 ($t = -3.71$) over the inter-meeting win-

dow. The easing-side interaction remains positive throughout and becomes statistically significant over the longer window, at 48.28 ($t = 2.43$). Thus, even after the component of monetary policy surprises predictable from pre-announcement information has been removed, cyclical firms respond more pessimistically to an unexpected easing. The delayed significance over the longer window suggests that the adverse information contained in easing surprises may take time to become fully reflected in managers' stated economic outlook.

Panel B shows that the same cross-sectional pattern extends from beliefs to investment plans. For raw surprises, the interaction coefficients over the 30-day window are -45.96 ($t = -1.96$) for $MPS(+) \times Beta$ and 24.13 ($t = 2.40$) for $MPS(-) \times Beta$. Over the longer window, the corresponding coefficients are -30.62 and 17.93, both statistically significant. Thus, more cyclical firms revise investment plans downward more strongly following both unexpected tightenings and unexpected easings.

The pattern survives the cleaning of monetary policy surprises. The tightening-side interaction remains significantly negative in both windows, at -32.24 ($t = -2.06$) and -28.76 ($t = -2.51$). The easing-side interaction is again positive and becomes statistically significant over the longer window, at 16.30 ($t = 2.16$). Notably, the average response of investment expectations to clean easing surprises is close to zero: the 30-day coefficient on $MPS(-)$ is only 3.619 and statistically insignificant. Yet the cross-sectional gradient is economically meaningful. More cyclical firms revise their investment plans downward more strongly following an unexpected easing, consistent with the adverse information about aggregate fundamentals being more consequential for firms whose cash flows are more exposed to the business cycle.

Taken together, the two panels provide cross-sectional evidence consistent with the mechanism behind the asymmetric information effect. Firms whose fundamentals are more sensitive to aggregate conditions react more strongly to monetary policy surprises in both their economic outlook and investment plans. The easing-side results are particularly revealing. A monetary easing lowers financing costs, so the stronger downward revisions among high-beta firms are difficult to attribute to the conventional cost-of-capital channel. Instead, they are consistent with cyclical firms placing greater weight on the adverse information about aggregate fundamentals conveyed by an unexpected easing. The tightening-side results, by contrast, show that the same firms are also more exposed to the conventional contractionary consequences of tighter monetary policy. Together, these findings link the asymmetry in aggregate responses to heterogeneous exposure to the economic information and demand conditions associated with monetary policy actions.

7 Conclusion

This paper studies how monetary policy affects corporate investment by tracing FOMC surprises through managers' beliefs, perceived financing costs, investment plans, and realized capital expenditures. We show that the transmission mechanism is fundamentally asymmetric. Unexpected easings lower firms' perceived cost of capital but also worsen managers' expectations about the economy, consistent with rate cuts conveying adverse information about fundamentals. These opposing forces weaken the investment response to easing. Unexpected tightenings, by contrast, raise perceived financing costs and generate conventional contractionary revisions in expectations, causing the two forces to operate in the same direction.

This asymmetry also helps reconcile the debate over the Fed information effect. With pooled shocks, raw monetary policy surprises produce the familiar information-effect pattern, while cleansed surprises appear to eliminate it. Once easing and tightening surprises are separated, however, the underlying responses are much more stable. The adverse information effect survives cleansing and is concentrated on the easing side, both in firm-level expectations and in the Blue Chip forecasts studied by Bauer and Swanson (2023a). Pooling the two directions of policy can therefore obscure economically distinct transmission mechanisms.

More broadly, our results suggest that monetary easing and tightening should not be viewed as mirror-image policy experiments. The effect of a policy action depends not only on how it changes financing costs, but also on what firms infer from the action about the state of the economy. Accounting for this informational content is therefore important for understanding the transmission of monetary policy to real investment.

Table 1: Summary Statistics

This table presents summary statistics for the key variables used in the analysis over the sample period from 2005 to 2022. Panel A reports statistics for the 30-day post-FOMC window, while Panel B reports statistics for the post-FOMC window before the next FOMC announcement. Panel C reports FOMC-announcement-level summary statistics for monetary policy shocks, including raw Fed rate surprises and clean Fed rate surprises. The investment expectation variables are constructed using Capital IQ guidance and I/B/E/S consensus data: *Changes in Investment Exp.* represents the change in management investment guidance relative to the pre-FOMC analyst consensus. *Actual Investment* is measured as realized investment relative to the pre-FOMC analyst consensus. *Forecast Horizon* is defined as the gap in days between the guidance announcement and the end of the fiscal quarter. *Exp. on Economy* represents firm-level expectations regarding the U.S. economic outlook, extracted from earnings conference calls using Large Language Models (LLMs). *Perceived Cost of Capital* and *Discount Rate* represent firm-level perceived cost of capital and perceived discount rates, constructed following Gormsen and Huber (2025a). *WACC* denotes the weighted average cost of capital, constructed using equity and bond market data. The table also summarizes firm-level characteristics, including firm size (*Size*), return on assets (*ROA*), leverage ratio (*Leverage*), Tobin's Q (*Tobin Q*), asset growth (*Asset Growth*), and firm-level CAPM beta (*Beta*), alongside macroeconomic control variables, inflation (*Inflation*), unemployment rate (*Unemployment Rate*), and Bank Prime Rate (*Rate (Lagged)*).

Panel A: 30-Day Window								
	N	Mean	Median	Std.Dev	P25	P75	Min	Max
Changes in Investment Exp.	8,426	-0.001	0.000	0.194	-0.061	0.060	-0.758	0.916
Actual Investment	8,645	0.029	0.048	0.443	-0.199	0.280	-1.363	1.376
Forecast Horizon	8,770	152.833	151.000	73.850	69.000	238.000	51.000	258.000
Exp. on Economy	24,340	0.210	0.000	0.646	0.000	1.000	-1.000	1.000
Perceived Cost of Capital	62,753	0.086	0.085	0.013	0.077	0.095	0.041	0.126
Discount Rate	62,753	0.113	0.113	0.017	0.101	0.124	0.060	0.172
WACC	45,880	0.080	0.076	0.178	0.059	0.097	-30.647	13.532
Tobin Q	61,900	1.981	1.520	1.375	1.146	2.254	0.670	8.463
Asset Growth	61,859	0.112	0.050	0.310	-0.029	0.158	-0.411	1.759
Size	61,902	7.117	7.088	1.987	5.741	8.448	2.830	12.023
Leverage	61,568	0.227	0.206	0.194	0.044	0.359	0.000	0.755
ROA	61,902	-0.002	0.033	0.165	-0.013	0.073	-0.817	0.272
Beta	61,747	1.178	1.092	0.640	0.732	1.517	0.039	3.320
Inflation	62,753	2.170	2.169	0.561	1.891	2.564	0.691	3.459
Unemployment	62,753	6.316	5.900	1.968	4.700	7.900	3.500	11.000
Rate (lagged)	62,753	3.857	3.250	1.085	3.250	4.250	3.250	8.250

Panel B: Before Next FOMC								
	N	Mean	Median	Std.Dev	P25	P75	Min	Max
Changes in Investment Exp.	13,339	0.001	0.000	0.190	-0.057	0.062	-0.758	0.916
Actual Investment	13,712	0.029	0.046	0.437	-0.190	0.271	-1.363	1.376
Forecast Horizon	13,878	150.329	152.000	73.559	67.000	238.000	51.000	258.000
Exp. on Economy	39,977	0.229	0.000	0.637	0.000	1.000	-1.000	1.000
Perceived Cost of Capital	89,280	0.086	0.085	0.013	0.076	0.095	0.041	0.126
Discount Rate	89,280	0.113	0.113	0.017	0.101	0.124	0.060	0.172
WACC	64,927	0.081	0.076	0.176	0.059	0.097	-30.647	13.532
Tobin Q	88,127	1.996	1.534	1.377	1.153	2.286	0.670	8.463
Asset Growth	88,070	0.107	0.050	0.299	-0.027	0.154	-0.411	1.759
Size	88,134	7.190	7.146	2.000	5.791	8.523	2.830	12.023
Leverage	87,673	0.226	0.203	0.192	0.044	0.355	0.000	0.755
ROA	88,134	0.003	0.036	0.161	-0.008	0.075	-0.817	0.272
Beta	87,922	1.175	1.090	0.636	0.733	1.513	0.039	3.320
Inflation	89,280	2.120	2.143	0.565	1.888	2.519	0.691	3.459
Unemployment	89,280	6.465	6.100	2.024	4.800	8.200	3.500	11.000
Rate (lagged)	89,280	3.798	3.250	1.044	3.250	4.000	3.250	8.250

Panel C: Monetary Policy Shocks								
	N	Mean	Median	Std.Dev	P25	P75	Min	Max
Fed rate surprises	155	0.001	0.006	0.051	-0.013	0.024	-0.250	0.138
Clean Fed rate surprises	143	0.007	0.003	0.045	-0.014	0.029	-0.135	0.161

Table 2: Federal Funds Rate Surprises and Changes in Firm Investment Expectations

This table presents changes in firms' investment expectations following FOMC announcements, measured over the 30-day event window and the post-FOMC window leading up to the next announcement. We utilize post-FOMC investment expectations from Capital IQ Guidance and pre-FOMC investment consensus from IBES to construct the dependent variable, *Changes in Investment Exp.*. This variable represents the percentage difference between the post-FOMC expectation and the pre-FOMC consensus. The key explanatory variable, *Fed rate surprises*, is constructed following Nakamura and Steinsson (2018) and Acosta et al. (2025) using the first principal component of rate changes for money market futures spanning approximately a one-year horizon. We control for forecasting horizons, macroeconomic factors (unemployment rate, inflation rate, and lagged prime rate), and firm-specific characteristics, including firm size, return on assets (ROA), leverage ratio, Tobin's Q, and asset growth. Standard errors are clustered by firm. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Coefficients are multiplied by 100.

	30-Day Window			Before Next FOMC		
	(1)	(2)	(3)	(4)	(5)	(6)
Fed rate surprises	34.22***	36.47***	38.37***	34.11***	33.98***	36.61***
	(2.71)	(2.86)	(2.79)	(4.03)	(3.99)	(4.30)
Inflation		-2.791***	-3.058***		-3.127***	-3.475***
		(-4.57)	(-4.93)		(-6.30)	(-6.98)
Unemployment		0.0694	0.0222		-0.0606	-0.162
		(0.38)	(0.10)		(-0.39)	(-0.92)
Rate (lagged)		0.802**	0.563		0.949***	0.624**
		(2.35)	(1.47)		(3.57)	(2.16)
Tobin Q			2.874***			2.739***
			(5.67)			(7.00)
Asset Growth			-0.224			0.728
			(-0.20)			(0.81)
Size			-0.371			-1.048
			(-0.39)			(-1.39)
Leverage			-3.951			-6.537**
			(-1.15)			(-2.40)
ROA			2.765			0.652
			(0.75)			(0.20)
Forecast Horizon			0.0111***			0.0147***
			(3.93)			(6.92)
Firm FE	NO	NO	YES	NO	NO	YES
Adjusted R-Squared	0.001	0.005	0.200	0.001	0.006	0.199
N	8,562	8,562	8,152	13,615	13,615	13,198

Table 3: Changes in Federal Funds Rate and Firm Actual Investment Growth

This table examines the response of actual firm investment to monetary policy shocks (*Fed rate surprises*) using two distinct samples. Columns (1) and (2) utilize a firm-quarter panel ranging from 1990 to 2024, where shocks are aggregated at the quarterly level. In these specifications, the dependent variable is the ratio of actual investment to lagged actual investment. Columns (3) and (4) employ an event-study approach, restricting the sample to firms that issue guidance within the 60-day window following an FOMC announcement. For this sample, the dependent variable is measured as the ratio of actual investment to the pre-FOMC analyst consensus. The *Fed rate surprises* series is constructed following Nakamura and Steinsson (2018) and Acosta et al. (2025). We include several firm-level features—firm size, return on assets (ROA), leverage ratio, Tobin's Q, and asset growth—alongside three macroeconomic factors: the unemployment rate, inflation rate, and lagged prime rate. Standard errors are clustered by firm. Coefficients are multiplied by 100. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Long Sample		FOMC Sample	
	(1)	(2)	(3)	(4)
Fed rate surprises	476.9***	451.6***	47.98***	37.10***
	(24.38)	(21.16)	(4.02)	(3.68)
Inflation		-2.721***		-2.957***
		(-7.22)		(-4.44)
Unemployment		1.086***		-0.0346
		(4.86)		(-0.16)
Rate (lagged)		1.271***		0.831**
		(5.86)		(2.13)
Tobin Q		8.881***		4.040***
		(23.94)		(6.32)
Asset Growth		15.68***		3.304***
		(15.23)		(2.75)
Size		-9.378***		-3.166**
		(-18.57)		(-2.43)
Leverage		-32.54***		-12.08***
		(-11.21)		(-2.96)
ROA		57.22***		-0.0996
		(18.67)		(-0.02)
Firm FE	NO	YES	NO	YES
Adjusted R-Squared	0.006	0.027	0.001	0.412
N	101,210	90,452	15,300	15,032

Table 4: Federal Funds Rate Surprises and Firm Expectations of the Economic Outlook and Cost of Capital

This table reports the response of firm expectations to FOMC announcements, measured over a 30-day event window and the post-FOMC window leading up to the subsequent FOMC announcement. We focus on two types of expectations: the U.S. economic outlook (*Exp. on Economy*) and projected changes in the cost of capital (*Changes in Exp. on Cost of Capital*). The U.S. economic outlook (*Exp. on Economy*) is extracted from post-FOMC earnings conference calls using LLMs, while the perceived cost of capital measure follows Gormsen and Huber (2025a). The key explanatory variable, *Fed rate surprises*, is constructed following Nakamura and Steinsson (2018) and Acosta et al. (2025) using the first principal component of rate changes for money market futures covering an approximate one-year horizon. We control for macroeconomic factors (unemployment rate, inflation rate, and lagged prime rate) and firm-specific characteristics, including firm size, return on assets (ROA), leverage ratio, Tobin's Q, and asset growth. Standard errors are clustered by firm. Coefficients are multiplied by 100. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	30-Day Window				Before Next FOMC			
	Exp. on Economy		Changes in Perceived Cost of Capital		Exp. on Economy		Changes in Perceived Cost of Capital	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fed rate surprises	377.4***	242.4***	-3.163***	3.650***	274.2***	231.4***	-3.447***	0.434
	(17.03)	(11.75)	(-5.13)	(5.09)	(18.16)	(15.59)	(-7.55)	(0.86)
Inflation		-37.91***		0.938***		-34.31***		0.756***
		(-36.31)		(28.68)		(-42.27)		(30.51)
Unemployment		-7.630***		0.183***		-7.700***		0.157***
		(-17.62)		(16.77)		(-22.19)		(18.13)
Rate (lagged)		0.210		0.116***		-0.388		0.0874***
		(0.28)		(6.96)		(-0.61)		(6.80)
Tobin Q		7.086***		-0.0878***		6.383***		-0.0819***
		(8.70)		(-4.48)		(8.98)		(-5.56)
Asset Growth		-5.377***		-0.150**		-3.278**		-0.168***
		(-2.80)		(-2.51)		(-2.06)		(-3.36)
Size		0.431		-0.453***		1.573		-0.462***
		(0.27)		(-10.72)		(1.17)		(-14.33)
Leverage		40.03***		-0.0656		30.25***		0.147
		(6.03)		(-0.39)		(5.51)		(1.07)
ROA		-16.70**		0.438**		-21.56***		0.359**
		(-2.50)		(2.45)		(-4.03)		(2.54)
Firm FE	NO	YES	NO	YES	NO	YES	NO	YES
Adjusted R-Squared	0.013	0.264	0.001	0.026	0.009	0.254	0.001	0.014
N	23,999	23,068	60,949	59,496	39,356	38,313	86,625	84,793

Table 5: Clean Federal Funds Rate Surprises and Changes in Firm Investment Expectations

This table presents changes in firms' investment expectations in response to clean monetary policy shocks (following Bauer and Swanson (2023a)), measured over the 30-day event window and the post-FOMC window leading up to the next announcement. We utilize post-FOMC investment expectations from Capital IQ Guidance and pre-FOMC investment consensus from IBES to construct the dependent variable, *Changes in Investment Exp.*. This variable represents the percentage difference between the post-FOMC expectation and the pre-FOMC consensus. The key explanatory variable, *Clean Fed rate surprises*, is constructed following Bauer and Swanson (2023a) using the first principal component of rate changes for money market futures over an approximate one-year horizon, which is then orthogonalized to six macroeconomic variables. We control for forecasting horizons, macroeconomic factors (unemployment rate, inflation rate, and lagged prime rate), and firm-specific characteristics, including firm size, return on assets (ROA), leverage ratio, Tobin's Q, and asset growth. Standard errors are clustered by firm. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Coefficients are multiplied by 100.

	30-Day Window			Before Next FOMC		
	(1)	(2)	(3)	(4)	(5)	(6)
Clean Fed rate surprises	-17.67**	-14.60**	-10.28	-5.229	-4.449	0.274
	(-2.53)	(-2.09)	(-1.43)	(-1.07)	(-0.91)	(0.06)
Inflation		-2.229***	-2.458***		-2.770***	-3.239***
		(-3.49)	(-3.74)		(-5.34)	(-6.13)
Unemployment		-0.249	-0.302		-0.235	-0.386*
		(-1.19)	(-1.10)		(-1.32)	(-1.80)
Rate (lagged)		-0.00411	-0.214		0.361	0.0173
		(-0.01)	(-0.55)		(1.34)	(0.06)
Tobin Q			2.573***			2.559***
			(4.96)			(6.36)
Asset Growth			0.270			1.519
			(0.23)			(1.64)
Size			-0.157			-1.111
			(-0.16)			(-1.39)
Leverage			-2.137			-4.307
			(-0.60)			(-1.53)
ROA			4.563			2.383
			(1.21)			(0.71)
Forecast Horizon			0.0158***			0.0184***
			(5.41)			(8.51)
Firm FE	NO	NO	YES	NO	NO	YES
Adjusted R-Squared	0.001	0.002	0.209	0.000	0.003	0.205
N	8,096	8,096	7,693	12,855	12,855	12,449

Table 6: Clean Federal Funds Rate Surprises and Firm Expectations of the Economic Outlook and Cost of Capital

This table reports the response of firm expectations to clean monetary policy shocks (following Bauer and Swanson (2023a)), measured over both a 30-day event window and the post-FOMC window leading up to the subsequent FOMC announcement. We focus on two types of expectations: the U.S. economic outlook (*Exp. on Economy*) and projected changes in the cost of capital (*Changes in Exp. on Cost of Capital*). The economic outlook measure is extracted from post-FOMC earnings conference calls using large language models (LLMs), while the perceived cost of capital measure follows Gormsen and Huber (2025a). The key explanatory variable, *Clean Fed rate surprises*, is constructed following Bauer and Swanson (2023a) using the first principal component of rate changes for money market futures over an approximate one-year horizon, which is then orthogonalized to six macroeconomic variables. We control for macroeconomic factors (unemployment rate, inflation rate, and lagged prime rate) and firm-specific characteristics (firm size, return on assets (ROA), leverage ratio, Tobin's Q, and asset growth). Standard errors are clustered at the firm level. Coefficients are multiplied by 100. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	30-Day Window				Before Next FOMC			
	Exp. on Economy		Changes in Perceived Cost of Capital		Exp. on Economy		Changes in Perceived Cost of Capital	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Clean Fed rate surprises	-136.2***	-115.1***	6.793***	5.106***	-76.14***	-50.53***	4.793***	4.845***
	(-9.55)	(-8.57)	(16.14)	(12.12)	(-7.25)	(-5.13)	(16.38)	(15.85)
Inflation		-38.80***		0.908***		-36.36***		0.795***
		(-34.02)		(28.14)		(-40.57)		(31.60)
Unemployment		-8.936***		0.161***		-8.980***		0.161***
		(-15.01)		(13.63)		(-18.42)		(17.58)
Rate (lagged)		-2.860***		0.0637***		-3.059***		0.0771***
		(-3.35)		(3.91)		(-4.33)		(6.12)
Tobin Q		6.874***		-0.0880***		6.057***		-0.0741***
		(8.05)		(-4.54)		(7.92)		(-5.08)
Asset Growth		-4.669**		-0.191***		-1.797		-0.208***
		(-2.34)		(-3.16)		(-1.07)		(-4.10)
Size		0.478		-0.373***		0.504		-0.397***
		(0.27)		(-8.68)		(0.33)		(-12.03)
Leverage		47.63***		-0.0626		32.18***		0.193
		(6.89)		(-0.38)		(5.58)		(1.39)
ROA		-20.62***		0.408**		-25.39***		0.364**
		(-3.03)		(2.22)		(-4.62)		(2.48)
Firm FE	NO	YES	NO	YES	NO	YES	NO	YES
Adjusted R-Squared	0.005	0.273	0.007	0.032	0.002	0.260	0.004	0.018
N	22,803	21,913	58,188	56,784	37,250	36,226	82,704	80,939

Table 7: Asymmetric Response to Monetary Policy Shocks: Positive vs Negative

This table analyzes how managers' expectations respond differently to monetary policy shocks in positive and negative domains. MPS (+) equals the value of MPS when MPS is positive and zero otherwise. Similarly, MPS (-) equals the value of MPS when it is non-positive and zero otherwise. The analysis is based on a 30-day event window following FOMC announcements.

MPS Measure:	Fed rate surprises				Clean Fed rate surprises			
	Exp. on Economy		Changes in Perceived Cost of Capital		Exp. on Economy		Changes in Perceived Cost of Capital	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Monetary Policy Shocks	242.4***		3.650***		-115.1***		5.106***	
	(11.75)		(5.09)		(-8.57)		(12.12)	
MPS(+)		-257.3***		2.978**		-354.0***		4.137***
		(-5.98)		(2.19)		(-16.62)		(6.86)
MPS(-)		542.6***		3.987***		214.6***		6.687***
		(17.18)		(4.13)		(7.50)		(8.10)
Inflation	-37.91***	-35.63***	0.938***	0.940***	-38.80***	-35.42***	0.908***	0.925***
	(-36.31)	(-33.57)	(28.68)	(28.63)	(-34.02)	(-31.01)	(28.14)	(28.62)
Unemployment	-7.630***	-7.208***	0.183***	0.184***	-8.936***	-7.913***	0.161***	0.167***
	(-17.62)	(-16.81)	(16.77)	(16.79)	(-15.01)	(-13.48)	(13.63)	(13.91)
Rate (lagged)	0.210	2.274***	0.116***	0.119***	-2.860***	-0.437	0.0637***	0.0746***
	(0.28)	(3.01)	(6.96)	(7.02)	(-3.35)	(-0.52)	(3.91)	(4.46)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Other Firm Controls	YES	YES	YES	YES	YES	YES	YES	YES
Adjusted R-Squared	0.264	0.270	0.026	0.026	0.273	0.280	0.032	0.032
N	23,068	23,068	59,496	59,496	21,913	21,913	56,784	56,784

Table 8: Asymmetric Response of Firm Investment Expectations to Monetary Policy Shocks: Positive vs. Negative

This table examines whether firms' projected changes in investment expectations respond differently to positive and negative monetary policy shocks. The dependent variable is *Changes in Investment Exp.*, defined as the percentage difference between post-FOMC investment guidance and the pre-FOMC analyst consensus. Columns (1) and (2) use Fed rate surprises, while columns (3) and (4) use clean Fed rate surprises following Bauer and Swanson (2023a). Columns (1) and (3) report specifications using the overall monetary policy shock, while columns (2) and (4) decompose the shock into its positive and negative components. MPS(+) equals the value of the monetary policy shock when it is positive and zero otherwise, and MPS(-) equals the value of the monetary policy shock when it is non-positive and zero otherwise. All regressions include firm fixed effects, macroeconomic controls, and other firm-level controls. Standard errors are clustered at the firm level. Coefficients are multiplied by 100. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Changes in Investment Exp.			
MPS Measure:	Fed rate surprises		Clean Fed rate surprises	
	(1)	(2)	(3)	(4)
Monetary Policy Shocks	28.63**		-13.61*	
	(2.01)		(-1.85)	
MPS(+)		-27.87		-25.89**
		(-1.14)		(-2.14)
MPS(-)		70.03***		2.714
		(2.96)		(0.18)
Inflation	-3.190***	-2.891***	-2.643***	-2.510***
	(-5.01)	(-4.55)	(-3.91)	(-3.69)
Unemployment	0.00828	0.0424	-0.335	-0.303
	(0.04)	(0.20)	(-1.20)	(-1.08)
Rate (lagged)	0.632	0.867**	-0.161	-0.0791
	(1.62)	(2.18)	(-0.40)	(-0.20)
Firm FE	YES	YES	YES	YES
Other Firm Controls	YES	YES	YES	YES
Adjusted R-Squared	0.187	0.188	0.195	0.195
N	7,913	7,913	7,473	7,473

Table 9: Asymmetric Response of Actual Firm Investment to Monetary Policy Shocks: Positive vs Negative

This table reports regressions of actual investment on signed monetary policy surprises in the FOMC event sample. The dependent variable is realized capital expenditure measured relative to the analyst consensus, on the same footing as the guidance revisions in Table 2. MPS (+) equals the value of the monetary policy shock when it is positive and zero otherwise; MPS (−) equals the value of the monetary policy shock when it is non-positive and zero otherwise. Columns (1) and (2) use the raw high-frequency surprise; columns (3) and (4) use the surprise orthogonalized with respect to publicly available macroeconomic and financial data following Bauer and Swanson (2023a). Columns (2) and (4) include firm fixed effects and the full set of firm-level controls (Tobin's Q, size, leverage, cash flow, and asset growth) and macroeconomic controls (GDP growth, inflation, and the unemployment rate). Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

MPS Measure:	Changes in Actual Investment			
	Fed rate surprises		Clean Fed rate surprises	
	(1)	(2)	(3)	(4)
Monetary Policy Shocks	23.43***		1.372	
	(3.99)		(0.26)	
MPS (+)		-4.598		-21.42*
		(-0.37)		(-1.90)
MPS (-)		39.59***		25.55**
		(3.82)		(2.00)
Inflation	-2.994***	-2.685***	-3.080***	-2.767***
	(-4.49)	(-4.01)	(-4.18)	(-3.75)
Unemployment	-0.0451	-0.00251	-0.475	-0.401
	(-0.20)	(-0.01)	(-1.47)	(-1.25)
Rate (lagged)	0.856**	0.986**	0.174	0.331
	(2.20)	(2.49)	(0.41)	(0.78)
Firm FE	YES	YES	YES	YES
Other Firm Controls	YES	YES	YES	YES
Adjusted R-Squared	0.412	0.412	0.416	0.417
N	15,032	15,032	14,169	14,169

Table 10: Manager Attention and the Asymmetric Response of Economic Expectations to Clean Monetary Policy Shocks

This table reports regressions of firms' expectations about the U.S. economic outlook (*Exp. on Economy*) on clean monetary policy shocks and their interactions with topic-mention indicators. The dependent variable is extracted from post-FOMC earnings conference calls using large language models (LLMs). The clean monetary policy shock follows Bauer and Swanson (2023a), and we use its positive and negative components separately. The mention indicators equal one if the earnings call explicitly mentions the corresponding topic. Columns (1)–(7) define the mention indicator using references to monetary policy and the Fed, monetary policy, the Fed, market conditions, real output, inflation, and currency, respectively. All regressions include firm fixed effects, macroeconomic controls, and other firm-level controls. T-statistics are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Exp. on Economy						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mon. Policy & Fed	Mon. Policy	Fed	Market Cond.	Real Output	Inflation	Currency
Clean MPS(+) x Mentioned Dummy	-77.41*	-53.39	-164.1	-133.9**	-34.24	-181.6***	54.67
	(-1.65)	(-1.12)	(-1.44)	(-2.24)	(-0.86)	(-3.24)	(1.03)
Clean MPS(-) x Mentioned Dummy	229.8***	227.0***	353.4***	165.0**	175.0***	113.3*	9.921
	(4.13)	(4.06)	(3.34)	(2.28)	(3.35)	(1.85)	(0.15)
Clean MPS(+)	-339.8***	-345.7***	-348.1***	-309.5***	-311.0***	-324.4***	-342.2***
	(-14.20)	(-14.55)	(-16.02)	(-13.87)	(-9.98)	(-14.25)	(-14.96)
Clean MPS(-)	163.6***	165.9***	197.4***	185.2***	91.21**	207.6***	195.3***
	(5.13)	(5.22)	(6.77)	(6.28)	(2.09)	(6.53)	(6.28)
Mentioned Dummy	6.248***	6.736***	3.286	-11.89***	-16.96***	13.49***	-15.75***
	(3.92)	(4.20)	(0.92)	(-4.39)	(-13.61)	(7.71)	(-8.49)
Inflation	-35.46***	-35.52***	-35.42***	-33.63***	-31.95***	-35.88***	-35.57***
	(-30.94)	(-30.99)	(-31.03)	(-29.09)	(-28.10)	(-31.42)	(-31.21)
Unemployment	-7.954***	-7.973***	-7.909***	-7.367***	-6.688***	-8.001***	-8.331***
	(-13.57)	(-13.60)	(-13.48)	(-12.61)	(-11.49)	(-13.68)	(-14.20)
Rate (lagged)	-0.477	-0.501	-0.409	-0.180	-0.351	-0.389	-1.127
	(-0.57)	(-0.60)	(-0.49)	(-0.22)	(-0.43)	(-0.47)	(-1.35)
Firm FE	YES	YES	YES	YES	YES	YES	YES
Other Firm Controls	YES	YES	YES	YES	YES	YES	YES
Adjusted R-Squared	0.281	0.281	0.281	0.284	0.298	0.283	0.285
N	21,913	21,913	21,913	21,913	21,913	21,913	21,913

Table 11: Replication of Bauer and Swanson (2023a)

Panel A of this table replicates Panel C of Table 1 in Bauer and Swanson (2023a), utilizing their sample period from January 1990 to June 2019. In Panel B, we use this same sample to investigate the asymmetric response of Blue Chip expectations to positive and negative monetary policy shocks (MPS). Panel C repeats the analysis from Panel A, but replaces the baseline MPS with the cleansed MPS proposed by Bauer and Swanson (2023, NBER Macroeconomics Annual). Finally, in Panel D, we decompose this cleansed MPS into positive and negative components to evaluate whether Blue Chip expectations respond asymmetrically.

Panel A: Replication of Bauer and Swanson 2023 AER

	(1)	(2)	(3)
	Unemployment	GDP	CPI
MPS	-0.230**	0.338	0.434*
	(0.106)	(0.269)	(0.243)
Observations	218	218	218
R^2	0.023	0.009	0.020

Panel B: Response to MPS(+) and MPS(-)

	(1)	(2)	(3)
	Unemployment	GDP	CPI
MPS(+)	0.368	0.144	0.213
	(1.114)	(0.204)	(0.375)
MPS(-)	-0.478***	0.419	0.525
	(-3.833)	(1.201)	(1.608)
Observations	218	218	218
R^2	0.058	0.010	0.021

Panel C: Response to Clean MPS			
	(1)	(2)	(3)
	Unemployment	GDP	CPI
Clean MPS	0.113	-0.553	-0.188
	(0.711)	(-1.338)	(-0.469)
Observations	218	218	218
R^2	0.005	0.020	0.003

Panel D: Response to Clean MPS(+) and Clean MPS(-)			
	(1)	(2)	(3)
	Unemployment	GDP	CPI
Clean MPS(+)	0.876**	-2.001**	-1.231
	(2.435)	(-2.013)	(-1.257)
Clean MPS(-)	-0.433***	0.482	0.558
	(-2.742)	(1.142)	(1.459)
Observations	218	218	218
R^2	0.083	0.071	0.038

Table 12: Firm Beta and Expectation Responses to Fed Rate Surprises

This table examines whether more cyclical firms respond more strongly to monetary policy shocks. Panel A reports the response of firms' expectations about the U.S. economic outlook (*Exp. on Economy*), extracted from post-FOMC earnings conference calls using large language models (LLMs). Panel B reports the response of firms' projected changes in investment expectations (*Changes in Investment Exp.*). Columns (1) and (2) use Fed rate surprises, while columns (3) and (4) use clean Fed rate surprises following Bauer and Swanson (2023a). Columns (1) and (3) measure expectation changes over a 30-day post-FOMC window, and columns (2) and (4) use the post-FOMC window leading up to the subsequent FOMC announcement. The key explanatory variables are the interactions between positive and negative monetary policy surprises and firm CAPM beta. CAPM beta is estimated from regressions of firm-level weekly stock returns on weekly CRSP value-weighted market returns using approximately five years of past returns, and is matched to each FOMC event using the most recent available estimate before the event date. Beta is standardized within FOMC date but reported as Beta in the table. The clean Fed rate surprise measure is constructed following Bauer and Swanson (2023a) by orthogonalizing Fed rate surprises to macroeconomic information. All regressions include firm fixed effects, macroeconomic controls (unemployment rate, inflation rate, and lagged prime rate), and firm-specific controls (firm size, return on assets (ROA), leverage ratio, Tobin's Q, and asset growth). Standard errors are clustered at the firm level. Coefficients are multiplied by 100. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Economic Outlook

MPS Measure:	Exp. on Economy			
	Fed rate surprises		Clean Fed rate surprises	
	(1)	(2)	(3)	(4)
	30-Day Window	Before Next FOMC	30-Day Window	Before Next FOMC
MPS(+) x Beta	-71.63**	-32.14*	-98.46***	-62.55***
	(-2.44)	(-1.72)	(-4.34)	(-3.71)
MPS(-) x Beta	43.52**	50.06***	15.91	48.28**
	(2.28)	(3.71)	(0.58)	(2.43)
MPS(+)	-105.9***	-129.4***	-353.1***	-343.4***
	(-4.13)	(-7.22)	(-16.73)	(-20.91)
MPS(-)	304.7***	283.6***	212.6***	287.0***
	(16.43)	(22.18)	(7.40)	(14.52)
Beta	1.499	1.178	2.014*	1.923*
	(1.35)	(1.28)	(1.72)	(1.96)
Inflation	-36.02***	-31.85***	-35.56***	-32.16***
	(-33.34)	(-37.85)	(-30.98)	(-35.53)
Unemployment	-7.300***	-7.217***	-7.883***	-7.696***
	(-16.88)	(-20.67)	(-13.39)	(-15.87)
Rate (lagged)	1.930**	1.205*	-0.443	-0.330
	(2.53)	(1.91)	(-0.53)	(-0.47)
Firm FE	YES	YES	YES	YES
Other Firm Controls	YES	YES	YES	YES
Adjusted R-Squared	0.270	0.262	0.282	0.273
N	22,815	37,861	21,676	35,802

Panel B: Changes in Investment Expectations

MPS Measure:	Changes in Investment Exp.			
	Fed rate surprises		Clean Fed rate surprises	
	(1)	(2)	(3)	(4)
	30-Day Window	Before Next FOMC	30-Day Window	Before Next FOMC
MPS(+) x Beta	-45.96**	-30.62**	-32.24**	-28.76**
	(-1.96)	(-2.09)	(-2.06)	(-2.51)
MPS(-) x Beta	24.13**	17.93***	10.13	16.30**
	(2.40)	(2.65)	(0.91)	(2.16)
MPS(+)	-9.841	-1.345	-20.71*	-18.36**
	(-0.64)	(-0.13)	(-1.79)	(-2.07)
MPS(-)	42.74***	33.72***	3.619	19.47**
	(3.45)	(4.43)	(0.26)	(2.26)
Beta	-0.721	-0.252	-0.320	0.178
	(-1.26)	(-0.56)	(-0.56)	(0.39)
	(3.48)	(6.47)	(5.10)	(7.73)
Inflation	-2.912***	-3.311***	-2.415***	-3.056***
	(-4.69)	(-6.64)	(-3.66)	(-5.77)
Unemployment	0.0169	-0.137	-0.291	-0.330
	(0.08)	(-0.78)	(-1.07)	(-1.54)
Rate (lagged)	0.682*	0.739**	-0.145	0.135
	(1.82)	(2.55)	(-0.38)	(0.45)
Firm FE	YES	YES	YES	YES
Other Firm Controls	YES	YES	YES	YES
Adjusted R-Squared	0.201	0.200	0.208	0.205
N	8,149	13,195	7,690	12,446

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INTERNET APPENDIX

A Measuring Firm-Level Macroeconomic Expectations Using Large Language Models

This appendix details the LLM-based procedure used in Section 2.3 to extract managerial expectations about the aggregate economy from earnings call transcripts. We instruct the model to adopt the persona of a finance expert and evaluate each transcript for explicit macroeconomic forecasts. The prompting strategy requires a three-step reasoning process: (1) identify the presence of broad economic commentary, (2) classify the sentiment of that commentary on a five-point scale, and (3) provide direct textual evidence supporting the classification. This chain-of-thought approach ensures that the sentiment classification is grounded in specific managerial statements rather than the general tone of the document.

A.1 Prompt Design

Below is the exact instruction set provided to the model when extracting expectations regarding the aggregate economy:

> The following text is an excerpt from a company's earnings call transcripts. You are a finance expert.
>
> Based on this text only, please answer the following question.
>
> 1) Does the firm mention any forecast or expectation of the entire market or economy? Please select your answer from the following three choices: Yes, No, Unsure.
>
> 2) If the answer to Question 1) is "Yes", what is the firm's forecast or expectation of the entire market or economy? Please select your answer from the following five choices: Extremely Positive, Positive, Neutral, Negative, Extremely Negative. Please provide a supporting explanation of your choice and include a direct quote of the original text.
>
> 3) If the answer to Question 1) is "Unsure", Please provide a supporting explanation of your choice and include a direct quote of the original text.

The indicator for managerial attention to monetary policy is constructed analogously, replacing the question in step 1) with whether the firm explicitly discusses the Federal Reserve or monetary policy.

A.2 Representative Model Outputs

The following examples illustrate how the model distinguishes between positive, negative, and neutral macroeconomic outlooks.

A.2.1 Positive Expectations

1) Yes

2) Positive

The firm's forecast or expectation of the entire market or economy is positive. The company mentions that their customers are recovering from the recession and accelerating growth as expected over the next several quarters. They also note that the industrial markets are strengthening as the economy continues to recover from the economic recession.

Direct quotes supporting this: - "This increase is further validation that our customers are recovering from the recession and accelerating growth as expected over the next several quarters." - "Growth in our comparative and consecutive quarters reflects the strengthening in our industrial markets as the economy continues to recover from the economic recession..."

A.2.2 Negative Expectations

1) Yes, the firm mentions a forecast or expectation of the entire market or economy.

2) The firm's forecast or expectation of the entire market or economy is "Negative."

Supporting explanation: The firm discusses a global economic slowdown and its impact on their business. They mention that "it is now clear that we are in a global economic slow down" and that "the challenges that initially affected the U.S. have spread to all other countries around the world." They also provide specific data on declining order growth rates, such as "order rates in November decreased by 9% year-over-year and December our order growth decreased by 11% year-over-year for products and in January our year-over-year order growth decreased by approximately 20%." These statements indicate a negative outlook on the current state of the market and economy.

Direct quote: "It is now clear that we are in a global economic slow down and for the company that operates in over 160 countries worldwide we will obviously be impacted." Another direct quote: "The environment has continued to change dramatically in the last several months." These quotes and the surrounding context clearly indicate a negative expectation for the market and economy.

A.2.3 Neutral Expectations

1) Yes

2) Neutral

The firm mentions its forecast or expectation of the entire market or economy in a neutral tone.

Direct quote is: "In determining guidance, we are not assuming any significant change in the global economic climate or IT spending levels in the near term, nor are we projecting possible impacts on our business which might result from the recent turmoil in the US mortgage-backed securities markets." This statement indicates that the firm does not anticipate significant positive or negative changes in the economic climate or IT spending, hence a neutral outlook.

A.3 Methodological Advantages over Dictionary-Based Approaches

The examples above illustrate the key advantages of LLMs over traditional "bag-of-words" or dictionary-based textual analysis (e.g., Loughran and McDonald, 2011). First, the LLM parses *negation and conditional clauses*. As seen in the neutral example, a manager may use strong keywords like "significant change" or "turmoil" within a sentence that explicitly denies their impact (e.g., "we are *not* assuming any significant change"). A keyword-counting approach would likely misclassify this segment as volatile or negative, whereas the LLM correctly interprets the syntactic structure to identify the net neutral stance.

Second, the prompting strategy enforces *interpretability and consistency*. By requiring a supporting explanation and a direct quote before the final classification, the chain-of-thought structure reduces the likelihood of hallucinations or false positives and anchors each sentiment score to specific, verifiable text segments rather than the general mood of the document.

A.4 Validation

We validate the measure in two complementary ways. First, trained research assistants, blind to the model output, independently classify a random sample of 200 transcripts using the same instructions given to the model. The human-verified accuracy rate—the share of transcripts for which the model's classifications match the human annotation—is 92%. Second, the cross-sectional average of *Exp. on Economy* comoves closely with the Survey of Professional Forecasters GDP growth forecast, declining sharply during the 2008–09 financial crisis and the onset of the COVID-19 pandemic and recovering in line with the survey benchmark. These results indicate that the LLM extracts macroeconomic expectations with a precision comparable to human annotators and consistent with external measures of the macroeconomic outlook.

B Matching Analysis

Table IA.5 serves as a critical robustness check designed to address a specific measurement challenge in our baseline analysis. In the previous specifications, the key dependent variable was the *level* of economic expectations. However, because our key explanatory variable (Fed rate surprises) represents a *shock* or change in monetary policy, the theoretically consistent outcome variable should be the *revision* or change in firm expectations. Capturing this revision within a single firm is empirically difficult because firms hold earnings conference calls infrequently; it is rare to observe the same firm speaking immediately before and after an FOMC announcement to allow for a direct difference-in-differences comparison.

To overcome this data limitation and approximate the change in beliefs, we employ a matching analysis. We construct a proxy for the pre-FOMC baseline by identifying a control group of peer firms that held conference calls shortly before the announcement. We match firms based on Fama-French 49 industries, market capitalization (Size), and Tobin's Q. The dependent variable is an indicator equal to one if a firm's post-FOMC economic expectation exceeds the pre-FOMC median expectation of its matched peers. Crucially, we also explicitly control for the median economic expectation of these matched firms in our regression specifications. This inclusion accounts for potential mean-reversion in beliefs, ensuring that our results capture a genuine response to the policy shock rather than a statistical drift toward the group average.

The results strongly corroborate the Fed information effect. We observe a statistically significant upward revision in economic optimism following positive rate surprises relative to the pre-announcement benchmark. In Column (2), matching solely on industry, we find a coefficient of 65.29 ($t = 5.26$). This effect remains highly robust as we increase the strictness of the matching criteria. In our most stringent specification (Column 4), where firms are matched on industry, size, and Tobin's Q simultaneously, the coefficient is 107.9 ($t = 4.61$).

These findings confirm that the positive relationship observed in levels (as shown in Table 4) is indeed driven by an active update in beliefs. Following a positive monetary policy surprise—which conveys positive private information about the economy—firms significantly upgrade their economic outlook relative to the baseline established by their peers just days prior.

C Alternative Measure for Fed Rate Surprises

In our main analysis, we identify monetary policy shocks using the high-frequency methodology of Nakamura and Steinsson (2018), which relies on price changes in interest rate futures within a narrow 30-minute window around FOMC announcements.

In this appendix, we construct an alternative measure of *Fed rate surprises* to test the robustness of our results. We define this alternative metric as the difference between the realized Federal Funds Target Rate and the pre-announcement market consensus. We proxy for market consensus using the Federal Funds Rate forecast from the *Livingston Survey*, selecting the release immediately preceding each FOMC meeting.

A limitation of this approach is the frequency of the benchmark data; because the Livingston Survey is updated only quarterly, the consensus measure may not fully capture information revealed shortly before the meeting. Despite this limitation, our core findings remain robust. As reported in Tables **??** through **??**, the estimated effects are qualitatively similar to those presented in the main text.

C.1 Which Firms Mention Expectations

To validate the textual measures employed in our main analysis, we investigate the determinants of management's propensity to discuss the economic outlook.

Table IA.1 presents the regression results where the dependent variable is an indicator for whether a firm mentions expectations regarding the economy. We examine these propensities against firm characteristics—CAPM beta, size, Tobin's Q, leverage, ROA, and asset growth—as well as aggregate macroeconomic indicators. To properly identify the effect of macroeconomic conditions, we alternate the fixed effect structure: Columns (1) and (3) include date fixed effects to absorb aggregate time trends, while Columns (2) and (4) exclude date fixed effects to estimate the coefficients for inflation, unemployment, and interest rates.

A key finding is the strong positive relationship between systematic risk and the likelihood of discussing economic expectations. Across all specifications, the coefficient on CAPM Beta is positive and statistically significant at the 1% level (ranging from 3.547 to 3.852). This indicates that high-beta firms—those whose returns are most correlated with the broader market—are significantly more likely to provide guidance on the macroeconomic outlook. This aligns with the intuition that management at firms with high exposure to systematic risk must pay closer attention to, and communicate more frequently about, aggregate economic conditions.

We also observe distinct patterns regarding firm size and profitability. In contrast to financing-constraint hypotheses where smaller firms might discuss costs more, we find that Size is positively associated with mentioning economic expectations (coefficients range from 1.348 to 3.574). This suggests that larger firms, often viewed as industry bellwethers with broader analyst coverage, are more inclined to discuss the general economic outlook. Furthermore, ROA exhibits a positive relationship, particularly in the window leading up to the next FOMC meeting (Column 4), implying that more profitable firms are more active in communicating external economic factors. Notably, Asset Growth and Leverage do not appear to be significant drivers of the propensity to mention economic expectations in this sample.

Finally, the results highlight specific sensitivities to the macroeconomic environment. The coefficient on the Unemployment rate is positive and statistically significant (1.240 and 2.504), confirming a counter-cyclical pattern where management is far more likely to address the economy during periods of labor market distress. Interestingly, the coefficient on Rate (lagged) is negative and significant at the 1% level, indicating that firms are more likely to discuss the economic outlook when interest rates are lower. Additionally, while Inflation is not significant in the 30-day window, it becomes positive and significant (1.737) in the longer window before the next FOMC meeting, suggesting that inflationary pressures may take more time to manifest in corporate discourse than labor market signals.

Collectively, these results indicate that, the firms discussing these topics are precisely those we would theoretically expect to be most sensitive to systematic risks: high-beta firms, larger entities with broad economic exposure, and firms operating during periods of labor market uncertainty.

D Two-Stage Analysis of the Information Channel

Building on the strong relationship established between sentiment and investment, we employ a two-stage least squares (2SLS) framework to pinpoint the role of monetary policy in driving investment expectations. This design isolates the specific variation in firm-level economic outlook induced by Federal Funds Rate surprises, allowing us to test the causal influence of policy-driven sentiment on investment guidance.

Table IA.3 presents the results of this instrumental variable analysis. In the first stage (Columns 2 and 4), we instrument firm-level expectations of the economic outlook using Fed rate surprises. In the second stage (Columns 1 and 3), we regress changes in investment expectations on the fitted values of the economic outlook derived from the first stage. To ensure precision, we include a full set of firm-level and macroeconomic controls—including Tobin's Q, leverage, and inflation—in both stages.

The first-stage results confirm the strength and relevance of our instrument. Across both the 30-day window (Column 2) and the full inter-meeting period (Column 4), the coefficient on Fed rate surprises is positive and statistically significant at the 1% level. Specifically, we find coefficients of 175.9 ($t = 2.60$) and 141.7 ($t = 3.29$), respectively. These estimates indicate that positive rate surprises reliably induce upward revisions in firm expectations of the macroeconomy. Furthermore, the instrument is empirically robust; the first-stage F-statistics are 29 and 51, well above the conventional threshold of 10, mitigating concerns regarding weak instrument bias.

The second-stage estimates provide critical validation of our hypothesis. We find that the instrumented economic outlook significantly predicts upward revisions in investment guidance. In the 30-day window (Column 1), the coefficient on the instrumented *Expectation on Economy* is 24.55 (significant at the 10% level). This effect becomes stronger and more significant over the longer window leading up to the next FOMC meeting (Column 3), with a coefficient of 28.45 ($t = 2.66$, significant at the 1% level).

These results clarify the mechanism behind the Information effect. We show that the positive correlation between rate hikes and investment stems from a distinct informational channel: a positive policy surprise signals the Fed's private optimism, causing

managers to upgrade their economic beliefs. This positive revision drives an increase in investment guidance, effectively dominating the conventional contractionary pressure of rising financing costs.

Table IA.1: Which Firms Mention Expectations?

This table examines firm characteristics that predict the likelihood of mentioning economic outlook expectations. We include several firm-level features—firm size, return on assets (ROA), leverage ratio, Tobin's Q, and asset growth—alongside three macroeconomic factors: the unemployment rate, inflation rate, and lagged prime rate. Standard errors are clustered by firm. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Coefficients are multiplied by 100.

	30-Day Window		Before Next FOMC	
	(1)	(2)	(3)	(4)
CAPM Beta	3.563***	3.732***	3.749***	3.892***
	(6.78)	(6.69)	(7.44)	(7.39)
Tobin Q	0.0435	0.130	-0.0358	0.486*
	(0.16)	(0.48)	(-0.14)	(1.83)
Asset Growth	0.637	0.384	0.122	0.0986
	(0.93)	(0.55)	(0.19)	(0.15)
Size	1.382**	3.084***	1.753***	3.624***
	(2.10)	(5.01)	(2.77)	(6.15)
Leverage	-1.155	1.097	-0.0418	1.754
	(-0.49)	(0.46)	(-0.02)	(0.80)
ROA	2.097	1.376	3.196*	3.693*
	(1.02)	(0.64)	(1.70)	(1.82)
Inflation		-0.496		1.771***
		(-1.09)		(4.27)
Unemployment		1.208***		2.504***
		(6.60)		(14.57)
Rate (lagged)		-5.425***		-3.268***
		(-19.68)		(-12.52)
Firm FE	YES	YES	YES	YES
Date FE	YES	NO	YES	NO
Adjusted R-Squared	0.410	0.335	0.381	0.299
N	59,466	59,470	84,813	84,817

Table IA.2: Replication using Sample Period of Jan 1990 to December 2022

Panel A of this table uses extended sample (Jan 1990-Dec 2022) to replicate Panel C of Table 1 in Bauer and Swanson (2023a). In Panel B, we use this same sample to investigate the asymmetric response of Blue Chip expectations to positive and negative monetary policy shocks (MPS). Panel C repeats the analysis from Panel A, but replaces the baseline MPS with the cleansed MPS proposed by Bauer and Swanson (2023, NBER Macroeconomics Annual). Finally, in Panel D, we decompose this cleansed MPS into positive and negative components to evaluate whether Blue Chip expectations respond asymmetrically.

Panel A: Replication of Bauer and Swanson 2023 AER			
	(1)	(2)	(3)
	Unemployment	GDP	CPI
MPS	-1.750	1.330	0.984**
	(1.551)	(1.122)	(0.414)
Observations	246	246	246
R^2	0.047	0.049	0.072

Panel B: Response to MPS(+) and MPS(-)			
	(1)	(2)	(3)
	Unemployment	GDP	CPI
MPS(+)	0.555	-0.985	0.462
	(0.708)	(-1.255)	(0.732)
MPS(-)	-2.760	2.346	1.213**
	(-1.109)	(1.338)	(1.977)
Observations	246	246	246
R^2	0.067	0.084	0.076

Panel C: Response to Clean MPS

	(1)	(2)	(3)
	Unemployment	GDP	CPI
Clean MPS	0.109	-0.613	-0.038
	(0.775)	(-1.527)	(-0.093)
Observations	246	246	246
R^2	0.000	0.008	0.000

Panel D: Response to Clean MPS(+) and Clean MPS(-)

	(1)	(2)	(3)
	Unemployment	GDP	CPI
Clean MPS(+)	-0.569	-1.585	-0.813
	(-0.615)	(-1.536)	(-0.856)
Clean MPS(-)	0.630	0.132	0.557
	(0.890)	(0.221)	(1.371)
Observations	246	246	246
R^2	0.002	0.016	0.014

Table IA.3: The Effect of Economic Outlook on Changes in Firms' Investment Expectations: Two Stage Regressions
This table presents a two-stage least squares (2SLS) analysis of the effect of firm-level economic outlook expectations on investment expectations following FOMC announcements. The dependent variable, *Changes in Investment Exp.*, is the percentage difference between the post-FOMC expectation and the pre-FOMC consensus. The analysis covers a 30-day event window and the post-FOMC window leading to the subsequent announcement. In the first stage, economic outlook expectations are instrumented with federal funds rate surprises. The second stage regresses investment expectations on the fitted values of economic outlook expectations. Variable definitions follow Table 2. Standard errors are clustered by firm. Coefficients are multiplied by 100. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	30-Day Window		Before Next FOMC	
	(1)	(2)	(3)	(4)
	2nd-stage	1st-stage	2nd-stage	1st-stage
Exp. on Economy	24.55*		28.45***	
	(1.87)		(2.66)	
Fed rate surprises		175.9***		141.7***
		(2.60)		(3.29)
Tobin Q	-1.355	20.99***	-2.150	18.21***
	(-0.46)	(8.38)	(-1.05)	(10.39)
Asset Growth	-1.587	-3.609	-1.026	2.840
	(-0.74)	(-0.74)	(-0.66)	(0.77)
Size	-1.346	4.245	-2.388**	3.311
	(-0.76)	(1.02)	(-2.02)	(1.13)
Leverage	-17.55*	63.03***	-19.55***	49.82***
	(-1.82)	(4.38)	(-2.97)	(4.50)
ROA	-2.140	-51.45**	-0.0669	-46.33***
	(-0.23)	(-2.54)	(-0.01)	(-3.19)
Inflation	5.481	-35.02***	5.684	-32.11***
	(1.15)	(-13.04)	(1.61)	(-17.56)
Unemployment	1.393*	-5.644***	1.581**	-6.249***
	(1.72)	(-6.52)	(2.31)	(-9.90)
Rate (lagged)	1.176*	-0.484	1.469***	-1.937
	(1.84)	(-0.27)	(2.76)	(-1.51)
Forecast Horizon	0.00230	0.0426***	0.00566	0.0484***
	(0.32)	(2.92)	(0.95)	(4.79)
Firm FE	YES	YES	YES	YES
Adjusted R-Squared	-0.667	-0.100	-0.832	-0.056
N	3,328	3,328	6,393	6,393
F-statistic	7	29	11	51

Table IA.4: The Effect of Economic Outlook on Changes in Firms' Investment Expectations: Horserace

This table reports results from a horse race regression comparing the Fed information effect with alternative cost-of-capital explanations for firm investment expectations. The dependent variable, *Changes in Investment Exp.*, represents the percentage difference between the post-FOMC expectation and the pre-FOMC consensus. We control for several proxies for the firm-level cost of capital: *Perceived Cost of Capital* and *Discount Rate* follow Gormsen and Huber (2025a), while *WACC* denotes the weighted average cost of capital constructed using equity and bond market data. Variable definitions follow Table 2. Standard errors are clustered by firm. Coefficients are multiplied by 100. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	30-Day Window				Before Next FOMC			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Expectation on Economy	5.098***		5.064***	3.905***	4.919***		4.880***	3.806***
	(8.44)		(8.34)	(6.03)	(10.76)		(10.57)	(7.93)
Discount Rate		-32.20	-11.81	-58.58		-34.62*	-13.94	-81.49*
		(-1.56)	(-0.41)	(-0.90)		(-1.95)	(-0.56)	(-1.68)
Perceived Cost of Capital				-90.60				-10.09
				(-0.95)				(-0.15)
WACC				13.04				6.728
				(0.42)				(0.28)
Tobin Q				2.192**				2.182***
				(2.04)				(3.19)
Asset Growth				-1.497				-0.447
				(-0.63)				(-0.28)
Size				-1.896				-2.545**
				(-1.04)				(-2.06)
Leverage				-8.235				-6.468
				(-1.40)				(-1.58)
ROA				-9.160				-8.803*
				(-1.31)				(-1.72)
Inflation				-1.752*				-1.874***
				(-1.77)				(-2.67)
Unemployment				0.205				0.0165
				(0.62)				(0.06)
Rate (lagged)				0.779				0.395
				(1.39)				(0.86)
Forecast Horizon				0.00823*				0.0144***
				(1.68)				(4.31)
Firm FE	NO	NO	NO	YES	NO	NO	NO	YES
Adjusted R-Squared	0.029	0.000	0.029	0.177	0.027	0.001	0.027	0.219
N	3,684	8,426	3,684	2,937	6,768	13,339	6,768	5,512

Table IA.5: Federal Funds Rate Surprises and Firm Expectations of the Economic Outlook: Matching Analysis

This table reports changes in firms' economic outlook expectations following FOMC announcements, measured over the 30-day event window and the post-FOMC window leading up to the next FOMC announcement. We employ a matching approach to quantify these changes. The dependent variable is an indicator equal to one if a firm's post-FOMC expectation exceeds the pre-FOMC median expectation of its matched peers, and zero otherwise. Firms are matched based on Fama-French 5 industry categories, market capitalization, and Tobin's Q, as specified in the column headers. The key explanatory variable, *Fed rate surprises*, is constructed following Nakamura and Steinsson (2018) and Acosta et al. (2025) using the first principal component of rate changes for money market futures covering an approximate one-year horizon.We control for macroeconomic factors (unemployment rate, inflation rate, and lagged prime rate) and firm-specific characteristics, including firm size, return on assets (ROA), leverage ratio, Tobin's Q, and asset growth. Standard errors are clustered by firm. Coefficients are multiplied by 100. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Matching	30-Day Window				Before Next FOMC			
	All Types	FF49	Size	FF49, Size, Tobin Q	All Types	FF49	Size	FF49, Size, Tobin Q
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fed rate surprises	44.92***	65.29***	82.29***	107.9***	42.26***	55.41***	77.74***	101.6***
	(3.27)	(5.26)	(4.57)	(4.61)	(3.98)	(6.19)	(6.38)	(6.39)
Median Exp. on Economy of Matched Firms	-31.44***	-32.77***	-37.00***	-37.29***	-32.45***	-34.58***	-38.27***	-38.68***
	(-44.64)	(-48.44)	(-54.20)	(-42.03)	(-51.70)	(-62.57)	(-72.17)	(-59.19)
Inflation	-16.59***	-12.43***	-13.97***	-14.32***	-15.16***	-12.07***	-13.32***	-13.90***
	(-22.75)	(-16.79)	(-15.64)	(-11.97)	(-25.57)	(-20.60)	(-19.33)	(-15.51)
Unemployment	-3.093***	-2.866***	-2.557***	-2.918***	-3.040***	-2.809***	-2.655***	-2.890***
	(-10.50)	(-10.36)	(-7.64)	(-6.65)	(-12.35)	(-12.44)	(-10.48)	(-8.95)
Rate (lagged)	0.840*	0.263	0.525	0.459	0.514	0.0125	-0.189	-0.626
	(1.85)	(0.63)	(0.89)	(0.56)	(1.28)	(0.04)	(-0.40)	(-1.02)
Tobin Q	3.267***	2.983***	2.657***	1.879**	3.227***	2.810***	2.470***	1.847***
	(6.16)	(6.08)	(3.63)	(2.21)	(7.21)	(6.77)	(4.58)	(3.04)
Asset Growth	0.800	0.440	-1.639	-2.349	1.082	1.043	-1.750	-1.315
	(0.59)	(0.33)	(-0.94)	(-0.97)	(0.99)	(1.01)	(-1.38)	(-0.77)
Size	-5.891***	-4.139***	-0.255	-1.370	-4.657***	-2.735***	0.499	0.216
	(-5.83)	(-4.30)	(-0.22)	(-0.83)	(-5.56)	(-3.53)	(0.55)	(0.19)
Leverage	14.91***	16.72***	12.86***	11.87*	11.99***	13.50***	11.51***	11.18**
	(3.61)	(4.24)	(2.80)	(1.93)	(3.49)	(4.21)	(3.15)	(2.46)
ROA	-5.630	-0.920	-5.741	-0.288	-7.720**	-3.662	-6.356*	-5.319
	(-1.32)	(-0.24)	(-1.26)	(-0.04)	(-2.13)	(-1.14)	(-1.73)	(-1.07)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Adjusted R-Squared	0.257	0.267	0.351	0.352	0.245	0.264	0.359	0.367
N	23,212	22,491	11,433	6,603	38,612	37,533	19,865	11,925