The Changing Content of Fed Information Effects

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Abstract

Do investors interpret Federal Reserve policy surprises as signals about growth or about inflation? We develop a framework in which the dominant channel depends on relative uncertainty about growth or inflation, and test its predictions using short-term dividend strips around FOMC announcements from 2004 to 2025. In the pre-COVID period of low and stable inflation, short-term equity loads positively on policy surprises and predicts dividend growth. In the post-COVID period, the patterns reverse, with short-term equity loading negatively and predicting inflation. The shift aligns with rising attention to inflation and is concentrated in target rate decisions.

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1 Introduction

A growing literature argues that monetary policy decisions reveal information about the central bank's assessment of economic conditions.[1] These information effects can offset the conventional effects of monetary policy. For instance, if an unexpected rate cut is seen as a signal of deteriorating economic conditions, the resulting downward revision to growth expectations can work against the intended expansionary effect of the rate cut. Likewise, an unexpected rate hike can signal that the Fed sees inflation as more persistent than markets had assumed, raising rather than lowering inflation expectations.

The empirical literature on information effects from the pre-COVID period has focused on the growth channel. Nakamura and Steinsson (2018) show that monthly revisions of professional forecasters' GDP growth forecasts move in the direction of unexpected rate changes, consistent with the Fed revealing private information about growth. Jarociński and Karadi (2020) identify growth information shocks as cases when the stock market reacts in the same direction as the unexpected change in the interest rate.[2] Golez and Matthies (2025) tests for information effects using short-maturity equity dividend strips, which are more sensitive to near-term information shocks than the stock market itself and can be measured in narrow windows around FOMC announcements. They document robust evidence of information effects on near-term economic growth (see also Zhao et al. (2024)).

The post-COVID period presents a markedly different macroeconomic environment. Year-over-year CPI inflation peaked at 9.1% in June 2022, inflation uncertainty rose sharply, and forecast disagreement widened.[3] The Federal Reserve shifted its focus and communication to inflation, raising the federal funds rate from near zero to over 5% between March 2022

[1] E.g., Romer and Romer (2000), Campbell et al. (2012), Nakamura and Steinsson (2018), Cieslak and Schrimpf (2019), Jarociński and Karadi (2020), Zhao et al. (2024), Golez and Matthies (2025), Jarociński and Karadi (2025).

[2] Bauer and Swanson (2023a) argue that this evidence is not conclusive because Jarociński and Karadi (2020) shocks are infrequent and the analyst forecasts used by Nakamura and Steinsson (2018) are released at a low frequency, leaving room for intervening macroeconomic news to drive the apparent revisions (see also Karnaukh and Vokata (2022)).

[3] See Figure 1 for year-over-year CPI inflation from January 2004 to March 2025.

and July 2023. We test whether this shift in the macroeconomic environment, and in the Fed's focus, produced a corresponding shift in the content of information effects from growth to inflation.

To formalize this hypothesis, we extend the framework in Golez and Matthies (2025) to incorporate both growth and inflation uncertainty. The central bank follows a policy rule, setting the target rate in response to private signals about future growth and future inflation, and an orthogonal policy preference shock. Investors observe the composite monetary policy surprise but cannot decompose it into its underlying components, and use Bayesian signal extraction to update their beliefs. Their attribution depends on the macroeconomic environment. When growth uncertainty dominates, investors attribute policy surprises primarily to growth news. The resulting upward revision to expected cash flows can dominate the discount rate effect of higher rates, producing a positive loading of short-term equity returns on the monetary policy surprise, with announcement returns predicting subsequent dividend growth. When inflation uncertainty dominates, investors attribute surprises to inflation news. The cash flow channel weakens, the discount rate effect dominates, and the loading turns negative, with announcement returns predicting subsequent inflation with a negative sign. The regime shift requires no change in structural parameters or in how the Fed conducts policy, only in the composition of shocks driving the economy.

Testing for a regime shift in information effects requires an asset whose price responds to both near-term discount rates and near-term cash flows. Government bonds, whose cash flows are fixed, respond only to discount rates. We therefore use short-term dividend strip prices estimated from S&P 500 index options, following the put-call parity approach of Van Binsbergen et al. (2012), as refined by Golez and Jackwerth (2024) and Golez and Matthies (2025). We measure monetary policy surprises using the high-frequency shocks of Acosta et al. (2025), which isolate unexpected changes in the federal funds rate and distinguish between surprises associated with the target rate decision and the press conference that follows. Our sample covers 169 scheduled FOMC announcements from January 2004 to

March 2025. We define the growth-focused pre-COVID period as January 2004 to December 2020, and the inflation-focused post-COVID period as January 2021 to March 2025.

We document a regime shift in how short-term equity responds to monetary policy surprises. Short-term equity loads positively on monetary policy surprises in the pre-COVID period, and the sign reverses in the post-COVID period when short-term equity loads negatively on monetary policy surprises. The change in the loading coefficient across periods is statistically significant. The result is robust to winsorization, heteroscedasticity-consistent standard errors, controls for the bid-ask spread, alternative definitions of the post-COVID period, and restricting attention to meetings with non-zero changes in first-maturity federal funds futures.

This change in the short-term equity response to monetary policy surprises is accompanied by the rise in inflation predictability. While short-term equity return around FOMC announcements fails to predict inflation in the pre-COVID period, it serves as a strong predictor of inflation in the post-COVID period. The predictive coefficient in the regressions with one to four quarter ahead inflation is negative and always significant. The change in the predictive coefficient across the periods is statistically significant. The results are robust to the subsample of meetings with non-zero changes in first-maturity federal funds futures or the addition of control variables for the monetary policy surprise, long-term equity return, and the change in implied volatility. Conversely, in the pre-COVID period, short-term equity return serves as a reliable predictor of dividend growth one to four quarters ahead, especially when we focus on the subsample of meetings with non-zero changes in first-maturity federal funds futures. In the post-COVID period, the predictive coefficient decreases by half. The difference across the periods is less apparent than in the case of inflation predictability.

Overall, we find evidence consistent with the predictions of our stylized framework. The loading of the short-term equity on monetary policy surprise changes from positive to negative as we move from the pre-COVID to post-COVID period. This is coupled with increased predictability of inflation, while the predictability of dividend growth declines.

We next approximate the transition between regimes using attention measures from Google Trends. As inflation and inflation uncertainty increase, so does attention to inflation (Acharya et al. (2025); Pfäuti (2023)). We use the standardized search activity for "inflation" or the ratio of search activity for "inflation" to that for "unemployment rate,". Both measures are low in the pre-COVID period, rise sharply in 2021, and remain elevated through the end of the sample. The results confirm that the rise in inflation attention coincides with the transition from positive to negative loadings of the short-term asset on monetary policy surprises. Simultaneously, the predictive coefficient on future inflation becomes more negative as attention to inflation rises.

Finally, we separate the response to the target rate decision from the response to the press conference. If the Fed were to openly emphasize its concerns about inflation, that messaging could potentially reinforce the very inflation it aims to curb. We therefore expect the Fed to address inflation primarily through its policy actions, while muting such concerns in its public communications. Our findings align with this view: short-term equity returns observed during the statement window are predictive of future inflation, whereas those observed during the press conference window are not.

Our findings contribute to the literature on Fed information effects (Romer and Romer (2000); Campbell et al. (2012); Nakamura and Steinsson (2018); Cieslak and Schrimpf (2019); Jarociński and Karadi (2020); Karnaukh and Vokata (2022); Bauer and Swanson (2023a); Bauer and Swanson (2023b); Golez and Matthies (2025); Jarociński and Karadi (2025); Swanson et al. (2025)). Prior work, focused on periods of low inflation, has emphasized the growth channel. We show that the inflation channel emerges as inflation uncertainty rises, while the growth channel attenuates. Information effects are therefore regime-dependent. Our paper also connects to work on central bank communication (Swanson and Jayawickrema (2023); Acosta et al. (2025)). These studies emphasize the role of forward guidance, conveyed through speeches and press conferences, in shaping longer-term expectations. We find that, for learning about the Fed's near-term assessment of economic conditions, actions are more informative than words. Many recent papers study how the rise in inflation and the surge in inflation attention shape inflation expectations (e.g, Weber et al. (2025); Pfäuti (2023)). We contribute to this literature by showing that, as inflation attention rises, unexpected changes in the Fed's target rate become revealing about future inflation.

We also contribute to the literature on dividend strips. Initially, dividend strips were used to study the equity term structure (Van Binsbergen et al. (2012), Gormsen (2021), Cassella et al. (2023), Golez and Jackwerth (2024)). In a number of recent papers, dividend strips (or dividend futures) are used to analyze near-term expectations around special events (e.g, Golez and Matthies (2025), Golez et al. (2025a), Golez et al. (2025b), Gormsen and Koijen (2020), Gormsen et al. (2021)).

The paper proceeds as follows. Section 2 develops a stylized framework that formalizes the mechanism and derives testable predictions. Section 3 describes our empirical strategy and data. Section 4 presents results. Section 5 concludes.

2 Stylized Framework

To organize ideas, we develop a stylized framework linking monetary policy surprises to equity returns through both discount rate and cash flow channels. We build upon existing models (e.g., Cukierman and Meltzer (1986), Ellingsen and Soderstrom (2001), Melosi (2017), Nakamura and Steinsson (2018), and Miranda-Agrippino and Ricco (2021)). The framework nests growth-dominant and inflation-dominant regimes, allowing us to characterize how short-term equity strips respond to monetary policy surprises in different regimes.

2.1 Setup: Processes and Timing

The real growth rate and inflation rate follow AR(1) processes with interest rate feedback:

$$g_{\underline{t+1}} = \rho_g g_{\underline{t}} + b_g \hat{\imath}_{\bar{t}} + \epsilon_{g,\bar{t}} + w_{\underline{t+1}}, \quad b_g < 0 \tag{1}$$

$$\pi_{\underline{t+1}} = \rho_\pi \pi_{\underline{t}} + b_\pi \hat{\imath}_{\bar{t}} + \epsilon_{\pi,\bar{t}} + \eta_{\underline{t+1}}, \quad b_\pi < 0 \tag{2}$$

where $\epsilon_{g,\bar{t}} \sim \mathcal{N}(0, \sigma^2_{\epsilon_g})$ and $\epsilon_{\pi,\bar{t}} \sim \mathcal{N}(0, \sigma^2_{\epsilon_\pi})$ are the central bank's private information shocks about growth and inflation respectively, $w_{\underline{t+1}} \sim \mathcal{N}(0, \sigma^2_w)$ and $\eta_{\underline{t+1}} \sim \mathcal{N}(0, \sigma^2_\eta)$ are public shocks realized after the announcement, and $\hat{\imath}_{\bar{t}}$ is the short-term nominal interest rate set by the central bank. Each period t is divided into a pre-announcement subperiod $\underline{t}$ and a post-announcement subperiod $\bar{t}$: at $\underline{t}$, public information $(g_{\underline{t}}, \pi_{\underline{t}})$ is observed by all agents; at $\bar{t}$, the central bank announces its policy decision. All shocks are mutually independent.

The central bank follows a policy rule:

$$\hat{\imath}_{\bar{t}} = \rho_\iota \hat{\imath}_{\overline{t-1}} + \alpha_g \mathbb{E}^{cb}_{\bar{t}}[g_{\underline{t+1}}] + \alpha_\pi \mathbb{E}^{cb}_{\bar{t}}[\pi_{\underline{t+1}}] + \mu_{\bar{t}}, \quad \mu_{\bar{t}} \sim \mathcal{N}(0, \sigma^2_\mu) \tag{3}$$

where $\mathbb{E}^{cb}_{\bar{t}}$ denotes the central bank's expectation at announcement time $\bar{t}$. The central bank observes the information shocks ϵ_g and ϵ_π at announcement time (they are revealed to the central bank through internal staff analysis and proprietary data), plus an orthogonal monetary policy shock μ. These shocks remain unobserved by the market until the announcement, so investors must extract them from the policy surprise via Bayesian updating (Section 2.3).

2.2 The Monetary Policy Surprise

The monetary policy surprise is the difference between the announced rate and the investor's pre-announcement expectation:

$$\Delta \hat{\imath}^s_{\bar{t}} = \hat{\imath}_{\bar{t}} - \mathbb{E}^i_{\underline{t}}[\hat{\imath}_{\bar{t}}] \tag{4}$$

Since the investor does not observe ϵ_g, ϵ_π, or μ before the announcement, the pre-announcement expectation is $\mathbb{E}^i_{\underline{t}}[\hat{\iota}_{\bar{t}}] = \theta[\rho_\iota \hat{\iota}_{\overline{t-1}} + \alpha_g \rho_g g_{\underline{t}} + \alpha_\pi \rho_\pi \pi_{\underline{t}}]$. The investor's expectation comes from solving the same fixed-point equation that determines the actual rate, with unobserved shocks set to zero, so the damping factor θ appears symmetrically in both expressions. The surprise is therefore:

$$\Delta\hat{\iota}^s = \theta(\alpha_g \epsilon_{g,\bar{t}} + \alpha_\pi \epsilon_{\pi,\bar{t}} + \mu_{\bar{t}}) = \theta \cdot S_{\bar{t}} \tag{5}$$

where

$$\theta = \frac{1}{1 - \alpha_g b_g - \alpha_\pi b_\pi} \in (0, 1) \tag{6}$$

and $S_{\bar{t}} = \alpha_g \epsilon_{g,\bar{t}} + \alpha_\pi \epsilon_{\pi,\bar{t}} + \mu_{\bar{t}}$ is the composite signal driving the monetary policy surprise.

The fact that $\theta \in (0, 1)$ reflects *damping*: because both $b_g < 0$ and $b_\pi < 0$, the denominator $1 - \alpha_g b_g - \alpha_\pi b_\pi > 1$, so the feedback from growth and inflation expectations mutes the response to new information.

2.3 Bayesian Updating: Extracting Signals from the MPS

The market observes $\Delta\hat{\iota}^s = \theta S$ but does not directly observe ϵ_g, ϵ_π, or μ. Using Bayesian inference and the projection theorem, the market can extract conditional expectations:

$$\mathbb{E}[\epsilon_g | S] = \frac{\alpha_g \sigma^2_{\epsilon_g}}{\sigma^2_S} S, \tag{7}$$

$$\mathbb{E}[\epsilon_\pi | S] = \frac{\alpha_\pi \sigma^2_{\epsilon_\pi}}{\sigma^2_S} S, \tag{8}$$

$$\mathbb{E}[\mu | S] = \frac{\sigma^2_\mu}{\sigma^2_S} S, \tag{9}$$

where $\sigma^2_S = \alpha_g^2 \sigma^2_{\epsilon_g} + \alpha_\pi^2 \sigma^2_{\epsilon_\pi} + \sigma^2_\mu$ is the variance of the composite signal S.

These are *projection coefficients*, not probabilities, so they need not sum to unity. The reconstruction identity $\alpha_g \mathbb{E}[\epsilon_g|S] + \alpha_\pi \mathbb{E}[\epsilon_\pi|S] + \mathbb{E}[\mu|S] = S$ holds exactly, reflecting the fact that the three shocks together create the observed signal.

2.4 Return Expression: Discount Rate and Cash Flow Channels

The short-term asset is a claim to the next period's dividend. Because dividend growth loads on economic growth with a coefficient $\beta_d > 0$ (the cash flow sensitivity of dividends to GDP growth), the announcement return on the short-term asset can be decomposed (to a first-order approximation) into two components:

$$r_{\bar{t}} = -\Delta \hat{\imath}^s + \beta_d \cdot \Delta_{\bar{t}} \mathbb{E}^i[g_{\underline{t+1}}] \tag{10}$$

The first term, $-\Delta \hat{\imath}^s$, is the *discount rate channel*: a surprise rate increase lowers the present value of future dividends, reducing the strip price. The second term, $\beta_d \cdot \Delta_{\bar{t}} \mathbb{E}^i[g_{\underline{t+1}}]$, is the *cash flow channel*: $\Delta_{\bar{t}} \mathbb{E}^i[g_{\underline{t+1}}]$ is the revision to expected next-period growth from pre- to post-announcement, and $\beta_d > 0$ maps GDP growth to dividend growth. The parameter β_d captures the cash flow sensitivity of dividends to aggregate economic conditions; values above one reflect the leverage of corporate earnings relative to GDP due to operating and financial leverage.

We note that the discount rate term $-\Delta \hat{\imath}^s$ captures the effect of the policy rate surprise on the short-term strip's present value, and the cash flow term captures revisions to expected real growth. The framework abstracts from two additional channels through which inflation expectations could affect strip prices: nominal discount rates may move with inflation risk premia beyond the policy rate, and nominal dividends may partially inherit inflation through pass-through. Both abstractions affect quantitative magnitudes but not qualitative predictions. The risk premium channel would reinforce the negative loading in the inflation-dominant regime, while inflation pass-through to dividends would attenuate it.

The growth expectation revision decomposes as:

$$\Delta_{\bar{t}}\mathbb{E}^i[g_{\underline{t+1}}] = b_g \Delta\hat{\imath}^s + \mathbb{E}[\epsilon_g|S] \tag{11}$$

The first component, $b_g \Delta\hat{\imath}^s$, reflects the conventional contractionary effect of monetary policy on growth ($b_g < 0$): higher rates reduce next-period growth. The second component, $\mathbb{E}[\epsilon_g|S]$, is the market's extraction of the growth information shock from the MPS.

Substituting into the return equation:

$$r_{\bar{t}} = -\Delta\hat{\imath}^s + \beta_d \left(b_g \Delta\hat{\imath}^s + \mathbb{E}[\epsilon_g|S]\right) \tag{12}$$

Factoring:

$$r_{\bar{t}} = (-1 + \beta_d b_g)\Delta\hat{\imath}^s + \beta_d \mathbb{E}[\epsilon_g|S] \tag{13}$$

Substituting $\Delta\hat{\imath}^s = \theta S$ and $\mathbb{E}[\epsilon_g|S] = \frac{\alpha_g \sigma^2_{\epsilon_g}}{\sigma^2_S} S$:

$$r_{\bar{t}} = \left[(-1 + \beta_d b_g)\theta + \beta_d \frac{\alpha_g \sigma^2_{\epsilon_g}}{\sigma^2_S}\right] S \tag{14}$$

2.5 MPS Loading Coefficient

The MPS loading coefficient is the covariance between returns and the MPS, scaled by the variance of the MPS:

$$\lambda = \frac{\text{Cov}(r_{\bar{t}}, \Delta\hat{\imath}^s)}{\text{Var}(\Delta\hat{\imath}^s)} = (-1 + \beta_d b_g) + \frac{\beta_d \alpha_g \sigma^2_{\epsilon_g}}{\theta \sigma^2_S} \tag{15}$$

The loading comprises three economic channels. The -1 term is the discount rate channel and captures the mechanical effect of rising rates on equity valuations: a surprise rate increase of 1 bp lowers equity returns by approximately 1 bp on a short-term strip. The $\beta_d b_g$ term is the conventional cash flow channel and reflects the contractionary effect of higher rates on expected growth. Since $b_g < 0$, this term is negative; higher rates lower expected growth and therefore expected dividends. The $\frac{\beta_d \alpha_g \sigma^2_{\epsilon_g}}{\theta \sigma^2_S}$ term is the information cash flow channel and reflects the market's extraction of growth information from the MPS. When the MPS is driven by positive growth signals, the market revises growth expectations upward despite the rate increase, partially offsetting the discount rate effect.

For the overall MPS loading to be positive ($\lambda > 0$), the information cash flow channel must overcome both the discount rate and the conventional cash flow channels:

$$\frac{\beta_d \alpha_g \sigma^2_{\epsilon_g}}{\theta \sigma^2_S} > 1 - \beta_d b_g \tag{16}$$

Short-term equity strips therefore have positive sensitivity to monetary policy surprises only when cash flow revisions driven by growth information dominate discount rate effects. This requires β_d to be large (high cash flow sensitivity of dividends to GDP growth), $\sigma^2_{\epsilon_g}$ to be large (substantial growth information in the surprise), and $X = \sigma^2_{\epsilon_\pi} / \sigma^2_{\epsilon_g}$ to be small (growth uncertainty dominating inflation uncertainty).

2.6 Predictability of Growth and Inflation

The realized values of growth and inflation in period $\underline{t+1}$ are:

$$g_{\underline{t+1}} = \rho_g g_{\underline{t}} + b_g \hat{\iota}_{\bar{t}} + \epsilon_{g,\bar{t}} + w_{\underline{t+1}} \tag{17}$$

$$\pi_{\underline{t+1}} = \rho_\pi \pi_{\underline{t}} + b_\pi \hat{\iota}_{\bar{t}} + \epsilon_{\pi,\bar{t}} + \eta_{\underline{t+1}} \tag{18}$$

The predetermined components ($\rho_g g_{\underline{t}}$, $\rho_\pi \pi_{\underline{t}}$) are known before the announcement and therefore uncorrelated with the announcement return $r_{\bar{t}}$. The post-announcement public shocks ($w_{\underline{t+1}}$, $\eta_{\underline{t+1}}$) are independent of the announcement and also uncorrelated with $r_{\bar{t}}$. Only the innovation components that depend on the announcement-date shocks (ϵ_g, ϵ_π, μ) generate covariance with the return. Specifically, the announcement-date innovations in growth and inflation are:

$$\tilde{g}_{\underline{t+1}} \equiv b_g \Delta \hat{\iota}^s_{\bar{t}} + \epsilon_{g,\bar{t}} + w_{\underline{t+1}} \tag{19}$$

$$\tilde{\pi}_{\underline{t+1}} \equiv b_\pi \Delta \hat{\iota}^s_{\bar{t}} + \epsilon_{\pi,\bar{t}} + \eta_{\underline{t+1}} \tag{20}$$

These capture all variation in realized growth and inflation that is correlated with the announcement. The first component in each ($b_g \Delta \hat{\iota}^s$ and $b_\pi \Delta \hat{\iota}^s$) reflects the conventional effect of the rate change on fundamentals, while the second (ϵ_g and ϵ_π) is the direct realization of the information shock. The third component ($w_{\underline{t+1}}$ and $\eta_{\underline{t+1}}$) is an announcement-independent residual shock realized after the announcement; it affects realizations but is uncorrelated with the announcement return $r_{\bar{t}}$ and therefore does not contribute to predictability.

2.7 Proposition and Testable Hypotheses

Proposition 1. *In the stylized three-shock framework, the MPS loading $\lambda = -1 + \beta_d \Gamma_g$, where $\Gamma_g \equiv b_g + \alpha_g \sigma^2_{\epsilon_g} / (\theta \sigma^2_S)$, is positive if and only if $\beta_d \Gamma_g > 1$. Let β_g and β_π denote the population regression slopes from projecting next-period growth and inflation on the announcement return, allowing for independent measurement noise of variance $\sigma^2_\nu \geq 0$ in the observed return (Appendix A.8). In the growth-dominant regime ($\beta_d \Gamma_g > 1$, so $\lambda > 0$), β_g is positive and large while β_π is close to zero. In the inflation-dominant regime ($\Gamma_g < 0$, so $\lambda < 0$), β_g is positive but smaller in magnitude while β_π is substantially negative. Between these regimes lies a transition region in which λ is close to zero, return variance is small, and the regularized slopes behave non-monotonically; the empirical sample does not visit this region.*

The threshold condition has a natural interpretation. As X increases, the growth information channel weakens because growth variance falls while total signal variance is increasingly driven by inflation shocks. Beyond a critical ratio, the denominator in β^*_d turns negative and $\lambda < 0$ for all $\beta_d > 0$. The framework therefore admits two regimes. When X is small, the composite signal S is driven by growth information, monetary policy surprises are interpreted as responding to growth news, and the loading is positive (provided β_d is sufficiently large). When X is large, the signal is driven by inflation information, surprises are interpreted as responding to inflation news, and the loading is negative. The structural parameters do not change across regimes; only the composition of shocks does. The two limiting cases of the framework are also instructive. When $\sigma^2_{\epsilon_g} = 0$, the model reduces to an inflation-only setting with $\lambda < 0$. When $\sigma^2_{\epsilon_\pi} = 0$, the model reduces to a growth-only setting where the sign of λ depends on β_d and b_g.

The proposition maps to the pre-COVID and post-COVID periods. The pre-COVID era, characterized by elevated growth uncertainty and low, stable inflation, corresponds to the growth-dominant regime. The post-COVID era, characterized by large inflation shocks and the Fed's shift in focus toward inflation, corresponds to the inflation-dominant regime. This yields three testable hypotheses.

Hypothesis 1. *The loading of short-term equity returns on monetary policy surprises is positive in the pre-COVID period and negative in the post-COVID period.*

Hypothesis 2. *Short-term equity announcement returns predict near-term dividend growth in the pre-COVID period. This predictability weakens in the post-COVID period.*

Hypothesis 3. *Short-term equity announcement returns predict near-term inflation with a negative sign in the post-COVID period. This predictability is absent in the pre-COVID period.*

2.8 Discussion

The reversal in sign occurs not because the transmission channels change. The coefficients b_g, b_π, α_g, α_π are stable. The shift comes from the composition of shocks driving monetary policy surprises, which moved from growth-dominated to inflation-dominated. The MPS loading is not a fixed structural parameter, but a reduced-form outcome of the regime's underlying shock composition.

In the pre-COVID period (2000s–2010s), low inflation uncertainty and relatively high growth uncertainty imply a small $X = \sigma^2_{\epsilon_\pi}/\sigma^2_{\epsilon_g}$. Monetary policy surprises are primarily interpreted as reflecting growth information. Given empirically reasonable parameters ($b_g \approx -0.3$, $\alpha_g \approx 0.5$, $\theta \approx 0.83$), the threshold cash flow sensitivity $\beta^*_d = 1/\Gamma_g$ (Appendix A.10) is approximately 1.5, well below the empirical estimate of $\beta_d \approx 3$. The information channel therefore dominates, yielding positive MPS loadings ($\lambda > 0$), and announcement returns positively predict realized growth in the following quarter.

In the post-COVID period (2021–2023), inflation shocks became large ($\sigma^2_{\epsilon_\pi}$ increased substantially), so X rose. Monetary policy surprises are now interpreted as primarily reflecting inflation information. With the same $\beta_d \approx 3$, the denominator in the threshold condition turns negative, so $\lambda < 0$ unconditionally. Announcement returns negatively predict subsequent inflation, consistent with the market extracting the Fed's inflation signal: tighter policy (negative returns) forecasts higher inflation ahead.

2.9 Comparative Statics

Figure 2 illustrates the model's predictions as a function of the variance ratio $X = \sigma^2_{\epsilon_\pi}/\sigma^2_{\epsilon_g}$, holding fixed $\alpha_g = \alpha_\pi = 0.5$, $b_g = -0.3$, $b_\pi = -0.1$, $\sigma^2_\mu = 0.7$, $\beta_d = 3$, and the total information variance $\sigma^2_{\epsilon_g} + \sigma^2_{\epsilon_\pi} = 2.1$.

Panel (a) plots the MPS loading λ against X. For low X (growth-dominant), the loading is positive: the market interprets rate increases as growth news, and the positive cash flow revision from information extraction dominates the discount rate effect. As X increases, the growth information channel weakens, and at X^* the loading crosses zero. For high X (inflation-dominant), the loading is negative: the discount rate and conventional channels dominate, and the market interprets rate increases as inflation news. The blue circle and red square mark illustrative pre-COVID ($X = 0.05$) and post-COVID ($X = 20$) parameterizations.

Panel (b) plots the predictability regression slopes β_g and β_π from regressing realized next-period growth and inflation on announcement returns. Both slopes equal $\text{Cov}(\cdot, r)/[\text{Var}(r) + \sigma_\nu^2]$, where $\sigma_\nu^2 = 0.05$ represents independent measurement noise in the observed return. The regularization is needed because the unregularized slopes diverge at X^*, where $\lambda \to 0$ and $\text{Var}(r) \to 0$. Away from X^*, the regularization is essentially inactive and the slopes coincide with their unregularized counterparts.

In the growth-dominant regime, β_g is large and positive (≈ 0.62): higher announcement returns predict subsequent growth, reflecting the market's extraction of the Fed's growth signal. In the inflation-dominant regime, β_g shrinks toward zero (≈ 0.14) as growth information becomes scarce. The inflation slope β_π is close to zero in the growth-dominant regime (≈ -0.05), consistent with the absence of inflation predictability when growth uncertainty dominates. In the inflation-dominant regime, β_π becomes substantially more negative (≈ -0.49), consistent with announcement returns becoming informative about future inflation when the Fed is primarily responding to inflation news.

The two slopes change sign across an intermediate region near X^*, where the covariance $\text{Cov}(g, r) = \lambda\theta^2\sigma_S^2 \cdot \Gamma_g$ inherits sign changes from λ and Γ_g, which cross zero at different values of X (Appendix A.8). This non-monotonicity reflects a generic feature of predictive regressions when predictor variance is small, rather than a structural property of the information channel. Because the empirical sample sits well into the growth-dominant regime in the pre-COVID period and well into the inflation-dominant regime in the post-COVID period, the data do not visit this transition region.

3 Empirical Strategy

3.1 Monetary Policy Surprises

We obtain monetary policy surprises from Acosta et al. (2025), who estimate them following Nakamura and Steinsson (2018) as the first principal component of changes in money market futures rates covering a horizon of up to one year. They distinguish between surprises corresponding to different communication events. In the main part of the paper, we use the statement shock, which captures the announcement of the new federal funds target rate and runs from 10 minutes before to 20 minutes after the release of the statement. Under additional results, we also use the press conference shock, which is based on the press conference window and runs from 20 to 100 minutes after the statement release. [4]

3.2 Short-Term Equity Measurement

We use prices of dividend strips that entitle the holder to dividends paid by the S&P 500 index over the next six months as the empirical proxy for short-term equity. The starting point in estimating dividend strip prices is the put-call parity relationship spanning European options on the S&P 500 index, which implies that at any moment s:

$$c_s^h(X) - p_s^h(X) = (S_s - P_s^h) - Xe^{-rf_s^h \times h}, \tag{21}$$

where h is the time-to-expiration, c and p are the prices of European call and put options with strike X, S is the index level, P is the present value of dividends during the life of the options, and rf^h is the annualized risk-free rate over the option's maturity.

Van Binsbergen et al. (2012) invert this relationship to estimate dividend prices directly from observed option prices. However, that requires a stance on the risk-free rate, which can be problematic, especially in our setting, where the risk-free rate itself changes around

[4] In the recent period, press conferences start 30 minutes after the statement release and last for about 60 minutes.

FOMC announcements. We follow Golez and Matthies (2025), who build on Golez and Jackwerth (2024) and use a regression-based approach to simultaneously estimate dividend prices and risk-free rates from the put-call parity restriction. Specifically, rearranging (21) yields a regression equation that can be estimated using OLS across put-call pairs with the same maturity:

$$S_s - c_s^h(X) + p_s^h(X) = \alpha + \beta X + \epsilon. \tag{22}$$

The dividend strip price is estimated as the intercept, $\hat{P}_s^h = \hat{\alpha}$, and the implied risk-free rate is recovered from the slope as $\hat{rf}^h = -\frac{1}{h}\log(\hat{\beta})$. This procedure ensures that dividend prices are internally consistent with the estimated risk-free rates.

3.3 Data and Announcement Windows

We obtain minute-by-minute data for S&P 500 options from the Chicago Board of Options Exchange (CBOE) from January 2004 to March 2025. We keep standard monthly options that expire on the third Friday of each month and have more than 0.3 years until expiration. We eliminate observations before 10:00 AM and after 4:00 PM Eastern Time. We use bid-ask midpoint prices and eliminate options with bid or ask prices below \$3 or moneyness levels outside the range $[0.5, 1.5]$.

For the main analysis, we follow Golez and Matthies (2025) and define two 30-minute estimation windows for each FOMC announcement. The pre-announcement window runs from 40 minutes before to 10 minutes before the announcement time. The post-announcement window runs from 20 minutes after to 50 minutes after the announcement time. FOMC announcements typically occur at 2:00 PM Eastern Time, so these windows correspond approximately to 1:20–1:50 PM and 2:20–2:50 PM. For each window, we estimate dividend strip prices and risk-free rates by running a regression (22) on all put-call pairs for a given maturity within that interval.

We estimate dividend strip prices at a standardized 180-day maturity by linearly interpolating between option-implied prices for maturities above and below this horizon. We follow the same procedure for risk-free rates. Let P_{t-}^{180} and P_{t+}^{180} denote the dividend strip prices estimated in the pre- and post-announcement windows. The short-term equity returns are

$$r_t^{ST} = \log P_{t+}^{180} - \log P_{t-}^{180}. \tag{23}$$

These are the empirical analogues to $r_{\bar{t}}$ from the framework.

Our sample covers 169 scheduled FOMC announcements from January 2004 to March 2025. We exclude unscheduled announcements to maintain comparability across events.

4 Results

4.1 Summary Statistics

The first four columns in Table 1 report summary statistics for monetary policy surprises and short-term equity announcement returns. For comparison, we also report the summary statistics for the long-term equity announcement returns (the S&P 500 index). Panel A covers the full sample of 169 scheduled FOMC announcements from 2004Q1 to 2025Q1. The monetary policy surprise has a mean of 0.4 basis points and a standard deviation of 2.8 basis points. The short-term asset announcement return averages 0.5 percentage points with a standard deviation of 3.3%, while the long-term asset (S&P 500) announcement return averages 0.08% with a standard deviation of 0.54%.

Panels B and C split the sample into pre-COVID (2004Q1–2020Q4, $N = 135$) and post-COVID (2021Q1–2025Q1, $N = 34$) subperiods. The post-COVID period exhibits larger average monetary policy surprises (1.1 basis points versus 0.2 basis points; see also Acosta et al. (2025)).

Figure 3 presents scatter plots for the short-term and long-term asset returns against the monetary policy surprises. The last three columns in Table 1 report the corresponding pairwise correlations. In the pre-COVID period, the short-term asset return is positively correlated with the monetary policy surprise ($\rho = 0.32$), consistent with the growth information effects documented by Golez and Matthies (2025). In the post-COVID period, this correlation turns negative ($\rho = -0.20$). The long-term asset maintains a strong negative correlation with the monetary policy surprise throughout ($\rho \approx -0.5$ to -0.7), consistent with conventional discount rate effects (e.g., Bernanke and Kuttner (2005)).

4.2 Asset Responses to Monetary Policy Surprises

Hypothesis 1 predicts that the loading of short-term equity returns on monetary policy surprises is positive in the pre-COVID period and negative in the post-COVID period. We estimate the response of short-term equity to monetary policy surprises:

$$r_t^j = \alpha + \beta^j \Delta\iota_t^s + \epsilon_t, \tag{24}$$

where $\Delta\iota_t^s$ is the monetary policy surprise and r_t^j is the announcement return on short-term asset $j \in \{STA\}$. For comparison, we also report results with the long-term asset $j \in \{LTA\}$.

Table 2 reports results. Panel A shows the full sample, Panel B the pre-COVID period, and Panel C the post-COVID period. Consistent with existing estimates (e.g., Bernanke and Kuttner (2005)), the long-term asset loads negatively on the monetary policy surprise in the full sample as well as in both sub-samples, with coefficients around -0.10 to -0.12 and t-statistics exceeding 6 in absolute value.

The short-term asset response differs across subperiods. In the pre-COVID period, the short-term asset loads *positively* on the monetary policy surprise, with a coefficient of 0.38 and a t-statistic of 3.83. This replicates the central finding of Golez and Matthies (2025): hawkish surprises are associated with higher short-term equity prices, consistent with investors extracting positive news about near-term growth from Fed tightening.

In the post-COVID period, this relationship reverses. The short-term asset now loads *negatively* on the monetary policy surprise ($\hat{\beta} = -0.23$, $t = -1.18$). The change in the coefficient from the pre- to post-COVID period is economically large and statistically significant.

We test for the stability of the short-term asset response using an interaction specification:

$$r_t^{ST} = \alpha + \beta_1 \Delta\iota_t^s + \beta_2 \mathbf{1}_{Post} + \beta_3(\Delta\iota_t^s \times \mathbf{1}_{Post}) + \epsilon_t, \tag{25}$$

where $\mathbf{1}_{Post}$ is an indicator for the post-COVID period (2021Q1–2025Q1). Column (1) in Table 3 reports the results. The interaction term is large and highly significant ($\hat{\beta}_3 = -0.61$, $t = -2.87$), confirming that the short-term asset response to monetary policy surprises shifted markedly between periods, consistent with Hypothesis 1.

4.3 Robustness

We conduct several robustness checks of the stability test in Column (1) of Table 3, with results in the subsequent columns. The interaction term remains significantly negative across all checks, with t-statistics ranging from -2.49 to -3.42.

Column (2) winsorizes short-term asset returns at the 5 percent level. Column (3) uses heteroscedasticity-consistent GMM standard errors, addressing the concern that the short-term asset return is estimated with noise. Column (4) controls for the change in the average bid-ask spread of the option prices used to construct the short-term asset, addressing the concern that the results could be driven by bid-ask bounce. Columns (5) and (6) redefine the post-COVID period to start in June 2020 and June 2021 rather than January 2021. Column (7) restricts the sample to FOMC announcements with non-zero changes in first-maturity federal funds futures, where Golez and Matthies (2025) show their results are strongest; the t-statistic on the interaction term increases in absolute value to -3.11.

4.4 Inflation Predictability

Hypothesis 3 predicts that short-term equity announcement returns predict near-term inflation with a negative sign in the post-COVID period, but not in the pre-COVID period. We test this by estimating:

$$\pi_{t+k} = \alpha_k + \beta_k r_t^{STA} + \epsilon_{t+k}, \qquad k \in \{1, 2, 3, 4\}, \tag{26}$$

where π_{t+k} is year-over-year CPI inflation k quarters ahead and r_t^{STA} is the short-term asset announcement return.[5] We report Newey-West standard errors with $k + 1$ lags.

Table 4 presents results. Panel A covers the pre-COVID period. The short-term asset return has no predictive power for inflation at any horizon. Coefficients are small, t-statistics are below one in absolute value, and adjusted R^2 values are mostly negative.

Panel B covers the post-COVID period. The short-term asset return strongly predicts near-term inflation. Coefficients are negative across horizons (ranging from -0.21 to -0.33), with t-statistics between -2.28 and -3.19 and adjusted R^2 peaking at 18% at the two-quarter horizon. A one standard deviation decrease in the short-term asset return (3.3 percentage points) is associated with a 1.0 percentage point increase in inflation over the following two quarters, consistent with Hypothesis 3.

To assess whether the post-COVID predictability is statistically distinguishable from the pre-COVID null, we estimate a specification with an interaction term:

$$\pi_{t+k} = \alpha_k + \beta_{k,1} r_t^{STA} + \beta_{k,2} \mathbf{1}_{Post} + \beta_{k,3} (r_t^{STA} \times \mathbf{1}_{Post}) + \epsilon_{t+k}, \qquad k \in \{1, 2, 3, 4\}, \tag{27}$$

where $\mathbf{1}_{Post}$ is an indicator for the post-COVID period (2021Q1–2025Q1). Panel A of Table 5 reports the results. The interaction term ranges from -0.23 to -0.35 with t-statistics from -2.1 to -3.2, consistent with inflation predictability emerging in the post-COVID period.

Panel B repeats the analysis using only monetary policy shocks with non-zero changes

[5] We obtain inflation data from Robert Shiller's website (https://shillerdata.com/).

in first-maturity federal funds futures. The interaction coefficients increase in absolute value and remain significant. Panel C adds controls for the monetary policy surprise, the long-term asset return around FOMC announcements, and the change in implied volatility on S&P 500 index options. The interaction coefficients remain significant at horizons of two quarters and beyond, with t-statistics up to -3.44. The exception is the one-quarter-ahead horizon, where the interaction coefficient is marginally significant ($t = -1.72$).

4.5 Dividend Growth Predictability

Hypothesis 2 predicts that short-term equity announcement returns predict near-term dividend growth in the pre-COVID period, and that this predictability weakens in the post-COVID period. Table 6 tests this using:

$$g_{t+k} = \alpha_k + \beta_k r_t^{STA} + \epsilon_{t+k}, \tag{28}$$

where g_{t+k} is dividend growth k quarters ahead.

Panel A shows that in the pre-COVID period, the short-term asset return predicts near-term dividend growth. The coefficient at the one-quarter horizon is 0.38 ($t = 1.98$). Coefficients increase with the forecasting horizon, reaching 0.59 at four quarters, though t-statistics fall below conventional significance levels beyond two quarters. The positive sign is consistent with hawkish surprises predicting higher subsequent dividend growth, as investors extract positive growth news (Golez and Matthies, 2025).

Panel B shows that this predictability weakens in the post-COVID period. The predictive coefficients are less than half their pre-COVID values. The difference across periods is not statistically significant, but the reduction in economic magnitudes is substantial, as shown in Panel A of Table 7. Panel C adds controls for the monetary policy shock, the long-term asset return, and the change in implied volatility, with insignificant results. Panel B repeats the analysis using only monetary policy shocks with non-zero changes in first-maturity federal funds futures. The difference across periods becomes statistically significant at horizons up to two quarters, consistent with Golez and Matthies (2025) showing that dividend growth predictability is concentrated around larger monetary policy shocks.

The overall pattern is consistent with regime-dependent information effects, with inflation predictability emerging in the post-COVID period as dividend growth predictability weakens.

4.6 Discussion and Additional Results

The overall pattern of results is consistent with the content of Fed information effects depending on the macroeconomic environment. When growth uncertainty dominates, as in the pre-COVID period, investors extract growth signals from policy actions. When inflation uncertainty dominates, as in the post-COVID period, investors extract inflation signals.

These findings have implications for monetary policy transmission. Conventionally, hawkish surprises reduce inflation. Our results suggest that during periods of elevated inflation uncertainty, hawkish surprises instead signal the Fed's inflation assessment, thereby raising expected inflation. Consistent with this, hawkish surprises are associated with higher realized near-term inflation in the post-COVID period. This information channel works against the conventional disinflationary effect of tighter policy.

4.6.1 Transition Between Periods

So far, we have used the post-COVID indicator as a coarse proxy for the change in the macroeconomic environment, defining it to equal one from January 2021 onward. We now replace this indicator with two attention measures from Google Trends. In our framework, the regime shift is governed by the relative uncertainty about inflation compared to that about growth. Inflation uncertainty goes hand in hand with the inflation level Acharya et al. (2025), and as inflation increases, attention to inflation surges (Pfäuti (2023); Weber et al. (2025)). The first measure from Google Trends is the standardized search activity for "inflation" in the US, which captures general attention to inflation. The second is the ratio of search activity for "inflation" to that for "unemployment rate," which captures relative attention to the two pillars of the Fed's dual mandate. We use these measures as empirical proxies for $X = \sigma^2_{\epsilon_\pi}/\sigma^2_{\epsilon_g}$ from the framework.

Figure 4 plots the two attention series. Attention to inflation exhibits a similar pattern to news-based inflation uncertainty in Acharya et al. (2025). It is low until 2020, rises sharply, peaks in mid-2022 alongside realized inflation, and remains elevated relative to its pre-COVID level. Attention to unemployment spikes during the global financial crisis and the early COVID period and falls back quickly. The ratio is low through the pre-COVID period and rises sharply in 2021, remaining elevated through the end of the sample.

Table 8 repeats the stability test from Section 4 with the post-COVID indicator replaced by the attention measures:

$$r^j_t = \alpha + \beta_1 \cdot \text{MPS}_t + \beta_2 \cdot \text{Att} + \beta_3 \cdot (\text{MPS}_t \times \text{Att}) + \epsilon_t, \tag{29}$$

where Att is either attention to inflation (Panel A) or the ratio of attention to inflation over attention to unemployment (Panel B). The interaction term in Column (1) is negative and significant in both panels ($t = -2.68$ and $t = -1.92$), consistent with relative attention capturing the transition from positive to negative loadings of the short-term asset on monetary policy surprises. Column (2) shows that the transition is specific to short-term assets; the attention measures have little impact on the loading of the long-term asset.

Table 9 repeats the full-sample inflation predictability tests with the post-COVID indicator replaced by the attention measures:

$$\pi_{t+k} = \alpha + \beta_1 \cdot \text{STA}_t + \beta_2 \cdot \text{Att} + \beta_3 \cdot (\text{STA}_t \times \text{Att}) + \epsilon_t. \tag{30}$$

The interaction term between the short-term asset return and the attention measure is negative and significant for predicting inflation up to three quarters ahead using attention to inflation (Panel A), and up to two quarters ahead using the ratio of attention to inflation over unemployment (Panel B). Overall, the predictive coefficient on future inflation becomes more negative as attention to inflation rises.

4.6.2 Actions vs. Words: Statement and Press Conference Windows

The Fed faces a tension when inflation expectations matter for realized inflation: openly signaling concern about inflation could feed back into wage and price setting and reinforce the very inflation it seeks to contain. This gives the Fed an incentive to act on inflation concerns through policy decisions while downplaying them in public communications. Inflation predictability should therefore be concentrated in the response to the target rate decision, not the press conference.

In the post-COVID period, the statement was always released at 2:00 PM, followed by a press conference at 2:30 PM. To separate the two responses, we re-estimate dividend strip prices using 20-minute windows rather than the 30-minute windows used in the baseline. For the statement, the pre-announcement window runs from 1:30 to 1:50 PM and the post-announcement window from 2:10 to 2:30 PM. For the press conference, the pre-conference window runs from 2:10 to 2:30 PM and the post-conference window from 3:30 to 3:50 PM. These timings correspond to the event windows used by Acosta et al. (2025) to construct monetary policy surprises.

Table 10 reports inflation predictability regressions for each window. Returns measured in the statement window predict future inflation with coefficients comparable to the baseline estimates (t-statistics range from -2.3 to -4.3). Returns measured in the press conference window have no predictive power. Coefficients are insignificant at all horizons.

4.6.3 Short-Term Treasury Bonds

The framework predicts that the post-COVID inflation predictability operates through the discount rate channel. When investors interpret a hawkish surprise as signaling inflation news, short-term equity decreases because of the increase in the nominal rate, and it predicts future inflation with a negative sign. The cash flow channel that drives the predictability of dividend growth in the pre-COVID period is not necessary to create inflation predictability in the post-COVID period.

An implication is that other assets that do not contain cash flow news but respond to changes in short-term nominal rates should also predict inflation in the post-COVID period. We test this using the high-frequency return on the SHV ETF, which tracks short-term Treasuries and is, by construction, exposed only to the discount rate channel. As of May 1, 2026, the effective duration of SHV is 0.29 years. Table 11 reports the inflation predictability regression. The SHV return around FOMC announcements predicts CPI inflation with a negative sign at the one- and two-quarter horizons ($t = -2.54$ and $t = -1.96$). This is consistent with our framework and ties the inflation signal to the policy event, as there is no inflation predictability in our framework absent a central bank's informational advantage.[6]

5 Conclusion

We examine whether the content of information conveyed by the Federal Reserve policy surprises changes with the macroeconomic environment. We derive a stylized framework in which investors learn about economic growth and inflation from monetary policy surprises. Using high-frequency dividend strip data around FOMC announcements from 2004 to 2025, we confirm empirical regularities predicted by the model. In pre-COVID period, short-term equity responds positively to monetary policy shocks and predicts near-term dividend growth. This contrasts with the post-COVID period, in which dividend strips respond negatively to monetary policy shocks and predict near-term inflation. Inflation predictability

[6]Conceptually, we could test for changes in short-term expected inflation directly by comparing the announcement return on an ETF that tracks short-term Treasuries (such as SHV) with that on an ETF that tracks short-term Treasury Inflation Protected Securities (TIPS). Unfortunately, no near-term TIPS-based ETF exists during our sample period. The ultra-short-duration TIPS ETF RBIL, which invests in TIPS with maturities of 1 to 13 months and reports duration levels well below one year, has only existed since February 2025. Among short-term TIPS-based ETFs with a longer track record, the STIP ETF invests in TIPS with maturities between 1 and 5 years and has a current duration of 2.45 years, which is too long to test for inflation information effects concentrated in the very near term.

is concentrated in the response to the target rate decision rather than the press conference, suggesting the Fed's actions are more informative than its words. The contrast suggests that Fed information effects are regime-dependent: during periods of subdued inflation, investors extract signals about growth; during periods of elevated inflation, the inflation channel dominates.

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6 Tables & Figures

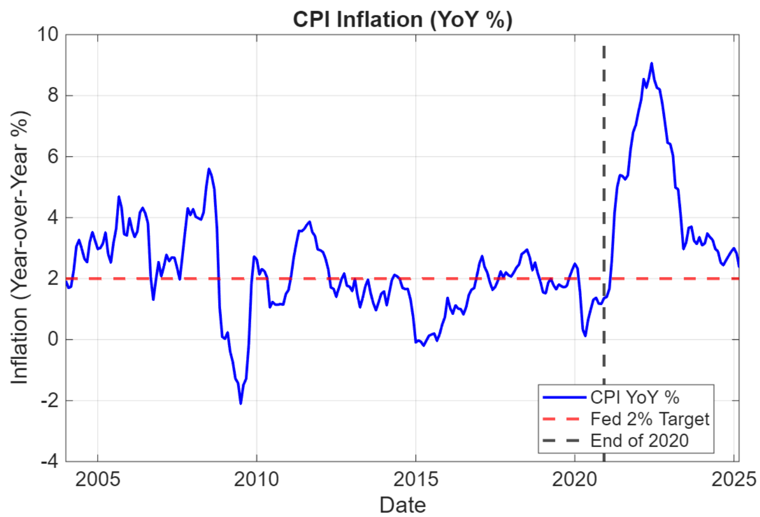
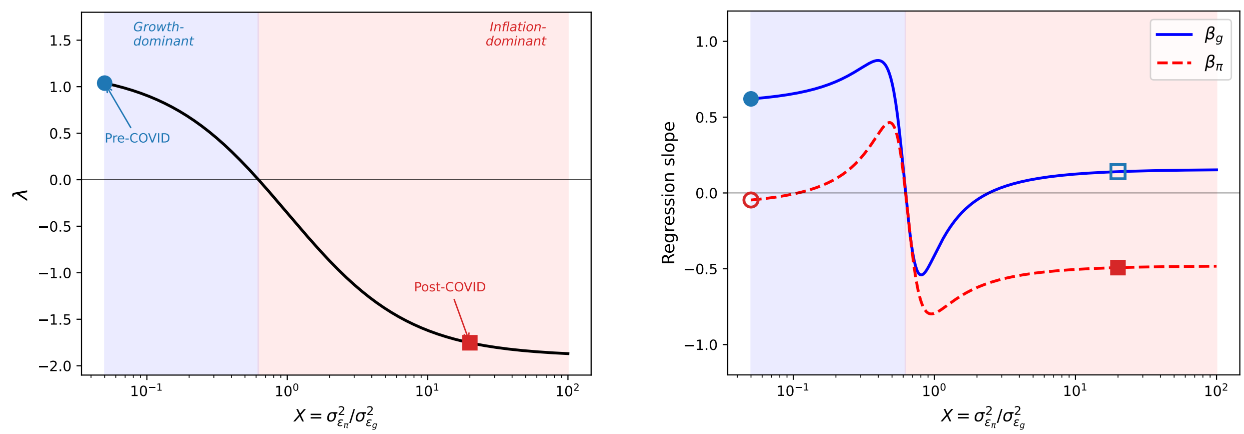


Figure 1: This figure plots the year-over-year % increase in Consumer Price Index (CPI) from January 2004 to March 2025. The data is from Robert Shiller's webpage. The horizontal dashed line denotes the 2% target inflation. Vertical dashed line denotes end of 2020.

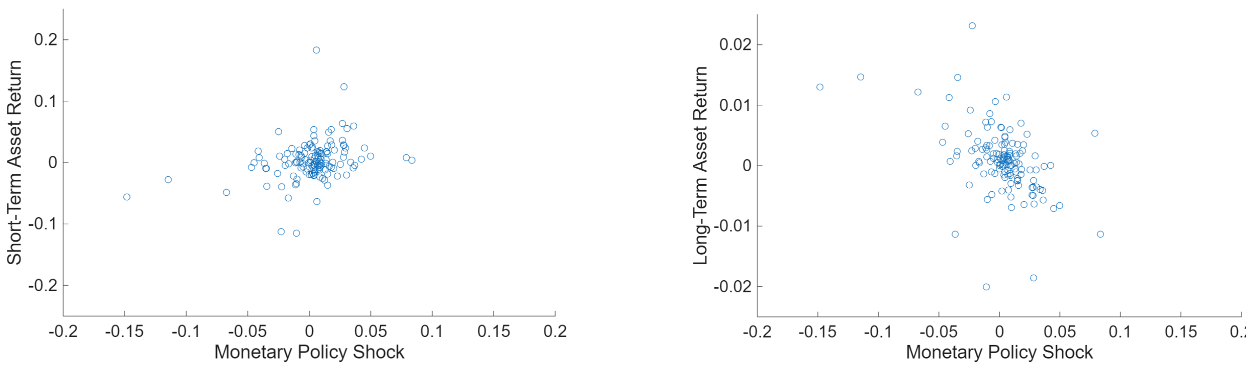


(a) MPS loading λ

(b) Return $\rightarrow$ fundamentals predictability

Figure 2: Comparative statics of the three-shock framework as a function of $X = \sigma^2_{\epsilon_\pi}/\sigma^2_{\epsilon_g}$, holding $\sigma^2_{\epsilon_g} + \sigma^2_{\epsilon_\pi} = 2.1$ fixed. Panel (a): MPS loading λ, switching from positive (growth-dominant) to negative (inflation-dominant) at threshold X^*. Panel (b): Predictability regression slopes β_g (solid blue) and β_π (dashed red), defined as $\text{Cov}(\cdot, r)/[\text{Var}(r) + \sigma^2_\nu]$ with measurement-noise variance $\sigma^2_\nu = 0.05$. Growth predictability is large and positive in the growth-dominant regime and smaller in magnitude in the inflation-dominant regime. Inflation predictability is close to zero in the growth-dominant regime and substantially negative in the inflation-dominant regime. Both slopes change sign in a transition region near X^* where λ is close to zero; the empirical sample does not visit this region. Parameters: $\alpha_g = \alpha_\pi = 0.5$, $b_g = -0.3$, $b_\pi = -0.1$, $\sigma^2_\mu = 0.7$, $\beta_d = 3$.

Panel A: Pre-COVID (2004Q1 - 2020Q4)



Panel B: Post-COVID (2021Q1 - 2025Q1)

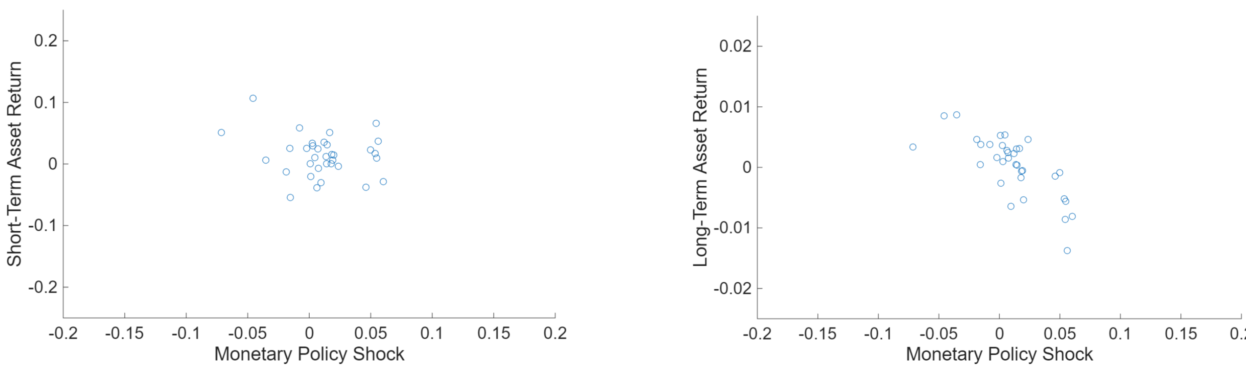
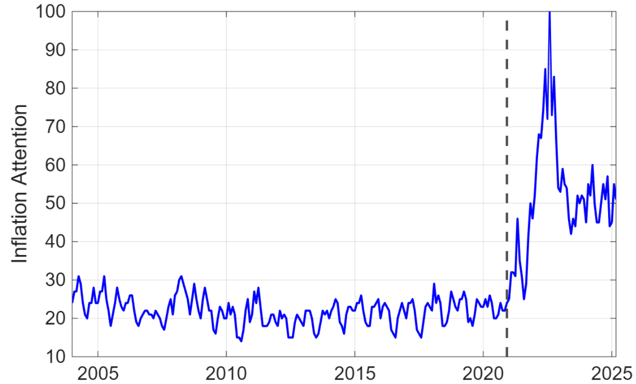
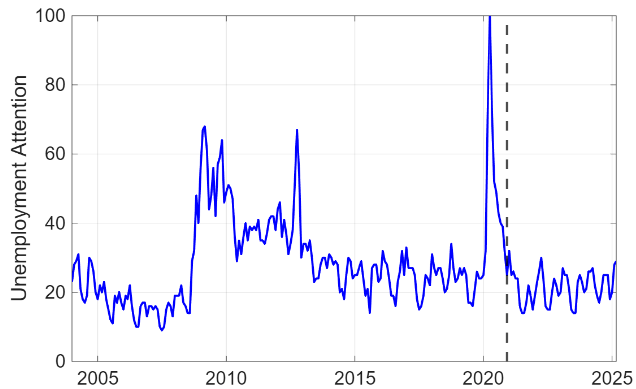


Figure 3: This figure presents scatter plots of short-term asset returns against the monetary policy shocks (left) and of long-term asset returns against monetary policy shocks (right). Panel A is based on the pre-COVID period from January 2004 until December 2020 (135 observations) and Panel B is based on the post-COVID period from January 2021 to March 2025 (35 observations).

Panel A: Search Activity for "Inflation"



Panel B: Search Activity for "Unemployment Rate"



Panel C: Search Activity for "Inflation" / "Unemployment Rate"

Figure 4: This figure plots search activity for "inflation" (Panel A), "unemployment rate" (Panel B), and the ratio of search activity for "inflation" and "unemployment rate" (Panel C). The period is from January 2004 to March 2025.

Table 1: Summary Statistics and Pairwise Correlations

	Summary Statistics				Pairwise Correlations		
	N	Mean	Median	Std. Dev.	MPS	STA	LTA
Panel A: Full period (2004Q1–2025Q1)							
Monetary Policy Shock (MPS)	169	0.41	0.59	2.77	1		
Short-Term Asset Return (STA)	169	0.50	0.21	3.31	0.22	1	
Long-term Asset Return (LTA)	169	0.08	0.09	0.54	-0.54	-0.16	1
Panel B: Pre-COVID (2004Q1–2020Q4)							
Monetary Policy Shock (MPS)	135	0.23	0.45	2.71	1		
Short-Term Asset Return (STA)	135	0.29	0.06	3.29	0.32	1	
Long-term Asset Return (LTA)	135	0.09	0.08	0.55	-0.49	-0.22	1
Panel C: Post-COVID (2021Q1–2025Q1)							
Monetary Policy Shock (MPS)	34	1.10	1.09	2.94	1		
Short-Term Asset Return (STA)	34	1.34	1.32	3.28	-0.20	1	
Long-term Asset Return (LTA)	34	0.03	0.12	0.50	-0.73	0.11	1

Notes: This table reports summary statistics and pairwise correlations for monetary policy surprises and asset announcement returns around scheduled FOMC announcements. The monetary policy surprises are from Acosta et al. (2025) (the statement shock). The short-term asset return is the log return on a 180-day dividend strip estimated from S&P 500 index options. The long-term asset return is the log return on the S&P 500 index. The monetary policy shock is expressed in basis points; short-term and long-term asset returns are expressed in percent.

Table 2: Asset Announcement Returns on Monetary Policy Surprises

	STA	LTA
Panel A: Full period (2004Q1–2025Q1)		
MPS	0.261	-0.104
(t-stat)	(2.90)	(-8.25)
Adj. R^2	0.042	0.285
N	169	169
Panel B: Pre-COVID (2004Q1–2020Q4)		
MPS	0.383	-0.099
(t-stat)	(3.83)	(-6.50)
Adj. R^2	0.093	0.235
N	135	135
Panel C: Post-COVID (2021Q1–2025Q1)		
MPS	-0.227	-0.124
(t-stat)	(-1.18)	(-6.12)
[t.stat-Diff.]	[-2.87]	[-0.80]
Adj. R^2	0.011	0.525
N	34	34

Notes: This table reports regressions of asset announcement returns on monetary policy surprises: $r_t^j = \alpha + \beta \cdot \text{MPS}_t + \epsilon_t$. STA is the short-term asset (180-day dividend strip) return, LTA is the long-term asset (S&P 500) return. t-statistics based on OLS standard errors are reported in parentheses. t-statistics for the difference in coefficients across periods (from a pooled regression with interactions) are reported in brackets.

Table 3: Regime Change in Asset Response

	Main	Winsorize	GMM	Bid-ask	Mid 2020	Mid 2021	Non-zero
MPS	0.383	0.290	0.383	0.425	0.384	0.382	0.388
(t-stat)	(3.80)	(3.98)	(5.09)	(4.30)	(3.80)	(3.80)	(4.00)
Post	0.014	0.011	0.014	0.011	0.011	0.015	0.017
(t-stat)	(2.18)	(2.43)	(1.98)	(1.78)	(1.83)	(2.30)	(2.48)
MPS × Post	-0.610	-0.442	-0.610	-0.714	-0.595	-0.614	-0.612
(t-stat)	(-2.87)	(-2.88)	(-2.49)	(-3.42)	(-2.80)	(-2.89)	(-3.11)
Bid-ask				0.884			
(t-stat)				(3.20)			
Adj. R^2	0.087	0.098	0.087	0.135	0.080	0.089	0.155
N	169	169	169	169	169	169	108

Notes: This table reports regressions of asset announcement returns on monetary policy surprises with a post-COVID interaction: $r_t^j = \alpha + \beta_1 \cdot \text{MPS}_t + \beta_2 \cdot \mathbf{1}_{\text{Post}} + \beta_3 \cdot (\text{MPS}_t \times \mathbf{1}_{\text{Post}}) + \epsilon_t$. Post is an indicator equal to one for FOMC announcements from 2021Q1 onward. The first column collects the main results. The second column winsorizes short-term asset returns at the 5 percent level. The third column uses heteroscedasticity-consistent GMM standard errors. The fourth column controls for the average bid–ask spread. The next two columns redefine the POST dummy variable so that the post-period starts in either June 2020 or June 2021 (rather than in January 2021). The last column reports results for FOMC announcements with non-zero changes in first maturity futures. t-statistics based on OLS standard errors are reported in parentheses.

Table 4: Inflation Predictability

	CPI Inflation			
	$k = 1$	$k = 2$	$k = 3$	$k = 4$
Panel A: Pre-COVID (2004Q1–2020Q4)				
STA	-0.013	0.028	0.045	0.011
(t-stat)	(-0.43)	(0.86)	(0.96)	(0.22)
Adj. R^2	-0.006	-0.003	0.004	-0.007
N	135	135	135	135
Panel B: Post-COVID (2021Q1–2025Q1)				
STA	-0.291	-0.327	-0.273	-0.215
(t-stat)	(-2.28)	(-2.48)	(-3.07)	(-3.19)
[t-stat-Diff]	[-2.12]	[-2.62]	[-3.18]	[-2.80]
Adj. R^2	0.16	0.18	0.10	0.05
N	32	30	28	26

Notes: This table reports predictive regressions of future CPI inflation on the short-term asset announcement return: $\pi_{t+k} = \alpha + \beta \cdot \text{STA}_t + \epsilon_{t+k}$. CPI inflation is measured as the year-over-year log change in the Consumer Price Index. k denotes the forecast horizon in quarters. t-statistics based on Newey-West standard errors with $k+1$ lags are reported in parentheses. t-statistics for the difference in coefficients across periods (from a pooled regression with interactions) are reported in brackets.

Table 5: Regime Change in Inflation Predictability

	CPI Inflation			
	$k=1$	$k=2$	$k=3$	$k=4$
Panel A: Full sample				
STA	-0.013	0.028	0.045	0.011
(t-stat)	(-0.43)	(0.86)	(0.96)	(0.22)
Post	0.032	0.032	0.030	0.027
(t-stat)	(4.84)	(4.18)	(3.53)	(2.95)
STA × Post	-0.278	-0.354	-0.318	-0.226
(t-stat)	(-2.12)	(-2.62)	(-3.18)	(-2.80)
Adj. R^2	0.392	0.367	0.316	0.239
N	167	165	163	161
Panel B: Non-zero first maturity shock				
STA	-0.011	0.027	0.131	0.090
(t-stat)	(-0.19)	(0.51)	(2.48)	(1.41)
Post	0.035	0.032	0.030	0.024
(t-stat)	(4.45)	(3.86)	(3.64)	(3.11)
STA × Post	-0.308	-0.371	-0.406	-0.256
(t-stat)	(-2.09)	(-2.70)	(-4.45)	(-3.40)
Adj. R^2	0.422	0.344	0.342	0.221
N	107	106	105	105
Panel C: Additional control variables				
STA	-0.036	0.002	0.045	0.038
(t-stat)	(-1.20)	(0.05)	(1.08)	(0.82)
Post	0.032	0.031	0.029	0.027
(t-stat)	(4.83)	(4.01)	(3.35)	(3.00)
STA × Post	-0.238	-0.293	-0.315	-0.281
(t-stat)	(-1.72)	(-2.08)	(-3.25)	(-3.44)
MPS	0.000	0.055	0.042	-0.038
(t-stat)	(-0.01)	(1.00)	(0.73)	(-0.65)
LTA	-0.662	-0.360	0.370	0.639
(t-stat)	(-1.86)	(-1.03)	(1.18)	(1.55)
ΔIV	-0.368	-0.324	0.839	1.671
(t-stat)	(-0.63)	(-0.49)	(1.59)	(2.35)
Adj. R^2	0.405	0.373	0.312	0.255
N	167	165	163	161

Notes: This table reports predictive regressions of future CPI inflation on the short-term asset announcement return with a post-COVID interaction: $\pi_{t+k} = \alpha + \beta_1 \cdot \text{STA}_t + \beta_2 \cdot \mathbf{1}_{\text{Post}} + \beta_3 \cdot (\text{STA}_t \times \mathbf{1}_{\text{Post}}) + \epsilon_t$. Post is an indicator equal to one for FOMC announcements from 2021Q1 onward. Panel A reports results for the full sample. Panel B repeats the results using only monetary policy shocks with non-zero changes in first-maturity federal funds futures. Panel C adds control variables for the monetary policy shock (MPS), long-term asset return (LTA) and change in implied volatility. t-statistics based on Newey-West standard errors with $k+1$ lags are reported in parentheses.

Table 6: Dividend Growth Predictability

	Dividend Growth			
	$k = 1$	$k = 2$	$k = 3$	$k = 4$
Panel A: Pre-COVID (2004Q1–2020Q4)				
STA	0.381	0.416	0.434	0.590
(t-stat)	(1.98)	(1.86)	(1.45)	(1.58)
Adj. R^2	0.012	0.016	0.018	0.039
N	135	135	135	135
Panel B: Post-COVID (2021Q1–2025Q1)				
STA	0.113	0.126	0.183	0.1185
(t.stat)	(0.60)	(1.25)	(1.90)	(1.41)
[t.stat-Diff]	[-1.01]	[-1.18]	[-0.80]	[-1.23]
Adj. R^2	-0.01	0.00	0.04	-0.01
N	32	30	28	26

Notes: This table reports predictive regressions of future dividend growth on the short-term asset announcement return: $g_{t+k} = \alpha + \beta \cdot \text{STA}_t + \epsilon_{t+k}$. Dividend growth is measured as the year-over-year log change in S&P 500 dividends. k denotes the forecast horizon in quarters. t-statistics based on Newey-West standard errors with $k + 1$ lags are reported in parentheses. The t-statistic for the difference in coefficients across periods is reported in brackets.

Table 7: Regime Change in Dividend Growth Predictability

	Dividend Growth			
	$k=1$	$k=2$	$k=3$	$k=4$
Panel A: Full sample				
STA	0.381	0.416	0.434	0.590
(t-stat)	(1.98)	(1.86)	(1.45)	(1.58)
Post	-0.029	-0.023	-0.024	-0.022
(t-stat)	(-2.02)	(-1.48)	(-1.40)	(-1.16)
STA × Post	-0.269	-0.290	-0.251	-0.471
(t-stat)	(-1.01)	(-1.18)	(-0.80)	(-1.23)
Adj. R^2	0.019	0.016	0.018	0.037
N	167	165	163	161
Panel B: Non-zero first maturity shock				
STA	0.560	0.712	0.746	1.038
(t-stat)	(2.09)	(2.45)	(1.62)	(1.88)
Post	-0.027	-0.020	-0.021	-0.009
(t-stat)	(-1.76)	(-1.16)	(-1.00)	(-0.36)
STA × Post	-0.585	-0.602	-0.574	-0.873
(t-stat)	(-1.80)	(-1.95)	(-1.19)	(-1.54)
Adj. R^2	0.033	0.042	0.030	0.058
N	107	106	105	105
Panel C: Additional control variables				
STA	0.183	0.262	0.293	0.467
(t-stat)	(0.99)	(1.30)	(1.08)	(1.36)
Post	-0.033	-0.030	-0.031	-0.032
(t-stat)	(-2.44)	(-1.86)	(-1.91)	(-1.79)
STA × Post	0.116	0.084	0.052	-0.199
(t-stat)	(0.42)	(0.25)	(0.14)	(-0.51)
MPS	0.452	0.562	0.540	0.630
(t-stat)	(1.19)	(1.59)	(1.60)	(2.05)
LTA	-2.842	-0.447	-0.078	1.424
(t-stat)	(-1.10)	(-0.19)	(-0.03)	(0.53)
ΔIV	-5.909	-2.306	-0.704	2.984
(t-stat)	(-1.93)	(-0.80)	(-0.23)	(0.78)
Adj. R^2	0.048	0.029	0.027	0.058
N	167	165	163	161

Notes: This table reports predictive regressions of future dividend growth on the short-term asset announcement return with a post-COVID interaction: $g_{t+k} = \alpha + \beta_1 \cdot \text{STA}_t + \beta_2 \cdot \mathbf{1}_{\text{Post}} + \beta_3 \cdot (\text{STA}_t \times \mathbf{1}_{\text{Post}}) + \epsilon_t$. Post is an indicator equal to one for FOMC announcements from 2021Q1 onward. Panel A reports results for the full sample. Panel B repeats the results using only monetary policy shocks with non-zero changes in first-maturity federal funds futures. Panel C adds control variables for the monetary policy shock (MPS), long-term asset return (LTA) and change in implied volatility. t-statistics based on Newey-West standard errors with $k+1$ lags are reported in parentheses.

Table 8: Transition Between Periods in Asset Response

	STA	LTA
Panel A: Attention to Inflation		
MPS	0.714	-0.093
	(3.68)	(-3.37)
InfAtt	0.032	0.002
	(1.61)	(0.73)
MPS × InfAtt	-1.514	-0.038
	(-2.68)	(-0.47)
Adj. R^2	0.074	0.279
N	169	169
Panel B: Attention to Inflation / Unemployment		
MPS	0.515	-0.083
	(3.11)	(-3.56)
InfAtt/EmpAtt	0.006	0.000
	(1.67)	(0.85)
MPS × InfAtt/UnempAtt	-0.197	-0.016
	(-1.92)	(-1.10)
Adj. R^2	0.057	0.283
N	169	169

Notes: This table reports regressions of asset announcement returns on monetary policy surprises with interactions for attention measures: $r_t^j = \alpha + \beta_1 \cdot \text{MPS}_t + \beta_2 \cdot \text{Att} + \beta_3 \cdot (\text{MPS}_t \times \text{Att}) + \epsilon_t$. Att is attention to inflation in Panel A (InfAtt) or the ratio of attention to inflation over attention to unemployment in Panel B (InfAtt/UnempAtt). t-statistics based on OLS standard errors are reported in parentheses.

Table 9: Transition Between Periods in Inflation Predictability

	CPI Inflation			
	k=1	k=2	k=3	k=4
Panel A: Attention to Inflation				
STA	0.191	0.261	0.252	0.106
	(1.84)	(2.29)	(2.21)	(1.02)
InfAtt	0.094	0.080	0.059	0.041
	(5.36)	(4.21)	(3.43)	(2.93)
STA × InfAtt	-0.850	-0.991	-0.872	-0.408
	(-1.98)	(-2.23)	(-2.24)	(-1.27)
Adj. R^2	0.359	0.239	0.126	0.046
N	167	165	163	161
Panel B: Attention to Inflation / Employment				
STA	0.175	0.200	0.138	-0.013
	(2.51)	(2.20)	(1.34)	(-0.13)
InfAtt/EmpAtt	0.018	0.015	0.011	0.006
	(6.72)	(4.40)	(2.89)	(1.72)
STA × InfAtt/UnempAtt	-0.183	-0.178	-0.105	0.006
	(-2.83)	(-2.01)	(-1.10)	(0.06)
Adj. R^2	0.491	0.337	0.160	0.053
N	167	165	163	161

Notes: This table reports predictive regressions of future CPI inflation on the short-term asset announcement return with interactions for attention measures: $\pi_{t+k} = \alpha + \beta_1 \cdot \text{STA}_t + \beta_2 \cdot \text{Att} + \beta_3 \cdot (\text{STA}_t \times \text{Att}) + \epsilon_t$. Att is attention to inflation in Panel A (InfAtt) or the ratio of attention to inflation over attention to unemployment in Panel B (InfAtt/UnempAtt). t-statistics based on Newey-West standard errors with $k+1$ lags are reported in parentheses.

Table 10: Inflation Predictability: Statement vs. Press Conference Windows

	CPI Inflation			
	$k = 1$	$k = 2$	$k = 3$	$k = 4$
Panel A: Statement Window				
STA	-0.228	-0.239	-0.244	-0.230
	(-2.27)	(-2.72)	(-4.31)	(-3.58)
Adj. R^2	0.10	0.11	0.11	0.10
N	32	30	28	26
Panel B: Press Conference Window				
STA	-0.115	0.034	0.001	0.202
	(-0.71)	(0.23)	(0.00)	(1.20)
Adj. R^2	-0.01	-0.03	-0.04	0.00
N	32	30	28	26

Notes: This table reports predictive regressions of future CPI inflation on short-term asset announcement returns measured in different windows around FOMC announcements. Panel A uses returns measured in the statement window (30 minutes around the 2:00 PM announcement). Panel B uses returns measured in the press conference window (Chair's remarks and Q&A, typically beginning at 2:30 PM). Sample covers the post-COVID period (2021Q1–2025Q1). t-statistics based on Newey-West standard errors with $k+1$ lags are reported in parentheses.

Table 11: Inflation Predictability Using SHV

	CPI Inflation			
	$k = 1$	$k = 2$	$k = 3$	$k = 4$
SHV	-63.84	-50.28	9.53	16.06
	(-2.54)	(-1.96)	(0.35)	(0.63)
Adj. R^2	0.019	-0.004	-0.038	-0.039
N	32	30	28	26

Notes: This table reports predictive regressions of future CPI inflation on the short-term Treasury bonds return: $\pi_{t+k} = \alpha + \beta \cdot \text{SHV}_t + \epsilon_{t+k}$. CPI inflation is measured as the year-over-year log change in the Consumer Price Index. k denotes the forecast horizon in quarters. t-statistics based on Newey-West standard errors with $k + 1$ lags are reported in parentheses.

A Framework Derivations

This appendix provides complete derivations of all key results in the three-shock monetary policy framework. We proceed step-by-step, carefully tracking the algebra to ensure the critical terms are preserved.

A.1 Solving the Policy Rule for the MPS

The central bank follows the policy rule:

$$\hat{\iota}_{\bar{t}} = \rho_\iota \hat{\iota}_{\overline{t-1}} + \alpha_g \mathbb{E}^{cb}_{\bar{t}}[g_{\underline{t+1}}] + \alpha_\pi \mathbb{E}^{cb}_{\bar{t}}[\pi_{\underline{t+1}}] + \mu_{\bar{t}} \tag{31}$$

The central bank observes the information shocks at time $\bar{t}$:

$$\mathbb{E}^{cb}_{\bar{t}}[g_{\underline{t+1}}] = \rho_g g_{\underline{t}} + b_g \hat{\iota}_{\bar{t}} + \epsilon_{g,\bar{t}} \tag{32}$$

$$\mathbb{E}^{cb}_{\bar{t}}[\pi_{\underline{t+1}}] = \rho_\pi \pi_{\underline{t}} + b_\pi \hat{\iota}_{\bar{t}} + \epsilon_{\pi,\bar{t}} \tag{33}$$

Let $c_t = \alpha_g(\rho_g g_{\underline{t}} + \epsilon_{g,\bar{t}}) + \alpha_\pi(\rho_\pi \pi_{\underline{t}} + \epsilon_{\pi,\bar{t}}) + \mu_{\bar{t}}$ be the composite exogenous component. Then:

$$\hat{\iota}_{\bar{t}} = \rho_\iota \hat{\iota}_{\overline{t-1}} + (\alpha_g b_g + \alpha_\pi b_\pi)\hat{\iota}_{\bar{t}} + c_t \tag{34}$$

Solving for $\hat{\iota}_{\bar{t}}$:

$$\hat{\iota}_{\bar{t}}[1 - (\alpha_g b_g + \alpha_\pi b_\pi)] = \rho_\iota \hat{\iota}_{\overline{t-1}} + c_t \tag{35}$$

$$\hat{\iota}_{\bar{t}} = \frac{\rho_\iota}{1 - (\alpha_g b_g + \alpha_\pi b_\pi)} \hat{\iota}_{\overline{t-1}} + \frac{1}{1 - (\alpha_g b_g + \alpha_\pi b_\pi)} c_t \tag{36}$$

The monetary policy surprise is the unexpected component of the interest rate change:

$$\Delta\hat{\iota}^s = \hat{\iota}_{\bar{t}} - \mathbb{E}^i_{\underline{t}}[\hat{\iota}_{\bar{t}}] \tag{37}$$

$$= \frac{1}{1 - (\alpha_g b_g + \alpha_\pi b_\pi)}[c_t - \mathbb{E}^i_{\underline{t}}[c_t]] \tag{38}$$

The unexpected component of c_t comes from the new information shocks and policy shocks:

$$c_t - \mathbb{E}^i_{\underline{t}}[c_t] = \alpha_g \epsilon_{g,\bar{t}} + \alpha_\pi \epsilon_{\pi,\bar{t}} + \mu_{\bar{t}} \equiv S_{\bar{t}} \tag{39}$$

Define $\theta = \frac{1}{1-(\alpha_g b_g + \alpha_\pi b_\pi)}$. Since both $b_g < 0$ and $b_\pi < 0$, we have:

$$1 - (\alpha_g b_g + \alpha_\pi b_\pi) = 1 + |\alpha_g b_g| + |\alpha_\pi b_\pi| > 1 \tag{40}$$

Therefore $\theta \in (0, 1)$, representing **damping**, not amplification.

$$\Delta\hat{\iota}^s = \theta S, \quad \text{where} \quad S = \alpha_g \epsilon_g + \alpha_\pi \epsilon_\pi + \mu \tag{41}$$

A.2 Properties of θ

From the definition $\theta = \frac{1}{1-\alpha_g b_g - \alpha_\pi b_\pi}$, we can rearrange:

$$\theta[1 - \alpha_g b_g - \alpha_\pi b_\pi] = 1 \tag{42}$$

$$\theta - \theta\alpha_g b_g - \theta\alpha_\pi b_\pi = 1 \tag{43}$$

$$\theta(1 - \alpha_g b_g - \alpha_\pi b_\pi) = 1 \tag{44}$$

This identity will be used repeatedly in the surprise derivations.

A.3 Bayesian Updating with Projection Theorem

The market observes $S = \alpha_g \epsilon_g + \alpha_\pi \epsilon_\pi + \mu$, where:

$$\epsilon_g \sim \mathcal{N}(0, \sigma^2_{\epsilon_g}) \tag{45}$$

$$\epsilon_\pi \sim \mathcal{N}(0, \sigma^2_{\epsilon_\pi}) \tag{46}$$

$$\mu \sim \mathcal{N}(0, \sigma^2_\mu) \tag{47}$$

The variance of S is:

$$\sigma_S^2 = \mathrm{Var}(S) = \alpha_g^2 \sigma^2_{\epsilon_g} + \alpha_\pi^2 \sigma^2_{\epsilon_\pi} + \sigma^2_\mu \tag{48}$$

By the projection theorem (best linear predictor in the Gaussian setting), the conditional expectation of ϵ_g given S is:

$$\mathbb{E}[\epsilon_g | S] = \frac{\mathrm{Cov}(\epsilon_g, S)}{\mathrm{Var}(S)} S = \frac{\alpha_g \sigma^2_{\epsilon_g}}{\sigma_S^2} S \tag{49}$$

Similarly:

$$\mathbb{E}[\epsilon_\pi | S] = \frac{\alpha_\pi \sigma^2_{\epsilon_\pi}}{\sigma_S^2} S \tag{50}$$

$$\mathbb{E}[\mu | S] = \frac{\sigma^2_\mu}{\sigma_S^2} S \tag{51}$$

The reconstruction identity verifies:

$$\alpha_g \mathbb{E}[\epsilon_g | S] + \alpha_\pi \mathbb{E}[\epsilon_\pi | S] + \mathbb{E}[\mu | S] = \left(\frac{\alpha_g^2 \sigma^2_{\epsilon_g} + \alpha_\pi^2 \sigma^2_{\epsilon_\pi} + \sigma^2_\mu}{\sigma_S^2} \right) S \tag{52}$$

$$= S \quad \checkmark \tag{53}$$

A.4 Growth Expectation Revision and Predictability

The realized growth rate in period $\underline{t+1}$ is:

$$g_{\underline{t+1}} = \rho_g g_{\underline{t}} + b_g \hat{\imath}_{\bar{t}} + \epsilon_{g,\bar{t}} + w_{\underline{t+1}} \tag{54}$$

The market's pre-announcement expectation of next-period growth (formed at time $\underline{t}$, before the policy announcement) is:

$$\mathbb{E}^i_{\underline{t}}[g_{\underline{t+1}}] = \rho_g g_{\underline{t}} + b_g \mathbb{E}^i_{\underline{t}}[\hat{\imath}_{\bar{t}}] \tag{55}$$

since neither the information shock $\epsilon_{g,\bar{t}}$ nor the public shock $w_{\underline{t+1}}$ is known before the announcement: $\mathbb{E}_{\underline{t}}[\epsilon_{g,\bar{t}}] = 0$ and $\mathbb{E}[w_{\underline{t+1}}] = 0$.

After observing the MPS $\Delta\hat{\imath}^s = \theta S$, the market updates its growth expectation using the Bayesian extraction from A.3:

$$\mathbb{E}^i_{\bar{t}}[g_{\underline{t+1}}] = \rho_g g_{\underline{t}} + b_g \hat{\imath}_{\bar{t}} + \mathbb{E}[\epsilon_{g,\bar{t}}|S] \tag{56}$$

The growth expectation revision from pre- to post-announcement is:

$$\Delta_{\bar{t}}\mathbb{E}^i[g_{\underline{t+1}}] = \mathbb{E}^i_{\bar{t}}[g_{\underline{t+1}}] - \mathbb{E}^i_{\underline{t}}[g_{\underline{t+1}}] \tag{57}$$

$$= b_g \left(\hat{\imath}_{\bar{t}} - \mathbb{E}^i_{\underline{t}}[\hat{\imath}_{\bar{t}}]\right) + \mathbb{E}[\epsilon_{g,\bar{t}}|S] \tag{58}$$

$$= b_g \Delta\hat{\imath}^s + \mathbb{E}[\epsilon_g|S] \tag{59}$$

The first term reflects the conventional contractionary effect of the rate change on growth ($b_g < 0$); the second is the market's extraction of the growth information shock from the composite signal.

We also define the *pre-announcement innovation* in realized growth, which captures all variation attributable to the policy announcement:

$$\tilde{g}_{\underline{t+1}} \equiv b_g \Delta \hat{\iota}^s_{\bar{t}} + \epsilon_{g,\bar{t}} + w_{\underline{t+1}} \tag{60}$$

This object is the relevant dependent variable for predictability regressions (see A.8), since the predetermined components $\rho_g g_{\underline{t}}$ are uncorrelated with the announcement return.

The post-announcement forecast error measures the gap between realized growth and the market's updated expectation:

$$g_{\underline{t+1}} - \mathbb{E}^i_{\bar{t}}[g_{\underline{t+1}}] = [\rho_g g_{\underline{t}} + b_g \hat{\iota}_{\bar{t}} + \epsilon_g + w] - [\rho_g g_{\underline{t}} + b_g \hat{\iota}_{\bar{t}} + \mathbb{E}[\epsilon_g|S]] \tag{61}$$

$$= \epsilon_g - \mathbb{E}[\epsilon_g|S] + w \tag{62}$$

Substituting $\mathbb{E}[\epsilon_g|S] = \frac{\alpha_g \sigma^2_{\epsilon_g}}{\sigma^2_S} S$ and expanding $S = \alpha_g \epsilon_g + \alpha_\pi \epsilon_\pi + \mu$:

$$g_{\underline{t+1}} - \mathbb{E}^i_{\bar{t}}[g_{\underline{t+1}}] = \epsilon_g \left(1 - \frac{\alpha_g^2 \sigma^2_{\epsilon_g}}{\sigma^2_S}\right) - \frac{\alpha_g \alpha_\pi \sigma^2_{\epsilon_g}}{\sigma^2_S} \epsilon_\pi - \frac{\alpha_g \sigma^2_{\epsilon_g}}{\sigma^2_S} \mu + w \tag{63}$$

Using $1 - \frac{\alpha_g^2 \sigma^2_{\epsilon_g}}{\sigma^2_S} = \frac{\alpha_\pi^2 \sigma^2_{\epsilon_\pi} + \sigma^2_\mu}{\sigma^2_S}$:

$$g_{\underline{t+1}} - \mathbb{E}^i_{\bar{t}}[g_{\underline{t+1}}] = \frac{1}{\sigma^2_S} \left[\epsilon_g (\alpha_\pi^2 \sigma^2_{\epsilon_\pi} + \sigma^2_\mu) - \alpha_g \alpha_\pi \sigma^2_{\epsilon_g} \epsilon_\pi - \alpha_g \sigma^2_{\epsilon_g} \mu\right] + w \tag{64}$$

This forecast error is by construction orthogonal to the return $r_{\bar{t}}$: it reflects the component of growth that the market could *not* predict from the MPS. When the signal S contains inflation and policy noise, the market's extraction $\mathbb{E}[\epsilon_g|S]$ is imperfect, and the forecast error captures this learning error. In the limiting case where $S = \epsilon_g$ only (i.e., $\alpha_\pi = 0$ and $\sigma^2_\mu = 0$), the extraction is perfect and the forecast error reduces to w alone.

A.5 Inflation Forecast Error

By parallel reasoning to A.4, the inflation post-announcement forecast error is:

$$\pi_{\underline{t+1}} - \mathbb{E}^i_{\bar{t}}[\pi_{\underline{t+1}}] = [\rho_\pi \pi_{\underline{t}} + b_\pi \hat{\imath}_{\bar{t}} + \epsilon_\pi + \eta] - [\rho_\pi \pi_{\underline{t}} + b_\pi \hat{\imath}_{\bar{t}} + \mathbb{E}[\epsilon_\pi | S]] \tag{65}$$

$$= \epsilon_\pi - \frac{\alpha_\pi \sigma^2_{\epsilon_\pi}}{\sigma^2_S} S + \eta \tag{66}$$

Expanding:

$$\pi_{\underline{t+1}} - \mathbb{E}^i_{\bar{t}}[\pi_{\underline{t+1}}] = \frac{1}{\sigma^2_S} \left[-\alpha_g \alpha_\pi \sigma^2_{\epsilon_\pi} \epsilon_g + \epsilon_\pi (\alpha_g^2 \sigma^2_{\epsilon_g} + \sigma^2_\mu) - \alpha_\pi \sigma^2_{\epsilon_\pi} \mu \right] + \eta \tag{67}$$

A.6 Return Expression Derivation

The return on a short-term equity strip comprises discount rate and cash flow channels:

$$r_{\bar{t}} = -\Delta \hat{\imath}^s + \beta_d \cdot \Delta_{\bar{t}} \mathbb{E}^i[g_{\underline{t+1}}] \tag{68}$$

From A.4:

$$\Delta_{\bar{t}} \mathbb{E}^i[g_{\underline{t+1}}] = b_g \Delta \hat{\imath}^s + \mathbb{E}[\epsilon_g | S] \tag{69}$$

Substituting:

$$r_{\bar{t}} = -\Delta \hat{\imath}^s + \beta_d \left(b_g \Delta \hat{\imath}^s + \mathbb{E}[\epsilon_g | S] \right) \tag{70}$$

Factoring:

$$r_{\bar{t}} = (-1 + \beta_d b_g) \Delta \hat{\imath}^s + \beta_d \mathbb{E}[\epsilon_g | S] \tag{71}$$

Substituting $\Delta \hat{\imath}^s = \theta S$ and $\mathbb{E}[\epsilon_g | S] = \frac{\alpha_g \sigma^2_{\epsilon_g}}{\sigma^2_S} S$:

$$r_{\bar{t}} = \left[(-1 + \beta_d b_g)\theta + \beta_d \frac{\alpha_g \sigma^2_{\epsilon_g}}{\sigma^2_S} \right] S \tag{72}$$

Writing $r_{\bar{t}} = \lambda \cdot \Delta\hat{\imath}^s$, the MPS loading coefficient (the coefficient on $\Delta\hat{\imath}^s$) is:

$$\lambda = (-1 + \beta_d b_g) + \frac{\beta_d \alpha_g \sigma_{\epsilon_g}^2}{\theta \sigma_S^2} \tag{73}$$

Note that the coefficient on S in Eq. (72) is $A = \lambda\theta$, since $\Delta\hat{\imath}^s = \theta S$.

A.7 Variance of Return

$$\text{Var}(r) = \left[(-1 + \beta_d b_g)\theta + \beta_d \frac{\alpha_g \sigma_{\epsilon_g}^2}{\sigma_S^2}\right]^2 \sigma_S^2 \tag{74}$$

Denoting $A = (-1 + \beta_d b_g)\theta + \beta_d \frac{\alpha_g \sigma_{\epsilon_g}^2}{\sigma_S^2} = \lambda\theta$ (the coefficient on S), this simplifies to:

$$\text{Var}(r) = \lambda^2 \theta^2 \sigma_S^2 \tag{75}$$

A.8 Growth Predictability Regression Coefficient

Consider the regression of realized next-period growth on the announcement return:

$$g_{\underline{t+1}} = a + \beta_g \cdot r_{\bar{t}} + u \tag{76}$$

The slope coefficient is:

$$\beta_g = \frac{\text{Cov}(g_{\underline{t+1}}, r_{\bar{t}})}{\text{Var}(r_{\bar{t}})} \tag{77}$$

From A.6, $r_{\bar{t}} = A \cdot S$ where $A = (-1 + \beta_d b_g)\theta + \beta_d \frac{\alpha_g \sigma_{\epsilon_g}^2}{\sigma_S^2}$. Since $A = \lambda\theta$ (where λ is the MPS loading from Eq. 73), we have $\text{Var}(r) = A^2 \sigma_S^2 = \lambda^2 \theta^2 \sigma_S^2$.

The realized growth rate is $g_{\underline{t+1}} = \rho_g g_{\underline{t}} + b_g \hat{\imath}_{\bar{t}} + \epsilon_{g,\bar{t}} + w_{\underline{t+1}}$. The predetermined component $\rho_g g_{\underline{t}}$ is uncorrelated with S, and the public shock $w_{\underline{t+1}}$ is independent of S. Writing $\hat{\imath}_{\bar{t}} = \text{predetermined} + \theta S$, the components of $g_{\underline{t+1}}$ correlated with S are:

$$b_g \theta S + \epsilon_{g,\bar{t}} \tag{78}$$

The covariance with the return is:

$$\text{Cov}(g_{\underline{t+1}}, r_{\bar{t}}) = \text{Cov}(b_g\theta S + \epsilon_g, A \cdot S) \tag{79}$$

$$= A\left[b_g\theta\,\text{Var}(S) + \text{Cov}(\epsilon_g, S)\right] \tag{80}$$

$$= A\left[b_g\theta\sigma_S^2 + \alpha_g\sigma_{\epsilon_g}^2\right] \tag{81}$$

where $\text{Cov}(\epsilon_g, S) = \text{Cov}(\epsilon_g, \alpha_g\epsilon_g + \alpha_\pi\epsilon_\pi + \mu) = \alpha_g\sigma_{\epsilon_g}^2$.

The regression coefficient is:

$$\beta_g = \frac{A(b_g\theta\sigma_S^2 + \alpha_g\sigma_{\epsilon_g}^2)}{A^2\sigma_S^2} = \frac{b_g\theta\sigma_S^2 + \alpha_g\sigma_{\epsilon_g}^2}{\lambda\theta\sigma_S^2} \tag{82}$$

The numerator $b_g\theta\sigma_S^2 + \alpha_g\sigma_{\epsilon_g}^2$ reflects the net effect of the composite signal S on realized growth: the conventional contractionary channel ($b_g\theta\sigma_S^2 < 0$) and the direct growth information ($\alpha_g\sigma_{\epsilon_g}^2 > 0$). It is convenient to write the numerator as $\theta\sigma_S^2 \cdot \Gamma_g$ with

$$\Gamma_g \equiv b_g + \frac{\alpha_g\sigma_{\epsilon_g}^2}{\theta\sigma_S^2}, \tag{83}$$

so that the MPS loading takes the compact form $\lambda = -1 + \beta_d\Gamma_g$ and the predictability slope simplifies to

$$\beta_g = \frac{\Gamma_g}{\lambda} = \frac{\Gamma_g}{-1 + \beta_d\Gamma_g}. \tag{84}$$

The sign of β_g depends on the signs of Γ_g and λ, which cross zero at different values of $X = \sigma_{\epsilon_\pi}^2/\sigma_{\epsilon_g}^2$. Three regions arise:

- *Growth-dominant regime* ($\beta_d\Gamma_g > 1$, i.e., $\Gamma_g > 1/\beta_d$): both $\Gamma_g > 0$ and $\lambda > 0$, so $\beta_g > 0$. Higher announcement returns predict stronger subsequent growth, reflecting the market's extraction of the Fed's growth signal.

- *Intermediate region* ($0 < \beta_d\Gamma_g < 1$): $\Gamma_g > 0$ but $\lambda < 0$, so $\beta_g < 0$. This sign flip arises mechanically because the regression scales the covariance by $\text{Var}(r) = \lambda^2\theta^2\sigma_S^2$, which collapses to zero as $\lambda \to 0$. The covariance itself, $\text{Cov}(g, r) = \lambda\theta^2\sigma_S^2 \cdot \Gamma_g$, also approaches zero in this region; the slope is poorly identified rather than economically meaningful.

- *Inflation-dominant regime* ($\Gamma_g < 0$): both $\Gamma_g < 0$ and $\lambda < 0$, so $\beta_g > 0$ but smaller in magnitude than in the growth-dominant case. The growth information channel is too weak to overcome the conventional channel, but the two negative signs in numerator and denominator cancel.

The unregularized slope diverges at $\lambda = 0$. To bound the slope across the transition, we define the regularized version

$$\beta_g^{\text{reg}} \equiv \frac{\text{Cov}(g_{\underline{t+1}}, r_{\bar{t}})}{\text{Var}(r_{\bar{t}}) + \sigma_\nu^2} = \frac{\lambda\theta^2\sigma_S^2 \cdot \Gamma_g}{\lambda^2\theta^2\sigma_S^2 + \sigma_\nu^2}, \tag{85}$$

which is the population regression slope when the return is observed with independent measurement noise of variance $\sigma_\nu^2 \geq 0$. The regularization eliminates the divergence at $\lambda = 0$ but preserves the sign pattern $\text{sign}(\lambda \cdot \Gamma_g)$. Away from the transition region, $\theta^2\sigma_S^2 \cdot \lambda^2 \gg \sigma_\nu^2$ and the regularized and unregularized slopes coincide. Figure 2 plots β_g^{reg} with $\sigma_\nu^2 = 0.05$. The empirical sample sits well into the growth-dominant regime in the pre-COVID period and well into the inflation-dominant regime in the post-COVID period; the data do not visit the intermediate region.

A.9 Inflation Predictability Regression Coefficient

Consider the regression of realized next-period inflation on the announcement return:

$$\pi_{\underline{t+1}} = a + \beta_\pi \cdot r_{\bar{t}} + u \tag{86}$$

By parallel reasoning to A.8, the slope coefficient is:

$$\beta_\pi = \frac{\text{Cov}(\pi_{\underline{t+1}}, r_{\bar{t}})}{\text{Var}(r_{\bar{t}})} \tag{87}$$

The realized inflation rate is $\pi_{\underline{t+1}} = \rho_\pi \pi_{\underline{t}} + b_\pi \hat{\iota}_{\bar{t}} + \epsilon_{\pi,\bar{t}} + \eta_{\underline{t+1}}$. The components correlated with S are $b_\pi \theta S + \epsilon_{\pi,\bar{t}}$, so:

$$\text{Cov}(\pi_{\underline{t+1}}, r_{\bar{t}}) = A\left[b_\pi \theta \sigma_S^2 + \alpha_\pi \sigma_{\epsilon_\pi}^2\right] \tag{88}$$

where $\text{Cov}(\epsilon_\pi, S) = \alpha_\pi \sigma_{\epsilon_\pi}^2$. The regression coefficient is:

$$\beta_\pi = \frac{b_\pi \theta \sigma_S^2 + \alpha_\pi \sigma_{\epsilon_\pi}^2}{\lambda \theta \sigma_S^2} \tag{89}$$

The structure parallels β_g: the numerator $b_\pi \theta \sigma_S^2 + \alpha_\pi \sigma_{\epsilon_\pi}^2 = \theta \sigma_S^2 \cdot \Gamma_\pi$, with

$$\Gamma_\pi \equiv b_\pi + \frac{\alpha_\pi \sigma_{\epsilon_\pi}^2}{\theta \sigma_S^2}, \tag{90}$$

captures the conventional contractionary channel ($b_\pi < 0$) and the direct inflation information ($\alpha_\pi \sigma_{\epsilon_\pi}^2 > 0$). The slope is $\beta_\pi = \Gamma_\pi / \lambda$. In the growth-dominant regime ($\lambda > 0$), Γ_π is small in magnitude when $\sigma_{\epsilon_\pi}^2$ is small, and β_π is correspondingly close to zero. In the inflation-dominant regime ($\lambda < 0$), Γ_π is positive and large because inflation information dominates, making $\beta_\pi < 0$: lower announcement returns predict higher subsequent inflation, consistent with the market correctly extracting the Fed's inflation signal. The same regularization argument from A.8 applies, with $\beta_\pi^{\text{reg}} = \lambda \theta^2 \sigma_S^2 \Gamma_\pi / [\lambda^2 \theta^2 \sigma_S^2 + \sigma_\nu^2]$.

A.10 Condition for Positive MPS Loading

The MPS loading is:

$$\lambda = (-1 + \beta_d b_g) + \frac{\beta_d \alpha_g \sigma_{\epsilon_g}^2}{\theta \sigma_S^2} \tag{91}$$

For $\lambda > 0$:

$$\frac{\beta_d \alpha_g \sigma_{\epsilon_g}^2}{\theta \sigma_S^2} > 1 - \beta_d b_g \tag{92}$$

Rearranging:

$$\beta_d \alpha_g \sigma_{\epsilon_g}^2 > \theta \sigma_S^2 (1 - \beta_d b_g) \tag{93}$$

Recall $\sigma_S^2 = \alpha_g^2 \sigma_{\epsilon_g}^2 + \alpha_\pi^2 \sigma_{\epsilon_\pi}^2 + \sigma_\mu^2$. Dividing both sides by $\theta \alpha_g \sigma_{\epsilon_g}^2$:

$$\frac{\beta_d}{\theta} > \frac{1 - \beta_d b_g}{\alpha_g} \left[\alpha_g^2 + \alpha_\pi^2 \frac{\sigma_{\epsilon_\pi}^2}{\sigma_{\epsilon_g}^2} + \frac{\sigma_\mu^2}{\sigma_{\epsilon_g}^2} \right] \tag{94}$$

Define $X = \frac{\sigma_{\epsilon_\pi}^2}{\sigma_{\epsilon_g}^2}$. Then:

$$\frac{\beta_d}{\theta} > \frac{1 - \beta_d b_g}{\alpha_g} \left[\alpha_g^2 + \alpha_\pi^2 X + \frac{\sigma_\mu^2}{\sigma_{\epsilon_g}^2} \right] \tag{95}$$

At the threshold $\beta_d = \beta_d^*$, equality holds:

$$\beta_d^* \alpha_g = \theta (1 - \beta_d^* b_g) \left(\alpha_g^2 + \alpha_\pi^2 X + \frac{\sigma_\mu^2}{\sigma_{\epsilon_g}^2} \right) \tag{96}$$

Collecting terms in β_d^* and solving explicitly:

$$\beta_d^* = \frac{\theta \left(\alpha_g^2 + \alpha_\pi^2 X + \sigma_\mu^2 / \sigma_{\epsilon_g}^2 \right)}{\alpha_g + b_g \theta \left(\alpha_g^2 + \alpha_\pi^2 X + \sigma_\mu^2 / \sigma_{\epsilon_g}^2 \right)} \tag{97}$$

Noting that $\alpha_g^2 + \alpha_\pi^2 X + \sigma_\mu^2 / \sigma_{\epsilon_g}^2 = \sigma_S^2 / \sigma_{\epsilon_g}^2$, this simplifies to:

$$\beta_d^* = \frac{1}{b_g + \frac{\alpha_g \sigma_{\epsilon_g}^2}{\theta \sigma_S^2}} \tag{98}$$

provided the denominator is positive, i.e., the growth information channel $\alpha_g \sigma_{\epsilon_g}^2 / (\theta \sigma_S^2)$ exceeds the contractionary effect $|b_g|$. As X increases (holding $\sigma_{\epsilon_g}^2 + \sigma_{\epsilon_\pi}^2$ fixed), growth variance shrinks and the denominator decreases. While it remains positive, β_d^* is increasing in X: a larger cash flow sensitivity is needed to sustain positive loadings. At a critical value X_c the denominator reaches zero and $\beta_d^* \to +\infty$, meaning no finite β_d suffices. For $X > X_c$, the denominator is negative and $\lambda < 0$ for all $\beta_d > 0$—the growth information channel is too weak to overcome the discount rate and contractionary channels regardless of cash flow sensitivity.

A.11 Numerical Verification

Using the baseline parameters: $\alpha_g = 0.5$, $\alpha_\pi = 0.5$, $b_g = -0.3$, $b_\pi = -0.1$, $\sigma^2_{\epsilon_g} = 2$, $\sigma^2_{\epsilon_\pi} = 0.1$, $\sigma^2_\mu = 0.7$, $\beta_d = 3$.

Step 1: Compute θ.

$$\theta = \frac{1}{1 - 0.5 \times (-0.3) - 0.5 \times (-0.1)} \tag{99}$$

$$= \frac{1}{1 - (-0.15) - (-0.05)} \tag{100}$$

$$= \frac{1}{1 + 0.15 + 0.05} \tag{101}$$

$$= \frac{1}{1.2} \tag{102}$$

$$= 0.833 \quad \checkmark \tag{103}$$

Step 2: Compute σ^2_S.

$$\sigma^2_S = 0.5^2 \times 2 + 0.5^2 \times 0.1 + 0.7 \tag{104}$$

$$= 0.25 \times 2 + 0.25 \times 0.1 + 0.7 \tag{105}$$

$$= 0.5 + 0.025 + 0.7 \tag{106}$$

$$= 1.225 \tag{107}$$

Step 3: Compute discount rate + conventional channels.

$$(-1+\beta_d b_g) = -1 + 3 \times (-0.3) \tag{108}$$
$$= -1 - 0.9 \tag{109}$$
$$= -1.9 \tag{110}$$

Step 4: Compute information cash flow channel.

$$\frac{\beta_d \alpha_g \sigma^2_{\epsilon_g}}{\theta \sigma^2_S} = \frac{3 \times 0.5 \times 2}{0.833 \times 1.225} \tag{111}$$
$$= \frac{3}{1.021} \tag{112}$$
$$= 2.939 \tag{113}$$

Step 5: Compute MPS loading.

$$\lambda = -1.9 + 2.939 \tag{114}$$
$$= +1.039 \quad \checkmark \text{ (positive, growth-dominant)} \tag{115}$$

For post-COVID parameters: $\sigma^2_{\epsilon_g} = 0.1$, $\sigma^2_{\epsilon_\pi} = 2$, $\beta_d = 3$.

Step 1: $\theta = 0.833$ (unchanged).

Step 2: Compute σ^2_S.

$$\sigma^2_S = 0.5^2 \times 0.1 + 0.5^2 \times 2 + 0.7 \tag{116}$$
$$= 0.025 + 0.5 + 0.7 \tag{117}$$
$$= 1.225 \quad \text{(same as before)} \tag{118}$$

Step 3: Discount rate + conventional channels: -1.9 (unchanged).

Step 4: Compute information cash flow channel.

$$\frac{\beta_d \alpha_g \sigma_{\epsilon_g}^2}{\theta \sigma_S^2} = \frac{3 \times 0.5 \times 0.1}{0.833 \times 1.225} \tag{119}$$

$$= \frac{0.15}{1.021} \tag{120}$$

$$= 0.147 \tag{121}$$

Step 5: Compute MPS loading.

$$\lambda = -1.9 + 0.147 \tag{122}$$

$$= -1.753 \quad \checkmark \text{ (negative, inflation-dominant)} \tag{123}$$

The numerical verification confirms that the framework correctly switches from positive to negative MPS loadings when the regime shifts from growth-dominant ($\sigma_{\epsilon_g}^2 \gg \sigma_{\epsilon_\pi}^2$) to inflation-dominant ($\sigma_{\epsilon_\pi}^2 \gg \sigma_{\epsilon_g}^2$).

A.12 Null Cases

A.12.1 Growth-Information-Only Model ($\sigma_{\epsilon_\pi}^2 = 0$)

When $\sigma_{\epsilon_\pi}^2 = 0$, the inflation process is deterministic given the interest rate, and there is no inflation signal to extract. The composite signal reduces to:

$$S = \alpha_g \epsilon_g + \mu \tag{124}$$

and

$$\sigma_S^2 = \alpha_g^2 \sigma_{\epsilon_g}^2 + \sigma_\mu^2 \tag{125}$$

The MPS loading becomes:

$$\lambda = (-1 + \beta_d b_g) + \frac{\beta_d \alpha_g \sigma_{\epsilon_g}^2}{\theta(\alpha_g^2 \sigma_{\epsilon_g}^2 + \sigma_\mu^2)} \tag{126}$$

For this to be positive, we need:

$$\frac{\beta_d \alpha_g \sigma_{\epsilon_g}^2}{\theta(\alpha_g^2 \sigma_{\epsilon_g}^2 + \sigma_\mu^2)} > 1 - \beta_d b_g \tag{127}$$

If $\sigma_\mu^2 = 0$ (pure growth signal), then:

$$\lambda = (-1 + \beta_d b_g) + \frac{\beta_d}{\theta \alpha_g} \tag{128}$$

With typical parameters ($b_g \approx -0.3$, $\beta_d \approx 3$, $\theta \approx 0.83$, $\alpha_g \approx 0.5$):

$$\lambda \approx -1.9 + \frac{3}{0.83 \times 0.5} = -1.9 + 7.2 = +5.3 \quad \text{(strongly positive)} \tag{129}$$

This is the "growth-only" limit: when the central bank raises rates in response to growth news, the positive cash flow effect from the strong growth signal dominates, yielding strongly positive loadings.

A.12.2 Inflation-Information-Only Model ($\sigma_{\epsilon_g}^2 = 0$)

When $\sigma_{\epsilon_g}^2 = 0$, the growth process has no independent information shock:

$$S = \alpha_\pi \epsilon_\pi + \mu \tag{130}$$

and

$$\sigma_S^2 = \alpha_\pi^2 \sigma_{\epsilon_\pi}^2 + \sigma_\mu^2 \tag{131}$$

The MPS loading becomes:

$$\lambda = (-1 + \beta_d b_g) + \frac{\beta_d \alpha_g \times 0}{\theta(\alpha_\pi^2 \sigma_{\epsilon_\pi}^2 + \sigma_\mu^2)} = -1 + \beta_d b_g \tag{132}$$

With $b_g \approx -0.3$ and $\beta_d \approx 3$:

$$\lambda \approx -1 - 0.9 = -1.9 \quad \text{(negative)} \tag{133}$$

This is the "inflation-only" limit: when rates rise in response to inflation news, there is no offsetting growth signal, so the discount rate channel dominates, yielding negative loadings. This is the standard textbook result.

A.13 Regime Transition Mechanism

The key insight of the framework is that the MPS loading λ is *not* a structural parameter invariant to shocks. Instead, it is a reduced-form coefficient that depends on the composition of shocks driving monetary policy surprises.

Define the growth shock weight:

$$w_g = \frac{\alpha_g^2 \sigma_{\epsilon_g}^2}{\sigma_S^2} \tag{134}$$

and the inflation shock weight:

$$w_\pi = \frac{\alpha_\pi^2 \sigma_{\epsilon_\pi}^2}{\sigma_S^2} \tag{135}$$

As the relative importance of growth shocks increases (i.e., w_g increases), the MPS loading shifts from negative to positive. The transition occurs precisely when the condition in Section A.10 is satisfied.

Pre-COVID: $\sigma_{\epsilon_g}^2 = 2$, $\sigma_{\epsilon_\pi}^2 = 0.1$ implies $w_g = 0.5/1.225 \approx 0.408$, $w_\pi = 0.025/1.225 \approx 0.020$. The market's signal extraction from the MPS is heavily tilted toward interpreting surprises as growth news.

Post-COVID: $\sigma^2_{\epsilon_g} = 0.1$, $\sigma^2_{\epsilon_\pi} = 2$ implies $w_g = 0.025/1.225 \approx 0.020$, $w_\pi = 0.5/1.225 \approx 0.408$. The market's signal extraction is now heavily tilted toward interpreting surprises as inflation news.

The structural parameters $(b_g, b_\pi, \alpha_g, \alpha_\pi)$ remain constant across regimes; only the shock variances change. This explains how the same monetary policy rule and transmission mechanism can produce opposite equity return responses, not through changes in the deep structural parameters, but through changes in the composition of shocks hitting the economy.

A.14 Boundary Cases and Extensions

A.14.1 Large β_d Limit

Recall that $\lambda = -1 + \beta_d \Gamma_g$ where $\Gamma_g = b_g + \alpha_g \sigma^2_{\epsilon_g}/(\theta \sigma^2_S)$. As $\beta_d \to \infty$,

$$\lambda \to \beta_d \Gamma_g \to \pm\infty, \tag{136}$$

with the sign determined by Γ_g. In the growth-dominant case ($\Gamma_g > 0$), $\lambda \to +\infty$: equity values become so sensitive to growth expectations that the information channel overwhelms the discount rate effect for any positive growth signal. In the inflation-dominant case ($\Gamma_g < 0$), $\lambda \to -\infty$: large cash flow sensitivity amplifies the negative effect of the conventional contractionary channel, since the growth information channel is too weak to offset it. The sign of the limit therefore depends on the regime.

A.14.2 Small β_d Limit

As $\beta_d \to 0$ (cash flow sensitivity approaches zero):

$$\lambda \to -1 \tag{137}$$

This is the pure discount rate effect: when $\beta_d = 0$, returns are determined entirely by the mechanical impact of interest rate changes.

A.14.3 Alternative Policy Rule Specifications

If the central bank places zero weight on growth ($\alpha_g = 0$), then:

$$\theta = \frac{1}{1 - \alpha_\pi b_\pi} < 1, \quad \sigma_S^2 = \alpha_\pi^2 \sigma_{\epsilon_\pi}^2 + \sigma_\mu^2 \tag{138}$$

and

$$\lambda = -1 + \beta_d b_g \quad \text{(negative, as expected)} \tag{139}$$

Conversely, if $\alpha_\pi = 0$:

$$\theta = \frac{1}{1 - \alpha_g b_g}, \quad \sigma_S^2 = \alpha_g^2 \sigma_{\epsilon_g}^2 + \sigma_\mu^2 \tag{140}$$

and the loading can be positive if β_d is large enough.