Money Illusion in Earnings Growth Expectations

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Abstract

We study whether inflation expectations generate money illusion in professional forecasts. Using U.S. analyst forecasts matched to measures of expected inflation, we show that higher inflation expectations are associated with upward revisions in long-term growth forecasts, even though realized earnings growth does not increase commensurately. These revisions generate predictable and systematic forecast errors. The evidence suggests that analysts partially interpret nominal inflation signals as information about real earnings growth rather than fully adjusting for inflation. Cross-sectional patterns across analysts and firms reinforce this interpretation. Our findings identify a growth-based form of money illusion in earnings growth forecasts.

JEL Classification: E31, G02, G14

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1 Introduction

Money illusion refers to the tendency to mistake nominal signals for real economic changes. In asset pricing, this idea is typically viewed through discounting: inflation lowers stock valuations when investors fail to distinguish nominal from real required returns. Consistent with this view, classic studies document a negative relation between inflation and equity returns (Fama and Schwert 1977; Fama 1981; Geske and Roll 1983). Recent evidence, however, suggests that the effects of inflation depend not only on valuation mechanics but also on how inflationary news is interpreted. Inflation surprises are often priced in a stagflationary manner, with stock prices falling and discount rates rising (Knox and Timmer 2025), while higher inflation also reduces households' demand for equities (Braggion et al. 2023). At the same time, inflation expectations can be read as signals of stronger future growth (Chaudhary and Marrow 2022), and retail investors hold systematically optimistic beliefs about the stock return-inflation relationship (Schnorpfeil et al. 2024). Yet the existing evidence remains centered on prices, returns, and trading, leaving open whether inflation also shapes expectations about firms' future growth.

It is important to understand whether inflation shapes beliefs about future growth, because those beliefs are a central input into valuation. If inflation affects such beliefs, then its effects on stock prices need not operate through discounting alone. The question is difficult to answer using return-based evidence. Prices and returns reflect both beliefs about discount rates and beliefs about firms' future growth, making it hard to isolate where the distortion enters. One way to study this channel is through forecasts, which allow us to observe expectations about firm fundamentals before they are embedded in asset prices. Long-term earnings growth forecasts are especially useful for this purpose: they are widely used in valuation, move gradually, and can therefore serve as a natural place for belief distortions to persist and affect valuation. More broadly, if inflation shapes the expectations of professional forecasters, then the effects of money illusion extend beyond retail trading and return beliefs to the professional assessments of firm fundamentals that underpin valuation.

In this paper, we provide direct evidence that money illusion can operate through earnings growth expectations. Using U.S. analyst earnings forecasts matched to forward-looking measures of inflation expectations, we show that higher expected inflation predicts upward revisions in analysts' long-term earnings growth forecasts. These revisions systematically exceed realized earnings growth, generating predictable forecast errors. We interpret this evidence as showing that analysts partially map nominal inflation signals into expected real earnings growth, rather than fully separating nominal from real fundamentals. By shifting attention from realized market outcomes to the forecasting stage, we identify a belief-based distortion that arises before it is embedded in asset prices.

Testing whether money illusion operates through earnings growth expectations is challenging empirically because it requires data that jointly capture earnings forecasts and forward-looking inflation expectations. To study this mechanism, we combine firm-level long-term earnings-per-share (EPS) forecasts from the Institutional Brokers' Estimate System (IBES) with consensus measures of expected inflation from the Survey of Professional Forecasters (SPF). The forward-looking nature of SPF expectations provides a natural setting to examine how anticipated macroeconomic conditions shape beliefs (Coibion and Gorodnichenko 2015; D'Acunto et al. 2021). As we center our analysis on expectations rather than realized inflation, we examine whether analysts map expected inflation into long-term growth forecasts before inflation materializes, thereby reducing confounding from contemporaneous shocks.

A further challenge concerns identification, as inflation expectations may move with information that also affects earnings forecasts. We address this concern in two ways based on recent advances in identifying exogenous variation in expected inflation. First, following Gulen et al. (2024), we decompose forecast errors into predictable and residual components to isolate systematic deviations from standard information updating. Second, we instrument inflation expectations using exogenous oil supply shocks (Känzig 2021), which generate variation in expected inflation plausibly unrelated to firm-level fundamentals. A range of robustness checks and heterogeneity analyses support an interpretation in which the estimated effects reflect a belief-based channel operating through earnings growth expectations.

To study belief formation directly rather than its reflection in prices, we rely on analyst earnings forecasts. Analyst forecasts are particularly well suited for this purpose because they provide a direct, high-frequency measure of professional beliefs and have been central to research on information processing and market efficiency (Mikhail et al. 1997; Hong and Kacperczyk 2010). Consequently, our design focuses on beliefs at the forecasting stage, prior to any transmission into asset prices. Here, we study long-term growth (LTG) forecasts, which capture analysts' views of firms' sustained earnings capacity and serve as a key input to valuation models. Unlike short-term earnings revisions or market prices, LTG reflects slow-moving expectations about fundamentals. Variation in these forecasts thus has first-order implications because it alters the growth component of valuation and can contribute to persistent mispricing.

Formally, we implement our analysis using a comprehensive panel of IBES consensus forecasts for U.S. firms from 1990 to 2020, matched to realized earnings from Compustat. Combining these sources yields a firm-level dataset that tracks analysts' forward-looking earnings expectations and subsequent realized outcomes at quarterly frequency. Following the existing literature, we define forecast error as realized earnings minus forecasted earnings, where positive values indicate underestimation and negative values indicate overestimation. This setup allows us to examine whether forecast errors systematically comove with changes in expected inflation. If analysts form earnings expectations entirely in real terms, forecast errors should be orthogonal to movements in expected inflation. In contrast, a systematic relationship between forecast errors and inflation expectations would indicate that nominal information is mapped into earnings growth expectations.

Consistent with a belief-based channel operating through earnings growth expectations, higher inflation expectations are associated with more negative forecast errors, indicating systematic overprediction of future earnings. A one-unit increase in expected inflation is associated with a 6 to 9 percentage point decline in forecast errors relative to the average. When inflation expectations rise, forecast errors become more negative, whereas declines in inflation expectations are associated with less negative or positive forecast errors. These patterns indicate that changes in inflation expectations are systematically incorporated into earnings growth forecasts. The relationship remains robust to controls for firm characteristics and macroeconomic conditions and is strongest in low-inflation environments, where inflation may be less salient.

The cross-sectional evidence provides additional insight into the underlying mechanism. We find that the relationship between inflation expectations and forecast errors is substantially weaker for more experienced analysts and for analysts at top brokerages. Quantitatively, for a one-unit change in expected inflation, the forecast response is 2.06 percentage points smaller for analysts at top brokerages and 0.44 percentage points smaller for more experienced analysts, relative to their respective counterparts. These patterns suggest that greater experience and institutional resources are associated with a reduced sensitivity of earnings growth forecasts to inflation expectations.

We also find that the effect of inflation expectations on forecast errors varies systematically across firms. The relationship is stronger for firms with low cash holdings and cash flows and weaker for firms with high cash. For a one-unit change in expected inflation, forecast errors are approximately 0.6 percentage points smaller for high-cash firms and 1.6 percentage points smaller for high-cash-flow firms, relative to their counterparts. This cross-sectional variation is consistent with differences in firms' ability to absorb inflation-related cost pressures, and it provides further evidence that inflation expectations are reflected in earnings growth forecasts through a belief channel rather than solely through realized fundamentals.

To distinguish money illusion from alternative explanations, we consider four competing channels: discount-rate effects, fundamental improvements, extrapolative forecasting biases, and macroeconomic conditions. Each channel implies a distinct pattern in how inflation expectations should relate to forecast errors, which we test directly in the data. First, if discount-rate or risk-premium variation were driving the results, firms with higher leverage should exhibit a stronger response given their greater sensitivity to nominal discounting; no such difference is observed. Second, if higher expected inflation reflected genuine improvements in fundamentals, such as stronger demand or increased pricing power, the effect should vary systematically with industry concentration; we find no evidence of this. Moreover, if the patterns arose from mechanical extrapolation of recent nominal revenue growth or selective attention to revenues rather than costs, the effect should be strongest among firms with high recent growth, which is not the case. Finally, if inflation expectations merely proxy for broader macroeconomic conditions, decomposing inflation into demand- and supply-driven components should yield differential responses; instead, the forecast-error relationship is similar across components.

We also consider broader identification concerns. One potential issue is reverse causality. In our setting, inflation expectations are formed at the aggregate macroeconomic level, making it unlikely that forecast errors for a subset of firms materially influence expected inflation. A second concern is omitted variables that may jointly affect inflation expectations and earnings forecasts. To mitigate this concern, we focus on expected rather than realized inflation and complement our baseline analysis with an instrumental variable strategy based on exogenous oil supply shocks, which generate variation in inflation expectations that is plausibly orthogonal to firm-level earnings news. A third concern is that the results reflect generic over-extrapolation or competitiveness gains unrelated to inflation. To address this, we control for contemporaneous firm performance, commodity price exposure, and industry concentration. The estimated relationship between inflation expectations and forecast errors is robust to these controls.

In sum, this paper provides evidence that money illusion operates through earnings growth expectations. Valuation effects of inflation can, in principle, arise through either discount-rate beliefs or growth expectations, but firm-specific discount-rate expectations are not directly observable. Instead, we account for the discount-rate channel using the T-bill forecast from the Survey of Professional Forecasters as a proxy for short-term rate expectations. Using analyst earnings forecasts matched to forward-looking measures of inflation expectations, we show that nominal inflation signals are partially incorporated into perceived real earnings growth. Our findings establish the presence of a growth-based channel that operates independently of discount-rate beliefs. The growth-based channel we document helps account for the state-dependent relationship between inflation expectations and equity valuations documented in the literature, without invoking time-varying risk premia or institutional frictions.

Related Literature. This paper contributes to several strands of literature. First, it contributes to the literature on money illusion. A large body of work shows that agents often confuse nominal and real values across settings such as wage bargaining (Fair 1971), consumer pricing (Noussair et al. 2012), housing markets (Brunnermeier and Julliard 2008), and financial valuation (Schmeling and Schrimpf 2011). In financial markets, classic studies show that asset prices respond to inflation in ways inconsistent with fully rational, inflation-adjusted discounting (Modigliani and Cohn 1979; Cohen et al. 2005), while survey and experimental evidence shows that households often frame economic outcomes in nominal rather than real terms (Shiller 1997; Shafir et al. 1997; Fehr and Tyran 2001). We build on this literature by shifting attention from valuation to belief formation. Our evidence shows that higher expected inflation is associated with more optimistic long-term earnings growth forecasts even when realized earnings growth does not support such optimism, pointing to a growth-based form of money illusion in professional forecasts.

Second, we contribute to the literature on analyst forecasts by identifying an inflation-related bias in long-term earnings projections arising from nominal framing. While prior work documents persistent optimism and overreaction in analyst forecasts (Lim 2001; Dechow et al. 2004; Bordalo et al. 2019; Afrouzi et al. 2023), existing studies do not examine how inflation expectations shape earnings beliefs. We show that rising inflation expectations lead analysts to revise long-term growth forecasts upward, consistent with nominal inflation signals being embedded into perceived real growth. This pattern connects the forecast-bias literature to evidence on inflation misperception (Schnorpfeil et al. 2024; Beutel and Weber 2023; Andre et al. 2022) and is amplified among firms where the nominal–real earnings gap is larger, particularly firms with low internal liquidity. Our results extend work showing that forecast errors intensify during periods of macroeconomic uncertainty and financial distress (Pevzner et al. 2025; Chu and Zhai 2021) by identifying inflation expectations as a distinct driver of long-term forecast optimism.

Third, we contribute to the literature on inflation and stock valuations by clarifying the role of inflation expectations in shaping beliefs about firm fundamentals. Most existing studies focus on realized inflation and asset prices (Fama and Schwert 1977; Fama 1981; Geske and Roll 1983; Boons et al. 2020; Fang et al. 2025), while evidence based on inflation expectations is more limited. Recent work shows that inflation expectations affect household and firm decisions (Agarwal et al. 2022; D'Acunto and Weber 2024) and asset prices (Chaudhary and Marrow 2022; Duffee 2023; Bhamra et al. 2023). In particular, Chaudhary and Marrow (2022) find that stock prices respond positively to long-term inflation expectations through discount-rate channels. We complement this literature by identifying a behavioral transmission mechanism through which inflation expectations distort analysts' earnings growth beliefs, linking inflation expectations to equity valuations through biased expectations rather than discounting alone.

The paper proceeds as follows. Section 2 motivates our analysis by clarifying the valuation intuition behind growth-based versus discount-rate channels of money illusion. Section 3 describes the data and empirical strategy. Section 4 presents the main empirical results. Section 5 examines the underlying mechanism and evaluates alternative channels.

Section 6 concludes.

2 Motivation and Conceptual Framework

We begin by explaining why distortions in beliefs about long-run earnings growth matter for valuation and how inflation expectations can enter those beliefs. Theoretically, inflation should not affect firms' real earnings capacity. In practice, however, inflation-driven nominal signals may influence how agents form expectations about future profitability. When expected inflation is partially interpreted as information about real earnings growth rather than fully stripped out as a nominal component, long-run growth beliefs can become systematically biased. We refer to this mechanism as a growth-based form of money illusion.

Beliefs about long-run earnings growth play a central role in financial analysis. They anchor analysts' assessments of firms' future profitability, guide revisions to earnings forecasts, and enter directly into valuation models. Because long-term growth expectations are forward-looking and slow-moving, distortions at this stage can persist even when short-term earnings information is processed efficiently. As a result, biased beliefs about long-run growth can generate persistent forecast errors and have first-order implications for valuation frameworks that rely on these expectations.

In this context, inflation expectations are a natural source of potential belief distortions. Inflation is closely linked to nominal earnings dynamics and is highly salient in macroeconomic discourse. Even when inflation does not affect firms' real earnings capacity, it may influence how agents process nominal information and extrapolate it into the future. To discipline this intuition and derive testable implications, we introduce a simple valuation framework. The framework is not intended to explain asset prices directly, but rather to formalize how beliefs about earnings growth enter financial decision-making and to distinguish between two conceptually distinct channels through which inflation expectations may matter: discounting and perceived earnings growth expectations.

Simple Valuation Framework. Consider the standard Gordon growth model, in which equity value depends on expected earnings growth and the discount rate[1]. Let D_t denote dividends at time t. Suppose agents believe that dividends follow a deterministic growth process at a constant long-run rate g and are discounted at a constant rate r. The

[1]For expositional clarity, we write the benchmark valuation framework in real terms. This is without loss of generality. An equivalent nominal representation would scale both expected cash-flow growth and the discount rate by expected inflation, so that under full rational adjustment the common nominal component cancels and valuation depends on real growth and real discounting exactly as in our baseline setup. Our empirical question is whether analysts in practice fully remove this nominal component when mapping inflation expectations into long-run earnings growth beliefs.

valuation at time 0 is given by

$$P_0 = \sum_{t=1}^{\infty} \frac{D_0(1+g)^t}{(1+r)^t} = \frac{D_1}{r-g}, \qquad D_1 \equiv D_0(1+g), \quad r > g. \tag{1}$$

Under rational expectations, valuation can be represented either in real terms or, equivalently, in nominal terms. In the real representation, both g and r are real objects. In the nominal representation, expected inflation π^e affects both expected cash-flow growth and the discount rate symmetrically, so the common nominal component cancels under full adjustment. Hence, absent misperception, expected inflation has no direct effect on valuation. A standard form of money illusion arises when agents discount real cash flows using nominal rather than real rates (Modigliani and Cohn 1979). Suppose expected inflation passes through to the perceived discount rate with elasticity β, so that the perceived discount rate is

$$r^a(\pi^e) = r + \beta\pi^e. \tag{2}$$

The perceived valuation is then

$$P_0^a(\pi^e) = \frac{D_0(1+g)}{r^a(\pi^e) - g} = \frac{D_0(1+g)}{r + \beta\pi^e - g}. \tag{3}$$

Differentiating with respect to the perceived discount rate yields

$$\frac{\partial P_0^a}{\partial r^a} = -\frac{D_0(1+g)}{(r^a - g)^2} < 0, \tag{4}$$

implying that higher expected inflation lowers perceived valuation when it is incorporated into discounting. This mechanism captures the nominal discounting channel emphasized in the classic money-illusion literature.

Money Illusion in Earnings Growth. The same framework can also highlight a second, conceptually distinct channel. Inflation expectations may affect perceived earnings growth rather than discounting. When agents misinterpret part of expected inflation as reflecting real improvements in earnings capacity, inflation-driven changes in nominal earnings are treated as signals about fundamentals. We refer to this mechanism as money illusion in earnings growth.

Formally, let the perceived long-run growth rate be

$$g^a(\pi^e) = g + \alpha\pi^e, \tag{5}$$

where α measures the pass-through of expected inflation into perceived real growth. The corresponding perceived valuation is

$$P_0^a(\pi^e) = \frac{D_0(1 + g^a(\pi^e))}{r^a(\pi^e) - g^a(\pi^e)} = \frac{D_0(1 + g + \alpha\pi^e)}{r + \beta\pi^e - (g + \alpha\pi^e)}. \tag{6}$$

Differentiating with respect to expected inflation yields

$$\frac{dP_0^a}{d\pi^e} = \frac{D_0\Big[\alpha(r - g) - (\beta - \alpha)(1 + g)\Big]}{(r + \beta\pi^e - g - \alpha\pi^e)^2}. \tag{7}$$

Since the denominator is positive, the sign of the valuation response depends on the numerator. Expected inflation raises perceived firm value whenever

$$\alpha(r - g) > (\beta - \alpha)(1 + g), \tag{8}$$

which can be written equivalently as

$$\frac{\alpha}{1 + g} > \frac{\beta}{1 + r}. \tag{9}$$

This condition characterizes when the growth-based channel dominates the discounting channel. When $\alpha = 0$, inflation affects valuation only through discounting, consistent with the negative inflation–valuation relationship emphasized in early studies. When α is positive and sufficiently large, inflation expectations raise perceived earnings growth, generating a positive association between inflation expectations and perceived firm value.

Implications for Earnings Growth Beliefs. The key implication of this framework concerns belief formation rather than valuation per se. Although the Gordon model is written in terms of dividend growth, the same logic applies to beliefs about long-run earnings growth. In practice, analysts' long-term growth forecasts are intended to capture expectations about firms' sustained earnings capacity, which, under standard payout and reinvestment policies, maps into long-run dividend growth. If expected inflation enters perceived earnings growth, analysts' long-term growth forecasts should therefore rise with expected inflation. Because firms' real earnings capacity does not mechanically change with inflation, such comovement reflects the incorporation of nominal inflation signals into beliefs about real growth.

Long-term growth forecasts reported by analysts provide a natural empirical counterpart to the perceived growth rate $g^a(\pi^e)$ in the framework. In standard valuation models, equity prices depend on both expected earnings growth and discount rates. While discount-rate beliefs are not reported and must be inferred indirectly from prices, long-run earnings growth expectations are observed directly in analyst forecasts and enter valuation models based on earnings flows. These forecasts can also be evaluated against subsequent realized earnings, which allows us to assess whether inflation-related revisions reflect rational updating about fundamentals or the incorporation of nominal information into perceived real growth.

Valuation Dynamics over Time. Our conceptual framework highlights two channels through which inflation expectations may be related to equity valuations: discount-rate beliefs and beliefs about long-run earnings growth.

Figure 1 summarizes how the relationships among inflation expectations, earnings growth forecasts, forecast errors evolve over time. Furthermore, Figure 1a illustrates changes in the relative co-movement between inflation expectations and components related to discounting and earnings growth across periods. Prior to 2000, long-term earnings growth (LTG) forecasts move weakly or negatively with expected inflation, and forecast errors are small in magnitude. Over the same period, higher expected inflation is associated with lower equity valuations. Taken together, these patterns are consistent with inflation expectations being reflected primarily through discount-rate considerations, with limited incorporation into beliefs about long-run earnings growth.

<Insert Figure 1 Here>

After 2000, these relationships change markedly. LTG forecasts move positively with expected inflation, and forecast errors become increasingly negative as inflation expectations rise. At the same time, the association between inflation expectations and valuations weakens or reverses. The widening gap between inflation expectations, growth forecasts, and subsequent realizations indicates that revisions in earnings growth beliefs increasingly exceed realized earnings growth. In this period, variation in inflation expectations is more strongly reflected in analysts' growth forecasts than in realized outcomes.

<Insert Table 1 Here>

Table 1 provides an illustration of these two channels across subperiods. Columns (1)-(2) show that the coefficient on inflation expectations switches sign after 2001: prior to 2001, higher expected inflation is associated with lower stock returns, consistent with discounting dominating ($\alpha \approx 0$, $\beta > 0$). After 2001, the coefficient turns positive, suggesting the growth channel has grown sufficiently strong that condition (9) is satisfied. Columns (5)-(6) speak directly to this shift: before 2001, inflation expectations bear no significant relationship to LTG forecasts ($\alpha \approx 0$); after 2001, the coefficient becomes positive and significant, indicating analysts increasingly embed nominal inflation signals into perceived real earnings growth.

Crucially, this reversal does not reflect a weakening of the discount-rate channel. Columns (3)-(4) introduce the T-bill forecast from the Survey of Professional Forecasters as a proxy for short-term rate expectations. The T-bill coefficient is negative and statistically significant in both subperiods, with a magnitude of -0.0465 that grows more pronounced over time, confirming that β has not attenuated. The sign reversal in the inflation-valuation relationship therefore reflects the emergence of a growth-based channel rather than any attenuation of discounting. In terms of the framework, β is stable across time while α rises post-2001, shifting the sign of $\frac{dP_0^a}{d\pi^e}$ in expression (7) from negative to positive. The remainder of the paper examines this belief formation mechanism directly.

This reasoning yields a clear empirical prediction. Empirically, our variables are observed in nominal terms, so the null of no money illusion is that analysts correctly net inflation out when translating nominal signals into expectations of real earnings capacity. If inflation expectations are partially mapped into beliefs about real earnings growth, upward revisions in long-term growth forecasts will not be fully realized ex post. Forecast errors in long-run earnings should systematically co-move with expected inflation. The empirical analysis that follows tests this prediction by examining how analysts' long-term earnings forecasts and subsequent forecast errors respond to variation in expected inflation.

3 Data and Empirical Strategy

We now describe the data sources, variable construction, and empirical design used to test whether inflation expectations systematically distort analysts' beliefs about real earnings growth. The dataset combines firm-level forecasts from financial analysts with realized earnings outcomes and forward-looking macroeconomic expectations. This structure allows us to study how aggregate inflation expectations are mapped into firm-level beliefs about earnings growth and whether such beliefs deviate systematically from subsequent realized performance. We then outline the empirical framework that links variation in expected inflation to forecast errors, providing a direct test of belief distortions in professional financial forecasting.

3.1 Data

Our analysis combines firm-level forecasts from the *Institutional Brokers' Estimate System* (IBES), realized earnings from *Compustat* and *CRSP*, and macroeconomic expectations from the *Survey of Professional Forecasters* (SPF). The sample spans 1990–2020 at a quarterly frequency. All variables are winsorized at the 1st and 99th percentiles and, where applicable, deflated to 2016 dollars.

Specifically, we focus on: (i) forecast errors of Earnings per Share (EPS) that capture deviations between realized and expected performance, serving as a measure of belief bias; (ii) inflation expectations, which represent the nominal signal that may be mistakenly incorporated into assessments of real fundamentals; and (iii) firm characteristics that shape how nominal beliefs are transmitted into perceived earnings potential. Together, these components provide an empirical implementation of the model's central prediction: that higher inflation expectations induce systematic bias in analysts' growth forecasts. Table A.1 in the Online Appendix details variable definitions discussed in this section.

3.1.1 Forecast Errors of Earnings per Share

We begin by constructing forecast errors of Earnings per Share (EPS), which provide a direct window into analysts' belief formation. A key object in our analysis is the long-term earnings growth (LTG) forecast reported in IBES. These forecasts are commonly interpreted as analysts' assessments of firms' sustained earnings capacity rather than as literal predictions of earnings growth at a fixed horizon. Accordingly, our empirical strategy does not evaluate whether LTG forecasts accurately predict earnings at a specific future date. Instead, we examine whether variation in inflation expectations is systematically embedded in the beliefs reflected in LTG forecasts in a way that generates predictable forecast errors ex post.

This distinction is central for interpretation. If analysts form earnings expectations entirely in real terms, revisions in expected inflation should not systematically affect the relationship between LTG forecasts and subsequent realized earnings. In contrast, if analysts overweight nominal inflation signals when forming beliefs about real earnings growth, LTG forecasts will incorporate inflation-driven optimism that is not fully justified by subsequent realizations. Importantly, such belief distortions need not manifest only at the distant horizon to which LTG forecasts nominally refer. Although LTG forecasts nominally refer to long-run growth, they reflect beliefs about firms' underlying earnings capacity rather than outcomes at a single distant horizon. Consequently, inflation-induced misperceptions may affect realized earnings relatively quickly, as firms' cost structures, margins, and operating constraints begin to adjust.

To operationalize this idea, we match LTG forecasts from the IBES Unadjusted Detail History File with realized earnings from Compustat and examine forecast errors over subsequent horizons. Although LTG forecasts refer to multi-year growth, our objective is not to test long-run forecasting accuracy. Rather, we ask whether changes in inflation expectations induce directional bias in analysts' growth beliefs that becomes apparent in realized earnings before longer-run fundamentals fully adjust. This approach follows the logic that distortions in perceived earnings capacity can influence near-term realizations even if longer-run growth eventually converges (Bordalo et al. 2019; Gulen et al. 2024).

Next, we obtain realized EPS from the IBES Unadjusted Detail Actuals File and construct forecast errors as the difference between anticipated earnings growth and realized earnings over the subsequent four quarters. To ensure comparability over time, EPS is adjusted using CRSP's cumulative share adjustment factor to account for stock splits and other capital structure changes. Because our tests relate forecast errors to contemporaneous inflation expectations and firm characteristics, we aggregate monthly IBES forecasts to a quarterly frequency. To prevent outliers from driving our results, for each firm, we winsorize the median LTG forecast at the 1st and 99th percentiles and compute a three-month moving average to form a quarterly consensus forecast. The four-quarter realization window aligns with the horizon of inflation expectations and captures one year of realized performance.[2]

The resulting firm-level panel links forecast errors directly to shifts in inflation expectations, allowing us to test whether nominal signals distort belief formation prior to their incorporation into prices. In what follows, we construct two measures of forecast error. First, we have the raw forecast error which captures total deviations between forecasted and realized earnings growth and provides a benchmark measure of optimism or pessimism. It is defined as

$$\text{Forecast Error}_{i,t\to t+4} = \left(\frac{\text{Adjusted EPS}_{i,t+4}}{\text{Adjusted EPS}_{i,t}}\right) - E_{i,t}[\text{LTG}] \tag{10}$$

where $\left(\frac{\text{Adjusted EPS}_{i,t+4}}{\text{Adjusted EPS}_{i,t}}\right)$ captures realized one-year EPS growth and $E_{i,t}[\text{LTG}]$ denotes the long-term earnings growth forecast formed at time t. A positive forecast error indicates that realized earnings growth exceeds analysts' forecasts, while a negative forecast error indicates forecast optimism. Forecast errors are expressed in annualized growth-rate units; for example, a forecast error of -0.10 corresponds to forecasts exceeding realized earnings growth by approximately 10 percentage points at an annual rate.

One concern is that raw forecast errors may reflect predictable revisions based on information already available to analysts, rather than distortions in belief formation. To address this concern, we follow Gulen et al. (2024) and decompose forecast errors to isolate their unpredicted component. Specifically, we regress the raw forecast error on lagged forecast revisions, which capture analysts' prior updating of LTG forecasts. Quarterly LTG forecasts are computed as three-month averages of monthly medians, and forecast revisions are defined as:

$$\text{Forecast Revision}_{i,t\to t+h} = \text{LTG}_{i,t+h} - \text{LTG}_{i,t}. \tag{11}$$

[2]Results using alternative horizons are reported in the Online Appendix. Realized values are annualized to align with the different time span, and the conclusions are unchanged.

The predictable component of the forecast error is estimated as:

$$FE_{i,t\to t+4} = \alpha_{t+4} + \beta_1 FR_{i,t-2\to t-1} + \beta_2 FR_{i,t-1\to t} + \epsilon_{i,t+4}, \tag{12}$$

where $\epsilon_{i,t+4}$ represents the unpredicted forecast error, that is, the component of forecast errors unrelated to prior revisions. This residual serves as our key measure of belief distortion.

We report summary statistics for earnings forecasts and forecast error measures in Table 2 Panel A. Here, we find that analysts' long-term earnings growth forecasts have a mean of 0.1717 with moderate dispersion (standard deviation 0.1361). Realized EPS growth is substantially more volatile, with a mean of −0.0336 and a standard deviation of 1.7375, reflecting considerable heterogeneity in firm performance. Raw forecast errors average −0.1199 with a standard deviation of 1.46, indicating systematic overoptimism on average alongside substantial dispersion. The unpredicted component is smaller in magnitude (mean −0.0861, standard deviation 1.29) but remains highly dispersed. Forecast revisions are small and close to zero on average (mean −0.0106).

<Insert Table 2 Here>

3.1.2 Inflation Expectations & Macroeconomic Controls

We next describe our main explanatory variable, the quarterly change in inflation expectations. Our baseline measure is the change in the median one-year-ahead CPI forecast from the Survey of Professional Forecasters (SPF), which captures quarter-to-quarter revisions in the consensus views of professional forecasters about future inflation. We focus on changes in expectations rather than realized inflation because our objective is to study how anticipated nominal conditions shape analysts' beliefs before inflation materializes. Using the median limits the influence of outliers and reflects consensus beliefs. Conceptually, revisions in SPF inflation expectations isolate new information about expected inflation, making this measure well suited for examining how analysts incorporate nominal signals into long-run earnings growth forecasts.[3]

We also incorporate macroeconomic controls that could influence analysts' forecasts. Specifically, we control for U.S. real GDP growth, measured as the percent change from the preceding period on a seasonally adjusted annual rate basis to capture the overall pace of economic activity.[4] In addition, we include the U.S. dollar exchange rate, which reflects external demand and import cost pressures.[5] Here, we use the average exchange

[3]As a robustness check, we also use inflation expectations from the Michigan Survey of Consumers, which capture household beliefs and provide a complementary perspective to expert forecasts.

[4]Retrieved from https://fred.stlouisfed.org/series/A191RP1Q027SBEA

[5]Retrieved from: https://fred.stlouisfed.org/series/CCUSMA02EZQ618N

rate of the U.S. dollar against the euro (in euros), based on daily averages aggregated quarterly as the proxy. Including these realized macroeconomic variables helps separate the role of expected inflation from concurrent changes in economic conditions that may independently influence earnings forecasts.

Table 2 Panel B reports summary statistics for these variables. Quarterly changes in one-year-ahead SPF inflation expectations have a near-zero mean and a standard deviation of approximately 0.19 percentage points, indicating meaningful variation over time. Real GDP growth averages 4.56 percent with substantial volatility, with a standard deviation of 5.15, reflecting both expansionary and recessionary periods. The exchange rate is relatively stable, with a mean of 0.84 euros per dollar.

3.1.3 Firm-Level Characteristics

We further examine cross-sectional differences in forecast behavior using firm-level variables from the CRSP/Compustat Merged dataset. The sample includes active, publicly listed U.S. firms identified by valid `linktype` and `linkprim` codes. Financial firms (SIC 6000–6999) and utilities (SIC 4900–4949) are excluded because of sector-specific regulation. Observations with nonpositive total assets, sales, or book equity are removed. All nominal variables are deflated to 2016 dollars using the Consumer Price Index (CPI) from the Federal Reserve Economic Data, and all variables are winsorized at the 1st and 99th percentiles.

Firm characteristics capture how differences in financial flexibility and operating strength shape analysts' responses to inflation expectations. We also obtain Total Q from WRDS, constructed following Peters and Taylor (2017). This improved Tobin's q proxy controls for market valuation and investment opportunities, ensuring that the relationship between inflation expectations and forecast bias is not confounded by firm fundamentals. Return on assets (ROA) and sales growth measure profitability and operating momentum. Total assets proxy for size. Cash flow and cash holdings indicate internal liquidity and capacity to absorb inflation-related cost pressures, while leverage reflects financing constraints and exposure to nominal debt. These variables jointly characterize the balance-sheet conditions under which analysts form expectations, allowing us to assess whether forecast bias is stronger for firms whose characteristics make them more exposed to inflation shocks.

We also include a default-risk measure based on the modified Merton model of Bharath and Shumway (2008), which infers the probability of default from capital structure and market volatility. Equity is modeled as a call option on firm assets, with debt as the strike price. Asset volatility is estimated as a weighted average of equity and debt volatilities, and the expected default frequency (EDF) is given by

$$\Phi\left(-\frac{\ln\left(\frac{E+F}{F}\right)+\mu-\frac{\sigma_V^2}{2}}{\sigma_V}\right), \tag{13}$$

where E denotes the market value of equity, F the market value of debt, μ the 12-month cumulative return on assets, and σ_V the combined asset volatility. The cumulative normal distribution of this distance-to-default metric yields the EDF, summarizing each firm's financial fragility. All components are derived from the CRSP/Compustat Merged database.

Panel C of Table 2 reports summary statistics for firm-level characteristics. Total q averages 2.19 with a standard deviation of 1.37, reflecting substantial heterogeneity in market valuation. Sales growth averages 13.53% but is highly dispersed. Leverage has a mean of 0.26 and spans nearly the full unit interval. Measures of financial flexibility also exhibit wide variation: cash flow averages 0.0660 and ranges from −0.62 to 0.27, while the cash ratio averages 0.1125 and reaches as high as 0.897. Firms have mean log assets of 8.09. Default probabilities are low on average, with a mean of 0.0125, but display a pronounced right tail.

3.2 Empirical Specification

We now turn to our empirical tests. If analysts form expectations in real terms, forecast errors should be unrelated to changes in expected inflation. If instead they anchor on nominal figures and underweight inflation's effect on real earnings, forecast errors will covary systematically with expected inflation. We examine this relationship using firm-level analyst forecasts matched to macro-level inflation expectations, controlling for firm fundamentals, macroeconomic conditions, and fixed effects.

OLS Specification

First, we rely on an Ordinary Least Squares (OLS) regression to provide an initial assessment of the relationship between inflation expectations and analyst forecast errors.

$$\mathrm{FE}_{i,t\to t+4}=\beta_0+\beta_1\Delta\pi_t^e+\gamma\mathbf{X}_{i,t}+\rho\mathbf{M}_t+\eta_y+\psi_q+\mu_i+\epsilon_{i,t} \tag{14}$$

where $\mathrm{FE}_{i,t\to t+4}$ measures the forecast error for firm i over a four-quarter horizon (realized minus forecasted earnings). $\Delta\pi_t^e$ is the change in inflation expectations, our main variable of interest. The coefficient of interest, β_1, captures the effect of changes in expected inflation on forecast bias. $\mathbf{X}_{i,t}$ is a vector of firm-level controls, including return on assets, book assets, cash flow, cash holdings, leverage, sales growth, Total Q, and default probability. These variables account for differences in firm fundamentals that may independently affect forecast errors. We include $\mathbf{M}_t$, a vector of macroeconomic controls including U.S. real GDP growth and the USD-EUR exchange rate to capture business cycle conditions, as well as external demand and cost pressures affecting analysts' forecasts. We also include extensive fixed effects to absorb unobserved heterogeneity. Particularly, year fixed effects, η_y, capture broader economic conditions, quarter fixed effects ψ_q (Q1-Q4) absorb seasonal variation common across years, and firm fixed effects μ_i account for time-invariant firm-specific heterogeneity.

For our dependent variables, we follow Gulen et al. (2024) and examine both total forecast errors and unpredicted (residual) forecast errors to ensure that the estimated relationship reflects belief distortions rather than rational responses to firm-specific information. Total forecast errors capture both rational forecast updates and systematic biases, while unpredicted forecast errors isolate the portion unexplained by prior forecast revisions or contemporaneous firm news, providing a cleaner measure of the bias component.

Our main explanatory variable is based on the aggregate inflation expectations from the Survey of Professional Forecasters (SPF). Using SPF data helps mitigate concerns about reverse causality, as it reflects the consensus forecasts of professional macroeconomists and captures the broad national inflation outlook rather than firm-specific expectations. This design ensures that variation in our key explanatory variable arises from shifts in aggregate macroeconomic beliefs rather than from any one firm's earnings performance or idiosyncratic shocks. As a result, changes in SPF inflation expectations are plausibly exogenous to individual firms' forecasting errors.

IV Specification

While OLS provides a valuable baseline estimate, we acknowledge that inflation expectations may still be endogenous. One could be concerned that changes in expected inflation could coincide with shifts in macroeconomic conditions that also directly affect firm earnings and analyst forecasts. For instance, a rise in expected inflation might occur alongside demand shocks, or monetary policy changes that influence analysts' projections through channels other than inflation beliefs. To address this, we implement an instrumental variables (IV) strategy using the exogenous oil supply news shocks of Känzig (2021)[6]. These shocks are derived from high-frequency movements in oil futures prices around OPEC announcements, capturing revisions in expectations about future oil supply. By

[6]Data are retrieved from `https://www.diegokaenzig.com/data`. The monthly series is converted to quarterly frequency by taking quarterly averages.

construction, they exclude realized supply changes, isolating pure news-based surprises that shift inflation expectations without directly affecting most firms' fundamentals.

As shown in Känzig (2021), unexpected news about future oil supply leads markets to revise their expectations about future inflation. These shocks primarily operate through the price level and are unlikely to directly affect firm-level earnings expectations outside of energy-exposed sectors. To further limit any potential direct exposure, we exclude firms in energy-related and transportation industries from the analysis.

The second-stage regression is:

$$\text{FE}_{i,t\to t+4} = \beta_0 + \beta_1 \widehat{\Delta\pi_t^e} + \gamma \mathbf{X}_{i,t} + \rho \mathbf{M}_t + \eta_y + \psi_q + \mu_i + \epsilon_{i,t} \tag{15}$$

where $\widehat{\Delta\pi_t^e}$ are the fitted values from the first-stage regression of changes in inflation expectations on the oil supply news shocks and the full set of controls. As in the OLS analysis, our dependent variables include both total and unpredicted forecast errors. This approach strengthens causal interpretation by using a plausibly exogenous shift in inflation expectations to identify the effect on analyst forecast errors.

Together, the OLS and IV specifications allow us to test both the presence and the causal nature of the inflation-driven bias in analyst forecasts. In the next section, we present the regression results.

4 Results

This section presents the main empirical evidence on how inflation expectations influence analysts' earnings forecasts. We begin with baseline OLS estimates that relate changes in expected inflation to forecast errors, followed by instrumental-variables (IV) regressions that address potential endogeneity. Across both approaches, we assess whether rising inflation expectations systematically bias analysts toward excessive optimism about firms' future earnings. We then conduct a series of robustness tests to verify that the observed patterns are not driven by alternative measures, instruments, or time horizons.

4.1 Baseline Results

4.1.1 OLS Results

We begin by presenting the OLS results in Table 3. Columns (1) and (2) report estimates using the total (raw) forecast error, while columns (3) and (4) use the unpredicted forecast error, which isolates the component of forecast errors not explained by prior forecast revisions. All specifications include firm, year, and quarter fixed effects, with heteroskedasticity-robust standard errors clustered at the firm level. Odd-numbered columns exclude firm-level and macroeconomic controls, while even-numbered columns include the full set of controls. Throughout the paper, forecast errors are defined as realized minus forecasted earnings growth, expressed in annualized growth-rate terms, so more negative values correspond to greater analyst overoptimism.

<Insert Table 3 Here>

Across all specifications, the coefficient on $\Delta\pi^e$ is negative and statistically significant at the 1 percent level. This pattern indicates that increases in inflation expectations are associated with systematically more optimistic earnings forecasts. When expected inflation rises, analysts tend to overestimate firms' future earnings growth, leading realized earnings to fall short of forecasts. Conversely, declines in inflation expectations are associated with forecast pessimism. This asymmetric response suggests that analysts' forecasts are framed, at least in part, in nominal rather than real terms.

Focusing on columns (1) and (2), the coefficient on $\Delta\pi^e$ is –0.1162 in the baseline specification and –0.0995 when firm-level and macroeconomic controls are included. These estimates imply that a one percentage point increase in expected inflation is associated with forecast errors that are approximately 0.12 percentage points more negative in annual earnings growth terms in column (1), and about 0.10 percentage points more negative in column (2). The modest reduction in magnitude reflects the inclusion of additional controls, which absorb some variation correlated with inflation expectations, but the economic effect remains substantial and precisely estimated.

Next, we focus on the unpredicted forecast error in columns (3) and (4), which isolates belief-driven forecast distortions that cannot be attributed to prior forecast revisions. The coefficient on $\Delta\pi^e$ in column (3) is –0.1318, closely aligned with the estimate in column (1). This similarity indicates that the inflation-related bias is not driven by predictable updating dynamics but reflects distortions in analysts' earnings growth beliefs. After controlling for firm-level and macroeconomic factors in column (4), the coefficient remains negative and statistically significant, with a magnitude of –0.0963. These estimates imply that a one percentage point increase in expected inflation leads to forecast errors that are roughly 0.13 percentage points more negative in column (3) and 0.10 percentage points more negative in column (4).

Including firm-level and macroeconomic controls improves explanatory power and helps rule out confounding channels. The adjusted R^2 increases from 0.1385 to 0.1544 for total forecast errors and from 0.1649 to 0.1839 for unpredicted forecast errors. The estimated coefficients on control variables are economically intuitive. Leverage enters positively and significantly, indicating that analysts tend to underpredict earnings growth for highly leveraged firms, potentially reflecting concerns about refinancing pressure. Firm size and return on assets enter negatively and significantly, consistent with persistent forecast optimism for larger and more profitable firms.

4.1.2 IV Results

We now turn to the instrumental-variables results. Table 4 reports estimates using oil supply news shocks as an instrument for changes in inflation expectations. Columns (1)–(4) focus on total forecast errors, while columns (5)–(8) focus on unpredicted forecast errors. For each outcome, the table reports the corresponding first-stage regressions for inflation expectations and the associated second-stage estimates, both without and with firm-level and macroeconomic controls.

<Insert Table 4 Here>

The first-stage results indicate a strong relationship between oil supply news shocks and inflation expectations. The F-statistics are uniformly large, reaching 2590.22 for the total forecast error specification and 1282.05 for the unpredicted forecast error specification with controls, well above conventional thresholds for weak instruments. These results confirm that oil supply shocks provide a powerful source of exogenous variation in inflation expectations.

Turning to the second-stage results, column (2) shows that the coefficient on instrumented inflation expectations is -0.8436 and statistically significant at the 1 percent level. This estimate implies that a one percentage point increase in expected inflation leads to forecast errors that are approximately 0.84 percentage points more negative in annual earnings growth terms, indicating substantially greater analyst overoptimism. When firm-level and macroeconomic controls are included in column (4), the coefficient declines modestly to -0.7337 but remains negative and highly statistically significant, indicating that the effect is not driven by omitted firm characteristics or aggregate conditions.

A similar pattern emerges for unpredicted forecast errors. In columns (6) and (8), a one percentage point increase in expected inflation is associated with forecast errors that are 0.83 and 0.68 percentage points more negative, respectively. The close correspondence between the IV estimates for total and unpredicted forecast errors indicates that the effect of inflation expectations persists even after removing forecast revisions attributable to prior information. Rising inflation expectations therefore induce systematic forecast optimism that cannot be explained by mechanical or informational updating.

The IV estimates are substantially larger in magnitude than the corresponding OLS estimates, consistent with a salience-based mechanism. Oil supply news generates sharp and highly salient revisions in inflation expectations, which behavioral theories predict should amplify nominal-real confusion relative to more diffuse macroeconomic news. The IV coefficients can therefore be interpreted as local average treatment effects for salient inflation shocks, rather than average responses to routine fluctuations in inflation expectations.

4.1.3 Absolute Forecasting Accuracy

To complement our baseline analysis, we examine the absolute magnitude of forecast errors, which captures the overall precision of analysts' long-term projections. This approach abstracts from the direction of bias and instead asks whether forecasts become less accurate when inflation expectations change. If forecasts are framed in real terms, forecast precision should be unaffected by movements in expected inflation; if not, periods of changing inflation expectations should be associated with larger deviations from realized earnings. We measure absolute forecast errors as the absolute difference between realized and forecasted earnings per share (EPS) growth rates.

$$|\text{Forecast Error}_{i,t\to t+4}| = |\left(\frac{\text{Adjusted EPS}_{i,t+4}}{\text{Adjusted EPS}_{i,t}}\right)^{\frac{1}{4}} - E_{i,t}[\text{LTG}]| \tag{16}$$

where the fourth-root transformation converts annual EPS growth into a quarterly-equivalent rate to ensure consistency with the units of long-term growth (LTG) forecasts. We present the results in Table 5.

<Insert Table 5 Here>

Table 5 Column (1) reports OLS estimates relating absolute forecast errors to changes in inflation expectations. The coefficient on $\Delta\pi^e$ is positive (0.0765) and statistically significant at the 1% level, indicating that larger revisions in inflation expectations are associated with greater forecast inaccuracy. Column (2) reports the corresponding IV estimates. The coefficient on instrumented inflation expectation changes is larger in magnitude (0.3493) but remains positive and statistically significant. Together, these results indicate that periods of shifting inflation expectations are associated with lower forecast precision, consistent with analysts having difficulty incorporating inflation information into long-term earnings projections.

4.1.4 Forecast Revision

In addition to forecast errors, we examine forecast revisions, which capture how analysts update long-term earnings growth expectations over time. Revisions reflect adjustments to new information and evolving macroeconomic conditions. Under rational, real-term forecasting, forecast revisions should not respond systematically to changes in inflation expectations, conditional on fundamentals, because inflation does not directly affect real earnings growth. By contrast, under money illusion, analysts partially frame forecasts in nominal terms and under-adjust for inflation. When inflation expectations rise, higher nominal growth is initially misinterpreted as stronger real performance, generating overly optimistic forecasts, as shown in the baseline results. As realized earnings subsequently reveal the real effects of inflation, analysts correct this misperception through downward forecast revisions.

To study this relationship, we estimate a regression model with a similar setup to the previous specification, maintaining the same structure of fixed effects and control variables to ensure consistency of results. Specifically, we estimate the following equation:

$$\text{Forecast Revision}_{i,t\to t+4} = \beta_0 + \beta_1 \Delta\pi_t^e + \gamma \mathbf{X}_{i,t} + \rho \mathbf{M}_t + \eta_y + \psi_q + \mu_i + \epsilon_{i,t} \tag{17}$$

Table 6 shows that changes in inflation expectations are associated with systematic forecast revisions. Under OLS, a one percentage point increase in expected inflation is associated with a 0.0153 percentage point downward revision in long-term earnings growth forecasts (statistically significant at the 1% level). When inflation expectations are instrumented using oil supply shocks, the estimated revision is substantially larger. The IV coefficient of -0.0881 implies that a one percentage point increase in expected inflation leads analysts to revise long-term earnings growth forecasts downward by nearly 0.09 percentage points. Relative to typical quarterly revisions in long-term growth expectations, this magnitude is economically meaningful and indicates a delayed correction of earlier optimism. This is consistent with the notion that analysts' initial forecasts may have been overly optimistic in response to nominal growth assumptions driven by inflation expectations. As analysts adjust for the real impact of inflation, they lower their forecasts. Together, these findings demonstrate how money illusion manifests over time: initial forecasts fail to fully account for inflation, producing optimistic bias, and subsequent downward revisions occur only as the true real effects are realized.

<Insert Table 6 Here>

4.2 Robustness

This section evaluates the robustness of our main findings to alternative measurement choices, horizons, and macroeconomic controls. Across all specifications, the relationship between inflation expectations and forecast bias remains stable in sign, magnitude, and statistical significance.

Alternative Measure of Forecast Error. To assess the robustness of our results to the construction of forecast errors, we begin by implementing an alternative measure commonly used in the analyst-forecast literature (Jackson 2005). Specifically, we compute forecast errors as the difference between realized and forecasted earnings per share (EPS) four quarters ahead, scaled by the firm's lagged average stock price. This price-scaled forecast error normalizes earnings surprises by market valuation and is widely used to evaluate short-horizon analyst accuracy.

We construct this measure as follows. From IBES Unadjusted Detail forecasts, we extract analyst projections for fourth-quarter-ahead EPS (FPI=9). Within each firm-quarter, individual forecasts are winsorized at the 1st and 99th percentiles and aggregated using the median to form a consensus forecast. Forecast errors are then computed as the difference between realized and forecast EPS and normalized by the firm's lagged average stock price. Results using this alternative forecast error measure are reported in Table A.2 in the Online Appendix. Across specifications with and without macroeconomic and firm-level controls, changes in inflation expectations remain negatively associated with forecast errors. Consistent with our baseline findings, higher expected inflation predicts systematic overestimation of firm performance.

While this measure captures short-term forecast deviations, it may also reflect transitory shocks or reactive revisions tied to firm-specific events, rather than belief distortions alone. By contrast, our baseline analysis relies on long-term growth (LTG) forecast errors following Gulen et al. (2024), which are better suited to studying belief formation. LTG forecasts reflect analysts' structural views about firms' earnings capacity and allow us to decompose forecast errors into predicted and unpredicted components, enabling a cleaner identification of belief-driven bias. Reassuringly, our conclusions are robust across both measures.

Alternative Measure of Inflation Expectations. We next assess robustness to alternative measures of inflation expectations. Inflation expectations differ across agents, including professional forecasters, firms, and households, raising the possibility that our results are driven by features specific to the SPF measure.

To address this concern, we compare quarterly changes in one-year-ahead inflation expectations from the SPF with alternative series from the Cleveland Fed's Survey of Firms' Inflation Expectations (SoFIE), the New York Fed's Survey of Consumer Expectations (SCE), and the University of Michigan Survey of Consumers (MSC). As shown in Figure A.1 in the Online Appendix, these series exhibit strong co-movement, with similar turning points and magnitudes despite differences in sample composition and elicitation methods.

We further replicate our baseline analysis using the MSC measure. Results reported in Table A.3 show that forecast errors respond similarly to consumer-based inflation expectations, with coefficients close in magnitude to those obtained using SPF data. Instrumental-variable estimates using oil supply shocks as an instrument for MSC inflation expectations yield consistent results (Table A.4). These findings indicate that our results do not hinge on a particular expectation measure and reflect a common inflation signal across agents.

Alternative Time Horizon. Our baseline analysis focuses on four-period-ahead forecast errors. To examine whether the results extend beyond this horizon, we re-estimate the model using eight-period-ahead forecast errors. Table A.5 in the Online Appendix shows that the relationship between inflation expectations and forecast bias remains negative and statistically significant. While the magnitudes are smaller, the pattern is unchanged: higher expected inflation continues to predict overestimation of real earnings growth at longer horizons. These results indicate that the documented bias is not confined to short-term forecasts.

Macroeconomic Extrapolation. Finally, we examine whether the relationship between inflation expectations and forecast bias reflects broader macroeconomic optimism rather than a belief distortion. Analysts often form expectations about inflation, growth, and unemployment jointly, raising the possibility that inflation expectations proxy for revisions in real economic outlooks. We first address this concern by controlling for expected changes in real GDP growth and unemployment derived from the SPF. When these controls are included, either separately or jointly, the coefficient on inflation expectations remains negative, statistically significant, and close in magnitude to the baseline estimates (Table A.6). This suggests that the inflation-related forecast bias is not driven by general macroeconomic optimism.

To further isolate the nominal component of inflation expectations, we orthogonalize changes in inflation expectations with respect to expected GDP growth and unemployment. We then replace the raw inflation expectations measure with this residual component, which captures variation in inflation expectations that is not explained by contemporaneous revisions in real activity or labor market outlooks. The resulting estimates are nearly identical to the baseline results (Table A.8)[7].If the observed relationship were primarily driven by macroeconomic extrapolation whereby analysts infer stronger real growth from higher expected inflation, removing the real-activity component of inflation expectations would substantially attenuate the estimated effect. Instead, the stability of the coefficients suggests that the forecast bias is linked to the nominal component of inflation expectations and is consistent with analysts placing weight on inflation signals beyond their implications for real fundamentals.

[7]First-stage regression results are reported in Table A.7 in the Online Appendix.

Energy-Based Inflation Measures. To further validate that our results reflect general inflation expectations rather than being driven by the energy price variation underlying the oil supply shock instrument, we replicate the baseline analysis using energy-related CPI components from the Bureau of Labor Statistics as alternative inflation proxies. Specifically, we replace the SPF inflation expectation measure with the electricity price index, the natural gas price index, and the overall energy price index in turn. Table A.9 reports the results. Across all six specifications, the coefficients on these energy inflation measures are small in magnitude, statistically insignificant, and in some cases signed in the opposite direction from the baseline estimates. These null results provide an important validation of our instrumental variables strategy: if the IV estimates were spuriously driven by the energy content of oil supply shocks rather than by their effect on broader inflation expectations, one would expect energy price changes to exhibit a similar relationship with forecast errors as the instrumented SPF measure. The absence of any such relationship instead confirms that the forecast bias documented in the baseline results is attributable to general inflation expectations, and not to the direct exposure of firms to energy cost pressures.

5 Discussion

In this section, we provide direct belief-level evidence using analyst- and firm-level heterogeneity to characterize how inflation expectations enter long-run earnings growth forecasts. Finally, we systematically evaluate and rule out competing explanations. The combined evidence points to a belief-based distortion in which analysts partially treat nominal inflation as real earnings growth, generating persistent forecast optimism.

5.1 Heterogeneity across Analysts and Firms

Next, we provide belief-level evidence on money illusion in earnings growth expectations by exploiting heterogeneity across analysts and firms. We focus on two dimensions that are directly informative about nominal–real translation: analyst experience and firms' financial flexibility.

Analysts' Experience. First, we use analyst experience as a diagnostic for money illusion. If forecast overoptimism reflects imperfect translation of nominal inflation signals into real earnings growth, analysts with greater accumulated experience and stronger organizational research support should be better able to disentangle nominal price changes from real fundamentals. Under this hypothesis, the inflation-related forecast bias should be weaker among more experienced analysts.

To test this prediction, we estimate an instrumental variables specification that interacts changes in inflation expectations with measures of analyst experience. We proxy experience along two complementary dimensions. First, following Clement (1999), who shows that forecast accuracy improves with employer size, we use brokerage headcount as a measure of organizational resources and research support. Specifically, we define *Top Broker* to equal one if the analyst's employer falls within the top 20 percent of the annual brokerage headcount distribution in the IBES data. Second, we proxy individual experience using analyst coverage intensity, defined as the number of unique firms for which an analyst issues at least one forecast in a given quarter. Analysts with broader coverage are repeatedly exposed to earnings dynamics across firms and industries, which may improve their ability to distinguish nominal price changes from real fundamentals. We define *High Workload* to equal one if an analyst's coverage lies at or above the 90th percentile of the quarterly distribution.

Formally, we estimate the following specification:

$$
\begin{aligned}
FE_{i,a,t+4} = {} & \beta_1 \widehat{\Delta\pi_t^e} + \beta_2 \widehat{\Delta\pi_t^e} \times \text{Experience}_{a,t} + \gamma' X_{i,t} + \theta' X_{i,t} \times \text{Experience}_{a,t} + \rho \mathbf{M}_t \\
& + \tau_a + \mu_i + \eta_y + \psi_q + \varepsilon_{i,a,t},
\end{aligned} \tag{18}
$$

where $\widehat{\Delta\pi_t^e}$ denotes the instrumented quarterly change in one-year-ahead inflation expectations from the SPF, and $\text{Experience}_{a,t}$ is a high-experience indicator. The vector $X_{i,t}$ includes the same set of firm-level controls as in the baseline specification, each interacted with the experience indicator to allow for heterogeneous slopes. All regressions include firm, analyst, year, and quarter fixed effects.

Table 7 shows that inflation-related forecast bias is significantly weaker among more experienced analysts. In Panel A, the interaction coefficient of 2.0617 implies that a one percentage point increase in expected inflation is associated with forecast errors that are 2.06 percentage points less overoptimistic for analysts employed by top-size brokerages relative to others. The estimate is statistically significant at the one percent level. In Panel B, the corresponding interaction coefficient is 0.4362, indicating a smaller but still economically meaningful attenuation among analysts with high coverage intensity. Overall, the evidence suggests that greater experience and organizational resources mitigate inflation-related distortions in earnings growth forecasts, consistent with money illusion operating through imperfect nominal-real translation.

<Insert Table 7 Here>

Cash and Cash-Flow Heterogeneity. Next, we examine heterogeneity across firms based on liquidity buffers and internal cash-flow strength. Firms with lower cash holdings or weaker operating cash flows are more exposed to inflation-induced cost pressures, which widen the gap between nominal revenue growth and real earnings capacity. In such firms, nominal price increases are less likely to translate into sustained real profitability. If analysts partially interpret nominal inflation signals as real growth, forecast overoptimism should therefore be strongest for firms with limited liquidity buffers and weak internal cash generation. In contrast, firms with substantial cash holdings and strong operating cash flows can better absorb input cost shocks and smooth investment, making their real earnings capacity less sensitive to inflation.

We classify firms into high- and low-cash groups based on annual medians of two balance-sheet measures: the cash-to-assets ratio and operating cash flow-to-assets. Firms above the annual median are coded as high, and zero otherwise. We then examine whether the sensitivity of forecast errors to inflation expectations varies systematically across these groups by interacting changes in expected inflation with the cash and cash-flow indicators. We regress both raw and unpredicted forecast errors on inflation expectations, the group indicator, their interaction, the standard set of fixed effects, and firm-level controls interacted with the group indicator.

Table 8 reports the results. The magnitude of the inflation-related forecast bias varies systematically with firms' liquidity buffers and internal cash-flow strength. The positive interaction terms imply that a one percentage point increase in expected inflation is associated with forecast errors that are approximately 0.6 percentage points less negative for high-cash firms relative to low-cash firms. Similarly, forecast errors are 1.57 percentage points less negative for firms with high operating cash flows than for their low cash-flow counterparts. These patterns indicate that inflation-driven forecast overoptimism is attenuated among firms whose real earnings capacity is less exposed to inflationary pressures. Importantly, these results hold after controlling for realized earnings performance, indicating that the heterogeneity reflects differences in perceived vulnerability to inflation rather than differences in realized fundamentals.

<Insert Table 8 Here>

Thus, heterogeneity across analysts and firms provides direct belief-level evidence consistent with money illusion in earnings growth expectations. The inflation-related forecast bias is weaker among more experienced analysts and among firms with stronger cash holdings and operating cash flows, settings in which real earnings capacity is less exposed to inflationary pressures. These patterns are difficult to reconcile with explanations based on rational learning, generic optimism, or realized fundamentals, and instead point to a systematic distortion in how nominal inflation expectations are incorporated into earnings growth beliefs.

5.2 Alternative Channels

In what follows, we assess whether alternative channels can account for the relationship between inflation expectations and forecast bias. We evaluate each in turn and find no evidence consistent with these explanations.

Rational Inattention. We first consider a rational inattention explanation, under which analysts respond to inflation only when it is sufficiently salient, allocating attention in proportion to its informational value. Under this mechanism, forecast bias should weaken or disappear during periods of low or stable inflation. The data do not support this prediction. Analysts incorporate expected inflation into long-run earnings forecasts even when inflation is low and stable, particularly after 2000. Moreover, the sensitivity of forecasts to inflation expectations is significantly weaker among more experienced analysts. While rational inattention allows experience to improve information processing, it predicts attenuation through more accurate filtering of signals, not a systematic reduction in the tendency to map inflation into perceived earnings growth. The evidence instead indicates that analysts attend to inflation information but differ in how effectively they translate nominal signals into real earnings expectations. This pattern is difficult to reconcile with limited attention and is more consistent with money illusion operating through nominal–real misinterpretation.

Risk-Premium Channel. We next consider a risk-premium interpretation, under which inflation expectations proxy for changes in macroeconomic risk or business conditions rather than belief distortions (Fama 1981). If higher expected inflation signals lower macro risk or stronger aggregate growth, risk premia should decline more for highly leveraged firms, leading analysts to become relatively more optimistic about these firms' earnings. Conversely, if inflation signals higher macro risk, forecast optimism should decline more sharply for highly leveraged firms. Both cases imply systematic heterogeneity by leverage.

We find no evidence of such heterogeneity. The interaction between inflation expectations and firm leverage is statistically insignificant across specifications (Table 9, Panel A), indicating that analysts do not revise forecasts differentially for highly indebted firms as inflation expectations change. Because leverage is a central proxy for exposure to risk-premium variation, the absence of any leverage-based response provides little support for a risk-premium explanation. Instead, this pattern is more consistent with forecast distortions arising from misinterpretation of nominal revenues and costs rather than changes in risk pricing.

<Insert Table 9 Here>

Additional evidence from inflation uncertainty reinforces this conclusion. After 2000, inflation uncertainty increases even as inflation levels remain relatively stable (Londono et al. 2025). Under a standard risk-premium channel, higher uncertainty should raise required returns and reduce optimism. Yet we observe the opposite pattern: increases in expected inflation are associated with more optimistic forecast errors. This sign pattern is difficult to reconcile with a risk-premium interpretation.

Real Profitability Channel. An alternative explanation is that analysts respond rationally to inflation expectations because inflation improves real profitability for some firms. Under this channel, forecast optimism should be concentrated among firms with stronger pricing power, which are better able to pass cost increases through to margins. We test this prediction using firm-level market power measured by the text-based Herfindahl-Hirschman Index (HHI) constructed by Hoberg and Phillips (2015) and firm-level markup constructed by De Loecker and Warzynski (2012). Splitting firms by market power, we find no evidence that the inflation-related forecast bias differs between high- and low-market-power firms (Table 9, Panel B and Panel C). The interaction terms are small and statistically insignificant, indicating that analysts do not condition their response to inflation expectations on firms' ability to pass inflation through to real margins. This null result suggests that the observed bias does not reflect rational conditioning on real profitability, but rather a nominal misinterpretation that operates broadly across firms.

Momentum-Chasing Channel. Another possibility is that analysts extrapolate recent nominal performance into long-run earnings, mechanically projecting revenue momentum forward. If so, inflation-related forecast optimism should be stronger for firms with high sales growth or high profitability. We test this hypothesis by interacting inflation expectations with indicators for high sales growth and high return on assets. Across specifications, the interaction terms are small and statistically insignificant (Table A.10). Analysts do not become more optimistic in response to inflation when firms are already exhibiting strong sales momentum or profitability. These results indicate that inflation-driven forecast bias is not explained by momentum chasing or mechanical extrapolation of recent performance.

Macro-Fundamental Channel. Finally, inflation expectations may proxy for aggregate demand conditions rather than belief distortions. If so, forecast optimism should be larger during demand-driven inflation episodes and weaker during supply-driven inflation episodes. Using the supply-demand inflation decomposition of Shapiro (2024), we find no evidence that the sensitivity of forecast errors to inflation expectations differs across demand- and supply-driven inflation regimes (Table A.11). Analysts respond similarly to inflation expectations regardless of their macroeconomic source. This pattern is inconsistent with rational macro-fundamental conditioning and instead points to a response to nominal inflation signals per se.

In sum, the above evidence provides little support for explanations based on selective attention, risk repricing, fundamental extrapolation, momentum chasing, or macroeconomic composition. Across specifications, we find that inflation expectations enter earnings forecasts in ways that are not closely tied to observable real fundamentals, firm exposure, or macroeconomic conditions. The results are most consistent with a growth-based form of money illusion, in which analysts partially interpret nominal inflation as real earnings growth.

6 Conclusion

This paper studies how inflation expectations shape equity analysts' long-term earnings growth forecasts. We document that higher expected inflation is associated with upward revisions in long-term growth forecasts that are not fully realized in subsequent earnings, generating systematic forecast errors. The evidence points to a belief-based channel through which macroeconomic expectations influence firm-level forecasts, with effects that are more pronounced among firms with weaker financial positions, including low cash holdings and limited internal cash flows. Using an instrumental-variables strategy based on global oil supply shocks, we provide evidence consistent with a causal effect of inflation expectations on forecast errors.

To interpret these findings, we use a Gordon growth framework that distinguishes how expected inflation can enter equity valuations through beliefs about earnings growth or discount rates. Our results help clarify the reversal in the empirical relationship between inflation and equity valuations documented in prior work. Rather than reflecting shifts in underlying fundamentals alone, the changing sign of the inflation–valuation relationship appears to coincide with an evolution in belief formation. In a low-inflation environment, nominal price signals were more readily incorporated into perceived real growth, contributing to forecast optimism. By linking analysts' expectations to aggregate valuation patterns, the paper highlights a behavioral channel through which nominal expectations shape equity valuations.

More broadly, the findings underscore how nominal macroeconomic signals can distort real economic beliefs even among professional forecasters. Inflation expectations influence not only discounting, but also perceptions of firms' long-run earnings capacity, with persistent effects on forecasts and valuations. This mechanism has implications for how financial markets process macroeconomic information in low- and high-inflation environments, and for the transmission of monetary and inflation shocks into asset prices. Understanding how nominal signals are translated into real beliefs may therefore be central to explaining variation in forecast accuracy, valuation dynamics, and the sensitivity of equity markets to macroeconomic news.

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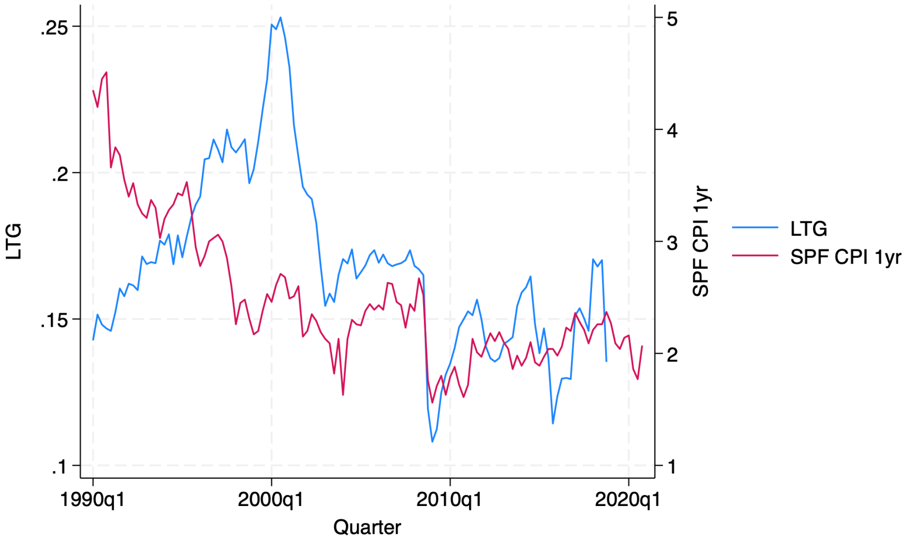
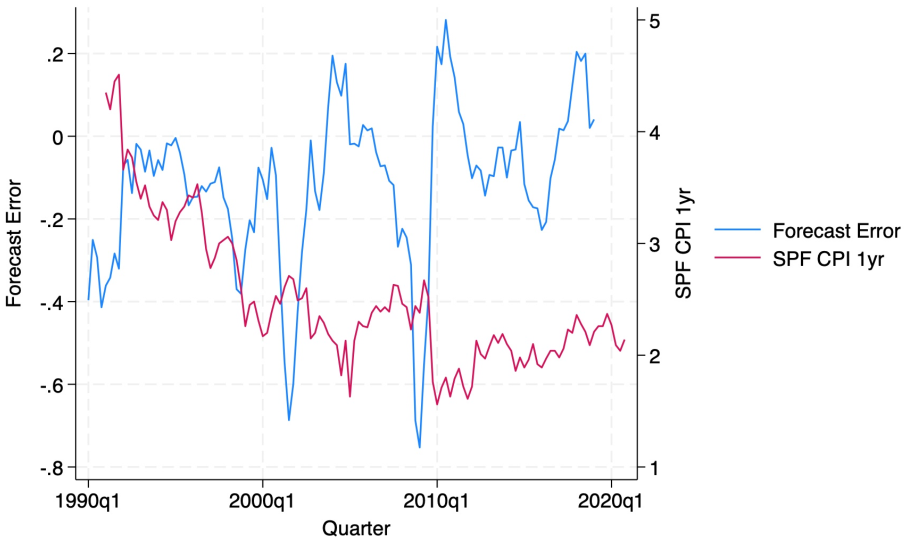
Tables and Figures

Figure 1: LTG and Forecast Error with Inflation Expectations

(a) LTG Forecasts and Inflation Expectations



(b) LTG Forecast Error and Inflation Expectations



Note: This figure consists of two panels. Panel (a) plots the time series of analysts' long-term growth forecasts (LTG) and inflation expectations from the Survey of Professional Forecasters (SPF). For each quarter, we collapse the panel to the mean of LTG forecasts. The blue line (left axis) shows the quarterly average LTG forecast, and the red line (right axis) shows the SPF CPI one-year expectation. Figure (b) plots analysts' forecast errors against inflation expectations from the Survey of Professional Forecasters (SPF). The series for inflation expectations is lagged four quarters to reflect information available to analysts at the time forecasts were formed. The left axis displays the mean forecast error, and the right axis displays the lagged SPF CPI one-year expectation.

Table 1: Inflation Expectations and Interest Rates: Pre- and Post-2001 Comparison

	(1) Quarterly Return_post	(2) Quarterly Return_pre	(3) Quarterly Return_post	(4) Quarterly Return_pre	(5) LTG_post	(6) LTG_pre
SPFCPI1YR	0.0161***	-0.0291***			0.0124***	0.0007
	(0.0062)	(0.0080)			(0.0033)	(0.0025)
TBILL2			-0.0465***	-0.0080***		
			(0.0029)	(0.0030)		
Constant	0.0230	0.3274***	0.1241***	0.2780***	0.0638**	0.1409***
	(0.0256)	(0.0354)	(0.0219)	(0.0293)	(0.0302)	(0.0146)
Observations	132,439	102,830	132,439	102,830	48,828	35,478
R^2	0.145	0.158	0.147	0.158	0.382	0.687
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table reports regressions estimated separately for the post-2001 and pre-2001 periods. Columns (1)-(2) regress quarterly stock returns on one-year-ahead inflation expectations. Columns (3)-(4) regress quarterly stock returns on the short-term interest rate measure proxied by the T-bill forecast from the Survey of Professional Forecasters. Columns (5)-(6) regress long-term growth expectations on one-year-ahead inflation expectations. All regressions include firm, year, and quarter fixed effects. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 2: Summary statistics for firm-level variables

Variable	Obs	Mean	Std. Dev	Min	Max
Panel A: FE and FR					
$EPS^{forecast}$	170,975	0.1717	0.1361	-0.162	0.75
EPS^{actual}_{t+4}	335,111	-0.0336	1.7375	-9.45	7
FE^{t+4}_{raw}	139,597	-0.1199	1.4607	-10.36	7.7035
FE^{t+4}_{unpred}	76,163	-0.0861	1.2912	-10.36	7.7035
$FR_{t\to t+4}$	101,937	-0.0106	0.1249	-0.912	0.912
Panel B: Macro Level Variables					
$\Delta\widehat{\pi}^e$	124	-.0174	0.1914	-0.85	0.5
gdp	124	4.5613	5.1489	-29.1	40
exrate	124	0.8417	0.1075	0.6402	1.1501
Panel C: Firm Level Variables					
Total q	42,220	2.1874	1.3663	0.5748	11.0719
Sales Growth	42,220	0.1353	0.3061	-0.7651	4.8000
Leverage	42,220	0.2591	0.1743	0	0.9979
Cash Flow	42,220	0.0660	0.0680	-0.6167	0.2749
Assets	42,220	8.0860	1.5570	2.4788	10.7487
ROA	42,220	0.0288	0.0251	-0.3858	0.1234
Cash ratio	42,220	0.1125	0.1356	0.0001	0.8972
Default Prob	42,220	0.0125	0.0763	0	0.9598

Note: The number of observations varies across forecast error measures because each construction requires different data availability. Raw forecast errors can be computed whenever realized earnings are matched to LTG forecasts, yielding the largest sample. Forecast revisions require at least two adjacent forecasts for a firm, reducing the sample size. The unpredicted forecast error further conditions on the availability of lagged forecast revisions to purge predictable components, resulting in the smallest sample.

Table 3: OLS Regression Results

	FE_{raw}^{t+4}		FE_{unpre}^{t+4}	
	(1)	(2)	(3)	(4)
$\Delta\pi^e$	-0.1162***	-0.0995***	-0.1318***	-0.0963***
	(0.0234)	(0.0314)	(0.0283)	(0.0359)
Total Q		-0.0137*		-0.0115
		(0.0079)		(0.0087)
Sales Growth		0.0195		0.0218
		(0.0257)		(0.0359)
Leverage		0.3812***		0.2349***
		(0.0697)		(0.0850)
Cash Flow		0.0222		-0.1729
		(0.1767)		(0.2117)
Assets		-0.2768***		-0.2531***
		(0.0185)		(0.0232)
ROA		-2.5741***		-3.3148***
		(0.4064)		(0.5110)
Cash		0.0579		0.1875
		(0.1022)		(0.1244)
Default Probability		-0.5119***		-0.2979
		(0.1625)		(0.2349)
Adjusted R^2	0.1385	0.1544	0.1649	0.1839
Observations	134,852	70,477	73,228	41,396
Macro Controls	No	Yes	No	Yes
Firm&Time FE	Yes	Yes	Yes	Yes

Note: This table reports baseline OLS estimates with firm, year, and quarter fixed effects. Columns (1) and (2) use FE_{raw}^{t+4} as the dependent variable, while columns (3) and (4) use FE_{unpre}^{t+4}. Macro-level control variables include the exchange rate and the GDP growth rate. Odd-numbered columns exclude controls, while even-numbered columns include them. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 4: IV Regression Results: Oil Supply News Shocks as Instrument

	FE_{raw}				FE_{unpre}			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	First-stage	2SLS	First-stage	2SLS	First-stage	2SLS	First-stage	2SLS
Oil Shock	0.1176***		0.1062***		0.1140***		0.0989***	
	(0.0018)		(0.0021)		(0.0025)		(0.0028)	
$\widehat{\Delta\pi^e}$		-0.8436***		-0.7337***		-0.8323***		-0.6833***
		(0.1280)		(0.1824)		(0.1560)		(0.2159)
Total Q			0.0006	-0.0164*			0.0006	-0.0158*
			(0.0007)	(0.0091)			(0.0007)	(0.0090)
Sales Growth			0.0050**	0.0363			0.0050**	0.0385
			(0.0023)	(0.0407)			(0.0023)	(0.0406)
Leverage			-0.0036	0.1969**			-0.0036	0.1983**
			(0.0064)	(0.0827)			(0.0064)	(0.0827)
Cash Flow			-0.0083	0.0652			-0.0083	0.0569
			(0.0165)	(0.2115)			(0.0165)	(0.2116)
Assets			0.0035***	-0.2252***			0.0035***	-0.2250***
			(0.0012)	(0.0232)			(0.0012)	(0.0232)
ROA			0.0757**	-2.1691***			0.0757**	-2.6426***
			(0.0384)	(0.4184)			(0.0384)	(0.5240)
Cash			0.0047	0.0708			0.0047	0.1468
			(0.0089)	(0.1039)			(0.0089)	(0.1219)
Default Probability			-0.0027	-0.3814**			-0.0027	-0.1834
			(0.0109)	(0.1787)			(0.0109)	(0.2644)
F-stats	4260.69		2590.22		2059.57		1282.05	
Centered R^2		-0.0074		0.0037		-0.0088		0.0035
Observations	115,520	115,520	62,626	62,626	61,484	61,484	36,596	36,596
Macro Controls	No	No	Yes	Yes	No	No	Yes	Yes
Firm&Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table reports the IV regression results instrumenting inflation expectations with global oil supply news shocks. Macro-level control variables include the exchange rate and the GDP growth rate. Odd-numbered columns exclude controls, while even-numbered columns include them. Columns (1)–(4) present IV regression results using FE^{t+4}_{raw} (raw forecast error) as the dependent variable. Columns (1) and (3) report the first-stage regressions for changes in SPF inflation expectations without and with firm-level and macro-level controls, respectively. Columns (2) and (4) display the corresponding second-stage regressions for FE^{t+4}_{raw}, again without and with controls. Columns (5)–(8) present IV regression results using FE^{t+4}_{unpre} (unpredicted forecast error) as the dependent variable. Columns (5) and (7) show the first-stage regressions for changes in inflation expectations instrumented by oil supply news shocks, for the unpredicted forecast error specification, without and with firm-level controls. Columns (6) and (8) show the corresponding second-stage results for FE^{t+4}_{unpre}. All regressions absorb firm, year, and quarter fixed effects. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 5: OLS and IV Results for Absolute Forecasting Accuracy

	OLS	IV
Dependent Var: $\lvert FE_{t\to t+4}\rvert$	(1)	(2)
$\Delta\pi^e$	0.0765***	0.3493**
	(0.0268)	(0.1501)
Total Q	-0.0044	-0.0020
	(0.0072)	(0.0073)
Sales Growth	-0.1251***	-0.1280***
	(0.0222)	(0.0250)
Leverage	0.2773***	0.2346***
	(0.0616)	(0.0631)
Cashflow	-1.3122***	-1.1015***
	(0.1569)	(0.1594)
Assets	-0.1018***	-0.0922***
	(0.0168)	(0.0178)
ROA	-7.8885***	-7.4307***
	(0.4100)	(0.4246)
Cash	-0.1203	-0.2168**
	(0.0885)	(0.0905)
Default Probability	1.1578***	1.2742***
	(0.1251)	(0.1338)
Observations	70,477	62,626
R^2	0.3111	0.0448
Macro Control	Yes	Yes
Firm&Time FE	Yes	Yes

Note: This table reports OLS and IV estimates for the absolute forecast error, which is constructed as the absolute value of the total forecast error. Column (1) presents the results from a standard OLS regression, while Column (2) uses an Instrumental Variables (IV) approach. The first-stage F-statistic for the IV model is 2590.22, which indicates that the instrument is sufficiently strong. Macro-level control variables include the exchange rate and the GDP growth rate. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 6: Forecast Revision Results

Dependent Var: $FR_{t\to t+4}$	OLS		IV	
	(1)	(2)	(3)	(4)
$\Delta\pi^e$	-0.0147***	-0.0153***	-0.0638***	-0.0881***
	(0.0021)	(0.0028)	(0.0134)	(0.0192)
Total Q		-0.0053***		-0.0061***
		(0.0008)		(0.0007)
Sales Growth		-0.0199***		-0.0137***
		(0.0033)		(0.0034)
Leverage		0.00003		-0.0021
		(0.0062)		(0.0060)
Cash Flow		-0.0219		0.0135
		(0.0149)		(0.0141)
Assets		-0.0145***		-0.0138***
		(0.0013)		(0.0013)
ROA		-0.2014***		-0.1129***
		(0.0314)		(0.0281)
Cash		0.0149		0.0082
		(0.0100)		(0.0095)
Default Probability		0.0353***		0.0367***
		(0.0117)		(0.0120)
R^2	0.0485	0.0589	-0.0054	-0.0021
Observations	100,672	54,507	85,085	48,163
Macro Controls	No	Yes	No	Yes
Firm&Time FE	Yes	Yes	Yes	Yes

Note: This table reports the 4-period forecast revision regression results. Columns (1) and (2) display OLS results; IV columns display two-stage least squares estimates. The first stage F-statistics are 2541.61 and 1501.43 for columns (3) and (4), respectively. Macro-level control variables include the exchange rate and the GDP growth rate. Odd-numbered columns exclude controls, while even-numbered columns include them. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 7: Heterogeneity by Analyst Experience

Dependent Variables:		FE_{ind}^{t+4}
Panel A: by Broker	$\widehat{\Delta\pi^e}$	-0.3000^{*}
		(0.1826)
	$\widehat{\Delta\pi^e}\times$ Top Broker	2.0617^{***}
		(0.7504)
	Firm-level controls	Yes
	Macro-level controls	Yes
	Firm & Analyst & Time fixed effects	Yes
	Observations	136,474
Panel B: by Workload	$\widehat{\Delta\pi^e}$	-0.3647^{*}
		(0.1896)
	$\widehat{\Delta\pi^e}\times$ High Workload	0.4362^{**}
		(0.2224)
	Firm-level controls	Yes
	Macro-level controls	Yes
	Firm & Analyst & Time fixed effects	Yes
	Observations	136,974

Note: This table reports heterogeneity by analyst experience using two proxies for experience. The dependent variable is the individual firm-level forecast error at horizon $t+4$. Top Broker equals 1 if in the calendar year corresponding to the forecast date, the analyst's employer ranks within the top 10 percent of all brokerages by analyst headcount for that year, and equals 0 otherwise. High Workload equals 1 if the analyst's workload, measured by the number of distinct firms the analyst covers that quarter falls within the top 20 percent among analysts active in that quarter, and equals 0 otherwise. All specifications are estimated by IV. The endogenous regressor is the change in one-year-ahead inflation expectations. We instrument both $\widehat{\Delta\pi^e}$ and its interaction with the relevant proxy using the oil-supply news shock and its corresponding interaction. Firm-level controls and macro controls (GDP growth, exchange rate) are included. All regressions absorb firm, analyst, year, and quarter fixed effects. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 8: Heterogeneity by Cash Holdings and Cash Flow

Dependent Variables:		FE_{raw}^{t+4}	FE_{unpre}^{t+4}
Panel A: Cash Holdings Group	$\widehat{\Delta\pi^e}$	-1.0115^{**}	-0.9895^{***}
		(0.2409)	(0.2824)
	$\widehat{\Delta\pi^e}\times$ Cash Group	0.5398^{*}	0.6200^{*}
		(0.2940)	(0.3424)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	62,626	36,596
Panel B: Cashflow Group	$\widehat{\Delta\pi^e}$	-1.7431^{***}	-1.6073^{**}
		(0.5278)	(0.6670
	$\widehat{\Delta\pi^e}\times$ Cashflow Group	1.5778^{***}	1.5671^{**}
		(0.5513)	(0.6977)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	62,626	36,596

Note: This table reports the cash group heterogeneous results. The dependent variables are the raw and unpredicted forecast errors for 4 periods, and we use IV to run the regressions. We exclude firms in the office of Energy & Transportation when running the IV regressions. Firms are classified into high- and low cash holdings (or cashflow) groups based on the within-year median of the respective measure; firms above the median are assigned to the high group (1), and those at or below the median to the low group (0). We also include interaction terms between all controls and the corresponding grouping dummy variable. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 9: Heterogeneity by Leverage and Market Power

Dependent Variables:		FE^{t+4}_{raw}	FE^{t+4}_{unpre}
Panel A: Leverage			
	$\widehat{\Delta\pi^e}$	-0.5470^{**}	-0.6005^{**}
		(0.2284)	(0.2700)
	$\widehat{\Delta\pi^e}\times$ Leverage Group	-0.3636	-0.1556
		(0.3016)	(0.3377)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	62, 626	36, 596
Panel B: Market Power			
	$\widehat{\Delta\pi^e}$	-0.5304^{**}	-0.5650^{**}
		(0.2428)	(0.2721)
	$\widehat{\Delta\pi^e}\times$ Market Power Group	-0.4259	-0.3083
		(0.3018)	(0.3504)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	61, 947	36, 223
Panel C: Markup			
	$\widehat{\Delta\pi^e}$	-0.5996^{*}	-0.9575^{**}
		(0.3510)	(0.4409)
	$\widehat{\Delta\pi^e}\times$ Markup Group	-0.3396	0.1708
		(0.4222)	(0.4881)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	42,673	25,406

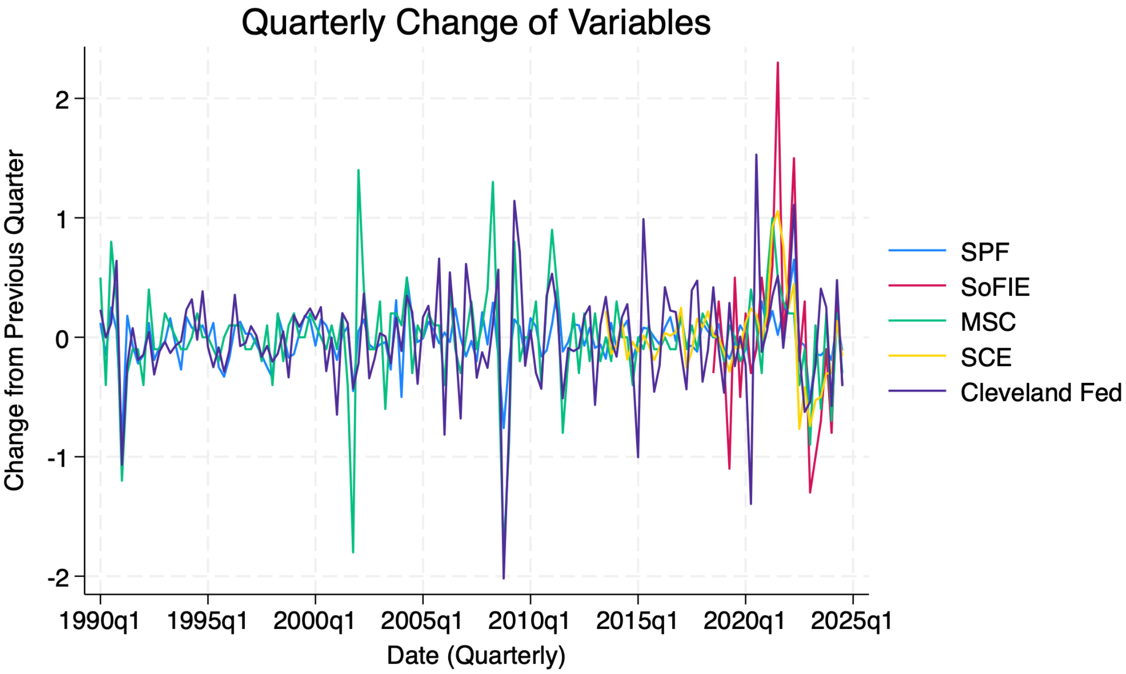
Note: This table reports the leverage and market power heterogeneous results. The dependent variables are the raw and unpredicted forecast errors at 4 periods, and we use IV to run the regressions. Firms are classified into high- and low-leverage and market power proxied by HHI index and firm level markup groups based on the within-year median of the respective measure; firms above the median are assigned to the high group (1), and those at or below the median to the low group (0). We also include interaction terms between all controls and the corresponding grouping dummy variable. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Online Appendix

Money Illusion in Earnings Growth Expectations

A Additional Tables and Figures

Figure A.1: Quarterly Change of Inflation Expectation



Note: This figure displays the quarterly change in one-year-ahead inflation expectations, computed as the difference between the current and previous quarter's inflation expectations. SPF is retrieved from the Survey of Professional Forecasters (SPF) by the Federal Reserve Bank of Philadelphia. The SoFIE series is from the Cleveland Federal Reserve's Survey of Firms' Inflation Expectations. The SCE series, from the Survey of Consumer Expectations by the Federal Reserve Bank of New York, represents median expected inflation rates from consumers. The MSC series is sourced from the University of Michigan's Surveys of Consumer. The Federal Reserve Bank of Cleveland also publishes an independent measure of expected inflation represented by the Cleveland Fed in the graph. We take simple averages of the monthly series from SCE and Cleveland Fed to form our quarterly observations.

Table A.1: Variable Construction and Sources

Variable Name	Construction Details	Source
Book Equity	Shareholder equity plus deferred taxes minus preferred stock	CRSP/Compustat
Age	Age of firm in quarters	CRSP/Compustat
ROA	Return on Assets (ROA = EBIT / Total Assets)	CRSP/Compustat
Assets	log of deflated total assets (log(Assets $\times$ deflator))	CRSP/Compustat
Cash Flow	cashflow divided by lagged assets	CRSP/Compustat
Cash	ratio of cash to total assets	CRSP/Compustat
Leverage	(Long-term Debt + Short-term Debt)/ Total Assets	CRSP/Compustat
Sales Growth	annual sales growth ((Sales / Lagged Sales) - 1)	CRSP/Compustat
Total Q	capital's market value/replacement cost	Peters and Taylor (2017)
GDP	Δ%from preceding period, seasonally adjusted annual rate	FRED Economic Data
Exrate	quarterly average of daily USD for Euro Area (19 Countries)	FRED Economic Data

Table A.2: Alternative FE Results: Scaled by Price

Dependent Var: FE_{price}^{t+4}	(1)	(2)
$\Delta\pi^e$	-0.0044***	-0.0051***
	(0.0013)	(0.0014)
Total Q		0.0008**
		(0.0003)
Sales Growth		0.0018*
		(0.0010)
Leverage		-0.0005
		(0.0038)
Cashflow		-0.0050
		(0.0065)
Assets		-0.0007
		(0.0009)
ROA		0.0429**
		(0.0179)
Cash		0.0161**
		(0.0051)
Default Probability		-0.0202*
		(0.0101)
gdp		-0.0000
		(0.0001)
exrate		0.0068
		(0.0066)
Observations	145,665	145,665
Adj. R-squared	0.1100	0.1118
Macro Control	No	Yes
Firm&Time FE	Yes	Yes

Note: This table presents an alternative measurement of forecast error regression results. The dependent variable is the 4-period forecast error scaled by price. Equations are estimated using OLS. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table A.3: OLS for MSC Inflation Expectations

	OLS			
	(1)	(2)	(3)	(4)
	FE_{raw}^{t+4}	FE_{raw}^{t+4}	FE_{unpre}^{t+4}	FE_{unpre}^{t+4}
$\Delta\pi^e$	-0.0874***	-0.0874***	-0.0778***	-0.0794***
	(0.0109)	(0.0147)	(0.0132)	(0.0167)
Total Q		-0.0126		-0.0104
		(0.0079)		(0.0087)
Sales Growth		0.0193		0.0219
		(0.0257)		(0.0359)
Leverage		0.3810***		0.2347***
		(0.0696)		(0.0850)
cashflow		0.0099		-0.1855
		(0.1767)		(0.2114)
Assets		-0.2759***		-0.2526***
		(0.0185)		(0.0232)
ROA		-2.5757***		-3.3182***
		(0.4065)		(0.5108)
Cash		0.0576		0.1853
		(0.1022)		(0.1243)
Default Probability		-0.5211***		-0.3062
		(0.1625)		(0.2349)
gdp		-0.0020		-0.0040
		(0.0028)		(0.0033)
exrate		0.0450		0.2662
		(0.1828)		(0.2120)
Adj. R^2	0.1388	0.1548	0.1652	0.1842
Observations	134,852	70,477	73,228	41,396
Macro Control	No	Yes	No	Yes
Firm&Time FE	Yes	Yes	Yes	Yes

Note: This table presents the OLS regression results with the MSC inflation expectations. $\Delta\pi^e$ is proxied using the MSC inflation expectation measure. Columns (1)-(4) report baseline OLS estimates with fixed effects. Columns (1) and (2) use FE_{raw}^{t+4} as the dependent variable, while columns (3) and (4) use FE_{unpre}^{t+4}. Macro-level control variables include the exchange rate and the GDP growth rate. Odd-numbered columns exclude controls, while even-numbered columns include them. All regressions absorb firm, year, and quarter fixed effects. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table A.4: IV for MSC Inflation Expectation

	IV: Oil Supply News Shocks FE^{t+4}_{raw}				**IV: Oil Supply News Shocks** FE^{t+4}_{unpre}			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	First	*2SLS*	*First*	*2SLS*	*First*	*2SLS*	*First*	*2SLS*
oilshock	0.5437***		0.5119***		0.5297***		0.4952***	
	(0.0046)		(0.0052)		(0.0062)		(0.0066)	
$\Delta\widehat{\pi}^e$		-0.1825***		-0.1522***		-0.1791***		-0.1365***
		(0.0276)		(0.0378)		(0.0335)		(0.0432)
Total Q			0.0091***	-0.0181**			0.0128***	-0.0145
			(0.0012)	(0.0082)			(0.0016)	(0.0090)
Sales Growth			-0.0024	0.0453			0.0053	0.0358
			(0.0035)	(0.0293)			(0.0059)	(0.0405)
Leverage			-0.0072	0.3635***			-0.0173	0.1984**
			(0.0096)	(0.0706)			(0.0134)	(0.0823)
cashflow			-0.0804***	0.2267			-0.1188***	0.0463
			(0.0253)	(0.1809)			(0.0369)	(0.2111)
Assets			0.0130***	-0.2596***			0.0118***	-0.2258***
			(0.0020)	(0.0192)			(0.0028)	(0.0232)
ROA			0.0857	-2.2378***			0.0385	-2.6891***
			(0.0611)	(0.4174)			(0.0886)	(0.5226)
Cash			0.0021	0.0696			-0.0092	0.1424
			(0.0141)	(0.1036)			(0.0195)	(0.1215)
Default Probability			-0.1379***	-0.3881**			-0.1212***	-0.1981
			(0.0223)	(0.1788)			(0.0305)	(0.2640)
gdp			0.0406***	0.0033			0.0402***	-0.0004
			(0.0008)	(0.0035)			(0.0012)	(0.0041)
exrate			0.1727***	0.0951			0.2789***	0.1948
			(0.0586)	(0.1920)			(0.0809)	(0.2167)
F-stats	13861.51		9725.81		7377.42		5690.57	
Centered R^2		0.0002		0.0100		0.0004		0.0111
Observations	115,520	115,520	62,626	62,626	61,484	61,484	36,596	36,596
Macro Control	No	No	Yes	Yes	No	No	Yes	Yes
Firm&Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the IV regression results with the MSC inflation expectations. Odd-numbered columns exclude controls, while even-numbered columns include them. This table presents instrumental variables (IV) regression results using the oil supply news shock as an instrument for the MSC inflation expectations. Columns (1)-(4) present IV regression results using FE^{t+4}_{raw} (raw forecast error) as the dependent variable. Columns (1) and (3) report the first-stage regressions for changes in SPF inflation expectations without and with firm-level and macro-level controls, respectively. Columns (2) and (4) display the corresponding second-stage regressions for FE^{t+4}_{raw}, again without and with controls. Columns (5)-(8) present IV regression results using FE^{t+4}_{unpre} (unpredicted forecast error) as the dependent variable. Columns (5) and (7) show the first-stage regressions for changes in inflation expectations instrumented by oil supply news shocks, for the unpredicted forecast error specification, without and with firm-level controls. Columns (6) and (8) show the corresponding second-stage results for FE^{t+4}_{unpre}. Macro-level control variables include the exchange rate and the GDP growth rate. All regressions absorb firm, year, and quarter fixed effects. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table A.5: OLS Regression Results at 8 Periods

	FE_{raw}^{t+8}		FE_{unpre}^{t+8}	
	(1)	(2)	(3)	(4)
$\Delta\pi^e$	-0.0553***	-0.0299***	-0.0487***	-0.0254**
	(0.0075)	(0.0103)	(0.0091)	(0.0118)
Total Q		-0.0347***		-0.0250***
		(0.0041)		(0.0046)
Sales Growth		-0.0914***		-0.0908***
		(0.0113)		(0.0171)
Leverage		0.1610***		0.1136***
		(0.0298)		(0.0363)
Cash Flow		-0.2018***		-0.2919***
		(0.0641)		(0.0866)
Assets		-0.1660***		-0.1468***
		(0.0076)		(0.0102)
ROA		-3.2768***		-3.1230***
		(0.1921)		(0.2403)
Cash		-0.0691		-0.0533
		(0.0423)		(0.0540)
Default Probability		0.3341***		0.3564***
		(0.0559)		(0.0856)
Adjusted R^2	0.0969	0.1747	0.1296	0.1979
Observations	111,619	58,839	61,504	35,104
Macro Controls	No	Yes	No	Yes
Firm&Time FE	Yes	Yes	Yes	Yes

Note: This table reports baseline OLS estimates using the 8-period forecast error. Columns (1) and (2) use FE_{raw}^{t+8} as the dependent variable, while columns (3) and (4) use FE_{unpre}^{t+8}. Macro-level control variables include the exchange rate and the GDP growth rate. Odd-numbered columns exclude controls, while even-numbered columns include them. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table A.6: Augmented Baseline: GDP and Unemployment Expectations

	(1) FE raw	(2) FE raw	(3) FE raw	(4) FE raw	(5) FE raw	(6) FE raw	(7) FE unpre	(8) FE unpre	(9) FE unpre	(10) FE unpre	(11) FE unpre	(12) FE unpre
π^e	-0.1022***	-0.0871***	-0.0910***	-0.0870***	-0.0911***	-0.0882***	-0.1192***	-0.0820**	-0.1125***	-0.0852**	-0.1113***	-0.0851**
	(0.0235)	(0.0314)	(0.0243)	(0.0327)	(0.0243)	(0.0327)	(0.0284)	(0.0360)	(0.0292)	(0.0374)	(0.0291)	(0.0374)
GDP^e	-0.0532***	-0.0532***			-0.0497***	-0.0536***	-0.0435***	-0.0569***			-0.0411***	-0.0582***
	(0.0086)	(0.0124)			(0.0091)	(0.0130)	(0.0101)	(0.0137)			(0.0106)	(0.0148)
unemp^e			0.0538***	0.0316	0.0256	-0.0030			0.0406*	0.0282	0.0181	-0.0087
			(0.0176)	(0.0235)	(0.0186)	(0.0247)			(0.0208)	(0.0261)	(0.0219)	(0.0282)
Total Q		-0.0132*		-0.0135*		-0.0132*		-0.0109		-0.0113		-0.0109
		(0.0079)		(0.0079)		(0.0079)		(0.0087)		(0.0088)		(0.0088)
SalesGrowth		0.0200		0.0193		0.0200		0.0221		0.0218		0.0222
		(0.0257)		(0.0257)		(0.0257)		(0.0359)		(0.0359)		(0.0359)
Leverage		0.3833***		0.3813***		0.3833***		0.2364***		0.2350***		0.2364***
		(0.0697)		(0.0697)		(0.0697)		(0.0850)		(0.0850)		(0.0850)
CashFlow		0.0077		0.0201		0.0078		-0.1892		-0.1750		-0.1890
		(0.1767)		(0.1767)		(0.1767)		(0.2119)		(0.2118)		(0.2119)
LogAssets		-0.2760***		-0.2766***		-0.2760***		-0.2523***		-0.2529***		-0.2523***
		(0.0185)		(0.0185)		(0.0185)		(0.0232)		(0.0232)		(0.0232)
ROA		-2.5523***		-2.5752***		-2.5521***		-3.2937***		-3.3163***		-3.2928***
		(0.4063)		(0.4064)		(0.4063)		(0.5106)		(0.5110)		(0.5108)
Cash		0.0556		0.0589		0.0554		0.1835		0.1883		0.1831
		(0.1021)		(0.1022)		(0.1021)		(0.1244)		(0.1245)		(0.1244)
Default Prob		-0.5116***		-0.5158***		-0.5112***		-0.2976		-0.3013		-0.2966
		(0.1625)		(0.1626)		(0.1627)		(0.2350)		(0.2349)		(0.2351)
GDP		-0.0041		-0.0039		-0.0042		-0.0055*		-0.0056*		-0.0057*
		(0.0028)		(0.0028)		(0.0028)		(0.0032)		(0.0033)		(0.0033)
exrate		0.2669		0.0892		0.2694		0.4829**		0.2998		0.4914**
		(0.1836)		(0.1830)		(0.1857)		(0.2136)		(0.2127)		(0.2169)
Constant	-0.1051***	1.7839***	-0.1034***	1.9388***	-0.1042***	1.7822***	-0.0737***	1.6528***	-0.0722***	1.8136***	-0.0730***	1.6469***
	(0.0003)	(0.2146)	(0.0007)	(0.2133)	(0.0007)	(0.2160)	(0.0004)	(0.2655)	(0.0008)	(0.2637)	(0.0008)	(0.2674)
Observations	134,852	70,477	134,852	70,477	134,852	70,477	73,228	41,396	73,228	41,396	73,228	41,396
R-squared	0.1871	0.2024	0.1869	0.2022	0.1871	0.2024	0.2165	0.2356	0.2164	0.2353	0.2165	0.2356
Macro Control	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Firm&Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: The table reports regression results of analyst forecast errors on changes in expected inflation, expected GDP growth, and expected unemployment from the Survey of Professional Forecasters (SPF). Columns 1–6 report regressions using the total forecast error while Columns 7–12 use the unexpected forecast error. Expected GDP growth is constructed by first computing the percent change in forecasted real GDP levels between the current and next calendar year, then taking the change in this growth rate relative to the prior forecast. Expected unemployment is measured as the change in the forecasted unemployment rate for the next calendar year. All regressions include firm, year, and quarter fixed effects; specifications with controls also include standard firm-level variables. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table A.7: Regression of Inflation Expectation Changes

	$\Delta\pi^e$
Δ GDP Growth Expectation	-0.0206
	(0.0288)
Δ Unemployment Expectation	-0.1111***
	(0.0302)
Constant	-0.0165
	(0.0164)
Adj. R^2	0.0865
Observations	124

Notes: This table reports the first-stage OLS regression results used to extract inflation expectation residuals. The dependent variable is the one-year change in inflation expectations. Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A.8: Inflation Expectation Shock Regression Results

	OLS			
	(1)	(2)	(3)	(4)
	FE_{raw}^{t+4}	FE_{raw}^{t+4}	FE_{unpre}^{t+4}	FE_{unpre}^{t+4}
$\Delta\ \pi^e$	-0.1164***	-0.1038***	-0.1337***	-0.1015***
	(0.0240)	(0.0324)	(0.0290)	(0.0370)
Tobin's Q		-0.0137*		-0.0115
		(0.0079)		(0.0087)
Sales Growth		0.0196		0.0219
		(0.0257)		(0.0359)
Leverage		0.3812***		0.2350***
		(0.0697)		(0.0850)
Cash Flow		0.0223		-0.1727
		(0.1767)		(0.2117)
Log Assets		-0.2768***		-0.2531***
		(0.0185)		(0.0232)
ROA		-2.5727***		-3.3134***
		(0.4065)		(0.5110)
Cash		0.0575		0.1870
		(0.1022)		(0.1244)
Default Probability		-0.5105***		-0.2966
		(0.1625)		(0.2349)
GDP Growth		-0.0052*		-0.0067**
		(0.0028)		(0.0032)
Exchange Rate		0.1133		0.3271
		(0.1821)		(0.2115)
Observations	134,852	70,477	73,228	41,396
Adj. R^2	0.1385	0.1545	0.1649	0.1839
Firm, Time FE	Yes	Yes	Yes	Yes

Notes: This table reports OLS estimates of the effect of quarterly inflation expectation shocks on forecast errors. Inflation shocks are measured as the inflation expectation residuals, constructed by orthogonalizing inflation expectations with respect to macroeconomic expectations of GDP growth and unemployment. Columns (1) and (2) use raw forecast errors as the dependent variable, while columns (3) and (4) use the unpredictable component of forecast errors. Even-numbered columns include firm-level financial controls and lagged macroeconomic controls. All regressions absorb firm, year, and quarter fixed effects and standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table A.9: Cost-Pushed Inflation Measures

	(1)	(2)	(3)	(4)	(5)	(6)
	FE_raw	FE_unpred	FE_raw	FE_unpred	FE_raw	FE_unpred
electricity	-0.0005	-0.0048				
	(0.0051)	(0.0057)				
naturalgas			0.0006	0.0002		
			(0.0011)	(0.0012)		
energy					0.0001	-0.0006
					(0.0014)	(0.0015)
Constant	1.1125***	1.2065**	1.1621***	1.2665**	1.1164***	1.2778***
	(0.3981)	(0.4930)	(0.4005)	(0.4958)	(0.3920)	(0.4912)
Observations	27,893	18,579	27,893	18,579	27,893	18,579
Adjusted R^2	0.159	0.167	0.159	0.167	0.159	0.167
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table reports regressions of the previously constructed raw and unpredicted forecast errors on firm characteristics and macroeconomic controls, using alternative measures of inflation. Inflation is proxied using energy related CPI components from the Bureau of Labor Statistics, specifically the electricity, natural gas, and overall energy price indices, as reported on the Consumer Price Index by category chart available at Bureau of Labor Statistics (2024). Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A.10: Heterogeneity Tests by Firm Valuation and Performance Variables

Dependent Variables:		FE^{t+4}_{raw}	FE^{t+4}_{unpre}
Panel A: Total Q	$\widehat{\Delta\pi^e}$	-0.5517^{**}	-0.6666^{**}
		(0.2510)	(0.3163)
	$\widehat{\Delta\pi^e}\times$ Total Q Group	-0.3794	-0.0436
		(0.2879)	(0.3515)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	62,626	36,596
Panel B: SalesGrowth	$\widehat{\Delta\pi^e}$	-0.7956^{***}	-0.8877^{***}
		(0.2434)	(0.2791)
	$\widehat{\Delta\pi^e}\times$ Sales Group	0.1149	0.3890
		(0.2936)	(0.3471)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	62,626	36,596
Panel C: Asset	$\widehat{\Delta\pi^e}$	-0.8624^{***}	-0.6015^{*}
		(0.2635)	(0.3506)
	$\widehat{\Delta\pi^e}\times$ Asset Group	0.2457	-0.1239
		(0.3002)	(0.3896)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	36,596	36,596
Panel D: ROA	$\widehat{\Delta\pi^e}$	-0.6773^{**}	-0.6586^{**}
		(0.2803)	(0.3312)
	$\widehat{\Delta\pi^e}\times$ ROA Group	-0.1284	-0.0276
		(0.2908)	(0.3312)
	Firm-level controls	Yes	Yes
	Macro-level controls	Yes	Yes
	Firm & Time fixed effects	Yes	Yes
	Observations	62,626	36,596

Note: This table reports the insignificant interaction terms, including Total Q, Sales Growth, Asset, and ROA. The dependent variables are the raw and unpredicted forecast errors at 4 periods, and we use IV to run the regressions. Interaction terms between each of these group dummies and all control variables are included in the model. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table A.11: Supply- & Demand- Driven Inflation

	OLS		IV	
	(1)	(2)	(3)	(4)
	FE_{raw}	FE_{unpre}	FE_{raw}	FE_{unpre}
$\Delta\widehat{\pi}^e$	-0.1453***	-0.1509**	-0.7332***	-0.7155***
	(0.0541)	(0.0623)	(0.1615)	(0.1914)
$\Delta\widehat{\pi}^e$ × Supply Dummy	0.0786	0.0934	-0.0026	0.2467
	(0.0724)	(0.0835)	(0.4315)	(0.4873)
Total Q	-0.0137*	-0.0116	-0.0207**	-0.0160*
	(0.0079)	(0.0087)	(0.0082)	(0.0090)
Sales Growth	0.0196	0.0220	0.0481	0.0382
	(0.0257)	(0.0359)	(0.0293)	(0.0406)
Book Leverage	0.3811***	0.2349***	0.3624***	0.1985**
	(0.0697)	(0.0850)	(0.0709)	(0.0826)
Cash Flow / Assets	0.0231	-0.1709	0.2481	0.0551
	(0.1767)	(0.2117)	(0.1813)	(0.2117)
Log Assets	-0.2768***	-0.2531***	-0.2595***	-0.2253***
	(0.0185)	(0.0232)	(0.0192)	(0.0232)
ROA	-2.5704***	-3.3108***	-2.1691***	-2.6380***
	(0.4064)	(0.5112)	(0.4184)	(0.5244)
Cash / Assets	0.0577	0.1876	0.0708	0.1464
	(0.1022)	(0.1244)	(0.1038)	(0.1219)
Default Probability	-0.5138***	-0.2995	-0.3814**	-0.1863
	(0.1625)	(0.2348)	(0.1789)	(0.2650)
Observations	70,477	41,396	62,626	36,596
Adjusted R^2 / Centered R^2	0.1545	0.1839	0.0036	0.0062

Note: Dependent variable is analyst forecast error in columns (1) and (3), and unexpected forecast error in columns (2) and (4). The Supply Dummy equals 1 when quarterly supply-driven inflation contribution exceeds demand-driven contribution. OLS uses headline decomposition; IV uses core decomposition to avoid mechanical correlation with the oil shock instrument. In IV regressions, both Δ Inflation Expectations and its interaction with the Supply Dummy are instrumented with the oil supply news shock and its interaction with the dummy. All regressions include firm, year, and quarter fixed effects. Standard errors are clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

B Additional Robustness Checks

B.1 Alternative Fixed Effects

A potential concern with the baseline specification is that, once year fixed effects are included, identification comes only from within-year variation in quarterly inflation expectations. To address this concern, we re-estimate the baseline OLS and IV specifications using quarter fixed effects, defined as quarter indicators (Q1–Q4), while omitting year fixed effects. This allows the estimates to draw on both within-year and across-year variation in inflation expectations, while still absorbing seasonal patterns common across years.

The results are qualitatively unchanged. In the OLS specifications, the coefficient on changes in inflation expectations remains negative and statistically significant across all four columns, ranging from -0.052 to -0.067. The IV estimates are similarly robust, with coefficients between -0.393 and -0.438, again negative and statistically significant throughout.

Table B.1: Forecast Errors and Inflation Expectations: No Year Fixed Effects

	(1) FE^{t+4}_{raw}	(2) FE^{t+4}_{raw}	(3) FE^{t+4}_{unpred}	(4) FE^{t+4}_{unpred}
Panel A. OLS				
$\Delta\ \pi^e$	-0.0523**	-0.0628**	-0.0674**	-0.0671*
	(0.0225)	(0.0305)	(0.0270)	(0.0352)
Controls	No	Yes	No	Yes
Observations	134,852	70,477	73,228	41,396
Adjusted R^2	0.127	0.142	0.153	0.170
Panel B. IV				
$\Delta\ \pi^e$	-0.4342***	-0.3931***	-0.4376***	-0.3927**
	(0.1253)	(0.1504)	(0.1542)	(0.1796)
Controls	No	Yes	No	Yes
Observations	115,520	62,626	61,484	36,596
Adjusted R^2	-0.002	0.009	-0.003	0.008

This table reports OLS and IV estimates of the relation between changes in inflation expectations and analyst forecast errors in specifications without year fixed effects. All regressions include firm fixed effects and quarter-of-year fixed effects only. Columns (1) and (2) use raw forecast errors, while columns (3) and (4) use unpredicted forecast errors. Even-numbered columns include the full set of firm-level and macroeconomic controls. In Panel B, changes in inflation expectations are instrumented using oil supply news shocks. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

B.2 Forecasts and Realizations

A natural question is whether the negative relationship between inflation expectations and forecast errors is driven by the forecast component, the realized earnings component, or both. Since our forecast error measure is constructed as realized earnings growth minus long-term growth forecasts, a negative coefficient on inflation expectations could arise because analysts revise long-term growth forecasts upward, because realized earnings growth subsequently declines, or because both occur simultaneously.

To assess this directly, we separately estimate the effect of inflation expectations on analysts' long-term growth forecasts (LTG) and on subsequent realized earnings growth (EPSG). Table B.2 reports the results for both the baseline OLS and IV specifications. The evidence shows a clear divergence between beliefs and realizations. In the LTG regressions, changes in inflation expectations enter positively and significantly. In the baseline OLS specifications, a one-unit increase in expected inflation is associated with a 0.0105 to 0.0065 increase in LTG forecasts. The IV estimates are larger, ranging from 0.0431 to 0.0216, and remain statistically significant at the 1% level. These results indicate that when inflation expectations rise, analysts revise long-term earnings growth forecasts upward.

By contrast, realized earnings growth moves in the opposite direction. In the EPSG regressions, lagged changes in inflation expectations have a negative and statistically significant effect on subsequent earnings growth. In the baseline OLS specifications, the coefficient ranges from -0.1142 to -0.0914. The IV estimates are again substantially larger in magnitude, between -0.7491 and -0.6572. This pattern is consistent with a stagflation-type interpretation in which higher expected inflation is followed by weaker realized earnings growth rather than stronger real profitability.

In sum, these results clarify the mechanism behind the forecast-error findings. Rising inflation expectations are associated with more optimistic long-term growth forecasts, even as subsequent realized earnings growth declines. The negative forecast-error coefficient therefore, does not simply reflect lower realized earnings following inflationary episodes. It also reflects analysts embedding inflation expectations into perceived long-run earnings growth in a way that is not borne out ex post. In this sense, the decomposition strengthens the interpretation of our main results as evidence of a belief-based distortion.

At the same time, the results also suggest that inflationary episodes may contain a real stagflationary component. Higher inflation expectations appear to coincide with weaker subsequent earnings realizations, which is consistent with inflation being associated with cost pressures, margin compression, or broader adverse macroeconomic conditions.

Table B.2: Inflation Expectations, Long-Term Growth Forecasts, and EPS Growth

	(1) LTG	(2) LTG	(3) EPSG	(4) EPSG
Panel A. OLS				
$\Delta\ \pi^e$	0.0105***	0.0065***	-0.1142***	-0.0914***
	(0.0013)	(0.0017)	(0.0223)	(0.0297)
Controls	No	Yes	No	Yes
Observations	169,729	88,226	130,974	68,180
Adjusted R^2	0.419	0.420	0.108	0.135
Panel B. IV				
$\Delta\ \pi^e$	0.0431***	0.0216*	-0.7491***	-0.6572***
	(0.0073)	(0.0111)	(0.1291)	(0.1836)
Controls	No	Yes	No	Yes
Observations	146,106	78,489	111,978	60,496
Adjusted R^2	-0.003	0.082	-0.006	0.013

This table reports OLS and IV estimates of the relation between inflation expectations, long-term growth forecasts, and realized EPS growth. Columns (1) and (2) use analysts' long-term growth forecasts (LTG) as the dependent variable, while columns (3) and (4) use realized earnings-per-share growth (EPSG). Even-numbered columns include the full set of firm-level and macroeconomic controls. In Panel B, inflation expectations are instrumented using oil supply news shocks. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.