Stagflationary Stock Returns and the Role of Market Power *

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Abstract

We study the implications of inflation for firms' performance with a focus on the role of market power. Using inflation announcements for identification, we find that inflationary surprises are associated with persistent declines in stock prices. The results hold controlling for discount rate changes, suggesting that stock market investors have a stagflationary view of the world: nominal cash flows are expected to be stagnant during periods of higher inflation. Consistent with this view, we find firms with more market power are shielded from stagflationary stock returns, particularly when inflation is demand-driven. These firms are better able to hold prices over marginal costs, generating an increase in their nominal cashflows in response to inflation shocks.

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1 Introduction

The historically high levels of inflation in 2022 triggered a debate on the role of market power in rising prices. For instance, President Joe Biden tweeted on May 13, 2022: "You want to bring down inflation? Let's make sure the wealthiest corporations pay their fair share." Senator Elizabeth Warren, argued "Concentration results in market power & corporations use it to jack up prices & profiteer during inflationary times." Despite the policy relevance, evidence on the interaction between firm market power and inflation has been scarce. In this paper, we analyze the implications of inflation for firms across the markup distribution from an asset pricing perspective, using a high-frequency identification approach around surprises in consumer price announcements.

We first present evidence on the aggregate stock market response to inflationary news before turning to firm heterogeneity. In standard theory, stock prices should not react to inflation shocks as stocks are real assets. Nominal cash flows are expected to increase with higher inflation, but at the same time nominal discount rates increase by the same amount. However, we show empirically that the overall stock market is adversely affected by inflationary news. Consequently, either nominal interest rates rise more than expected nominal cash flows with inflation, or inflation surprises are associated with increases in equity risk premium. We find negative stocks returns after inflationary surprises holds even after controlling for changes in equity risk premium and interest rates, suggesting that at least part of the decline is driven by negative expected cash flows news.

One potential channel through which to rationalize the stock market behavior is that the marginal investor has a stagflationary view of the world, expecting nominal growth and dividends to remain stagnant or fall, while inflation increases interest rates, and reduces stock prices. We call this stock market phenomenon "stagflationary returns". If investors expect nominal cash flows to remain stagnant with inflation, they are unlikely to do so homogeneously across firms. Firms operating in a competitive environment may be unable to generate additional cashflows with higher inflation, as their demand curves are perfectly elastic, and they are unable to set prices over marginal costs. In contrast, firms that exhibit product market power can raise prices above marginal costs without suffering an entire loss in demand, allowing them to re-optimize their pricing strategy with inflation, potentially shielding themselves from a reduction in real cash flows, and therefore from the negative implications of inflationary news.

We test this hypothesis by estimating firm-level markups as a measure of market power across the distribution of firms in our sample and split them into high and low-markup groups. We find that firms that exhibit a large degree of market power, are largely protected from the negative implications of inflationary news. This pattern is consistent with market power allowing firms to raise nominal dividends by shielding their real cash flows from inflation. We also find these results to be stronger in periods when inflation is demand-driven, as demand-driven inflation likely allows firms with a large degree of market power to raise prices relatively more due to lower demand elasticity of customers and less competition to keep prices at marginal costs. When inflation is supply-driven, the benefits of having market power vanish entirely when inflationary news is announced, suggesting that an increase in marginal costs affects firms with a differential degree of market power similarly.

To identify the effect of inflation on the stock market we rely on consumer price release dates. The consumer price index (CPI) is published by the Bureau of Labor Statistics (BLS) by the United States Department of Labor on a monthly basis, typically at 8:30 am Eastern Time (ET). We compare the headline year-on-year CPI inflation print from BLS to the median forecast of the same measure from the Consensus. We call the difference between the inflation print and the expectation "inflationary news". We then analyze the behavior of stock prices around these inflationary news. While before the CPI announcement, stock returns do not exhibit a particular pattern, on the day of the inflationary news stock returns decline economically and statistically in a significant manner. A one percentage point higher inflation print than expected by Consensus is associated with a 0.22% decline in the average U.S. stock on the day of the announcement. The impact of inflationary news is increasing over five days after the announcement to 0.45% and remains persistently lower at these levels.

We then define firms' degree of market power by estimating their markup using a production approach following Loecker and Warzynski (2012) and De Loecker et al. (2020). Market power is defined as firms' ability to set its price above marginal costs and hence do not face a perfectly elastic demand curve (Syverson, 2019). We estimate these firm-level markups using Compustat data with a production function approach under which the markup of a firm can be defined as sales over cost of goods sold multiplied by the output elasticity of inputs. Intuitively, sales over cost of goods would be equal to the ratio of price to average variable cost if both are divided by output, but as average variable costs do not necessarily equal marginal costs, the ratio needs to be multiplied by the output elasticity of inputs which is obtained from a production function estimation.

Equipped with our measure of market power, we study the asset pricing implications in response to inflationary news across the firm distribution. We start by splitting firms into high vs. low market power firms, based on whether they have below or above median markups in the previous years in the cross-section of firms, and inspect their stock price response to inflationary news. Firms with below median markups see a decline in their stock price of around 0.7% in response to one percentage point inflationary news, while firms at the top half of the markup distribution see a statistically insignificant decline of 0.25% decline of their stock price in response to a one percentage point inflationary news. We turn to estimate the differential response of firms with a larger degree of market power in an empirical specification that allows us to control for observed and unobserved time-variant factors across firms, such as the response in the VIX, interest rates, and market-level discount rates, exploiting only the heterogeneity in market power across firms, ruling out that confounding time factors that are correlated with market power are driving the results. Firms with a differential degree of market power exhibit statistically indistinguishable stock returns and hence no differential pre-trend in returns before the announcement of inflation. Once higher-than-expected inflation is released, firms with a larger degree of market power statistically and economically outperform those with limited abilities to set prices over marginal costs. Economically, a one standard deviation larger degree of market power increases the stock return by 0.7 percentage points in response to a one percentage point inflationary shock.

It is useful to consider the present value identity of the stock market to understand the potential drivers of stock returns in response to inflation shocks. This identity states that the price today is the sum of the present value of all future real dividends

$$P_t = \sum_{n=1}^{\infty} \frac{E_t\left[D_{t+n}\right]}{(1 + R_{t,n}^{f} + R_{t,n}^{RP})^n} \tag{1}$$

where P_t is the stock market price, $E_t\left[D_{t+n}\right]$ is the expected real dividend payment in year $t+n$ across all firms in the stock market, $R_{t,n}^{f}$ is the n-period risk-free rate, and $R_{t,n}^{RP}$ is the n-period equity risk premium. We can thus see that a decline in the stock market must come from some combination of (1) declines in expected real cashflows, (2) increases in real-risk free rates, and/or (3) increases in equity risk premium. For channel (1), a company's costs may increase with inflation and they are unable to increase product prices at the same rate, and thus real cashflows could fall. For channel (2), the expected monetary response of central banks to control higher inflation - that is an increase in nominal rates - might more than offset the change in expected inflation itself, and then real risk-free rates increase. For channel (3), inflation can lead to uncertainty and volatility in financial markets, thus leading to an increase in equity risk premium.

To isolate the impact of the channel (1) in driving the larger stock price decline of firms without pricing power in response to inflation, we control for the differential sensitivity of stock returns with respect to changes in interest rates and the risk premium across firms with a differential degree of market power.

If interest rates rise in response to higher inflation and firms with market power are less sensitive to increases in interest rates, e.g. because their cash flows are in the nearer future than those with less market power and hence discounted less strongly, their stock response may be weaker. To test this channel, we augment our baseline specification by controlling for the differential sensitivity of stock returns with respect to changes in the interest rate around the inflationary news announcement. If the interest-rate sensitivity channel was the sole driver of why stock returns of market power firms are less sensitive the effect of inflation itself would be depleted. Instead, the effect of markup in response to inflationary news remains almost unchanged and if anything increases when the interest rate channel is accounted for. An amplified effect of market power on stock returns when controlling for the interest rate channel would imply that market power firms are more rather than less sensitive to interest rate changes, consistent with Liu et al. (2022) and Kroen et al. (2021), rendering it unlikely that the interest-rate sensitivity channel accounts for our results.

For mechanism (3), the inflationary news increases the equity risk premium through an increase in uncertainty and volatility in financial markets through which firms with market power are less affected. Indeed, our results indicate that equity risk premium (Martin, 2017a) increases in response to inflationary news. However, when interacting the increase in the equity risk premium around the inflation surprise with markups we find only a small reduction in the estimated coefficient on inflationary news and markups themselves. The reduction in the coefficient indeed indicates that firms with market power are less sensitive to increases in the risk premium, potentially because their market power allows them to set prices more flexibly and weather risky episodes better, but not sufficient to eliminate the impact of inflation itself.

Consequently, our results are most likely driven by a real cash flow channel under which stock market investors are expecting firms with market power to increase nominal cash flows due to their inelastic residual demand curves, leading to real cash flows unchanged. This explanation is enforced by the two additional findings in the data. First, we find that it is only in times of *demand-driven* inflation that higher market power firms' stock prices are resilient to higher inflation. A negative supply shock may raise costs and reduce output leaving firms with market power unable to shield real cash flows. Second, turning to investors' expectations about dividend payments using dividend futures, we find no evidence that investors increase their nominal dividend expectations around inflationary news. Instead, we find that dividend futures prices are unchanged or decreasing in response to positive inflation shocks.

Our results can potentially have important macroeconomic implications. The findings suggest that inflation leads to a reallocation of activity from competitive firms to those that have higher markups, leading to more market power in general equilibrium. As these firms charge higher prices than their competitors and their share in the economy rises, the initial inflation surprise can be self-reinforcing, leading to higher prices due to a larger share of firms with high markups. The results therefore also have important implications for monetary policy. Tightening monetary policy to reduce inflation is not only associated with higher stock prices but comes with a reallocation from high to low market power firms, leading to a more competitive economy with a lower price level.

The rest of the paper is organized as follows. In section 2 we discuss the strains of literature that we contribute in this paper. In section 3 we present the data. In section 4 we lay out the empirical strategy. In section 5 we present the results. In section 6 we conclude.

2 Literature

Our paper connects two strands of the literature; the effects of inflation on asset prices, and the financial consequences of firms' market power.

Inflation and Asset Prices. A long literature studies the correlation between inflation and asset prices (Firth, 1979; Pearce and Roley, 1984; Weber, 2015; Gilbert et al., 2017; Katz et al., 2017; Law et al., 2018; Boons et al., 2020; Gurkaynak et al., 2020; Miranda-Agrippino and Rey, 2020). Fama (1981) argues that the correlation between stock returns and inflation is due to stock returns anticipating future economic activity, and inflation acting as a proxy for expected real activity. Bekaert and Engstrom (2010) show that when inflation rises alongside risk equity premiums and uncertainty, bond yields increase through their expected inflation. Modigliani and Cohn (1979) argue that investors may suffer from money illusion as real cash flows are incorrectly discounted with nominal discount rates. Cohen et al. (2005) and Campbell and Vuolteenaho (2004) show empirical evidence supporting this argument. Other previous studies show the negative relationship between asset returns and inflation Sharpe (2002); Pearce and Roley (1988); Summers (1980); Fama and Schwert (1977). Katz et al. (2017) study stock returns across countries and how they vary in response to local inflation, finding evidence consistent with sticky discount rate, with investors slowly adjusting nominal discount rates in response to inflation shocks. Fang et al. (2022) show that core inflation betas of stocks are negative while energy betas are positive, and cross asset-class evidence that only core inflation carries a negative risk premium. Relative to the literature, we shed light by studying the cross section of stocks, highlighting the role of the market power of firms.

Market Power. The macroeconomic implications of market power have recently attracted a lot of interest (De Loecker et al., 2020, 2021; Peters, 2020; De Loecker and Eeckhout, 2018; Diez et al., 2018), as recent advances in the estimation of market power through markups (De Loecker et al., 2020; Syverson, 2019), as discussed in section 3, led to many empirical applications. For instance, Burya et al. (2022); Kroen et al. (2021); Duval et al. (2021); Gorodnichenko and Weber (2016) study empirically how market power with monetary policy. Some other papers have theoretically studied the implications of market power (Liu et al., 2022; Lopez-Salido et al., 2021).

In contrast, the literature on the asset pricing implications of market power is more limited. Notable exceptions are Corhay et al. (2020) and Corhay et al. (2022) who study the implications of market power and markup shocks for stock prices. However, to the best of our knowledge, we are the first to study the interaction between inflation, market power, and asset prices.

We also contribute to the public debate on the interaction between market power and inflation. For instance, President Joe Biden tweeted on May 13, 2022: "You want to bring down inflation? Let's make sure the wealthiest corporations pay their fair share". More explicitly, Senator Elizabeth Warren, argued "Concentration results in market power & corporations use it to jack up prices & profiteer during inflationary times.", citing Bräuning et al. (2022) as evidence that concentration increases the pass-through of costs to prices. Instead, we test more formally the second claim that firms benefit from inflationary times. While we do not find that firms with a large degree of market power have positive stock returns when inflationary news is announced, they perform significantly better.

3 Data

3.1 Inflation

We obtain inflation data from the BLS. We use the 'headline inflation measure' based on the year-on-year Consumer Price Index from BLS. Data is usually released on the second week of the month for the CPI values of the previous month. The day of release can change. However, for other BLS data, there's a reference period that they use to do data collection/surveying, and the release is always exactly two weeks after that reference period ends. The reference period has a few rules to consider, like the number of business days in the period.

Second, we use the inflation forecast from the 'Consensus Economics Y-Y Consumer Price Index

Forecast', which is provided by *Consensus Economics*. The forecast CPI values are the median forecast CPI given by '240 influential economists around the world'. The forecast claims to have a predictive advantage, on average, over other similar forecasts given it is a high-quality group-based forecast. For the forecast CPI values of time t, the survey data is collected on the week when the CPI release will take place.

We calculate the difference between actual inflation values for period t, and inflation expectations by market participants for period t. For the actual inflation values, we use the year-on-year Consumer Price Index from BLS. The data starts in 1990 and ends in 2021.

Figure A.1 plots the inflationary news in red. The surprise series does not exhibit a particular trend, which is reassuring from a statistical perspective, and suggests that the data is stationary. However, there are periods when the surprises were larger in absolute values. For instance, in the early 1990s inflation first surprised the upside and later to the downside. During and shortly after the global financial crisis, the inflationary news was also larger, potentially because the global financial crisis and the accompanying monetary policy actions increased uncertainty about the effects of inflation. Since the COVID-pandemic, as is well known, inflation increased persistently to the upside.

We supplement the inflation news data with a measure that separates inflation by its supply and demand factors from the San Francisco Federal Reserve Bank. Proposed by Saphiro (2022), this measure seeks to separate the impact of supply and demand factors on monthly inflation. To do this, inflation rates are classified by spending category, then divide these categories into supply and demand-driven groups. Demand-driven categories take place when surprising price changes happen in the same direction as the unexpected change in quantity. Supply-driven categories take place when surprising price changes move in the opposite direction as the quantity changes.

3.2 Stock Returns

To calculate stock returns we use data from CRSP (Center for Research in Security Prices), which is a database that provides a wide range of financial and market data for the United States. The CRSP database contains data on publicly traded stocks, bonds, mutual funds, and exchange-traded funds (ETFs), as well as various market indexes and benchmark returns. It also includes data on corporate actions, such as dividends, stock splits, and mergers and acquisitions.

Figure A.1 plots the one-day stock return of the average firm on days of inflation announcements together with the inflationary news. Similar to the inflationary news, the one-day stock returns do not exhibit a particular pattern and while a negative correlation between the two series is not immediately obvious, a simple univariate regression of the average stock return on the inflationary news returns a coefficient of -0.22 and a standard error of 0.08 rendering the relationship between inflationary news and stock returns statistically significant at conventional levels. Economically, a one percentage point inflationary news is associated with a 0.22 % decline in the stock price of the average firm. Figure 1 also confirms the relationship in a binscatterplot.

3.3 Market Power

In microeconomic textbooks product market power is defined as firms' abilities to influence the price at which they sell their products and use this ability to hold prices over marginal cost, as they do not face perfectly elastic residual demand curves (Pindyck and Rubinfeld, 2014; Goolsbee et al., 2012). The price-marginal-cost gap at the firm's profit-maximizing output level is typically called the markup Syverson (2019).

We estimate markups using the so-called production approach, which was invented with industry-level data by Hall (1988, 2018) and advanced with firm-level data by Loecker and Warzynski (2012) and De Loecker et al. (2020). Under an assumption of cost minimization, the firms' markup is defined as the product of the revenue to expenditure share of a given variable input times the output elasticity of that variable input.[1]

From the cost minimization problem,

$$\theta^{\nu}_{i,t} = \frac{1}{\lambda_{i,t}} \frac{P^{V}_{i,t} V_{i,t}}{Q_{i,t}} \tag{2}$$

where $\theta^{\nu}_{i,t}$ is the output elasticity of input $V_{i,t}$, λ the Lagrange multiplier from the cost minimization which measures the marginal costs, $P^{V}_{i,t}$ is the price of the variable input, and $Q_{i,t}$ is the output.

The markup can be defined as

$$\mu_{i,t} = \frac{P_{i,t}}{\lambda_{i,t}} \tag{3}$$

where $P_{i,t}$ is the output price. Hence, the markup is equal to the output elasticity times the inverse of the variable input's revenue share:

[1] Alternative approaches are the accounting approach and the demand system estimation approach. The problem with the accounting approach is the difficulty of measuring marginal costs, while the demand estimation approach requires data on prices, which we do not have available.

$$\mu_{i,t} = \theta_{i,t} \frac{(P_{i,t}Q_{i,t})}{(P_{i,t}^{V}V_{i,t})} \tag{4}$$

Following De Loecker et al. (2021) we calculate markups using firm-level data from Compustat North American fundamentals, a dataset of firm-level financial statements for North American publicly traded companies. Our sample ranges from December 1989 to August 2022. The data allows us to implement the production approach for estimating markups. We use the cost of goods sold (COGS) as our measure for variable inputs, $(P_{i,t}^{V}V_{i,t})$ and sales for revenues $P_{i,t}Q_{i,t}$. This leaves us with estimating a measure of output elasticities. As in De Loecker et al. (2021) output elasticities are estimated on the (2-digit) sector level using a parametric production function estimation, with a variable input bundle and capital as inputs.

There is a large discussion around the validity of estimating markups using the production approach (Raval, 2020; Bond et al., 2021; Basu, 2019; Berry et al., 2019; Syverson, 2019; Doraszelski and Jaumandreu, 2021). For instance, De Ridder et al. (2021) use firm-level administrative production and pricing data and show that the level of markup estimates from revenue data is, but estimates do correlate highly with true markups. As we do not attempt to either contribute to the markup estimation literature or evaluate the level of markups in the economy, but instead study the consequences of markups across firms in an asset pricing setting, the production function estimation approach is to the best of our knowledge the most appropriate and feasible way to do so.

3.4 Financial Data

We use firm-level financial data from Compustat for controls in the analysis. We use firm size (log of total assets (AT)), tangibility (the ratio of tangible assets (PPENT) to total assets), leverage (the ratio of current debt (DLC) and the long-term debt (DLTT) to total assets) and the market-to-book ratio (the log total market value of the firm minus the log total assets).

Motivated by the cross-sectional asset pricing literature, we also use factor portfolio returns as controls. We use the Fama and French (1993) 3-factor portfolios, Fama and French (2015) 5-factor portfolios, and the Carhart (1997) momentum factor. We obtain these asset pricing factors from Kenneth French's website. We implement factor controls using a Fama-Macbeth approach. In the first step, we compute rolling 5-year betas of each stock in the sample with respect to the factor portfolios. We then include the estimated rolling betas, lagged one period, as control variables in the main regression specifications.

We also merge our data with time-variant market-level characteristics. We use the (Martin, 2017b) 1-year equity risk premium, with the sample updated to 2022 using (Knox and Vissing-Jorgensen, 2022) data. The equity risk premium is calculated from option prices obtained from OptionMetrics, the sample of which begins in 1996. To generate risk premium estimates from 1990-1996, we therefore regress the equity risk premium on VIX and VIX^2 in the matched sample 1996-2021, and use predicted values in the pre-OptionMetrics sample. We obtain the market yield on U.S. treasury securities at 2-year and at 10-year constant maturity from FRED.

Finally, we obtain dividend futures data from Bloomberg. We also consider the Nominal Broad US Dollar Index provided by the Federal Reserve Board of Governors (FRB). When this value is not available, we replace it with the Nominal US Dollar Index for goods only. Following (Knox and Vissing-Jorgensen, 2022), we use a linear interpolation on the next two year-end future maturity dates to generate a constant maturity dividend futures price time series at the one-year maturity, and then adjust price series for risk premium using the 1-year equity risk premium estimate using (Martin, 2017b).

4 Empirical Strategy

Our empirical strategy relies on an event-study approach that examines the market performance of equities around the announcement of a CPI release. The event study approach has the advantage that the market reaction on particular release days is likely due to the inflation itself rather than other confounding factors that could influence the performance of equities. For instance, in a simple time-series regression in which stock returns are regressed on inflation, many confounding factors could be the reason for the market reaction that is not due to inflation itself.

We, therefore, estimate the following event-study regression from 1990 until 2021:

$$Return_{i,t}^{k} = \alpha + \beta_1 \text{Inflationary News}_t + \epsilon_{i,t} \tag{5}$$

where inflationary news is defined as $\pi_t - E(\pi_t)$, with headline inflation on CPI release day t π_t and Consensus forecast for t $E(\pi_t)$. The return between the day before the announcement and k days after is: $Return_{i,t}^{k} = P_{i,t+k} - P_{i,t-1}$, where $P_{i,t}$ is the stock price of firm i at day t (taking into account dividends, stock splits, etc.). Standard errors are double clustered at the firm and day level.

Thus far, we have ignored the cross-sectional dimension across firms. A negative coefficient on β_1 indicates that stocks fall when inflationary news is announced. To test for the cross-sectional heterogeneity across firms with differential degrees of market power, we estimate the following regression:

$$Return^{k}_{i,t} = \alpha + \beta_1 \text{Inflationary News}_t * Markup_{i,y(t)-1} + \alpha_i + \alpha_t + \mathbf{X}'\gamma + \epsilon_{i,t} \tag{6}$$

In this specification, we interact the inflationary news with our measure of markups, as defined in section 3. The interact coefficient indicates whether, in response to inflationary news, firms with higher (one-year lagged) markups respond differential compared to their counterparts. A positive coefficient is associated with an over-performance of firms with higher markups in response to inflationary news. The specification in which we exploit cross-sectional heterogeneity across firms allows us to include time-fixed effects in our regression equation. Time-fixed effects (denoted by α_t) control for all unobserved and observed heterogeneity at a given point in time, such as changes in the monetary policy stance, volatility, economic news, or other factors such as sentiment, which are econometrically harder to observe. If these factors were to be correlated with the interaction term *Inflationary News*$_t * Markup_{i,y(t)-1}$, the exclusion of time fixed could bias the coefficient of interest β_1 of equation Equation 6. Moreover, we include firm fixed effect in the regression specification (α_i), which control for time-invariant characteristics of the firm.

We also include various other characteristics $\mathbf{X}$ as control variables. One potential threat for identification is if firm characteristics are correlated with markups and also react differentially with respect to inflationary news. For instance, if firms with smaller sizes are less responsive to inflationary news than large firms, and firm size is correlated with markups, our coefficient of interest could be biased. To control for the differential impact of various firm-level characteristics on inflationary news we interact various firm-level characteristics, such as log assets, tangibility, leverage, and market-to-book value with inflation news. The estimation is reported in column (4).

Given our dependent variable is stock returns, we can also control for firm characteristics by capturing firm stock return's risk exposure to asset pricing factor models.[2] Using a Fama-Macbeth approach, we first compute rolling 5-year stock beta's to the portfolio factors, and then include the estimated firm-level betas in the control vectors to inc Fama and French (1993), and, as with firm characteristics, interact with the inflationary news variable. The results from adding factor betas plus interactions as controls are reported in column (5), and using firm financial characteristics and factor betas simultaneously are reported in column (6). Across specifications for observable firm controls, we find the main result - an over-performance of firms with higher markups in response to inflationary

[2] In the baseline we use the Fama and French (1993) asset pricing model, but results are also robust to using Fama and French (1993) plus Carhart (1997), or to using the Fama and French (2015)

news - is robust.

One limitation of the interacted firm-control approach is that unobservable time-varying factors cannot be controlled for. If $firm * time$ fixed effects were to be included in the regression equation, they would be collinear with the *markup* $*$ *inflationary news* term. However, we can make some progress toward controlling for a certain degree of time-variant variation that differs across firms to compare firms within each industry by including $industry * time$ fixed effects. The results are shown in column (3). A further benefit of estimating a regression equation with industry*time fixed effect is that alleviates a potential concern with the markup estimation by De Loecker et al. (2020). The estimation of industry-level output elasticities can produce inconsistent estimates of the output elasticity and the disturbance, and therefore can generate biased markups (Doraszelski and Jaumandreu, 2021). By controlling for $industry * time$ fixed effects, we partially out the sector-specific output elasticities and solely compare firms with differential markups within an industry.

5 Results

5.1 Inflationary News across all Firms

Figure 2 plots the regression coefficient β of Equation 5 from k=-5 to k=10. The coefficient for k=0 represents the effect of inflationary news on the one-day return of the average stock on the day of the CPI announcement, whereas the one-day return is defined as the difference between the close price of the day of the announcement and the close price of the day before the announcement. Note that the announcement of the CPI release happens at 8:30 am when the market is still closed. For robustness, we also test for the difference between close and open prices, and all results are unchanged.

The negative coefficient, represented by the square at day=0, of 0.2 shows that in response to a one percentage point inflationary news, stock prices fall by around 0.2%. The shaded area in blue reflects the 95% confidence interval around the point estimate, ranging from around 0.1% to 0.3%, indicating statistical significance at conventional levels.

Moving to the next day (k=1), shows that the negative effect of inflationary news on the stock market increases. The coefficient indicates that stock prices fall by around 0.3% between the day before the announcement of the CPI and two days after. The effect after the second day remains persistent and if anything strengthens over a period of 10 days.

Importantly, before the announcement of inflationary news, stock returns do not exhibit a trend, as shown by the statistically insignificant coefficient for k=-2 to k=-5. This absence of a pre-trend suggests that the parallel trend assumption is more likely to hold, which refers to the idea that in a difference-in-differences analysis, the trend in stock prices would have been the same in the absence of inflationary news.

The results for the (absence of a) pre-trend, the contemporaneous effect, and the lagged effect are also summarized in the binscatter plots of Figure 1 in which the x-axis is the inflationary news. The left panel shows a binscatterplot where the y-axis is the contemporaneous (one-day) stock return, the middle panel shows the return over a period of five days, and the right panel shows the one-day return the day before the inflation announcement. The left and middle panels both show a strong negative relationship between the inflation surprise and the return over one and five days, respectively. Consistent with the results above, the relationship becomes stronger (more negative) over five days compared to when only one day's return is considered. The right panel can be seen as a placebo test. If the inflationary news was to be expected, one would potentially already see that stock returns are negative before the announcement. However, the absence of a relationship between inflationary news and stock returns the day before suggests that what we call inflationary news is indeed news and is not yet expected by the market.

?? plots the moving average one-day inflationary news β across all stocks. However, the coefficient is most strongly negative around the 2000s stock market crash and since the COVID pandemic. However, during the period just before the pandemic, the coefficient was positive, indicating that inflationary news was associated with positive stock returns, consistent with the narrative that inflation was "too low" and below central banks' targets so that inflationary news was considered a success.

5.2 Inflationary News and Market Power

Next, we aim to understand how the effect of inflationary news on stock returns differs between firms that have high vs. those that have low markups. Firms that have a higher degree of market power, measured by their markups, may be able to pass higher prices into their products relative to their counterparts that do not have a large degree of market power, due to differential elasticities of demand. A firm that has a large degree of market power faces a lower demand elasticity, making customers less likely to switch in response to rising prices. In contrast, firms that have no or only a small degree of market power may lose customers to competitors or face resistance from customers who are unwilling to pay the higher prices if they raise them. Next, we split the sample of firms into those that have high and low markups. High markup firms are those that have at any given point in time markups above the 75th percentile of the markup distribution while those with low markups are those with markups below the 25th percentile of the distribution.

We estimate the following equation:

$$\begin{aligned} Return^k_{i,t} = & \alpha + \beta_1 \text{Inflationary News}_t * \text{Low Markup}_{i,y(t)-1} \\ & + \beta_2 \text{Inflationary News}_t * \text{High Markup}_{i,y(t)-1} + \beta_3 \text{Low Markup}_{i,y(t)-1} + \epsilon_{i,t} \end{aligned} \tag{7}$$

Figure 3 plots β_1 & β_1 for different ks. In the upper panel, which plots β_1, the effect of inflationary news for low markup firms resembles qualitatively Figure 2, but the magnitudes are larger in absolute values. In particular, firms with low markups see their stock prices decline by around 0.8% in five days after a one percentage point inflationary news shock (compared to 0.4 for the average firm), with the 95th % confidence interval ranging between 0.3 and 1.3. In contrast, firms with high markups see their stock prices declining only modestly in response to inflationary news. Five days after the inflationary news shock, stock prices are down only 0.2% with the 95th % confidence interval touching zero. For firms with high markups, we can therefore reject the null hypothesis that inflationary news leads to declines in stock prices after five days.

We test more formally the difference between firms with differential degrees of market power by estimating Equation 6. Figure 4 plots the interaction coefficient between the inflationary news shock and markups. The interaction coefficient tests whether firms with higher markups exhibit differential stock returns around the announcement of inflationary news.

The results for $k <= 0$ help shed light on whether there is a pre-trend in the data. If firms with higher markups already before the CPI announcement had rising stock prices relative to those with lower markups, this would likely lead to a violation of the parallel trend assumption which implies that both types of firms would have experienced the same return dynamic around the event, had the announcement not been an inflationary news shock.

The close-to-zero and statistically insignificant coefficient that does not exhibit a trend before the CPI announcement, suggests that there is no pre-trend in the data. If there was a preexisting trend, it could be more difficult to determine whether the trend in the returns for the high markup group would have been the same as the trend in the returns for the firms with low markup in the absence of inflationary news, which could lead to biased estimates of the treatment effect.

A positive coefficient on the interaction for $k >= 0$ indicates that firms with higher markups earn higher returns after inflationary news. Since markups are standardized with a mean of zero and a standard deviation of one, the coefficient can be interpreted as the differential impact of inflationary news on firms with a one standard deviation higher markup. The coefficient rises from around 0.1 to 0.08 from the day of the event to five days after the event. Hence, a firm with a one standard deviation higher markup has a 0.08 percentage point higher stock price compared to another firm five days after the event in response to a one percentage point inflationary news shock. Note that the average firm suffers a decline of around 0.4% in response to a one percentage point inflationary news shock so that the interaction coefficient is around 20% of the base coefficient. A firm that has one standard deviation higher markup suffers a decline in the stock price of 0.32% (0.4-0.08) in response to a one percentage point inflationary news shock, a difference of 20% (1-0.32/0.4).

The result is also illustrated in Table 1 for k=5. Column (1) displays the regression result without time-fixed effects, which allows us to estimate the coefficient for the inflationary news on its own. Similarly to Figure 2, the inflation surprise coefficient is -0.37 and the main coefficient of interest, the interaction between markups and the inflation surprise is 0.087. Column (2) introduces time fixed effect in the regression equation. The inclusion of time-fixed effects introduces collinearity with the inflation surprise so that the effect of inflationary news cannot be interpreted anymore. However, the advantage of the inclusion of time-fixed effects is that through its inclusion we control for all unobservable and observable time-variant factors that could bias the result that firms with higher markups earn higher returns than their counterparts in response to inflationary news. Through the inclusion of time-fixed effects we control for the average effect of being in a particular time period and it allows us to make a within-time period comparison. For instance, we can control for any underlying trends in monetary policy, and uncertainty and instead isolate the effect of inflationary news on firms with differential degrees of market power. The coefficient on the interaction between market power and inflationary news remains virtually the same, indicating that time-variant factors that are correlated with the interaction of inflationary news and markup are not driving the results.

Column (3) introduces industry*time fixed effects to not only control for unit-invariant time specific factors but also for industry-specific time-variation that is both observable and unobservable. While the coefficient shrinks slightly in absolute terms, it is still statistically significant.

Columns (4) and (5) introduce firm-level controls to control for potential confounding firm-level characteristics. In column (4) we first rely on balance sheet characteristics from Compustat, Tobin's Q, log assets, leverage, and tangibility, and in column (5) we use the three Fama French factors. The coefficient on the interaction between inflationary news and markup remains stable.

In sum, we find strong evidence that inflationary news reduces stock prices for a firm that has a limited degree of market power but firms with market power are less severely hit and those that have a substantial degree do not suffer from inflationary news. The stark difference suggests that stock market investors see the impact of inflation on future discounted cash flows of high market power firms more benignly than that of firms that do not have market power.

5.3 Channel

5.3.1 Supply vs. Demand Driven Inflation

In this subsection, we aim to disentangle the channels through which inflationary news affects firms with different degrees of market power differentially. To do so, we zero in on whether the relationship between inflationary news and the impact on the stock market is driven by supply-side or demand-side-driven inflation. To differentiate between demand and supply-side inflation, we use data from Shapiro et al. (2022), which divides inflation rates into supply- and demand-driven groups of spending categories in the PCE basket of goods and services in the U.S. economy. Demand-driven categories are identified as those where an unexpected change in price moves in the same direction as the change in quantity in a given month. Supply-driven categories are identified as those where unexpected changes in price and quantity move in opposite directions. This methodology accounts for the evolving impact of supply- versus demand-driven factors on inflation from month to month.

We define a dummy that is one depending on whether the inflation is driven by more than 50% supply or demand side factors, respectively. We then estimate a modified regression specification in which we introduce a triple interaction term between inflationary news, markups, and a dummy of whether the inflation in this month has been either supply or demand driven.

$$\begin{aligned} Return^5_{i,t} = &\alpha + \beta_1 \text{Inflationary News}_t * Markup_{i,y(t)-1} + \\ &\beta_2 \text{Inflationary News}_t * Markup_{i,y(t)-1} * \text{Inflation Driver}_{m(t)} + \alpha_i + \alpha_t + \mathbf{X}'\gamma + \epsilon_{i,t} \end{aligned} \tag{8}$$

where Inflation $\text{Driver}_{m(t)}$ is a dummy that is one of the inflation is either demand or supply driven. $\mathbf{X}$ includes all interaction and level terms that are part of the triple interaction term. In the case of supply-driven inflation, Inflation $\text{Driver}_{m(t)} = 1$. Hence, β_1 can be interpreted as the effect of inflationary news for firms with higher markup when inflation is not supply driven, while $\beta_1 + \beta_2$ is the effect of inflationary news for firms with higher markup when inflation is supply-driven, with β_2 being the differential effect of supply-driven inflation. The results are shown in columns (1) and (2) of Table 2. As before $\beta > 0$ indicates that firms with higher markups perform better after inflationary news when inflation is not supply-side driven. The coefficient is significantly larger than before with around 0.16 instead of 0.8. The coefficient on the triple interaction term Inflationary $\text{News}_t * Markup_{i,y(t)-1} * \text{Inflation Driver}_{m(t)}$, β_2 is negative and statistically significant. The negative coefficient indicates that during times when inflation is supply-side driven, firms with market power are less shielded from inflation. When summing the double and triple interaction, we obtain a value of β_1, and β_2 we obtain a coefficient of 0.027, which is neither statistically nor economically significant. Hence, market power only shields firms from lower stock prices if the inflation is demand-driven. If inflation is supply-driven, all firms across the markup distribution, suffer negative stock returns in response to inflationary news.

Inflation that is supply-side driven can be explained through a negative supply shock that increases prices but lowers output. Demand-driven inflation can be explained through a positive demand shock that increases both prices and output. In response to a demand shock, firms with market power may be able to raise their prices more relative to their counterparts and increase their profits relatively, as their demand elasticity is lower than that of firms without market power. In contrast, when inflation is supply-driven, costs for all firms increase, reducing profits across all firms, as even those without market power may not be able to pass on cost shocks to their customers.

5.3.2 Cash Flows, Risk Free Rate and Risk Premia

The event-study methodology and the absence of a pre-trend before the announcement of inflationary news provide strong evidence that the source of the market implication during the days after the announcement is inflationary news itself and not other confounding factors, as it is unlikely that at the same day when inflationary news is announced other factors could drive markets systematically in the direction we observe. However, the channel through which inflationary news affects the stock market may not be through prices themselves, but rather through the reaction of other factors that are influenced by the announcement of the CPI news. For instance, inflationary news may affect monetary policy decisions and uncertainty, which then have subsequent effects on the stock market.

To test whether inflationary news affects the stock market through these channels, we include future changes in interest rates and the (Martin, 2017b) in our regression equation. In particular, we estimate the following regression specification:

$$Return^5_{i,t} = \alpha + \beta_1 \text{Inflationary News}_t + \beta_2 \Delta^5 ERP_t + \beta_2 \Delta^5 r_t + \epsilon_{i,t} \tag{9}$$

where $Return_{i,t}^{5}$ is, as before, the return of stock i between the day before the CPI announcement and five days after. Inflationary News$_t$ are the inflationary news at day t. ΔERP_t^5 is the change in the 1-year equity risk premium (in logs) between the day before the CPI announcement and five days after. Δr_t^5 is the change in the 2 or 10-year treasury yield between the day before the CPI announcement and five days after.

Table 3 shows the results. The coefficient on inflation surprise is reduced slightly but remains economically and statistically significant. Stock returns can be decomposed into cash flow, risk-free rate, and risk-premium component. By controlling for the change in the risk-free rate and the risk-premium through the change in the treasury yields and the equity options-implied equity risk premium (Martin, 2017b), the results suggest that the inflationary news impact at least partly the expectation of the future cash flows.

One channel through which firms with higher markups earn excess returns is because inflation-driven increases in the discount rate, affect firms without market power disproportionately. For instance, Liu et al. (2022) argue that firms with market power are instead more sensitive to changes in interest rates, as market leaders have a stronger investment response to lower interest rates relative to followers. However, an increase in the risk-free rate due to inflationary news would have affected firms with market power less for it to explain our results.

In Table 4 we show that once we control for various time-varying characteristics and interact them with markups the term on the interaction between the inflation surprise and markups remains positive and statistically significant, rendering it unlikely that inflation affects stock returns of market power firms disproportionately through a discount rate rather a stagnant cash-flow channel.

5.4 Market Outcomes

In this section, we analyze the market reaction to other outcomes to further disentangle whether inflationary news affects the stock market. To do so we estimate time series regression of the change in various market indicators between the day after and the day before the CPI release and regress it on our measure of inflationary news. Table 5 shows the results. Column (1) replicates our panel regression coefficient, in which a one percentage point surprise inflation news is associated with a 0.39% decline in the average stock. In column (2) we see that inflationary news increases the equity risk premium, increasing the discount factor, and contributing to the decline in stock prices across firms. Column (3) shows the response of the US Dollar index. An appreciation of the US Dollar against a broad range of currencies is often associated with a risk-off situation, in which investors sell risky assets, and therefore an increase in risk premia. Consistently, we find a positive elasticity of the US Dollar index with respect to inflationary news, further indicating that the risk premium rises, leading to a decline in stock prices. The increase in the dollar is likely partially explained by higher US nominal interest rates, which increases yield differentials with other currencies.

Columns (4) and (5) analyze the effect of inflationary news on the risk-free rate. In column (4) we regress the percentage change in the 2-year Treasury yield on inflationary news and find a positive relationship, consistent with the idea that higher inflation is associated with higher nominal interest rates and an increase in the discount factor. Column (5) replicates the results for the 10-year Treasury. We find only a weak positive relationship between inflationary news and an increase in the 10-year Treasury rate, potentially because investors expect inflation to be transitory and not to affect long-term interest rates.

Next, we analyze the effect of inflationary news on S&P dividend futures in Table 6. The data for dividend futures only start in 2016 so we can only observe 47 CPI prints. Equivalently to the other market outcomes, we calculate the difference between the dividend future prices after the CPI announcement and before the announcement. Note that for the dividend futures, the underlying asset is the nominal dividend from S&P 500 companies in the future. We consider one-year, two-year, and three-year ahead dividends and examine the price change over a one-day horizon (i.e. day of the CPI print vs. the day before) and a five-day horizon (i.e. price of the future five days after the the the announcement vs. day before. We regress each of these variables on the inflationary news, as defined before. With inflationary news, we would expect nominal dividends to rise because of an increase in nominal cash flows. If the increase in nominal cash flows is offset by an equally high increase in the discount rate, stock prices would not fall. However, we do not find evidence that expected dividends are increasing in response to inflationary news. The coefficients in Table 6 are mostly statistically insignificant. One concern with the regression could be that the few numbers of observations and measurement error bias the coefficients toward zero, and if we had a better measure of expectations of future cash flows, we would see an increase in expected nominal cash flows, due to a higher price level. However, the table shows mostly negative coefficients, with some t-values up to 1.5, suggesting that – if anything – stock market investors expect nominal cash flows to decline and not to increase in response to inflation. With higher-than-expected inflation and the expectation of stagnant nominal cash flows or even declining dividends, we can infer that expectations about real cash flows are declining.

Dividend futures for individual companies are not available, otherwise one could test whether firms with a large degree of market power see their dividend futures rising in response to inflationary news, which would be a more direct way to test the mechanism. We would expect firms with market power to increase nominal cash flows in response to higher inflation, as they can raise prices without losing as much customer demand. As the dividends futures are not directly observable, in future versions of the paper we plan to use firm-level balance sheet variables to test this mechanism.

6 Conclusion

The historically high levels of inflation in 2022 triggered a debate on the role of market power on rising prices. For instance, President Joe Biden tweeted on May 13, 2022: "You want to bring down inflation? Let's make sure the wealthiest corporations pay their fair share." The claim that price gouging has contributed to the recent inflation has triggered a debate among economists on the role of whether markups have contributed to inflation. In this paper, we approached the question from a slightly different angle. We asked: "How are firms with a differential degree of market power affected by inflation?". In standard models, inflation reflects firms' price changes, leading to higher nominal cash flows. However, not all firms raise prices proportionately with inflation. Firms that have market power do not face a perfectly elastic residual demand curve and can hold prices over marginal costs, potentially leading to differential outcomes during inflationary episodes

Inflation can affect firms with market power in different ways, depending on the specific circumstances of the firm and the market in which it operates. In general, firms with market power may be able to pass on higher costs associated with inflation to their customers by raising prices. This can help the firm maintain its profits or even increase them, as long as demand for its products or services remains strong.

However, there are also potential downsides to raising prices in response to inflation for firms with market power. If the firm raises prices too much, it may lose customers to competitors or face resistance from customers who are unwilling to pay the higher prices. In addition, if the firm raises prices in response to inflation, it may contribute to further inflation in the economy, which can have negative consequences for consumers and the overall economy.

It is important for firms with market power to carefully consider the potential trade-offs associated with raising prices in response to inflation and to balance the need to maintain profits with the need to remain competitive and responsive to customer demand.

In this paper, we provide evidence that inflationary news significantly reduces stock prices. The results hold after controlling for changes in proxies of risk premia and the risk-free rate, suggesting that the stock market expects lower future cash flows from companies. When exploiting heterogeneity across firms, we find a significant difference between firms that have a high degree of market power compared to those that do not. Firms that have significant market power fare significantly better in response to inflationary news compared to their counterparts. Firms that have market power can raise prices in response to positive demand shocks of households, being able to raise their cash flows relative to those that do not have market power, due to their inability to raise prices without losing a large share of customers. In response to supply shock-driven inflation, both firms with and without market power suffer in response to inflationary news.

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Tables

Table 1: Inflationary News, Market Power, and Stock Returns

	Dependent Variable: $Returns^5_{i,t}$					
	(1)	(2)	(3)	(4)	(5)	(6)
Inflationary News	-0.382					
	(-1.59)					
Markup	-0.0122	-0.0106	-0.0230	0.00784	-0.0234	0.00770
	(-0.43)	(-0.40)	(-1.12)	(0.36)	(-1.14)	(0.36)
Inflationary News × Markup	0.0885***	0.0872***	0.0678**	0.0702**	0.0700**	0.0727**
	(2.68)	(2.66)	(2.12)	(2.26)	(2.17)	(2.30)
R-squared	0.016	0.093	0.117	0.116	0.118	0.117
N	1,856,543	1,856,543	1,835,751	1,768,195	1,820,184	1,753,177
Firm FE	Y	Y	Y	Y	Y	Y
Time FE	N	Y	-	-	-	-
Industry-Time FE	N	N	Y	Y	Y	Y
Int. Firm Controls	N	N	N	Y	N	Y
Int. Asset Pricing Controls	N	N	N	N	Y	Y

This table shows results from Equation 6:

$$Return^5_{i,t} = \alpha + \beta_1 \text{Inflationary News}_t * Markup_{i,y(t)-1} + \alpha_i + \alpha_t + \mathbf{X}'\gamma + \epsilon_{i,t}$$

where $Return^5_{i,t}$ is the cumulative stock returns calculated from day t-1, before CPI release, to day t+5, after the CPI release. Inflationary News_t is the difference between announced year-on-year CPI inflation and its expected value by Consensus. $\text{Markup}_{i,y(t)-1}$ is the estimated markup from De Loecker et al. (2020) and standardized to have mean zero and a standard deviation of one. α_i is a firm fixed effect. α_t is a date fixed effect. $\mathbf{X}$ are controls. *Firm Controls* include log assets, tangibility, leverage, and market-to- book value. *Asset Pricing Controls* include the three Fama and French (1993) asset pricing factors: market beta, size, and value. Standard errors are double clustered at the firm and date level.

Table 2: Inflationary News, Markups, and Inflation Drivers

	Dependent Variable: $Returns^5_{i,t}$			
	(1)	(2)	(3)	(4)
Inflationary News	-1.247*		-0.290	
	(-1.86)		(-0.79)	
Markup	0.0161	0.00782	0.0213	0.0125
	(0.48)	(0.23)	(0.61)	(0.37)
Inflationary News × Markup	0.168***	0.167***	0.0480	0.0475
	(3.41)	(3.41)	(1.02)	(1.01)
Inflationary News × Markup × Inflation Driver	-0.112	-0.112	0.162**	0.161**
	(-1.44)	(-1.45)	(2.03)	(2.03)
R-squared	0.017	0.108	0.017	0.108
N	1,316,217	1,316,217	1,316,217	1,316,217
Firm FE	Y	Y	Y	Y
Time FE	N	Y	N	Y
Inflation Driver	Supply	Supply	Demand	Demand

This table shows results from Equation 8

$$Return^5_{i,t} = \alpha + \beta_1 \text{Inflationary News}_t * Markup_{i,y(t)-1} + \beta_2 \text{Inflationary News}_t * Markup_{i,y(t)-1} * \text{Inflation Driver}_{m(t)}$$

$$+\alpha_i + \alpha_t + \mathbf{X}'\gamma + \epsilon_{i,t}$$

where $Return^5_{i,t}$ is the cumulative stock returns calculated from day t-1, before CPI release, to day t+5, after the CPI release. Inflationary News$_t$ is the difference between announced year-on-year CPI inflation and its expected value by Consensus. Markup$_{i,y(t)-1}$ is the estimated markup from De Loecker et al. (2020) and standardized to have mean zero and a standard deviation of one. where Inflation Driver$_{m(t)}$ is a dummy that is one of the inflation is either demand or supply driven. $\mathbf{X}$ includes all interaction and level terms that are part of the triple interaction term. α_i is a firm fixed effect. α_t is a date fixed effect. Standard errors are double clustered at the firm and date level.

Table 3: Inflationary News on Stock Returns, controlling for observable Discount Rates

	Dependent Variable: $Returns^5$			
	(1)	(2)	(3)	(4)
Inflation Surprise	-0.512**	-0.360**	-0.362**	-0.350**
	(-2.29)	(-2.05)	(-2.07)	(-1.98)
Δ^5 Log(ERP)		-10.80***	-10.70***	-10.63***
		(-5.92)	(-5.75)	(-6.15)
Δ^5 2Y			1.173	2.566
			(1.19)	(0.98)
Δ^5 10Y				-1.729
				(-0.53)
R-squared	0.016	0.036	0.036	0.036
N	2,627,687	2,607,292	2,607,292	2,607,292
Firm FE	Y	Y	Y	Y

This table shows results from Equation 9:

$$Return^5_{i,t} = \alpha + \beta_1 \text{Inflationary News}_t + \beta_2 \Delta^5 ERP_t + \beta_2 \Delta^5 r_t + \epsilon_{i,t}$$

where $Return^5_{i,t}$ is the cumulative stock returns calculated from day t-1, before CPI release, to day t+5, after the CPI release. Inflationary News$_t$ is the difference between announced year-on-year CPI inflation and its expected value by Consensus. ΔERP^5_t is the change in the 1-year equity risk premium (in logs) between the day before the CPI announcement and five days after. Δr^5_t is the change in the 2 or 10-year treasury yield between the day before the CPI announcement and five days after. α_i is a firm fixed effect. Standard errors are double clustered at the firm and date level.

Table 4: Inflationary News, Market Power, and Stock Returns, controlling for observable Discount Rates

	Dependent Variable: $Returns^5_{i,t}$					
	(1)	(2)	(3)	(4)	(5)	(6)
Inflationary News	-0.382	-0.363	-0.384	-0.403**	-0.287	-0.100
	(-1.59)	(-1.54)	(-1.61)	(-1.98)	(-1.34)	(-0.41)
Markup	-0.012	-0.013	-0.013	-0.010	-0.021	-0.020
	(-0.43)	(-0.47)	(-0.44)	(-0.34)	(-0.73)	(-0.72)
Inflationary News × Markup	0.088***	0.087***	0.088***	0.084***	0.076**	0.069**
	(2.68)	(2.63)	(2.68)	(2.65)	(2.45)	(2.26)
R-squared	0.016	0.017	0.016	0.041	0.020	0.050
N	1,856,543	1,856,543	1,856,543	1,853,890	1,856,543	1,853,890
Firm FE	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
Int. Market Controls	N	2-yr. Yield	10-yr. Yield	Log(ERP)	Log(USD)	All

This table shows results from Equation 6:

$$Return^5_{i,t} = \alpha + \beta_1 \text{Inflationary News}_t * Markup_{i,y(t)-1} + \alpha_i + \alpha_t + \mathbf{X}'\gamma + \epsilon_{i,t}$$

where $Return^5_{i,t}$ is the cumulative stock returns calculated from day t-1, before CPI release, to day t+5, after the CPI release. Inflationary News$_t$ is the difference between announced year-on-year CPI inflation and its expected value by Consensus. Markup$_{i,y(t)-1}$ is the estimated markup from De Loecker et al. (2020) and standardized to have mean zero and a standard deviation of one. α_i is a firm fixed effect. α_t is a date fixed effect. $\mathbf{X}$ are the change in the 2-year Treasury Yield in column (2), the change in the 10-year Treasury Yield in column (3), the change in the log equity risk premium in column (4), the change in the log US Dollar index in column (5), and all of them combined in column (6), each interacted with markups. Standard errors are double clustered at the firm and date level.

Table 5: Inflationary News and Discount Rates

	(1) $\Delta Returns^5$	(2) Δ^5 Log (ERP)	(3) Δ^5 Log (USD)	(4) Δ^5 2-yr. Yield	(5) Δ^5 10-yr. Yield
Inflationary News	-0.218***	0.009*	0.001*	0.008**	0.002
	(-3.21)	(1.92)	(1.78)	(2.10)	(0.88)
N	388	385	388	388	388

This table shows results from the following equation:

$$Y_t^5 = \alpha + \beta_1 \text{Inflationary News}_t + \epsilon_t$$

where Y_t^5 is the average cumulative stock returns calculated from day t-1, before CPI release, to day t+5, after the CPI release in column (1), the change in the log equity risk premium in column (2), the change in the log US Dollar index in column (3), the change in the 2-year Treasury Yield in column (4), and the change in the 10-year Treasury Yield in column (5). Inflationary News_t is the difference between announced year-on-year CPI inflation and its expected value by Consensus. Standard errors are double clustered at the firm and date level.

Table 6: Inflationary News and Dividend Futures

	(1) Δ Div. 1yr.	(2) Δ Div. 2yr.	(3) Δ Div. 3yr.	(4) Δ^5 Div. 1yr.	(5) Δ^5 Div. 2yr.	(6) Δ^5 Div. 3yr.
Inflationary News	-0.000	-0.002	-0.004	-0.016	-0.051*	-0.062*
	(-0.09)	(-1.29)	(-1.40)	(-1.50)	(-1.92)	(-1.81)
N	47	47	47	46	46	46

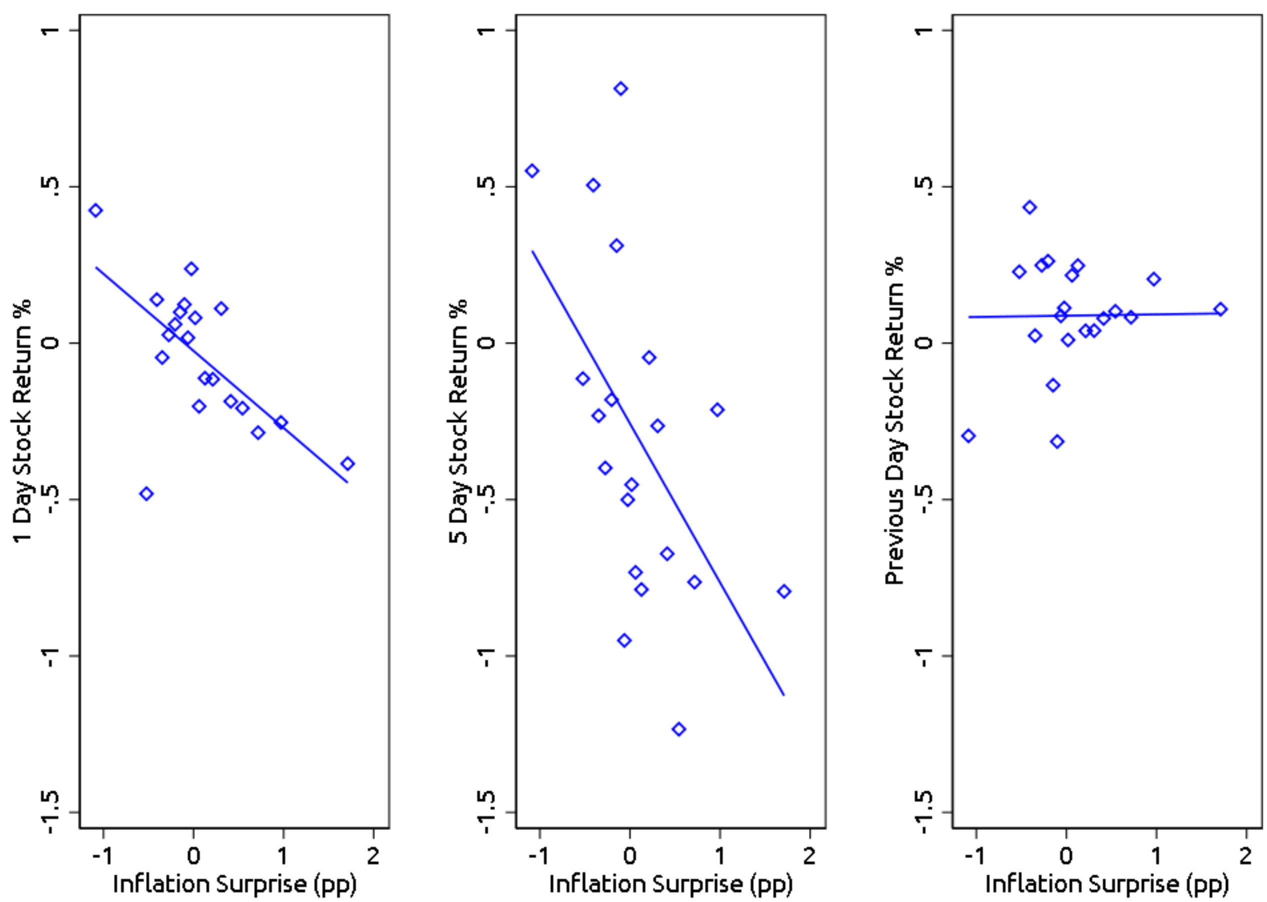
This table shows results from the following equation:

$$\Delta DividendFutures_t = \alpha + \beta_1 \text{Inflationary News}_t + \epsilon_t$$

where Y_t is the change in the one, two, and three year dividend future price on the S&P 500 in columns 1 (4), 2 (5), 3 (6) between the day t-1, before CPI release, to day t (t+5), of (after) the CPI release. Standard errors are double clustered at the firm and date level.

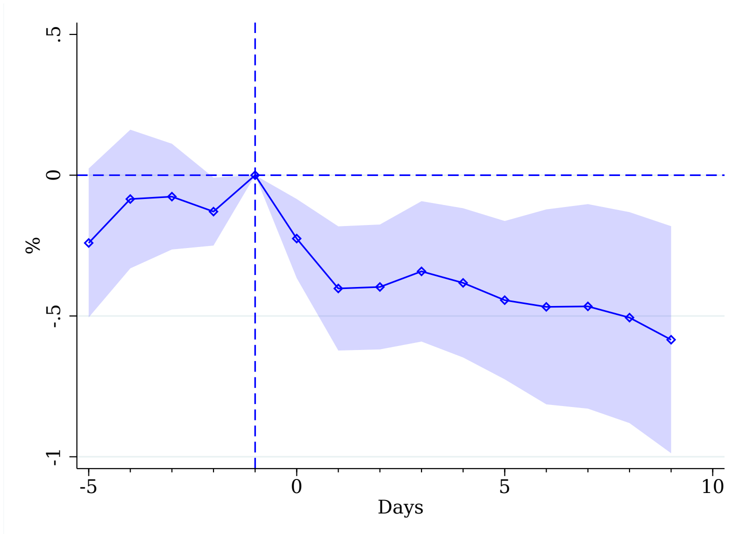
Figures

Figure 1: Inflationary News Coefficient for different horizons



This figure combines binscatterplot between $Return^{0}_{i,t}$ (left panel), $Return^{5}_{i,t}$ (middle panel), and $Return^{-1}_{i,t}$ (right panel) on the y-axis and the Inflationary News$_t$ on the x-axis. $Return^{k}_{i,t}$ is the cumulative return between the day before the CPI announcement on date t and k days after for stock i. Inflationary News$_t$ is the difference between announced year-on-year CPI inflation and its expected value by Consensus.

Figure 2: Stock Returns around Inflation Surprises

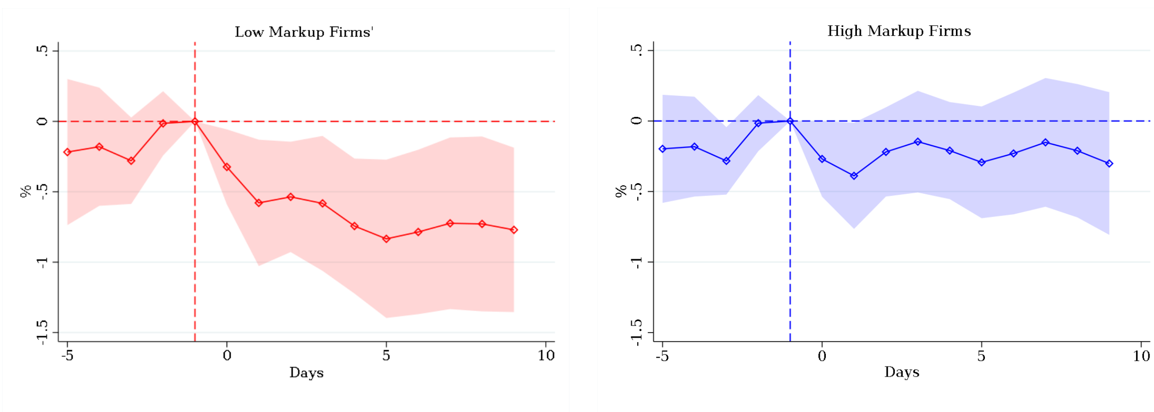


This figure plots the estimated coefficient of Equation 5:

$$Return_{i,t}^{k} = \alpha + \beta_1 \text{Inflationary News}_t + \epsilon_{i,t}$$

where $Return_{i,t}^{k}$ is the cumulative return between the day before the CPI announcement on date t and k days after for stock i. Inflationary News_t is the difference between announced year-on-year CPI inflation and its expected value by Consensus. Standard errors are double clustered at the firm and date level. The shaded area reflects the 95% confidence interval.

Figure 3: Stock Returns around Inflationary News by Market Power

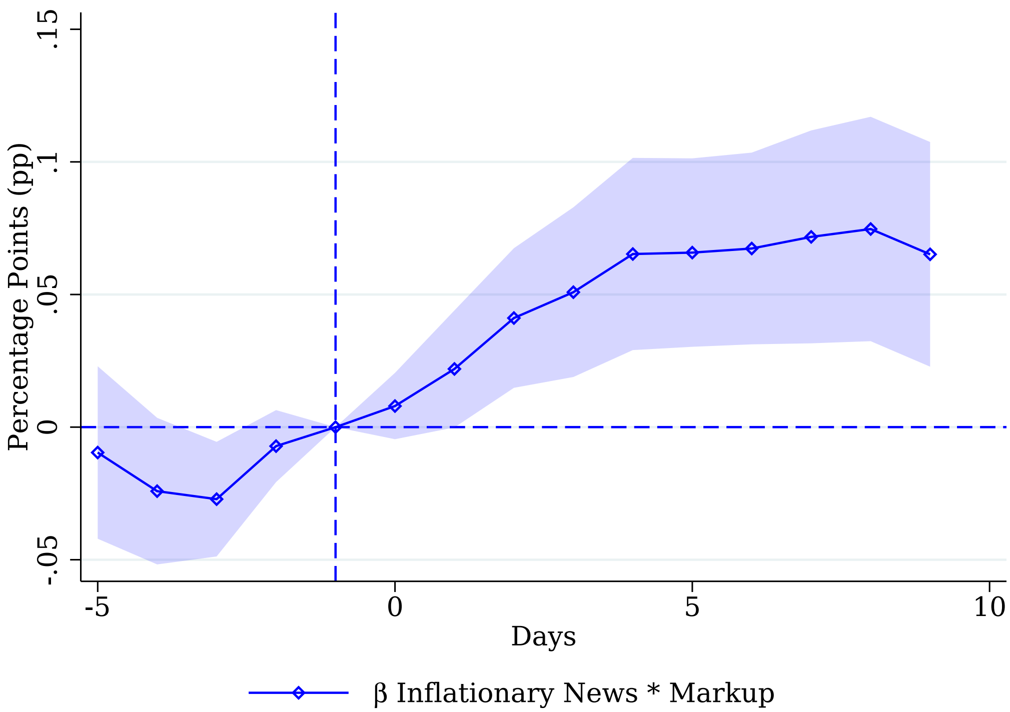


This figure plots the estimated coefficient of Equation 7:

$$\begin{aligned} Return_{i,t}^{k} = & \alpha + \beta_1 \text{Inflationary News}_t * \text{Low Markup}_{i,y(t)-1} \\ & + \beta_2 \text{Inflationary News}_t * \text{High Markup}_{i,y(t)-1} + \beta_3 \text{Low Markup}_{i,y(t)-1} + \epsilon_{i,t} \end{aligned}$$

where $Return_{i,t}^{k}$ is the cumulative return between the day before the CPI announcement on date t and k days after for stock i. Inflationary News_t is the difference between announced year-on-year CPI inflation and its expected value by Consensus. High $\text{Markup}_{i,y(t)-1}$ is a dummy that is equal to one if the firm has a markup above the 75th% percentile of the distribution and zero otherwise. Low $\text{Markup}_{i,y(t)-1}$ is a dummy that is equal to one if the firm has a markup below the 25th% percentile of the distribution and zero otherwise. Markup is defined as the estimated markup from De Loecker et al. (2020). Standard errors are double clustered at the firm and date level. The shaded area reflects the 95% confidence interval.

Figure 4: The Role of Market Power for Stock Returns around Inflationary News



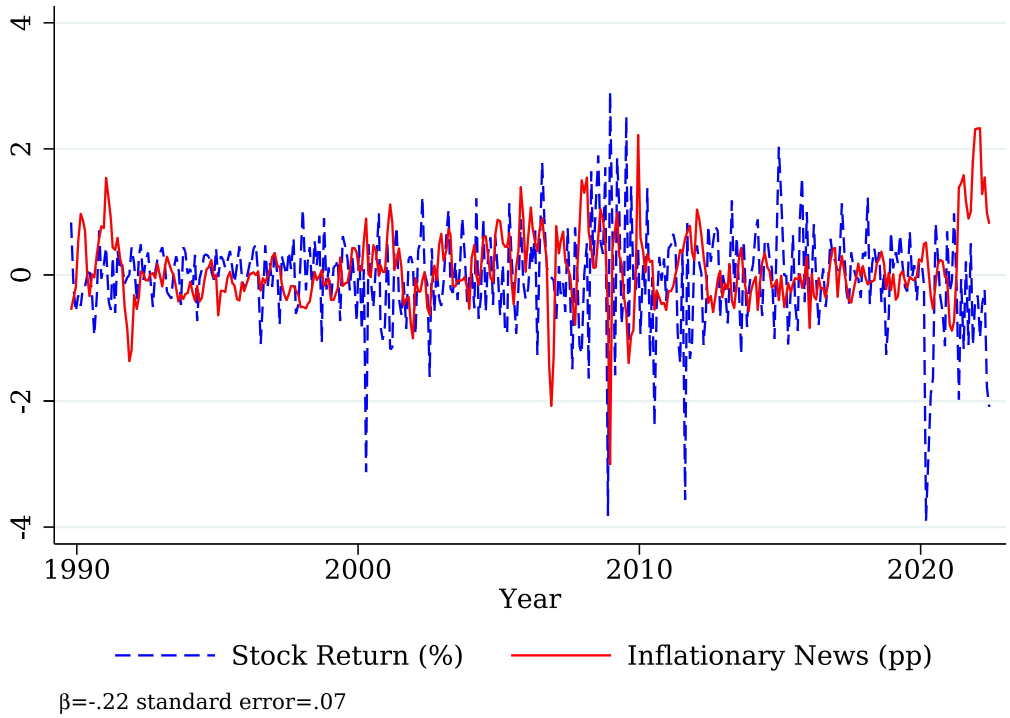
This figure plots the estimated coefficient of Figure 4:

$$Return^k_{i,t} = \alpha + \beta_1 \text{Inflationary News}_t * Markup_{i,y(t)-1} + \alpha_i + \alpha_t + \mathbf{X}'\gamma + \epsilon_{i,t}$$

where $Return^k_{i,t}$ is the cumulative return between the day before the CPI announcement on date t and k days after for stock i. Inflationary News_t is the difference between announced year-on-year CPI inflation and its expected value by Consensus. $\text{Markup}_{i,y(t)-1}$ is the estimated markup from De Loecker et al. (2020) and standardized to have mean zero and a standard deviation of one. α_i is a firm fixed effect. α_t is a date fixed effect. $\mathbf{X}$ are controls. Low $\text{Markup}_{i,y(t)-1}$ is a dummy that is equal to one if the firm has a markup below the 25th% percentile of the distribution and zero otherwise. Standard errors are double clustered at the firm and date level. The shaded area reflects the 95% confidence interval.

A Appendix Figures

Figure A.1: Inflationary News and Stock Returns



This figure plots the inflationary news as defined section 3 in solid red and the stock return at the day of the CPI announcement in dashed blue. β reports the coefficient of the univariate regression of the stock returns on the inflation surprise and *standard error* reports the standard error of the coefficient.