

Inflation, the Corporate Greed Narrative, and the Value of Corporate Social Responsibility*

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February 1, 2023

[First version: December 20, 2022]

Abstract

Inflation can significantly undermine companies' relationships with their customers, employees, and other stakeholders, spawning a crisis of trust. This is particularly true in a period when many citizens accuse corporations of excessively raising prices to maximize profits. Studying the cross-sectional reactions of US stocks to inflation over the period 2018-2022, we find that in the month following a higher inflation rate, equity investors reward firms with stronger social capital, as proxied by their corporate social responsibility levels. The effect holds using different measures of inflation, including region-specific ones. The inflation-hedging property of CSR is stronger for firms headquartered in Democratic US states (those most exposed to the “corporate greed” narrative of inflation) and for firms with higher customer awareness and intangible capital. Overall, the findings spotlight inflation as a crisis in stakeholder trust and provide new insights into the importance of social capital for firm value.

JEL Classification: G12, G32, M14

Keywords: CSR, ESG, Inflation, Stock returns, Social capital

*The authors declare that they have no relevant or material financial interests related to the research described in this paper. We thank Alexander Wagner and Amra Hrustanovic for their insightful comments.

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1 Introduction

Inflation poses significant threats to the relationship of companies with their stakeholders. People dislike inflation ([Shiller, 1997](#)), and recent survey evidence indicates that most citizens blame price hikes by corporations to increase their profits – that is, “corporate greed” – as the main cause of inflation in the post-2020 period (see [Deloitte, 2022](#); [Data For Progress, 2022](#); [Ipsos, 2022](#); [Navigator Research, 2022](#)).¹ This type of narrative can significantly erode the perception of a company by its employees, clients, and local authorities, undermining its operating performance.

In this paper, we exploit the sharp rise in inflation in the post-2020 period to study the effects of social capital on firm value. Specifically, by analyzing the monthly stock-price reactions of US firms to various inflation measures from January 2018 through September 2022, we investigate whether investors rewarded firms better prepared to preserve the trust of their stakeholders. We proxy for a firm’s social capital using its corporate social responsibility (CSR) performance in the environmental and social dimensions (ES), as done in the extant literature ([Lins et al., 2017](#); [Albuquerque et al., 2020](#)).

We find that in months following higher inflation, stocks of higher-CSR firms perform

¹According to [Data For Progress \(2022\)](#), as of May 2022, around 60% of US citizens agreed that corporations took advantage of the pandemic to raise prices and grow profits and rejected the premise that corporations have “no choice but to raise prices”. According to [Deloitte \(2022\)](#), the share of people blaming corporate price gouging for inflation is around 54%, and those people express weaker spending intentions. [Ipsos \(2022\)](#) find that clients react to price increases by expecting immediate improvements in customer experience, and customers feel nearly two times more empathy for small businesses (81%) raising their prices compared to large companies (47%). Overall, as [Shiller \(2022\)](#) put it, “*the public tends to think of inflation as an indicator of a cycle of greed and inhumanity, as a conspiracy to rob them of their buying power.*”

significantly better than stocks of lower-CSR firms. Specifically, for any additional 1 percentage point of month-to-month inflation in month t , companies with a 1-standard-deviation higher ES score experience a stock price outperformance of 1.43 percentage points in $t+1$, net of the effect of other firm characteristics. The inflation-hedging properties of CSR persist even when contemporaneously accounting for the stock-price effects of inflation through other channels, including the repricing of nominal values (leverage, cash holdings), differential exposure to changes in discount rates (book-to-market), pricing power (profitability), and exposure to market downturns (market beta).

The above result is robust to using alternative measures of inflation (including expected yearly inflation, region-specific inflation, and Google search attention to inflation) and alternative sets of returns (CAPM-adjusted and Fama-French-adjusted). We also obtain similar inferences when using an alternative measure of CSR obtained from the MSCI-KLD database.

Why do stocks of high-CSR firms perform better during periods of high inflation? In our interpretation, the effect is at least partially driven by equity investors recognizing that inflation can significantly undermine a firm’s relationship with its stakeholders, with consequences on its performance. The “corporate greed” narrative of inflation – accusing firms of taking advantage of the post-2020 environment for excessively raising prices – can amplify this mechanism. Whether corporations are *actually* responsible for inflation and to what extent is irrelevant: motivated or not, narratives can have a first-order influence on individual behaviors and economic outcomes ([Shiller, 2017](#)).

The “corporate greed” narrative has a strong socio-political dimension. Survey evidence indicates that it is more popular amongst Democratic than Republican voters ([Data For Progress, 2022](#); [Navigator Research, 2022](#)). Moreover, Republican areas generally have stronger pro-business attitudes than Democratic areas (e.g., [Gatchev et al., 2022](#)). Hence, we can expect the inflation-hedging properties of CSR to vary significantly based on the political attitudes a firm’s stakeholders are exposed to, proxied by its headquarter state. Cross-sectional analyses of our main finding confirm this intuition: the stock price effect of CSR during periods of high inflation is around 70% stronger among firms headquartered in “blue” vs. “red” US states.

Next, we discuss and test three not-mutually exclusive channels through which social capital may affect firm value during high-inflation times. Customers may punish companies they perceive as raising prices opportunistically, leading to reduced sales. Employees’ perception of the firm’s fairness can also affect morale, productivity, and turnover – reducing the firm’s human capital and production capacity. Investors may perceive firms with stronger social capital to be able to better preserve a relationship of trust with customers and employees, with positive effects on expected cash flows. It may also be that investors reward higher-CSR firms for their superior access to external capital following an expected inflation-driven tightening of credit conditions, with effects on firms’ cost of capital. We find that the inflation-hedging effect of CSR is stronger amongst firms with higher advertisement expenses (a proxy for customer awareness) and higher share of intangible assets (a proxy

of the importance of employees in a firm’s value creation), consistent with the “customers” and “employees” channels. We do not find any significant difference in the effect between firms with low and high net leverage, a proxy for the exposure to a tightening in financial frictions.

The paper makes three significant contributions. First, it adds to the literature on the effect of CSR on firm value, particularly during crises of trust.² Trust is a vital element for the well-functioning of any organization of human beings, including corporations (e.g., [La Porta et al., 1997](#); [Sapienza and Zingales, 2012](#); [Sapienza et al., 2013](#)).³ Investments in social capital – i.e., fostering a good relationship with employees, customers, suppliers, and local communities – are likely to pay off when trust becomes suddenly scarce. For instance, a good relationship with employees in “normal” times can help maintain their job satisfaction in difficult periods, with positive effects on firm performance ([Edmans, 2011](#)). In line with this interpretation, [Lins et al. \(2017\)](#) find that during the 2008–2009 financial crisis, firms with high levels of corporate social responsibility experienced significantly better stock prices and operating performance. [Albuquerque et al. \(2020\)](#) document that high-CSR firms experienced higher stock returns and operating profit margins during the early phases of the COVID-19 crisis, at least partially due to customer and investor loyalty.⁴ In this paper, we

²In addition to crises of trust, corporate social responsibility is obviously particularly valuable also in reaction to specific environmental and social crises, like climate change (e.g., [Ramelli et al., 2021](#)) or income inequality ([Pan et al., 2022](#)).

³For instance, an extensive literature emphasize the crucial role of trust in financial markets, e.g., ([Guiso et al., 2008](#); [Giannetti and Wang, 2016](#); [Gurun et al., 2018](#)).

⁴[Ding et al. \(2021\)](#) also find that stocks of high-CSR firms proved more resilient during the Covid-19 market crash. [Demers et al. \(2021\)](#) find that they did not, after accounting for several firm characteristics

address this question by exploiting a specific and different crisis of trust: a period of high inflation eroding the trust of citizens – and hence, stakeholders – in corporations.⁵

Second, we contribute to the literature on the cross-sectional effects of inflation on firm value. [Hong \(1977\)](#) and [Pearce and Roley \(1988\)](#) highlight the importance of the re-pricing of nominal values (e.g., debt or taxes) as a major driver of the differential effects of inflation on stock prices. [Sharpe \(2002\)](#) identifies two channels driving the negative relation between inflation and stock valuations: lower expected real earnings and higher required real returns. [Ang et al. \(2012\)](#) document substantial variation in how individual stocks covary with inflation. More recently, [Boons et al. \(2020\)](#) find that inflation risk is priced in stock returns, and this risk premium depends on the expected effect of inflation on real growth. In contemporaneous work, [Gil de Rubio Cruz et al. \(2022\)](#) find that firms with low leverage, large capitalization, high market beta, low book-to-market, and low market power are more susceptible to inflation surprises. Our paper is the first to investigate and document the cross-sectional effect of inflation on asset prices based on firms' social capital.

Finally, the paper also relates to the literature on the effects of culture on economic outcomes ([Guiso et al., 2006](#)). How corporations are perceived in society is a cultural trait that can largely influence economic behaviors. For instance, [Kaustia and Torstila \(2011\)](#) find that many people do not invest in the stock market due to a cultural/political stock market

but emphasize the positive role played by intangible assets.

⁵Of course, not all economic or financial crises are crises of trust; as such, not any crisis can be an appropriate setting to study the impact of social capital on firm value.

aversion. [Gatchev et al. \(2022\)](#) show that pro-business attitudes vary significantly across political and religious dimensions, influencing local firms' corporate governance. [Colonnelli et al. \(2022\)](#) show that public discontent toward large businesses influences policy preferences. [Pursiainen and Tykvova \(2022\)](#) find that acquisitions by private equity funds – generally a subject of public scrutiny – are followed by a reduction in retail customer visits to target firms' outlets. The popular perception of corporations can change over time, like any cultural trait. For example, [Jha et al. \(2021\)](#) document that historical disasters shape the sentiment of society toward finance. Inflation has been shown to have long-term effects on individual behavior ([Malmendier and Nagel, 2016](#)). Our work warns that they may also have long-lasting effects on how corporations are perceived in society, with consequences on firm value.

The rest of this paper is structured as follows. Section 2 presents and summarizes the data. Section 3 discusses our methodology and main results. Section 4 discusses and tests the potential channels driving the main finding. Section 5 concludes.

2 Data

Our main sample covers public firms in the United States from January 2018 through September 2022. We retrieve our data from several sources, as described below.

2.1 Stock returns and accounting variables

We retrieve monthly stock prices for common shares listed on U.S. major stock exchanges (NYSE, NYSE Arca, AMEX, and NASDAQ) from January 2015 through September 2022 from the Compustat Capital IQ database (accessed through the Wharton Research Data Services, WRDS).

We compute monthly returns by using dividend-adjusted stock prices. For every month, we winsorize returns at the 1st and 99th percentiles to reduce the effect of outliers on our estimates. For each stock, we estimate *Market beta* by regressing monthly returns above the 1-month Treasury-bill rate on the excess market return using a 36-month moving window when at least 24 months of non-missing returns are available. Similarly, we also estimate each stock's loadings on the value and size factors. We obtained the excess returns on the market, value, and size factors from Kenneth French's website. For each stock-month observation, we compute *Momentum* as the average individual stock return from month $t-12$ to $t-1$.

From Compustat, we also retrieve standard firm-level annual accounting characteristics: leverage (long-term debt plus debt in current liabilities divided by total assets, in percentage points), cash holdings (cash and short-term investments divided by total assets, in percentage points), firm size (the logarithm of market capitalization), book-to-market ratio (the book value of equity divided by market valuation), and return on assets (ROA, computed as the annual income before extraordinary items over total assets, in percentage points). We also retrieve and consider short-term and long-term debt separately, net leverage (long-

term and short-term debt minus cash and short-term investments divided by total assets, in percentage points), R&D intensity (R&D expenses divided by total assets, in percentage points), advertising (advertising expenses divided by total assets, in percentage points) and intangibility (intangible assets divided by total assets, in percentage points).

To determine the firms' location, we use their business address as reported in 10-X filings with the SEC.⁶ Using this information, we restrict our sample to firms headquartered in the US. We classify firms based on GICS industry groups, and we restrict our sample to non-financial and non-utility firms.

Table 1 provides the summary statistics of the main variables used in our analyses.

- Table 1 -

2.2 Corporate social responsibility

We obtain Environmental, Social, and Governance (ESG) scores from Refinitiv for 2017 through 2021. These scores are available at an annual frequency.⁷

Since we are mostly interested in the Environmental and Social pillars as a proxy for a firm's CSR and social capital, we compute an ES Score as the average of the two scores.

⁶This data is obtained from the University of Notre Dame's webpage: <https://sraf.nd.edu/data/augmented-10-x-header-data/>.

⁷Refinitiv adopts a percentile rank scoring methodology, where low scores indicate poor relative ESG performance and insufficient disclosure of data, whereas high scores indicate good relative performance and disclosure. The assessment is based on analyzing ten main themes aggregated in the three ESG pillars. The ten themes are *Resource use*, *Emissions*, *Innovation* (which make up the Environmental dimension), *Workforce*, *Human rights*, *Community*, *Product responsibility* (Social), *Management*, *Shareholders*, and *CSR strategy* (Governance).

To facilitate the economic interpretation of the results, we standardize our ES score to have mean 0 and unit standard deviation. As an alternative proxy for CSR, we compute the environmental and social score using the MSCI–KLD database, *ES (kld)*.⁸

2.3 Inflation measures

We obtain national and local inflation data (month-on-month and year-on-year changes in the Consumer Price Index for All Urban Consumers, All Items) from the U.S. Bureau of Labor Statistics. We also consider two measures of local inflation based on U.S. Census regions and divisions, which are matched with the firms’ locations.⁹

To gauge consumers’ expectations of inflation, we use the one-year-ahead inflation expectations numbers from the Survey of Consumer Expectations, available from the Federal Reserve Bank of New York. To measure consumers’ attention to inflation more specifically, we collect Google Trends data at the national and state level for searches with the keyword “inflation”. The evolution of inflation and attention to inflation figures at the national level during our sample period is illustrated in Figure 1. In Appendix Figure A1, we show the year-on-year inflation rates at the regional level.

⁸The MSCI–KLD dataset provides a series of dummy variables indicating, for each firm and year, the presence of strengths or concerns on several environmental, social, and governance factors. Following the usual practice in the literature (e.g., Lins et al., 2017; Albuquerque et al., 2020), we define *ES (kld)* as the fraction of environmental and social “strengths” indicators that are equal to one minus the fraction of the environmental and social “concerns” indicators that are equal to one. Since, at the time of writing, the MSCI–KLD dataset is available only through 2019, we assign the latest-available score for a firm also to the most recent period.

⁹The four divisions are Northeast, Midwest, South, and West. The nine divisions are New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, and Mountain Pacific. Data for divisions is only available since December 2018.

We account for the timing of inflation as follows. Since official inflation numbers and survey results are typically publicly announced mid-month and refer to the previous month, we study the effect of inflation data on stock returns over the following months.

3 The inflation-hedging properties of CSR on firm value

In this section, we test our hypothesis on the positive effect of a firm’s social capital on firm value during periods of high inflation. With this purpose, we run OLS regressions of individual stock returns in month $t+1$ of the following type:

$$Return_{i,t+1} = \alpha + \beta_1 Inflation_t \times ESscore_{i,t} + \beta_3 ESscore_{i,t} + \gamma' \mathbf{X}_{i,t} + \delta_t + I_i + \epsilon_{i,t}$$

Our main variable of interest is the interaction between the inflation rate in time t and a firm’s i environmental and social score ($ES_{i,t}$). $\mathbf{X}_{i,t}$ is a vector of lagged firm and stock characteristics (leverage, cash holdings, firm size, book-to-market, ROA, market beta and momentum).¹⁰ In a second specification, we will also interact these firm characteristics with the inflation rate to account for the “traditional” channels through which inflation can impact firms differently. δ_t and I_t represents date and industry fixed effects, respectively,

¹⁰We do not include a stock’s estimated loadings to the size, value, and quality factors, as we already control for firm characteristics correlated with those loadings (Bessembinder et al., 2019). However, controlling for factor loadings instead or in addition to firm characteristics does not affect our main findings. As discussed in Section 3.2, we also obtain similar results when using model-adjusted returns on the left-hand side of the regressions.

and $\epsilon_{i,t}$ the error term. We cluster standard errors at the firm level.¹¹

3.1 Main results

Table 2 shows the results of our analysis. In column 1, we run a regression without month fixed effect showing a strongly negative effect of inflation on monthly returns. In column 2, this effect is absorbed by the month fixed effects. In both specifications, we find that in months following higher inflation rates, high-CSR firms experience superior stock-price performance than otherwise-similar companies. The effect is economically meaningful: for any additional 1 percentage point of inflation in month t , companies with a 1-standard-deviation higher ES score experience a stock-price outperformance of 1.43 percentage points in $t+1$, net of the effect of many other firm characteristics. Figure 2 illustrates this finding in binned scatter plots and confirms the linearity of the relationship.

- Table 2 -

- Figure 2 -

Of course, inflation can impact firm value through several potential channels. For this reason, in column 3, we interact the inflation rate with *all* firm characteristics in our regressions. Some interesting patterns emerge. In particular, following months of high inflation,

¹¹We do not cluster both at the firm and month levels (Thompson, 2011; Petersen, 2009) due to our short sample period, which includes only 56 months/clusters. However, our main findings remain statistically significant even when double-clustering standard errors.

firms with higher profitability (ROA) — a measure of market power and markup — perform better, presumably thanks to their ability to pass through inflation to their clients and remain profitable. Leverage and cash holdings interact positively and negatively with inflation, respectively, reflecting a repricing of the nominal values of debt and liquidity. High-market-beta firms perform worse, given the overall negative reaction of the stock market to inflation (in the regression, the direct negative coefficient on inflation is absorbed by the month fixed effects). Large firms perform better than small ones. Finally, high book-to-value firms perform better (but the coefficient is not statistically significant), reflecting the positive link between inflation and discount rates, i.e., investors’ expected real returns. Despite simultaneously controlling for these “traditional” effects of inflation on stock prices, the estimated effect of our CSR channel remains statistically significant although reduced in magnitude.

3.2 Robustness checks

In this subsection, we describe the results of a set of robustness checks. Using alternative measures of inflation and attention to inflation does not change our main finding that high CSR firms outperform¹².

¹²We also test in Table A2 in the Appendix if our findings hold using an alternative measure of firms’ CSR performance, the ES score from MSCI-KLD. The findings are in line with those of our main specification.

3.2.1 Inflation changes

In our main analysis, we consider firm stock-price reactions to *realized* inflation rates. As an alternative approach, we here re-run our analyses by also considering *changes* in inflation rates, which could be more salient to stakeholders and investors. Table 3 shows the results of our main regressions if we use the monthly change in the inflation rate instead of its level. We confirm the positive effect of social responsibility: starting with column 1, following an increase in the monthly inflation rate of 1 percentage points, companies with a 1-standard-deviation higher ES score experience a stock price outperformance of 0.38 percentage points in $t+1$ controlling for firm characteristics and industry. In column 2, we additionally include monthly fixed effects (thus absorbing the direct effect of changes in inflation on return), and the magnitude of the coefficient of interest remains the same. When we saturate the model by additionally interacting the change in the monthly inflation rate with firm characteristics (column 3), our coefficient of interest turns statistically insignificant.

- Table 3 -

3.2.2 Alternative inflation measures

In Table 4, we confirm the value of firms' CSR during periods of high inflation using various alternative measures of inflation¹³. In column 1, we use the inflation year-on-year (*Inflation (yoy)*), and obtain a coefficient of 0.14. The result is similar (coefficient of 0.13 in column

¹³The specifications presented in this table are analogous to that of column 2 in Table 2.

2) if instead of using the national year-on-year inflation rate, we take it at the US Census Region level (*Inflation (yoy, region)*). Columns 3 and 4 consider measures of consumer inflation expectations at the national and regional level (*Expected inflation (yoy)* and *Expected inflation (yoy, region)*), and we find coefficients of 0.27 and 0.23. Finally, in the last two columns we include measures of attention to inflation proxied by Google search intensity for the keyword inflation, at the national and state level (*Google SVI inflation (US)*, *Google SVI inflation (state)*). Throughout all the specifications, our main effect of interest – the outperformance of high social responsibility firms in reaction to inflation – is significant at the 1% level.

- Table 4 -

3.2.3 Model-adjusted returns

In Table A1 in the Appendix, we replicate our main analyses using CAPM-adjusted and Fama-French-adjusted returns as the dependent variable instead of raw returns. The estimated coefficient on the interaction between inflation and CSR remains positive and statistically significant, except when using Fama-French-adjusted returns and simultaneously accounting for the interaction of inflation with firm characteristics. The reason is that firm size is positively correlated with CSR and, in this specification, we account for firm size three times: 1) When adjusting returns for the stock’s loading to the size factor times the size factor, 2) when including firm size as a control in the regression, and 3) when interacting

size with the inflation rate. The remaining variability in CSR is small for reliable inferences.

3.3 Results by industry

The impact of inflation on firm value is likely to vary significantly across industries due, for instance, to different levels of price rigidity (e.g., [Nakamura et al., 2018](#)). The value of social capital during high inflation is also likely to vary across industries.

Panel A of Figure 3 plots the coefficient on the interaction terms $Inflation(mom) \times ES$ score obtained from regressions of individual stock returns by GICS industry groups. Our coefficient of interest has a positive sign in most industries, confirming the broad importance of our findings, which are not driven by a few isolated sectors. The effect appears particularly strong among firms in the healthcare, media, IT, and pharmaceutical sectors.

- Figure 3 -

Panel B plots the average effect of inflation on stock returns by GICS industry groups against the estimated effects of $Inflation(mom) \times ES$ score on stock returns within the same industry. We observe that the hedging effect of ES score is more important within industries more negatively exposed to inflation.

4 What drives the inflation-hedging effect of CSR?

In the previous section, we documented the positive effect of CSR on stock returns following months of higher inflation. We now investigate some factors that contribute to and drive this effect.

4.1 The role of exposure to the corporate greed narrative

Survey evidence indicates that the “corporate greed” narrative of inflation is significantly stronger amongst Democratic vs. Republican voters ([Data For Progress, 2022](#); [Navigator Research, 2022](#)). Republican areas are also more likely than Democratic ones to have stronger pro-business attitudes (e.g., [Gatchev et al., 2022](#)). Hence, to the extent that the “corporate greed” narrative at least partially explains our result, we can expect the average political preferences in a firm’s home state to significantly influence the inflation-hedging properties of CSR on stock prices.

To test for the above conjecture, in [Table 5](#), we regress individual stock returns in $t+1$ on the triple interaction term $Inflation \times ESscore \times Democratic\ state$, where *Democratic state* is an indicator equal to 1 if the firm is headquartered in a U.S. state with a Democratic majority in the 2022 midterm election for the House of Representatives. The regressions control for the same set of firm characteristics used in our baseline specifications.

- [Table 5](#) -

In line with our expectations, we find that the value of CSR after months of higher inflation is primarily driven by firms headquartered in Democratic states. In column 1, we report a coefficient for the effect of high CSR interacted with inflation for Democratic states of 0.71 percentage points ($Inf(mom) \times ES\ Score \times Democratic\ state$), while the effect of CSR interacted with inflation ($Inf(mom) \times ES\ Score$) is 0.97 percentage points. That is, the effect among firms in “blue” states is around 70% higher than it is among firms in “red” states, which is also positive and statistically significant. The difference between the two groups is significantly reduced and statistically insignificant in the restrictive specification accounting for the interactions between inflation and all firm characteristics (column 2), but remains positive.

4.2 The role of customers, employees, and the cost of capital

How can a firm’s social capital mitigate the impact of the corporate greed narrative on firm value? The effect on firm value could run through cash flows and the cost of capital. While many studies document the existence and magnitude of a CSR effect on firm value, its mechanics are less clear. We here discuss and test three possible non-mutually exclusive channels.

First, the most intuitive channel: through customer loyalty. CSR can represent a form of product market differentiation, allowing firms to apply higher product price markups (e.g., [Luo and Bhattacharya, 2006](#); [Siegel and Vitaliano, 2007](#)). Consistent with this view, [Servaes](#)

and Tamayo (2013) and Albuquerque et al. (2019) show that CSR positively influences firm value only if coupled with high customer awareness. In contemporaneous work, Wei and Xiao (2022) use barcode-level data to show that an increase in CSR ratings by a brand owner is associated with higher sales (for an average product, relative to its alternatives) in the following year. In our setting, during periods of high inflation, CSR may give firms extra pricing power, allowing them to easily pass through inflation to clients. To test this conjecture, we follow Servaes and Tamayo (2013) and proxy the role of customer awareness with advertising expenditures.

A second possible channel is the role of employees. It is well known that employee satisfaction positively influences firm operations by, for instance, facilitating recruitment, reducing staff turnover, and improving productivity. Edmans (2011) finds a positive relationship between employee satisfaction and long-run stock returns, confirming the importance of this intangible for firm value (beyond what investors generally appreciate). Nyborg and Zhang (2013) show that workers in socially responsible firms are paid less. Similarly, using administrative data, Krueger et al. (2021) provide evidence that employees, especially those high-skilled and younger, are willing to accept a lower wage to work in a more environmentally sustainable firm.¹⁴ High-CSR firms may be in a position of advantage to preserve employee cohesion during periods of high inflation when job satisfaction is generally reduced

¹⁴Yao (2022) studies the effect of introducing ESG education in MBA curricula and finds evidence that ESG awareness influences job choices, to steer graduates towards higher-ESG firms. Following the introduction of mandatory ESG courses, graduates' wage growth decreases, which is also consistent with employees sacrificing salaries to work in more responsible firms.

due to a perceived worsening of real salaries.¹⁵ Testing for this channel is not straightforward, since simple headcounts do not reflect the firms' investment in employees, and salary expense measures are scattered across different accounting items. We thus use intangible assets as a proxy for the importance of employees and human capital in a firm's value creation process.

Third, the positive effect of CSR on firm value during high inflation may also be influenced by a cost-of-capital channel. For instance, [Coibion et al. \(2020\)](#) shows that firms associate higher inflation with worsening business conditions and reduced liquidity and access to credit. Investors may anticipate that in a higher-inflation/higher-rate environment, high-CSR firms may be able to raise external capital at a lower cost than otherwise similar firms, hence the positive effect on firm value. If a cost-of-capital channel is at play, we can expect the inflation-hedging properties of social responsibility to be larger for firms more exposed to a potential tightening of financial frictions. We proxy this exposure with a firm's net leverage.

- Table 6 -

In Table 6, we test the above three channels by rerunning our main specifications with different sub-samples: firms with low or high advertising intensity (columns 1 and 2), low or high intangibility (columns 3 and 4), and low or high net leverage (columns 5 and 6). (The sparsity of the advertising expenses variable on Compustat reduces the number of observations in the regressions in columns 1 and 2.) We define the low and high groups as

¹⁵For instance, [Hajdini et al. \(2022\)](#) document survey evidence indicating that inflation expectations increase the likelihood that employees will consider applying for a new job to improve their wages.

the firms in the bottom and top terciles of a given firm characteristic. Recall that in our main analysis, we found that firms with one-standard deviation higher CSR scores have an outperformance of 1.43 percentage points following an increase of 1 percentage point in the monthly inflation rate.

The coefficients in columns 1 and 2 confirm the conjecture that the CSR effect should be stronger for firms with high advertising expenses: the coefficient of 0.15 in column 1 (the sub-sample of low advertising firms) is not statistically significant; the coefficient of 2.08 in column 2 (the subsample of high advertising firms) is larger and highly statistically significant. The results in columns 3 and 4 also confirm the intuition that firms with higher intangible capital experience a higher inflation-hedging effect of CSR on stock prices: the coefficient for the top tercile firms is larger (1.71 vs. 1.11 for bottom tercile firms) and strongly statistically significant. Finally, in columns 5 and 6, we see no meaningful difference in stock-price reactions conditional on firms' financial constraints.

Overall, the results in this section indicate that the customer and employee channels play a significant role in driving the inflation-hedging property of CSR on firm values.

5 Conclusion

How inflation affects firm value is a topic attracting renewed interest from investors, corporate managers, and regulators alike. In this paper, we address this question by investigating and identifying a new channel through which inflation can impact firm value: the deterioration

of a company’s relationship with its employees, customers, and other key stakeholders.

Our results, based on the cross-sectional reactions of US stocks to inflation over the period 2018-2022, indicate that after months of higher inflation, equity investors reward firms with stronger social capital, as captured by their corporate social responsibility. The effect holds using different measures of inflation, stock returns, and CSR scores. In addition, the effect appears significantly stronger among firms headquartered in Democratic states, where the “corporate greed” narrative of inflation is most popular. We also find that the inflation-hedging properties of CSR are stronger in firms with higher customer awareness and a larger share of intangible assets, in line with our interpretation that these properties are at least partially driven by the trust-preserving role of social capital.

Overall, our findings spotlight inflation as a crisis in stakeholder trust and provide new insights into the importance of social capital for firm value.

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Figures

Figure 1: Inflation and attention to inflation measures

Measured in the left-hand axis, *Inflation (mom)* and; *Inflation (yoy)* are the monthly and yearly change in the Consumer Price Index for All Urban Consumers, All Items, from the U.S. Bureau of Labor Statistics.; *Expected inflation (yoy)* is the one-year-ahead inflation expectation series from the Survey of Consumer Expectations, available from the Federal Reserve Bank of New York. Measured in the right-hand axis, *Google Trends Inflation* is the search index for the keyword “inflation” in the United States.

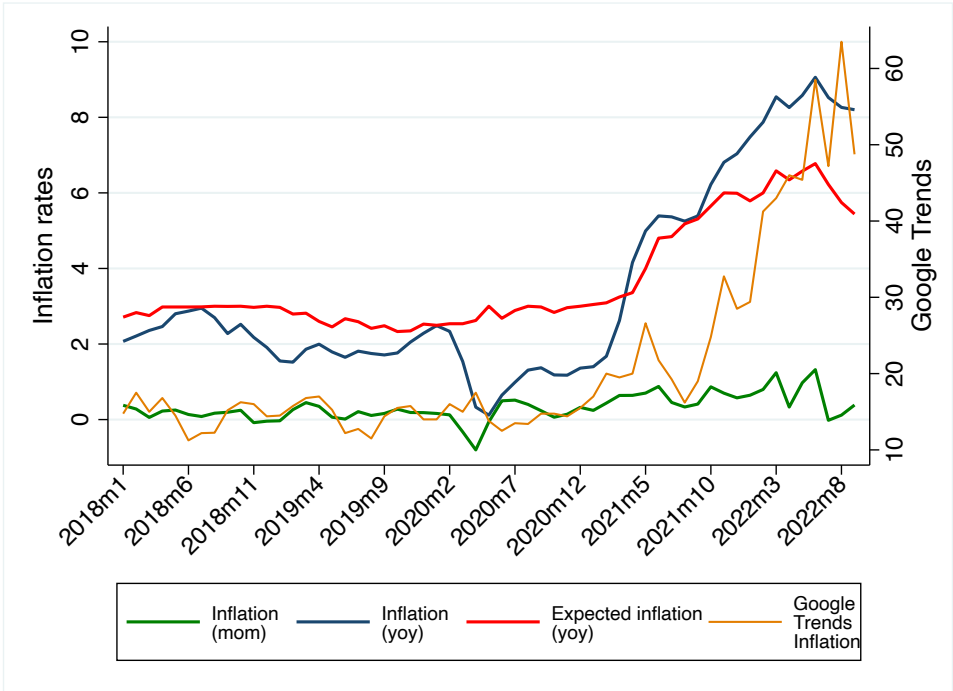


Figure 2: Inflation, corporate social responsibility and stock returns

This graph shows the effect on stock returns in month $t+1$ of the interaction of inflation in month t and firms' ES score. The relation depicted in the graph controls for firm characteristics (leverage, cash, size, book-to-market, ROA, market beta, and momentum), industry and month fixed effects and the direct effect of the ES score.

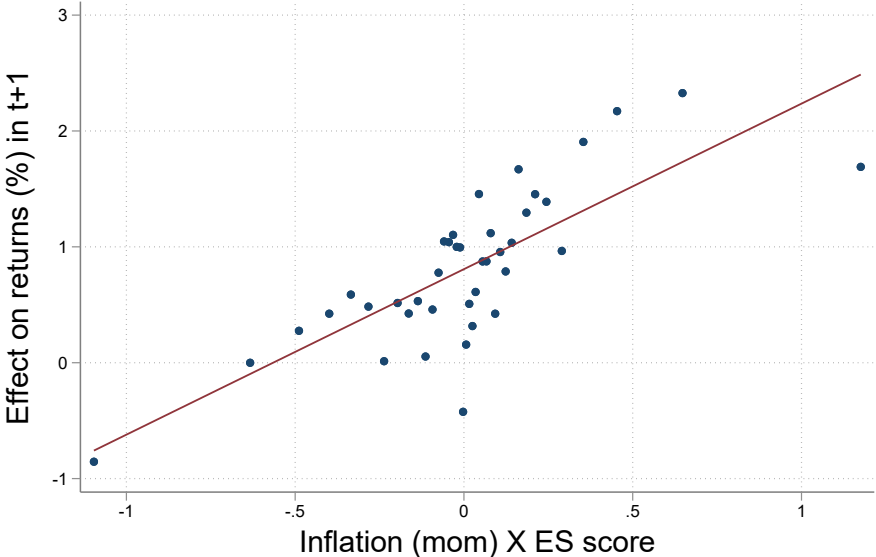
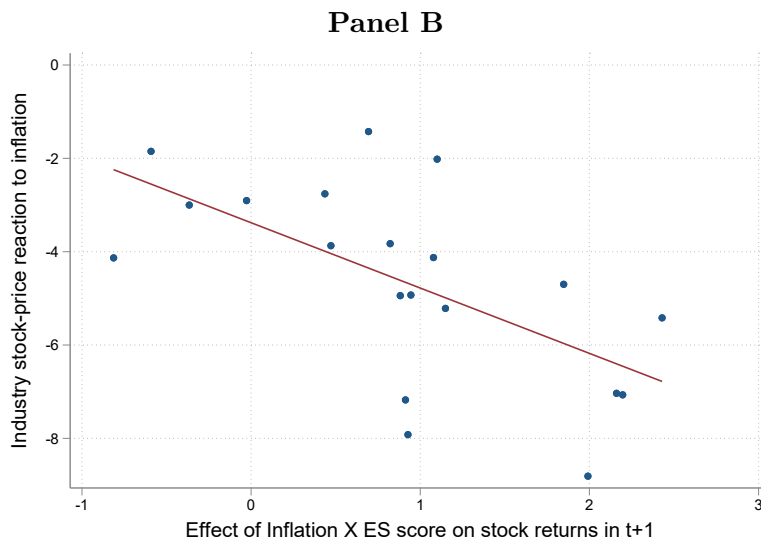
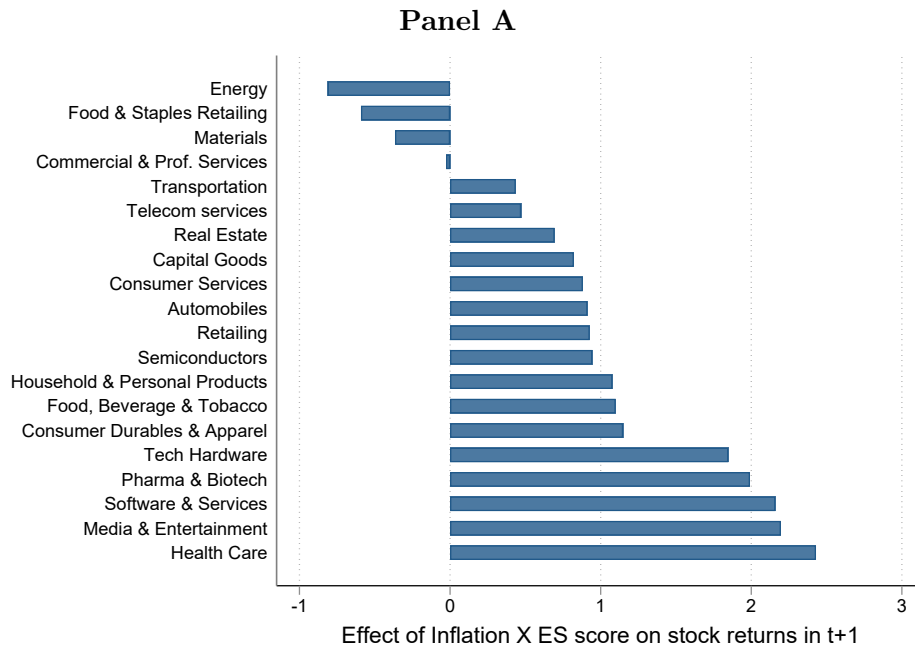


Figure 3: The value of corporate social responsibility by industry

Panel A shows the estimated coefficient on monthly stock returns in $t+1$ of the interaction between inflation in t and firms' ES score, by GICS industry groups. The coefficients are estimated through industry-specific regressions controlling for firm characteristics (leverage, cash holdings, size, book-to-market, ROA, market beta, and momentum), month fixed effects, and the direct effect of the ES score. Panel B plots the same coefficients against the average stock-price reaction to inflation in the respective industries.



Tables

Table 1: Descriptive statistics

This table shows descriptive statistics of the variables used in the analyses. The sample in Panel A consists of non-financial firms with available financial and accounting data from Compustat. The sample in Panel B consists of non-financial firms with available financial and accounting data from Compustat and ESG data from Refinitiv.

	N	min	p25	mean	p50	p75	max	sd
Panel A: Full Compustat sample								
Return (t+1)	173,372	-72.73	-8.47	0.32	-0.30	7.48	157.44	16.99
CAPM-adj. Return (t+1)	154,940	-60.12	-7.83	-0.31	-0.87	5.90	161.44	15.17
Fama-French-adj. Return (t+1)	153,900	-64.47	-7.68	-0.18	-0.75	6.06	135.91	15.22
Leverage	177,968	0.00	5.70	28.33	24.97	43.34	116.70	25.29
Net leverage	177,968	-96.64	-24.70	2.31	8.78	34.49	96.17	44.56
Cash holdings	178,238	0.07	4.19	26.14	13.26	40.28	97.25	28.79
Market beta	175,703	-0.92	0.72	1.25	1.17	1.70	3.87	0.85
Book-to-market	177,956	-0.84	0.16	0.47	0.35	0.67	3.23	0.53
ROA	177,963	-226.29	-12.78	-11.89	1.04	5.68	30.53	38.71
Size	178,195	-3.11	5.26	6.82	6.88	8.32	14.66	2.23
Momentum	174,606	-13.79	-1.57	1.25	0.94	3.60	22.74	5.76
R&D intensity	118,108	0.00	0.45	12.93	4.44	15.99	128.78	21.28
Advertising	73,670	0.00	0.22	2.67	0.84	2.76	27.11	4.79
Intangibility	178,238	0.00	0.26	19.01	8.84	32.86	99.98	22.54
Panel B: Main sample with Refinitiv ESG scores								
Return (t+1)	111,779	-72.73	-7.04	0.86	0.29	7.57	157.44	15.07
CAPM-adj. Return (t+1)	106,135	-60.12	-6.87	-0.18	-0.60	5.61	161.44	13.27
Fama-French-adj. Return (t+1)	105,840	-64.47	-6.73	-0.10	-0.54	5.65	135.91	13.28
ES score	113,931	-1.63	-0.79	0.00	-0.32	0.68	3.02	1.00
Leverage	113,772	0.00	9.81	30.09	28.51	44.43	116.70	23.61
Net leverage	113,772	-96.64	-15.15	7.33	14.23	36.01	96.17	40.58
Cash holdings	113,931	0.07	4.01	22.82	11.61	31.78	97.25	26.21
Market beta	113,440	-0.92	0.78	1.26	1.17	1.66	3.87	0.76
Book-to-market	113,874	-0.84	0.15	0.43	0.33	0.60	3.23	0.46
ROA	113,919	-226.29	-3.79	-3.90	2.45	6.70	30.53	25.16
Size	113,931	1.82	6.35	7.64	7.54	8.75	14.66	1.79
Momentum	112,997	-13.79	-0.91	1.61	1.24	3.61	22.74	4.81
R&D intensity	77,967	0.00	0.19	9.69	2.92	11.83	128.78	16.21
Advertising	49,570	0.00	0.23	2.48	0.86	2.65	27.11	4.37
Intangibility	113,931	0.00	1.12	20.85	12.48	35.96	93.94	22.32

Table 2: Inflation, corporate social responsibility and stock returns

This table shows the results of OLS regressions of individual stock monthly returns on the interaction between the inflation rate month-on-month and firms' CSR level. The regressions control for firm leverage, cash holdings, size, book-to-market, ROA, market beta and momentum, and industry and month fixed effects. t -statistics, based on standard errors clustered at the firm level, are reported in parentheses. ***, **, and * indicate that the parameter estimate significantly differs from zero at the 1%, 5%, and 10% levels, respectively.

Dependent variable:	Return (t+1)		
	(1)	(2)	(3)
Inflation (mom) \times ES score	1.37*** (12.09)	1.43*** (12.79)	0.36** (2.47)
Inflation (mom) \times Leverage			0.01* (1.93)
Inflation (mom) \times Cash holdings			-0.03*** (-5.17)
Inflation (mom) \times Market beta			-1.52*** (-7.37)
Inflation (mom) \times Book-to-market			0.31 (0.86)
Inflation (mom) \times ROA			0.07*** (7.61)
Inflation (mom) \times Size			0.29*** (2.85)
Inflation (mom) \times Momentum			0.10*** (2.64)
Inflation (mom)	-4.74*** (-33.64)		
ES score	-0.19*** (-3.34)	-0.21*** (-3.74)	0.11* (1.65)
Observations	109,547	109,547	109,547
R-squared	0.02	0.24	0.25
Firm controls	Yes	Yes	Yes
Month FE	No	Yes	Yes
Industry FE	Yes	Yes	Yes
Firm-clustered SE	Yes	Yes	Yes

Table 3: Main results with changes in inflation

This table shows the results of OLS regressions of individual stock monthly returns on the interaction between changes in inflation rate month-on-month and firms' CSR level. The regressions control for firm leverage, cash holdings, size, book-to-market, ROA, market beta and momentum, and industry and month fixed effects. t -statistics, based on standard errors clustered at the firm level, are reported in parentheses. ***, **, and * indicate that the parameter estimate significantly differs from zero at the 1%, 5%, and 10% levels, respectively.

Dependent variable:	Return (t+1)		
	(1)	(2)	(3)
Δ Inflation (mom) \times ES score	0.38*** (3.17)	0.38*** (3.21)	0.07 (0.45)
Δ Inflation (mom) \times Leverage			0.01* (1.68)
Δ Inflation (mom) \times Cash holdings			-0.00 (-0.10)
Δ Inflation (mom) \times Market beta			-1.29*** (-5.61)
Δ Inflation (mom) \times Book-to-market			-1.25*** (-2.92)
Δ Inflation (mom) \times ROA			0.04*** (3.63)
Δ Inflation (mom) \times Size			-0.06 (-0.54)
Δ Inflation (mom) \times Momentum			0.04 (1.04)
Δ Inflation (mom)	-2.19*** (-17.01)		
ES score	0.25*** (4.58)	0.24*** (4.85)	0.24*** (4.83)
Observations	109,547	109,547	109,547
R-squared	0.01	0.24	0.24
Firm controls	Yes	Yes	Yes
Month FE	No	Yes	Yes
Industry FE	Yes	Yes	Yes
Firm-clustered SE	Yes	Yes	Yes

Table 4: Main results with alternative measures of inflation

This table shows the results of OLS regressions of individual stock monthly returns on the interaction between various measures of inflation and firms' ESG performance. The regressions control for firm leverage, cash holdings, size, book-to-market, ROA, market beta and momentum, and industry and month fixed effects. t -statistics, based on standard errors clustered at the firm level, are reported in parentheses. ***, **, and * indicate that the parameter estimate significantly differs from zero at the 1%, 5%, and 10% levels, respectively.

Dependent variable:	Return (t+1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Inflation (yoy) \times ES score	0.14*** (9.17)					
Inflation (yoy, region) \times ES score		0.13*** (8.20)				
Expected inflation (yoy) \times ES score			0.27*** (9.81)			
Expected inflation (yoy, region) \times ES score				0.23*** (8.24)		
Google SVI inflation (US) \times ES score					0.02*** (5.31)	
Google SVI inflation (state) \times ES score						0.02*** (5.26)
ES score	-0.24*** (-3.68)	-0.24*** (-3.43)	-0.72*** (-7.15)	-0.63*** (-5.93)	-0.08 (-1.11)	-0.07 (-1.01)
Observations	109,547	89,911	109,547	89,911	109,547	109,342
R-squared	0.24	0.24	0.24	0.24	0.24	0.24
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-clustered SE	Yes	Yes	Yes	Yes	Yes	Yes

Table 5: The role of exposure to the corporate greed narrative

This table shows the results of OLS regressions of individual stock monthly returns on the interaction between inflation, firms' ESG performance, and political preferences in the firm's US state of headquarters. *Democratic State* is an indicator equal to 1 for US states with a Democratic majority in the 2022 mid-term election. The regressions control for firm leverage, cash holdings, size, book-to-market, ROA, market beta and momentum, and industry and month fixed effects. *t*-statistics, based on standard errors clustered at the firm level, are reported in parentheses. ***, **, and * indicate that the parameter estimate significantly differs from zero at the 1%, 5%, and 10% levels, respectively.

Dependent variable:	Return (t+1)	
	(1)	(2)
Inf (mom) × ES score × Democratic state	0.71*** (3.06)	0.22 (1.04)
Inf (mom) × ES score	0.97*** (5.13)	0.22 (1.13)
Inf (mom) × Democratic state	-1.21*** (-4.66)	-0.45* (-1.86)
ES score × Democratic state	-0.14 (-1.40)	0.01 (0.10)
ES score	-0.13 (-1.50)	0.10 (1.06)
Dem. state	0.47*** (4.19)	0.22** (1.97)
Observations	108,917	108,917
R-squared	0.24	0.25
Controls	Yes	Yes
Inf (mom) × Controls	No	Yes
Month FE	Yes	Yes
Industry FE	Yes	Yes
Firm clustered SE	Yes	Yes

Table 6: The role of customers, employees, and the cost of capital

This table shows the results of OLS regressions of individual stock monthly returns on the interaction between inflation and firms' CSR level for different sub-samples: firms with low or high advertising intensity (columns 1 and 2), low or high intangible capital (columns 3 and 4), and low or high net leverage (columns 5 and 6). Low and high refer to a given measure's bottom and top terciles, respectively. The regressions control for firm leverage, cash holdings, size, book-to-market, ROA, market beta and momentum, and industry and month fixed effects. *t*-statistics, based on standard errors clustered at the firm level, are reported in parentheses. ***, **, and * indicate that the parameter estimate significantly differs from zero at the 1%, 5%, and 10% levels, respectively.

Dependent variable:	Return (t+1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-samples:	Advertising		Intangibility		Net leverage	
	Low	High	Low	High	Low	High
Inflation (mom) \times ES score	0.15 (0.59)	2.08*** (3.98)	1.11* (1.88)	1.71*** (4.08)	0.94* (1.92)	0.92** (2.16)
Observations	15,680	15,806	36,026	36,831	36,327	36,590
R-squared	0.01	0.03	0.02	0.02	0.02	0.02
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-clustered SE	Yes	Yes	Yes	Yes	Yes	Yes

Appendix

A Additional results

Figure A1: Regional inflation rates

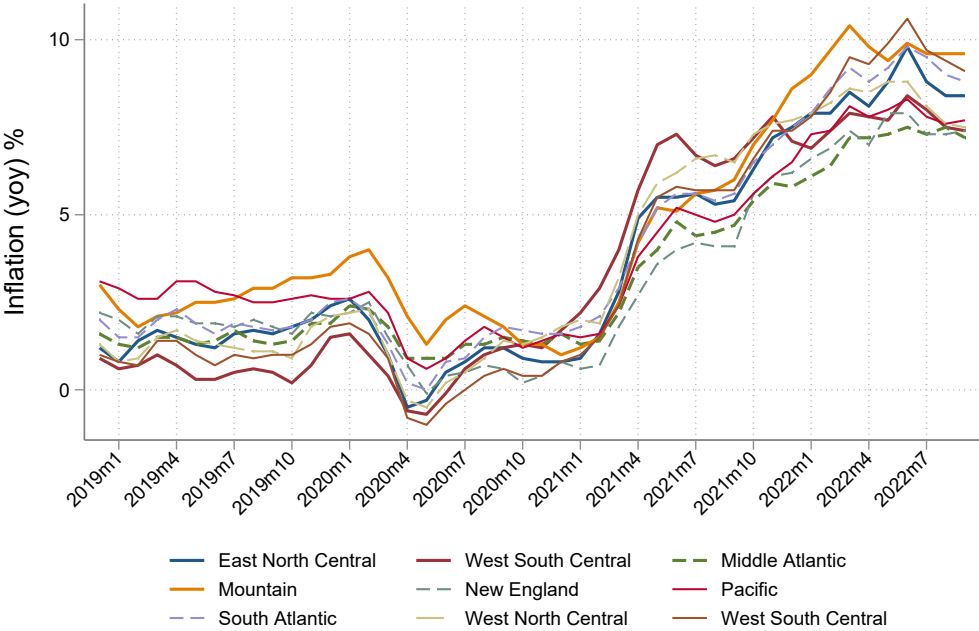


Table A1: Robustness: Main results using CAPM-adjusted and Fama-French-adjusted returns

This table shows the results of OLS regressions of individual CAPM-adjusted (specifications 1-3) and Fama-French-adjusted (specifications 4-6) monthly returns on the interaction between inflation and firms' ES performance. The regressions control for firm leverage, cash holdings, size, book-to-market, ROA, and momentum, and industry and month fixed effects. t -statistics, based on standard errors clustered at the firm level are reported in parentheses. ***, **, and * indicate that the parameter estimate significantly differs from zero at the 1%, 5%, and 10% levels, respectively.

Dependent variable:	CAPM-adj. return (t+1)			Fama-French-adj. return (t+1)		
	(1)	(2)	(3)	(4)	(5)	(6)
Inflation (mom) \times ES score	1.28*** (11.97)	1.25*** (11.73)	0.35** (2.40)	0.71*** (7.11)	0.71*** (7.11)	-0.04 (-0.31)
Inflation (mom) \times Leverage			0.01* (1.92)			0.00 (0.48)
Inflation (mom) \times Cash holdings			-0.04*** (-5.34)			-0.01 (-1.21)
Inflation (mom) \times Book-to-market			0.54 (1.40)			0.30 (0.85)
Inflation (mom) \times ROA			0.07*** (7.76)			0.05*** (5.31)
Inflation (mom) \times Size			0.19* (1.84)			0.33*** (3.42)
Inflation (mom) \times Momentum			0.02 (0.60)			0.31*** (7.70)
Inflation	-1.59*** (-12.12)			-0.81*** (-6.64)		
ES score	-0.18*** (-3.11)	-0.17*** (-2.96)	0.09 (1.25)	-0.08 (-1.35)	-0.07 (-1.26)	0.16** (2.31)
Observations	104,812	104,812	104,812	104,522	104,522	104,522
R-squared	0.00	0.04	0.05	0.00	0.01	0.01
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm clustered SE	Yes	Yes	Yes	Yes	Yes	Yes

Table A2: Robustness: Main results using MSCI-KLD ES score

This table shows the results of OLS regressions of individual stock monthly returns on the interaction between inflation and firms' ES performance based on the MSCI-KLD database. The regressions control for firm leverage, cash holdings, size, book-to-market, ROA, market beta and momentum, and industry and month fixed effects. *t*-statistics, based on standard errors clustered at the firm level are reported in parentheses. ***, **, and * indicate that the parameter estimate significantly differs from zero at the 1%, 5%, and 10% levels, respectively.

Dep. variable:	Return (t+1)		
	(1)	(2)	(3)
Inflation (mom) × ES score (kld)	0.64*** (7.20)	0.50*** (5.64)	0.02 (0.23)
Inflation (mom) × Leverage			0.01 (1.56)
Inflation (mom) × Cash holdings			-0.04*** (-5.49)
Inflation (mom) × Market beta			-1.47*** (-7.03)
Inflation (mom) × Book-to-market			-0.13 (-0.31)
Inflation (mom) × ROA			0.08*** (5.78)
Inflation (mom) × Size			0.27*** (3.09)
Inflation (mom) × Momentum			0.13*** (3.06)
Inflation (mom)	-3.64*** (-28.29)		
ES score (kld)	-0.08 (-1.59)	-0.04 (-0.74)	0.12** (2.30)
Observations	86,882	86,882	86,882
R-squared	0.01	0.28	0.28
Month FE	No	Yes	Yes
Industry FE	Yes	Yes	Yes
Firm-clustered SE	Yes	Yes	Yes