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The asymmetric and heterogeneous pass-through of input prices to firms' expectations and decisions*

Fiorella De Fiore† Marco Jacopo Lombardi‡ Giacomo Mangiante§

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Abstract

This paper studies the pass-through of input price shocks to firms' expectations and pricing decisions using firm-level data from the Bank of Italy's Survey on Inflation and Growth Expectations. We find a strong and asymmetric pass-through: positive input price shocks significantly raise firms' price expectations, realised prices and short-term inflation expectations, while negative shocks have little impact. The pass-through varies systematically with firm characteristics: it is higher for upstream firms and for firms facing greater uncertainty, adjusting prices more frequently, or operating with thinner profit margins. Macroeconomic conditions also matter: firms' expectations respond more strongly to business-specific signals in periods of low inflation and to aggregate signals in periods of high inflation. Finally, we show that providing firms with information about current inflation dampens the pass-through to inflation expectations, underscoring the importance of central bank communication.

Keywords: Pass-through, heterogeneous firm expectations, survey data, inflation.

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1 Introduction

Firm pricing decisions are an especially important issue at times of elevated inflation and supply chain disruptions. Pricing decisions, in turn, are determined by how firms respond to input cost shocks. Hence, understanding how firms translate input price changes into expectations and decisions about their own prices, and ultimately into their broader views on inflation, is essential for central banks' management of inflation dynamics and inflation expectations. Despite its policy relevance, empirical evidence on firms' reaction to input price changes is limited, primarily due to data limitations.

In this paper, we fill this gap and study how input price shocks affect firms' expectations and pricing behavior, using detailed firm-level data from the Bank of Italy's Survey on Inflation and Growth Expectations (SIGE). We identify exogenous shocks through forecast errors in firms' own input price expectations, defined as the gap between realised and expected input price growth. This approach rests on the assumption that firms' forecast errors proxy for unexpected input cost shocks faced as time unfolds. Accordingly, this surprise component provides exogenous variation to study the pass-through of input price costs.

Our results highlight a significant pass-through from input prices to firms' own-price expectations and realised prices: a 1 percentage point increase in the expected input price growth leads to a 0.3 percentage point rise in expected own price growth and a 0.2 point increase in actual prices after one year. It also leads to an upward revision of firms' short-term inflation expectations, while medium- and long-term expectations remain anchored. Importantly, the pass-through is asymmetric: firms respond strongly to positive shocks but little to negative ones, consistent with evidence on asymmetric pricing behavior (Peltzman, 2000, Buckle and Carlson, 2000, Benzarti et al., 2020).

We also document substantial heterogeneity in the pass-through. During periods of low inflation, firms rely more heavily on firm-specific input price information when forming expectations,[1] while in high-inflation periods they react more strongly to aggregate signals,

[1]This is in line with evidence from Born et al. (2025).

consistent with rational inattention models. The strength of the pass-through also varies systematically across firms: it is higher in manufacturing and industrial sectors, especially for upstream firms, as well as for those facing greater uncertainty, adjusting prices more frequently, or operating with thinner profit margins. These patterns suggest that both pricing power and financial constraints shape how firms respond to cost shocks. Moreover, we find that rising input prices accounted for a sizable share of the surge in sales prices during the 2022–2023 inflationary episode, explaining roughly 2 percentage points of the increase in both expected and realised prices.

Our finding of a strong and asymmetric pass-through of input price shocks to firms' expectations suggests that an environment of elevated inflation may be self-reinforcing, as firms are more responsive to cost increases than to cost declines.[2] We also provide evidence that central bank communication can play a stabilising role: providing firms with information on current inflation significantly dampens the sensitivity of their aggregate expectations to input price shocks. Overall, the variation in pass-through across macroeconomic conditions and firm characteristics – combined with our evidence that providing firms with information on current inflation helps anchor expectations – underscores the value of clear, transparent, and targeted communication strategies.

Related literature. Our findings contribute to and extend several strands of the literature on input cost pass-through, expectation formation, and pricing behaviour.

First, we build on a large body of work showing incomplete pass-through of input cost shocks to output prices at both micro and macro levels.[3] Closest to our analysis, Gödl-Hanisch and Menkhoff (2024) use a survey of German firms to show that pass-through is gradual and shaped by infrequent price changes and strategic coordination, distinguishing aggregate from idiosyncratic shocks. Riggi and Tagliabracci (2022) and Parlapiano (2024),

[2]This is consistent with the two-regime view of inflation advanced by Borio et al. (2023).

[3]See, among others, Taylor (2000), Smets and Wouters (2003), Gopinath and Itskhoki (2010), Auer and Schoenle (2016), Garetto (2016), Amiti et al. (2019), Ganapati et al. (2020), Dedola et al. (2021), Conflitti and Zizza (2021), and Riggi and Tagliabracci (2022).

using the same Italian survey data as we do, document that firms often absorb cost shocks rather than fully transmitting them.

We extend this literature in several directions. Unlike most prior work, we link input cost shocks not only to realised price changes but also to firms' inflation expectations across multiple horizons, examining both current and forward-looking pricing behavior. We also explore asymmetry in pass-through — whether firms react differently to cost increases versus decreases — and analyze how this transmission varies with macroeconomic conditions and firm-specific features, including access to information about realised inflation.

Second, we contribute to the literature on expectations formation. Consistent with prior work (Boneva et al., 2020; Andrade et al., 2022), we find that firms extrapolate from their own cost conditions when forming aggregate inflation expectations. We show that input cost shocks directly influence these revisions. Moreover, this behaviour is state-dependent: in high-inflation environments, firms shift attention from firm-specific costs to macroeconomic signals, in line with rational inattention models (Sims, 2003; Reis, 2006; Bartosz and Wiederholt, 2009; Afrouzi, 2016, Pasten and Schoenle, 2016, Yang, 2022).

Third, we provide novel empirical evidence of asymmetric pass-through, challenging the symmetry assumption in standard New Keynesian models with fixed probabilities of price adjustment (à la Calvo, 1983) or quadratic adjustment costs (à la Rotemberg, 1982). Our results are instead consistent with theoretical frameworks that allow for nonlinear and state-dependent pricing, including state-dependent pricing models (Dotsey et al., 1999; Golosov and Lucas, 2007), customer market models (Phelps and Winter, 1970; Duca et al., 2017), kinked demand and strategic complementarities (Ball and Mankiw, 1994; Hall, 2005), and precautionary pricing under financial frictions (Gilchrist et al., 2017). These mechanisms help explain our finding that firms respond more aggressively to rising than to falling input costs.

Empirically, our results build on prior evidence of asymmetric pricing behavior. Peltzman (2000) shows that prices react more strongly and persistently to cost increases than to decreases across a broad set of goods, while Buckle and Carlson (2000) find that inflation amplifies this asymmetry by increasing the probability of price hikes and reducing responsiveness to demand declines. Similar patterns are observed in response to VAT changes (Benzarti et al., 2020) and in convex pricing responses to demand shocks (Bunn et al., 2025). Our contribution lies in documenting comparable asymmetries in response to input cost shocks using high-frequency, firm-level data, which enables a detailed analysis of how these dynamics vary across firms and over time.

Finally, we contribute to the literature on heterogeneity in pricing behaviour. Extending work on financial constraints (Gilchrist et al., 2017), market power (Kharroubi et al., 2023, Hensel et al., 2024), and volatility or uncertainty (Gödl-Hanisch and Menkhoff, 2024), we show that pass-through varies with firm characteristics. We find that providing firms with inflation information improves the anchoring of expectations — highlighting the role of informational frictions and the potential for communication policies to help stabilise inflation dynamics.

The rest of the paper is organized as follows. Section 2 introduces the survey that we rely on for the analysis. Section 3 presents our empirical results. In Section 4 we perform a battery of robustness checks. Section 5 concludes.

2 Data

2.1 Survey on Inflation and Growth Expectations

Data on firms' expectations are drawn from the Survey on Inflation and Growth Expectations (SIGE), which is administered at quarterly frequency by the Bank of Italy since 1999. The survey is designed to be nationally representative, stratifying the sample based on three key firm characteristics: sector of activity, size class (determined by the number of employees)[4], and geographical area (based on the firm's administrative headquarters). Each

[4]The survey only includes firms with at least 50 employees.

quarter, approximately 1,200 Italian firms are surveyed on both aggregate and business-specific variables.

The SIGE has been used extensively in the academic literature[5]. The dataset's rich time-series and panel structure make it particularly well-suited for analysing the pass-through of input prices to firms' expectations and decision-making processes.

In this paper, we primarily focus on the following questions, which pertain to firms' expectations regarding the expected and realised growth of their own input prices, the price growth of their output, and future inflation:

- *In the last 12 months, what has been the average change in your firm's prices of goods and services bought in Italy and abroad?*
- *In the next 12 months, what do you expect will be the average change in your firm's prices of goods and services bought in Italy and abroad?*
- *In the last 12 months, what has been the average change in your firm's prices?*
- *For the next 12 months, what do you expect will be the average change in your firm's prices?*
- *What do you think the consumer price inflation will be in Italy: In six months? In one year? In two years? On average between three and five years?*

Firms respond to the SIGE questions by reporting the approximate percentage variation.[6]

To single out unexpected changes in input prices faced by firms, we use their input price forecast errors.[7] Forecast errors are defined as the difference between the realised price growth between $t - 12$ and t, and what firms had expected in $t - 12$ for the same period. The questions on input price growth were introduced at the end of 2016, so relying on input

[5]See, among others, Coibion et al. (2020), Bottone et al. (2021), Ropele et al. (2022), Bottone et al. (2022), and Ropele and Tagliabracci (2024).

[6]To limit the role played by outliers, the variables are trimmed at the 1st and 99th percentiles for each quarter. However, using raw data yields nearly identical results.

[7]A similar approach has been recently adopted by Bachmann et al. (2017), Barrero (2022), Alati et al. (2024), Parlapiano (2024), and Bunn et al. (2025).

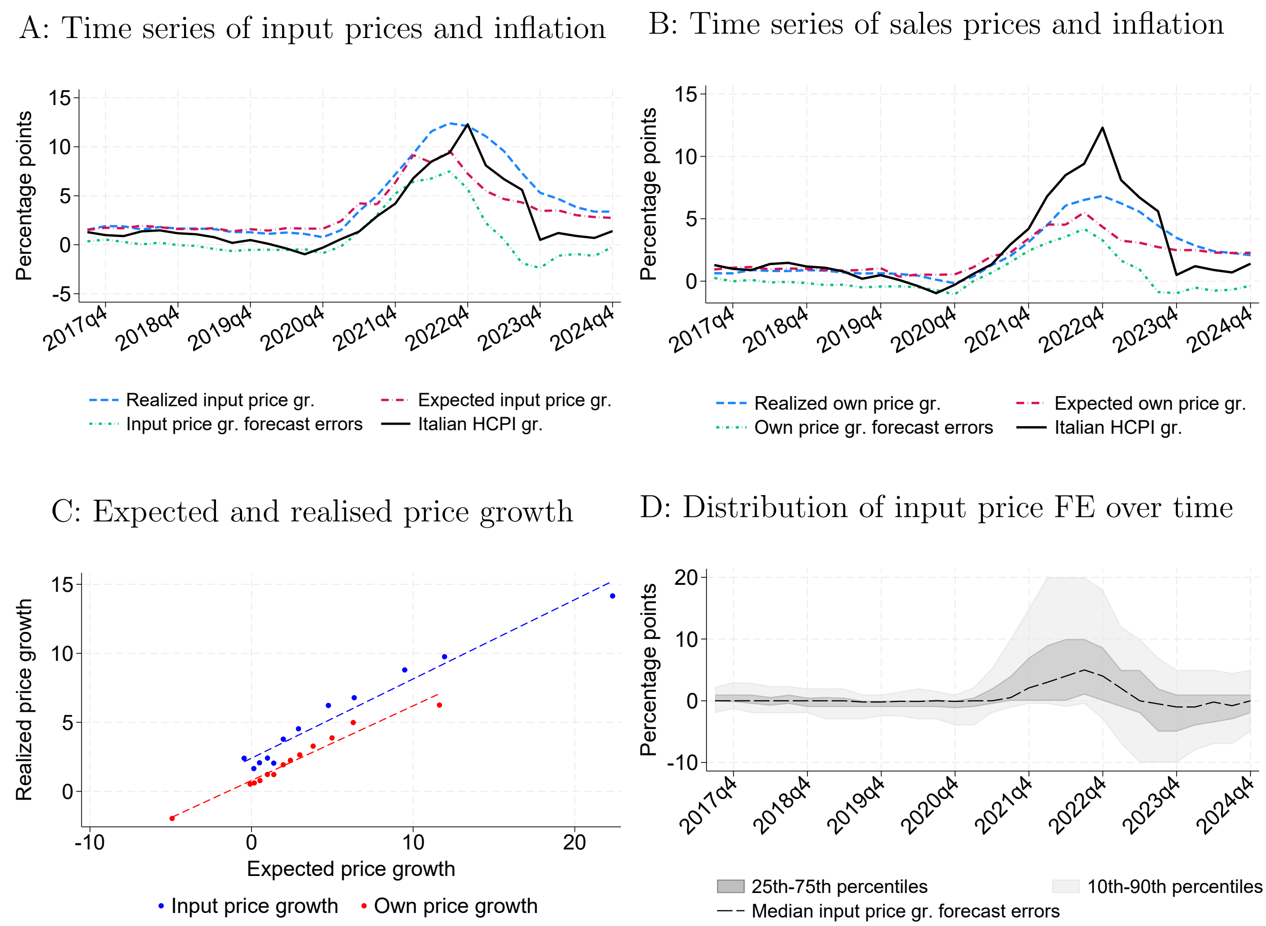
price forecast errors effectively restricts the sample from 2017Q3 to 2024Q4. Throughout this period, the SIGE includes around 25,000 firm-level observations, with each firm participating in the survey for an average of 15 quarters.

The principle underlying our identification strategy is that firms form expectations about the evolution of their input costs, but will face surprises when realised costs differ. These forecast errors proxy for unanticipated cost shocks, providing exogenous variation for our analysis. The key identifying assumption is that these errors need to be orthogonal to other shocks that may simultaneously influence firms' expectations or pricing decisions. To validate this, Section 4 shows that forecast errors are uncorrelated with firm-level demand indicators and do not systematically vary with observable firm characteristics. Their correlation with macroeconomic supply-side drivers, such as oil prices and the euro–dollar exchange rate, further supports a supply-shock interpretation. Together, these results reinforce the credibility of our identification strategy and the interpretation of forecast errors as exogenous input cost surprises.

Table A.1 presents descriptive statistics for the main variables of interest. There is significant heterogeneity between firms in their aggregate and own price growth expectations as well as decisions during the period under consideration. For example, the average expected inflation across different forecast horizons remains close to the European Central Bank's 2% target but exhibits significant dispersion. The tails of the distribution are particularly wide, with 12-month-ahead expected inflation ranging from 0.4% at the 10th percentile to 6% at the 90th percentile.

Panels A and B of Figure 1 shows the time series of the mean values of the main variables used in the analysis, namely expected and realised input and output price growth. The figure also shows the forecast errors (FE). The expected and realised price growth series closely follow each other, indicating that firms tend to report their true expectations. The expected and realised own price variables strongly correlate with the aggregate Italian Harmonized Consumer Price Index (HCPI), rising during the inflationary episode of 2022 and 2023, which

Figure 1: The SIGE survey



Notes: Panels A and B of the figure display the time series of the main variables used in the analysis. Panel C shows binned scatterplots illustrating the relationship between expected and realised input and output price growth. The red and blue lines are the best linear fit between the variables of interest. Panel D presents the distribution over time of the input price forecast errors, defined as the difference between realised and expected input price growth. The data are sourced from the SIGE for the period 2017Q3–2024Q4.

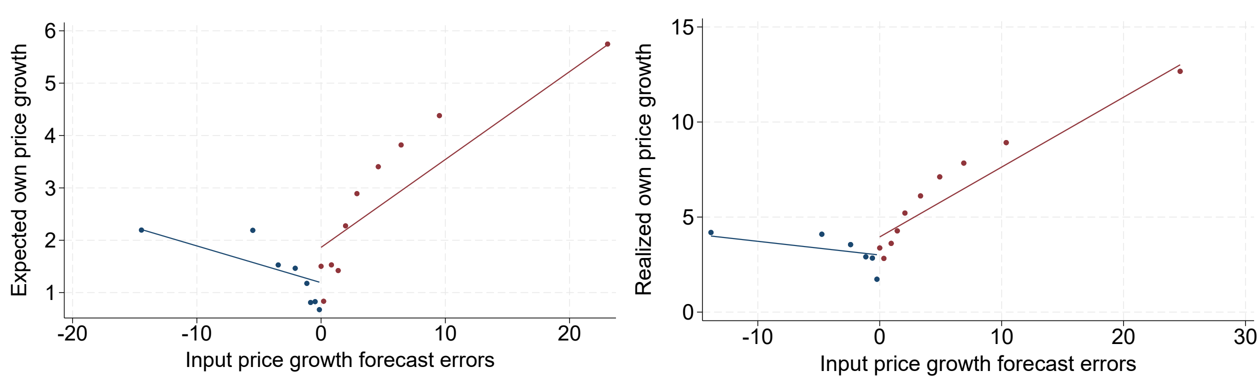
further confirms the representativeness of the survey for the broader economy. Moreover, both input and output forecast errors increased during this period, suggesting that firms struggled to anticipate the future evolution of their own input and sales prices.

Panel C of Figure 1 reports the binned scatterplots that illustrate the relationship between the expected input and own price growth for the next 12 months (x-axis) and the realised input and own price growth that occurred over the same period (y-axis). Both variables display a strong positive correlation between expected and realised values, confirming that, on average, firms are highly accurate at predicting the evolution of their own input and sales prices. This strengthens the validity of the survey data used in this analysis.

The time series of mean input price forecast errors masks significant heterogeneity across firms. Panel D of Figure 1 shows different percentiles of the input price forecast errors distribution. As forecast errors are defined as the difference between realised and expected input price growth: positive values indicate that firms underestimated the increase in their own input prices relative to the actual prices they ultimately paid. During the low-inflation phase up to 2022, forecast errors were tightly distributed, with a median close to zero and a narrow range between –3% and +3% at the 10th and 90th percentiles. With the onset of high inflation, however, the distribution widened dramatically, spanning roughly –1% to +20%. As inflation moved back to target, the median input price forecast errors converged back to zero, but the distribution remained quite wide in 2023 and 2024.

Figure 2: Input price forecast errors vs expected and realised own price growth

A: Input price FE and expected price gr. B: Input price FE and realised price gr.



Notes: Panels A and B of the figure display binned scatterplots illustrating the relationship between input price forecast errors and the expected and realised price growth. The red and blue lines show the best linear fit between the variables of interest. The input price forecast errors are defined as the difference between realised and expected input price growth. The data are sourced from the SIGE for the period 2017Q3–2024Q4.

Panel A of Figure 2 presents a binned scatterplot of input price forecast errors against expected own-price growth, while Panel B relates forecast errors to realised price growth.

The figure reveals a clear asymmetry: positive forecast errors are followed by strong upward revisions in both expected and realised prices, whereas negative forecast errors are not associated with comparable downward adjustments. As documented in Figure A.1 of the Appendix, and econometrically tested in Section 4, this asymmetric pattern is not driven by the recent high-inflation episode but is also evident during the preceding low-inflation period up to the end of 2023.

2.2 The Company Accounts Data Service

The Company Accounts Data Service (CADS) is a proprietary database owned by Cerved Group S.p.A., a leading information provider in Italy and one of the major credit rating agencies in Europe. CADS includes detailed information on the balance sheets and income statements of nearly all Italian limited liability companies since 1993. The data is drawn from official records at the Italian Registry of Companies and from financial statements filed with the Italian Chambers of Commerce. Companies are required to submit this information on a compulsory basis, and each company's financial statement is updated annually. From this dataset, we collect yearly balance sheet data on various assets and liability items, as well as income statement information, which we use to compute measures of net profit margins, markup, and liquidity ratio.

3 Empirical results

In this section, we present the main results of our empirical analysis. First, we examine the pass-through from input prices to firms' own expected and realised price growth, as well as inflation expectations across different horizons. Second, we investigate potential nonlinearities in the pass-through of input price shocks by distinguishing between positive and negative shocks. Third, we assess whether the importance of input price shocks in shaping business-specific and aggregate expectations differs during periods of high and low inflation.

Fourth, we evaluate the heterogeneous effects across firms' characteristics. Finally, we use the estimated pass-through coefficients to quantify how much rising input costs contributed to the surge in firms' sales prices during the high-inflation period.

To study the pass-through of input prices to firms' expectations and pricing decisions, we estimate the following empirical specification:

$$E_t^i\left(y_{t,t+j}^i\right) = \alpha + \omega^i + \delta_t + \beta\, FE_t^{I,i} + \theta X_t^i + \varepsilon_t^i, \tag{1}$$

where $E_t^i\left(y_{t,t+j}^i\right)$ denotes firm i's expectation at time t for the variable y over horizon j months ahead. When y refers to aggregate inflation expectations, $j \in \{6, 12, 24\}$ or is the average of expectations for months 36 to 60 ahead. In this case, the superscript i in y^i is not necessary, as aggregate inflation is common across firms. When y refers to firm i's own expected price growth, only the 12-month horizon ($j = 12$) is available. Firm fixed effects are captured by ω^i, and time fixed effects by δ_t. The control vector X_t^i includes firm size, sector, and geographic area. Standard errors are clustered at the firm level. When analyzing the pass-through to firms' realised prices, the dependent variable is $p_{t,t+12}^{S,i}$ which denotes the actual change in firm i's own sales price growth between time t and $t + 12$.

The input price forecast errors are defined as:

$$FE_t^{I,i} = p_{t-12,t}^{I,i} - E_{t-12}^i\left(p_{t-12,t}^{I,i}\right), \tag{2}$$

where $p_{t-12,t}^{I,i}$ is the realised change in input prices for firm i from $t-12$ to t, and $E_{t-12}^i\left(p_{t-12,t}^{I,i}\right)$ is the firm's expectation at time $t-12$ for the change in its input prices over the subsequent 12 months.

3.1 Pass-through to firms' expectations and decisions

We begin by evaluating the overall pass-through of input prices to firms' own expected and realised price growth. The results are reported in Columns 1-3 of Table 1. To facilitate the

Table 1: Input price forecast errors and firms' price expectations and decisions

	(1) Expected input price gr.	(2) Expected own price gr.	(3) Realized own price gr.	(4) Expected own price gr.	(5) Realized own price gr.
Input price FE	1.000***	0.299***	0.187***		
	(0.0423)	(0.0274)	(0.0401)		
Input price FE (+)				0.362***	0.228***
				(0.0441)	(0.0645)
Input price FE (-)				0.185***	0.102**
				(0.0345)	(0.0513)
Constant	3.274***	2.043***	2.601***	1.960***	2.546***
	(0.0110)	(0.00743)	(0.0146)	(0.0342)	(0.0528)
Observations	25255	25206	16068	25206	16068
R^2	0.559	0.439	0.444	0.440	0.444
Controls	YES	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for expected input price growth, own price growth, and realised price growth, all regressed on input price forecast errors. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

interpretation of the magnitudes, the input price forecast errors are standardised to induce a revision of 1 percentage point in the 12-month-ahead expected input price growth, as shown in Column 1.

We find a positive and statistically significant pass-through of shocks to input prices into firms' own prices. In response to a one-percentage-point increase in expected input price growth, own expected price growth rises by about 0.3 percentage points (Column 2). Twelve months later, realised prices increase by almost 0.2 percentage points (Column 3).

To better quantify the economic magnitude, the coefficients can be rescaled by the cost share of intermediate inputs. Firm balance sheet data indicate that intermediate goods and services account for about 68% of total costs on average (with substantial heterogeneity across firms, standard deviation of roughly 20 percentage points, but relative stability over time). Rescaling the estimates by this cost share implies a pass-through from input costs to sales prices of roughly 45% (=0.299/0.68) after 12 months.

This magnitude is economically meaningful. During the high-inflation period, expected input prices increased by more than 8%, and our estimates suggest that a sizable fraction of this increase was transmitted to output prices. At the same time, the imperfect pass-through indicates that firms absorbed a large part of cost shocks by adjusting profit margins. The magnitude of the estimated pass-through is in line with the empirical literature documenting incomplete transmission of input cost shocks.[8]

Figure 2 indicates that the transmission of input price shocks is asymmetric between positive and negative shocks. To formally assess the asymmetry, we re-estimate our baseline specification by differentiating shocks according to their sign. Columns 4 and 5 of Table 1 report the results for firms' own prices and expectations. Firms primarily revise their expected prices in response to positive input price shocks, and realised prices also react more strongly to such shocks. The responses are more than twice as large for cost increases than for cost decreases. This finding contradicts the symmetry assumption embedded in standard New Keynesian models with fixed probabilities of price adjustment (Calvo, 1983) or quadratic adjustment costs (Rotemberg, 1982). In Section 3.3, we explore the mechanisms that may account for this asymmetry.

Importantly, the asymmetry extends beyond firms' own variables. As argued by Andrade et al. (2022), firms rely on their business conditions when forming expectations about the aggregate economy. Figure 3 reports the regression coefficients of firms' expected inflation across horizons on input price forecast errors. The blue dots and bands show the overall effect, while the red and green markers distinguish positive from negative shocks.[9] The bands represent the 90% confidence intervals.

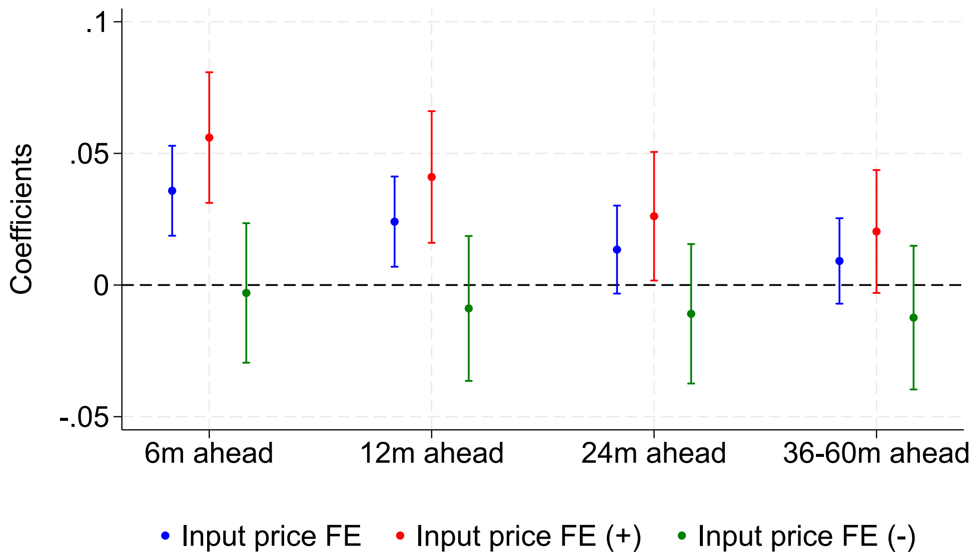
We find that input price increases also raise aggregate inflation expectations: a one-percentage-point upward revision in expected input prices leads to a 0.036 percentage point increase in 6-month-ahead inflation expectations and a 0.024 percentage point increase in 12-month-ahead expectations. No significant effects are detected at longer horizons, suggesting that long-term expectations remain well anchored.

These results indicate that firms' inflation expectations are influenced by the costs they

[8]See, among others, Taylor (2000), Smets and Wouters (2003), Gopinath and Itskhoki (2010), Nakamura and Zerom (2010), Auer and Schoenle (2016), Garetto (2016), Riggi and Tagliabracci (2022), Amiti et al. (2019), Dedola et al. (2021), Albagli et al. (2025), and Alvarez-Blaser et al. (2025).

[9]The corresponding estimates are reported in Tables A.2 and A.3 in the Appendix.

Figure 3: Input price forecast errors and firms' inflation expectations



Notes: The figure reports regression results for inflation expectations across different horizons regressed on input price forecast errors. The dots are the point estimates and the bands are the 90 percent confidence bands. The input price forecast errors are defined as the difference between realised and expected input price growth. The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

face, leading them to extrapolate from firm-specific developments to the broader economy, particularly in the short to medium term. This implies that during periods of rising input costs, firms may collectively contribute to inflationary pressures through upward adjustments in their expectations, potentially reinforcing inflation persistence. However, the fact that long-term expectations remain anchored indicates that firms do not view these cost shocks as fundamentally altering the long-run inflation outlook, underscoring the credibility of the central bank over the period considered.

The same asymmetric effect documented for firms' own expected and realised price growth, is observed in firms' inflation expectations across different horizons. Firms revise their inflation expectations exclusively in response to positive input price shocks. Following a positive shock, both short-term expectations (6- and 12-month ahead) and medium-term expectations (24-month ahead) are revised upwards, while negative shocks have no statis-

Table 2: Input price forecast errors and firms' economic expectations

	(1) Expected N employees (3m)	(2) Firm econ. cond. (3m)	(3) Aggregate econ. cond. (3m)	(4) Expected N employees (3m)	(5) Firm econ. cond. (3m)	(6) Aggregate econ. cond. (3m)
Input price FE	0.00151	-0.00987***	-0.00922***			
	(0.00184)	(0.00194)	(0.00216)			
Input price FE (+)				0.00255	-0.0134***	-0.0125***
				(0.00266)	(0.00267)	(0.00302)
Input price FE (-)				-0.000417	-0.00338	-0.00307
				(0.00357)	(0.00391)	(0.00389)
Constant	2.150***	1.958***	1.823***	2.148***	1.963***	1.828***
	(0.0261)	(0.0314)	(0.0295)	(0.0264)	(0.0313)	(0.0296)
Observations	25403	25377	25107	25403	25377	25107
R^2	0.357	0.342	0.425	0.357	0.342	0.425
Controls	YES	YES	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for expected number of employees, firms' and aggregate economic conditions, all regressed on input price forecast errors. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

tically significant impact on firms' aggregate inflation expectations. That said, longer-term expectations (measured as the average between 36- and 60-month ahead forecasts) remain unaffected by both positive and negative shocks, reinforcing the view that firms' long-run inflation expectations remain well-anchored notwithstanding short-term fluctuations.

Since firms revise upwards their inflation expectations in response to cost increases but do not adjust them downwards when costs decline, inflationary pressures may persist for longer periods, leading to greater inflation inertia. Such asymmetry suggests that temporary cost shocks, such as energy price spikes, could have prolonged effects on inflation expectations, making it more challenging for monetary authorities to deliver on their price stability mandate.

Finally, in Table 2, we show results on firms' economic expectations as dependent variables. The SIGE survey asks firms about their expectations for their total number of employees, business-specific conditions, and aggregate economic conditions over the next three months. These qualitative responses are coded as 1 if firms anticipate an increase, 0 if they expect no change, and -1 if they foresee a decline.

Columns 1–3 show that while positive input price shocks do not significantly affect firms' employment expectations, they lead to a notable deterioration in both business-specific and aggregate economic expectations. As shown in Columns 4–6, this effect is highly asymmetric, with firms revising their economic outlook downward only in response to positive input price shocks. These findings reinforce the idea that positive input price forecast errors are perceived as supply-side shocks—raising costs while simultaneously worsening economic conditions. Moreover, the results highlight that firms do not view their own cost pressures in isolation; rather, they extrapolate from their business-specific conditions to form expectations about the broader economy.

3.2 Micro vs macro shocks

We examine whether the pass-through of input price shocks to firm expectations varies across periods of low and high inflation, controlling for aggregate shocks. To capture macroeconomic shocks, we follow Born et al. (2025) and construct firm-level forecast errors for 12-month-ahead expected inflation of firm i, which we denote $FE_t^{\Pi,i}$. Analogously to the construction of input price forecast errors, this measure reflects the difference between realised and expected inflation, identifying unanticipated macroeconomic dynamics.[10]

We extend our baseline specification as follows to explore how the influence of micro and macro shocks on firm expectations depends on the inflationary regime:

$$\begin{aligned} E_t^i\left(y_{t,t+j}^i\right) = \alpha + \omega^i + \delta\, \mathit{High\ Infl}_t + \gamma_1\, FE_t^{I,i} + \gamma_2\left(FE_t^{I,i} \times \mathit{High\ Infl}_t\right) \\ + \eta_1\, FE_t^{\Pi,i} + \eta_2\left(FE_t^{\Pi,i} \times \mathit{High\ Infl}_t\right) + \theta\, X_t^i + \varepsilon_t^i, \end{aligned} \tag{3}$$

where *High Infl* is a dummy equal to 1 in high inflation periods (2021Q3–2023Q3), when inflation in Italy exceeded the European Central Bank's 2% target, and 0 otherwise (2017Q3–2021Q2). We include both the level and interaction terms of the two forecast error variables to assess

[10] The forecast errors are standardised to induce a 1 percentage point increase in the firms' 12-month ahead expected inflation.

Table 3: The pass-through in periods of low and high inflation

	(1) Expected own price gr.	(2) Expected infl. (6m)	(3) Expected infl. (12m)	(4) Expected infl. (24m)
High Infl.	1.461***	2.458***	1.940***	1.496***
	(0.106)	(0.0707)	(0.0687)	(0.0654)
Input price FE	0.323***	0.0341***	0.0360***	0.0258**
	(0.0421)	(0.0114)	(0.0105)	(0.0101)
Input price FE x High Infl.	-0.105**	-0.0566***	-0.0562***	-0.0414***
	(0.0490)	(0.0163)	(0.0149)	(0.0145)
Inflation FE	0.329***	0.597***	0.540***	0.463***
	(0.0669)	(0.0287)	(0.0284)	(0.0273)
Inflation FE x High Infl.	-0.0112	0.156***	0.117***	0.00933
	(0.0751)	(0.0360)	(0.0347)	(0.0337)
Constant	1.051***	1.177***	1.272***	1.391***
	(0.0483)	(0.0311)	(0.0306)	(0.0296)
Observations	17034	16712	16730	16722
R^2	0.466	0.710	0.676	0.614
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents regression results where the dependent variable is firms' price expectations. The key explanatory variables are forecast errors for input prices and 12-month-ahead aggregate inflation, both defined as the difference between realised and previously expected price growth. To assess how the influence of these shocks varies across inflation regimes, each forecast error is interacted with a dummy variable equal to 1 during periods of high inflation (2021Q3–2023Q3) and 0 otherwise (2017Q3–2021Q2). Additional control variables are included as discussed in the main text (not reported in the table). The analysis is based on firm-level data from the SIGE survey, covering the period 2017Q3–2023Q3. Standard errors are clustered at the firm level.

whether their effects differ across inflationary regimes.

The estimation results in Table 3 show that input price forecast errors significantly affect firms' expectations for both their own price growth (Column 1) and aggregate inflation (Columns 2–4). Similarly, aggregate inflation forecast errors also exert a positive and significant influence. Moreover, the magnitude of the effects of inflation forecast errors is substantially larger for expected aggregate inflation than for expected own-price growth, suggesting that firms place greater weight on macroeconomic signals when forming inflation expectations.

Turning to the interaction terms, we find that the coefficient on the interaction between input price forecast errors and the high-inflation dummy is negative and significant, while the corresponding interaction for the inflation forecast errors is positive and significant. This means that, during periods of high inflation, firms place less weight on firm-specific input cost signals and more weight on aggregate macroeconomic developments when forming their price expectations.

These findings contribute to the literature on expectation formation by showing that firms' responsiveness to information varies with the inflationary environment. While Born et al. (2025) document that firms tend to overreact to micro (firm-specific) news and underreact to macroeconomic developments—consistent with the "island illusion" hypothesis—we find that this pattern is not static. During periods of high inflation, firms shift attention toward aggregate conditions, placing greater weight on macroeconomic shocks (e.g., CPI inflation forecast errors) and less on firm-specific input price shocks when forming their expectations. This state-dependent shift in attention is consistent with predictions from rational inattention models and highlights how macroeconomic environments shape the salience of different information sources. Our results thus complement and extend the findings of Born et al. (2025) by demonstrating that firms' underreaction to macro news is conditional, and can reverse in periods of heightened inflation.

3.3 Heterogeneity across firms' characteristics

The effects documented so far may mask substantial heterogeneity across firms with different characteristics. In this section, we report the results from subsample regressions to illustrate how the pass-through of input price shocks varies by firm-specific factors. While the section focuses on presenting the estimated coefficients across subsamples, we formally test whether these differences are statistically significant in the Appendix. Specifically, Table A.4-Table A.9 report the results from specifications featuring interaction terms used to assess the statistical significance of the differences.

We begin by assessing whether the magnitude of the pass-through varies by firm size and sector. We categorize firms into three groups: those with fewer than 200 employees, those with 200 to 999 employees, and those with 1,000 or more employees. Additionally, we analyse sectoral differences by distinguishing firms operating in manufacturing, industry, commerce, services, and construction.

Figure 4: The pass-through of input price forecast errors across size and sectors

Notes: The figure presents regression results for realised own price growth and the 12-month ahead inflation expectations, in relation to input price forecast errors across firms' characteristics. Input price forecast errors are defined as the difference between realised and expected input price growth. The bands represent 90% confidence intervals. Additional controls are included (discussed in the main text but not shown). The analysis is based on SIGE data covering the period from 2017Q3 to 2024Q4.

Figure 4 illustrates the impact of input price forecast errors on realised own price growth (left panel), as well as the 12-month-ahead inflation expectations (right panel). The results for the expected price growth and the average expected inflation for the 36-60 month horizon are reported in Figure A.3 of the Appendix. For comparison, the blue dots and confidence bands represent the effects previously documented for the full sample.

Our analysis reveals that the pass-through to expected and realised own price growth is largely homogeneous across firm size groups. However, the pass-through to both short- and medium-to-long-term inflation expectations is significant only for smaller firms. This indicates that inflation expectations for smaller firms are more heavily influenced by firm-specific conditions and are more prone to de-anchoring in response to increases in input prices.

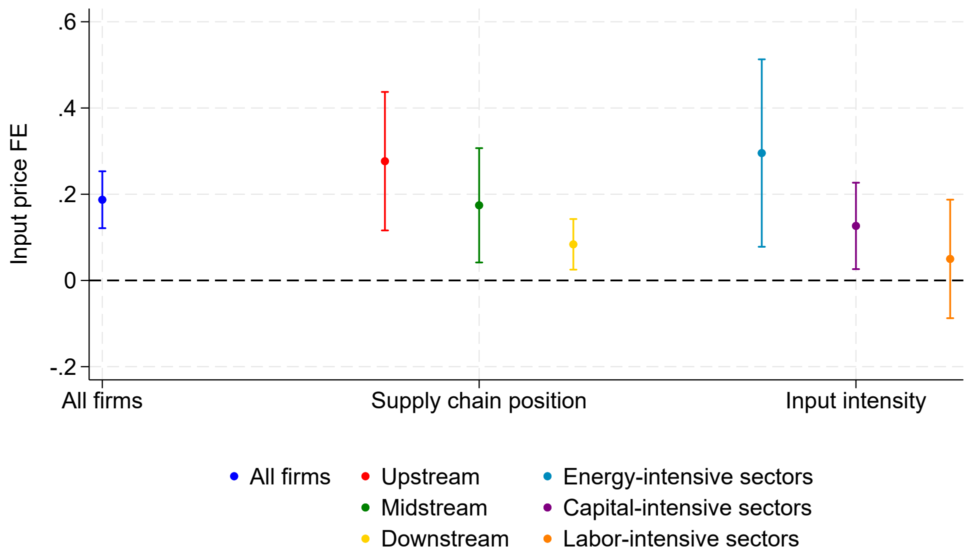
Turning to sectoral heterogeneity, we find that the strongest pass-through to realised prices (left panel) occurs in the industrial and manufacturing sectors.[11] As manufacturing and industrial firms are typically more dependent on raw materials and intermediate goods, their final prices are more sensitive to fluctuations in input prices. However, this heightened sensitivity does not extend to inflation expectations, where sectoral differences in pass-through are less pronounced.

As the SIGE survey is merged with the universe of firms' balance sheet data, we gain access to detailed sectoral classifications. Using firms' ATECO codes—the Italian classification system for economic activities, which closely corresponds to the European NACE codes—we classify firms along two main dimensions: their position in the supply chain and the intensity of their input costs. Firms are grouped as upstream, midstream, or downstream depending on their proximity to the final consumer. Upstream sectors include extractive activities and heavy manufacturing, midstream sectors are involved in processing and the production of capital goods, while downstream sectors consist mainly of retail, services, and other consumer-facing industries. We further classify firms based on the dominant input in their production process, distinguishing between energy-intensive sectors such as heavy manufacturing, labor-intensive sectors like food and beverage services, and capital-intensive sectors such as the manufacturing of motor vehicles and machinery.

The results of this classification are presented in Figure 5. As expected, the degree of input price pass-through declines as we move closer to the final consumer. Firms in upstream sectors exhibit a pass-through of approximately 0.3 percentage points, while for downstream firms, the magnitude is significantly lower, at less than 0.1 percentage points. In addition, pass-through is markedly higher in energy- and capital-intensive sectors compared to labor-intensive ones. These findings suggest that both a firm's position in the supply chain and the

[11] Using data from the Ifo Institute's business survey, Gödl-Hanisch and Menkhoff (2024) find that the pass-through is lowest for services firms and highest for manufacturing firms.

Figure 5: The sectoral pass-through of input price forecast errors to realised price growth



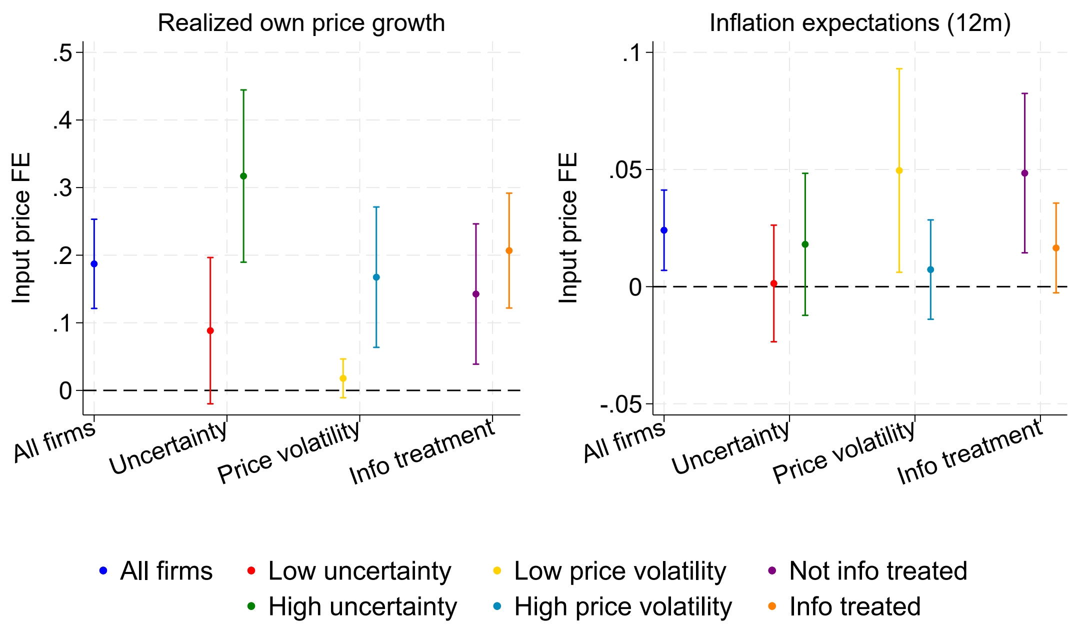
Notes: The figure presents regression results for the realised own price growth in relation to input price forecast errors across firms' characteristics. Input price forecast errors are defined as the difference between realised and expected input price growth. The bands represent 90% confidence intervals. Additional controls are included (discussed in the main text but not shown). The analysis is based on SIGE data covering the period from 2017Q3 to 2024Q4.

nature of its production inputs are key determinants of its pricing behavior. Understanding this heterogeneity is crucial for assessing how cost shocks propagate through the economy and how inflationary pressures may vary across industries.

We next explore the role of other firms' characteristics like the degree of uncertainty regarding future business conditions and the volatility of price growth defined as the standard deviation of price growth changes implemented by the firms. The results are presented in Figure 6 and Figure A.4 of the Appendix.

Uncertainty can have ambiguous effects on firms' pricing decisions. On one hand, greater uncertainty may lead to larger shocks, which in turn could result in more flexible pricing in the presence of menu costs (Barro, 1972) and larger pass-through of input price shocks to firms' prices. On the other hand, heightened uncertainty might induce a "wait-and-see"

Figure 6: The pass-through of input price forecast errors across firms' economic conditions



Notes: The figure presents regression results for realised own price growth and the 12-month ahead inflation expectations, in relation to input price forecast errors across firms' characteristics. Input price forecast errors are defined as the difference between realised and expected input price growth. The bands represent 90% confidence intervals. Additional controls are included (discussed in the main text but not shown). The analysis is based on SIGE data covering the period from 2017Q3 to 2024Q4.

strategy, with firms opting to delay further price adjustments (Vavra, 2014).[12]

To measure uncertainty at the firm level, we rely on survey responses from the SIGE dataset. Firms report the probability that their business conditions in the next three months will be better, the same, or worse. We quantify uncertainty as $1 - \sum_{i=1}^{3}(Prob_i - \frac{1}{3})^2$, where $Prob_i$ represents the probability assigned to each of the three possible outcomes. The lowest uncertainty occurs when all probability mass is assigned to a single scenario (e.g., 100% probability of better conditions), while higher uncertainty is associated with more evenly distributed probabilities (i.e., 33% for each scenario). We categorise firms into high and low

[12]Supporting evidence for the first channel is provided by Bachmann et al. (2019), Arndt and Enders (2023), and Gödl-Hanisch and Menkhoff (2024), who show that higher volatility over time is associated with increased price pass-through.

price uncertainty, based on whether their reported uncertainty falls within the top or bottom third of the distribution for each quarter.

We find that firms with higher levels of idiosyncratic uncertainty exhibit a significantly greater pass-through of input prices to actual price growth. The magnitude of this effect is substantial: firms with high uncertainty experience a pass-through three times larger than firms with low uncertainty.

We next examine the relationship between the magnitude of pass-through and the frequency of price changes. To measure price volatility at the firm level, we calculate the standard deviation of price growth changes implemented by the firms. We then categorise firms into high and low price volatility groups based on whether their reported value falls within the top or bottom third of the distribution for each quarter.

We find that a higher frequency of past price changes is associated with a greater pass-through of input cost shocks. Since our analysis includes industry fixed effects, this relationship cannot be attributed to sectoral heterogeneity in input price volatility. Rather, it likely reflects firm-level pricing behavior: firms that adjust prices more frequently tend to implement more responsive strategies, actively adjusting to cost shocks to protect their margins. Moreover, in markets where price changes are common and observable, firms may engage in implicit coordination, adjusting prices not only in response to their own costs but also in line with perceived changes among competitors. This responsiveness contributes to stronger pass-through even in the absence of explicit collusion or formal strategic pricing agreements.

In Figure 6, we also assess the causal impact of the provision of information about recent realised inflation on the magnitude of the pass-through from firms' input prices to their expectations. Firms in the SIGE are randomly assigned to one of two groups at irregular intervals. The first group is asked to report their inflation expectations for the next 12 months without receiving additional information. The second group receives the same question but only after being informed about the most recent inflation rates for Italy and the euro area. Firms remain in their assigned groups until the next reshuffling, ensuring that some firms consistently receive updated information while others do not. Prior to 2012Q3, all firms received identical information about recent inflation rates. Starting in 2012Q3, approximately one-third of firms were randomly assigned to the group that did not receive any information. Firms were reshuffled again in 2012Q4, and they remained in their new assignments until 2017Q2, when another reshuffling occurred, followed by a final reassignment in 2019Q4. The unique extended duration of this treatment makes the SIGE an ideal setting to examine how providing firms with information on actual inflation influences their expectations and decision-making.[13] As shown in Figure A.2 of the Appendix, this treatment significantly improves the alignment of treated firms' inflation expectations with actual inflation.

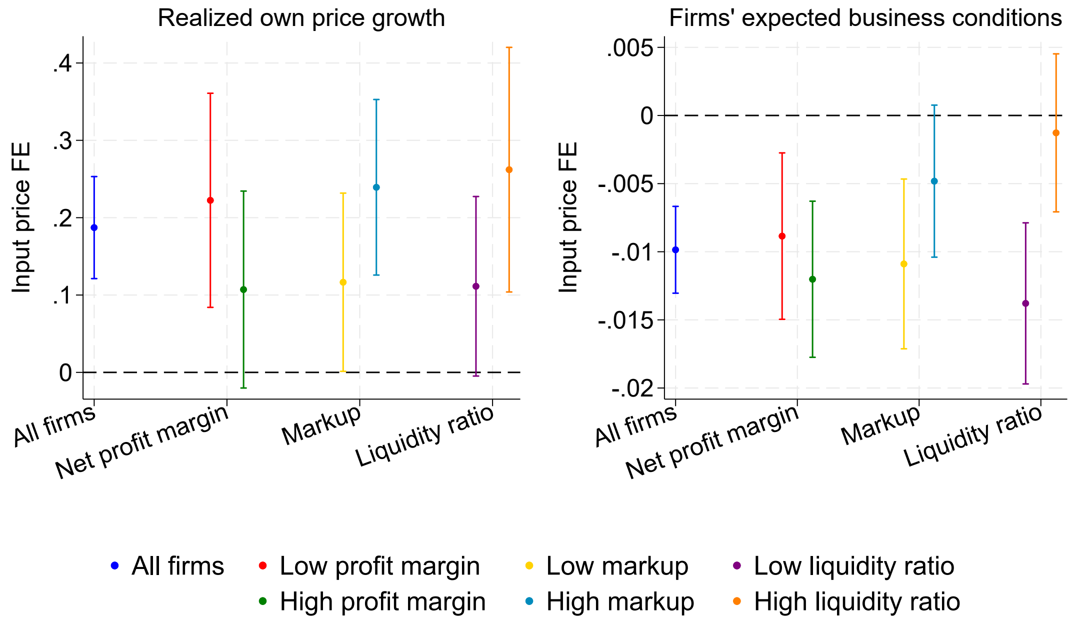
Our analysis offers novel insights to the findings of Rosolia (2024). They document that providing firms with information on the current inflation level does not have a clear effect on their expected and realised own price growth, and the pass-through to these variables remains comparable across groups. We document that firms receiving inflation information exhibit a significantly lower pass-through to both their short- and long-term inflation expectations. Our finding suggests that clear and transparent communication about the state of the economy can effectively reduce the extrapolation of business-specific conditions to broader aggregate expectations, thus limiting potential second-round effects.

Finally, we evaluate the role in the transmission of input cost shocks to output prices of three additional characteristics derived from firms' balance sheet data: the net profit margin, the markup, and the liquidity ratio.

We define the net profit margin as the percentage of revenue that remains as profit after accounting for all costs and taxes. This variable is commonly used as a proxy for a firm's profitability and reflects its capacity to absorb cost shocks without needing to adjust prices. The markup is calculated as the ratio of the value of production to the sum of intermediate

[13] Several studies have already exploited this feature of the SIGE to analyze firms' responses to informational interventions including Coibion et al. (2020), Bottone et al. (2021), Ropele et al. (2022), and Ropele et al. (2024).

Figure 7: The pass-through of input price forecast errors across firms' characteristics



Notes: The figure presents regression results for own price growth and expected business conditions in relation to input price forecast errors by firm characteristics. Input price forecast errors are defined as the difference between realised and expected input price growth. The bands represent 90% confidence intervals. Additional controls are included (discussed in the main text but not shown). The analysis is based on SIGE data covering the period from 2017Q3 to 2024Q4.

inputs and labor costs. This metric captures a firm's pricing power relative to its production costs and is often interpreted as an indicator of market power and the level of competition in its operating environment (Coibion et al., 2018, Kharroubi et al., 2023). Finally, the liquidity ratio measures a firm's ability to meet short-term obligations using liquid assets. It is computed as the sum of cash, cash equivalents, and short-term financial assets divided by total short-term liabilities.

To mitigate endogeneity concerns, we use lagged values of these financial variables. For each of these variables, we then classify firms as high or low value based on whether their reported values belong to the top or bottom third of the distribution for each quarter.

The results are presented in Figure 7. The left panel displays the pass-through to realised price growth, while the right panel shows the pass-through to firms' expectations about future business conditions. The left panel reveals that firms with lower profit margins and higher markups experience a significantly stronger pass-through of input price shocks. In particular, the magnitude of the pass-through is nearly three times larger for firms with high markups compared to those with low markups. This pattern likely reflects firms with thinner profit buffers finding more difficult to absorb input cost increases without adjusting their prices, whereas firms with higher markups enjoy greater pricing power, allowing them to raise prices without substantial demand loss.[14]

We then examine how the liquidity and leverage conditions of firms shape the transmission of input price shocks. Financially constrained firms may prioritise preserving internal liquidity over maintaining market share, leading them to raise their prices even amid input costs decreases due to a downturn. This behaviour - resulting in a lower pass-through - contrasts with the predictions of standard New Keynesian models, where prices are expected to adjust symmetrically to shocks. Instead, it reflects precautionary pricing behavior driven by firms' reluctance to rely on costly or inaccessible external financing.

To test the importance of liquidity constraints in our data, we assess whether the pass-through of input price shocks to output prices differs across firms' liquidity ratios. The left panel of Figure 7 shows that firms with low liquidity exhibit significantly lower pass-through of input cost shocks. This finding suggests that financially constrained firms are less able to adjust their prices in response to cost increases, likely due to concerns about losing demand and exacerbating financial stress. The right panel supports this interpretation, showing that these firms also report a more pessimistic outlook on future business conditions.[15] As liquidity constraints bind, firms tend to absorb input cost increases rather than passing them on to output prices, in order to avoid losing customers and further deteriorating their

[14] These findings are consistent with the predictions of state-dependent pricing models (e.g., Dotsey et al., 1999; Golosov and Lucas, 2007), which emphasise that firms are more likely to adjust prices when the benefits of doing so exceed adjustment costs. This mechanism also aligns with the evidence in Hensel et al. (2024), who finds that firms in more competitive markets—typically featuring lower markups—exhibit weaker pass-through of energy cost shocks to both price expectations and actual prices. Together, these results underscore the importance of cost absorption capacity and market power in shaping price-setting behavior and are suggestive of state-dependent rather than time-dependent price adjustment.

[15] These results build upon and are consistent with Gilchrist et al. (2017).

financial position. This behavior suggests that financially constrained firms use pricing conservatively as a tool to preserve market share and cash flow under stress. Our findings underscore how firms' financial health and market environment shape the inflationary effects of input shocks, highlighting the importance of accounting for balance sheet conditions in understanding inflation dynamics.

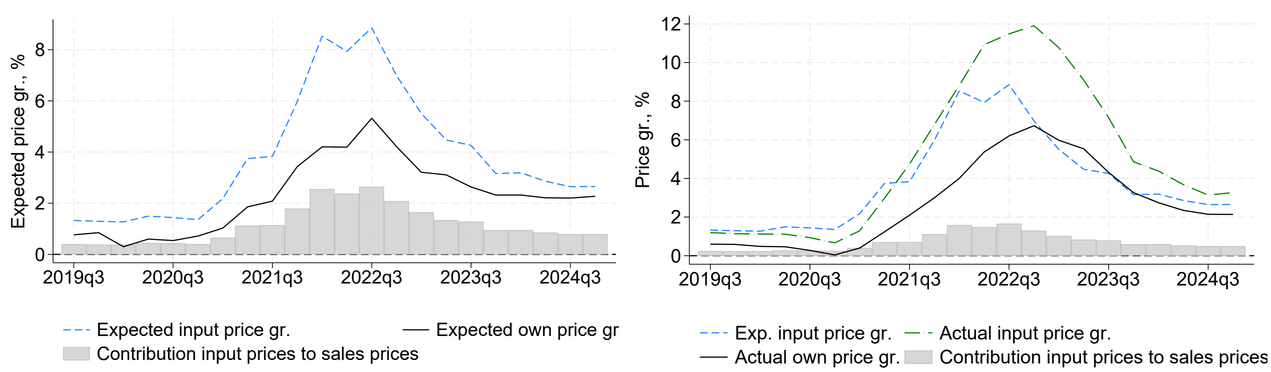
3.4 What share of the 2022–23 price increase was driven by higher input costs?

The pass-through coefficients estimated in Section 3.3 can be used to quantify the contribution of rising input prices to the surge in firms' sales prices throughout the recent high-inflation period.

Figure 8: The contribution of input prices to expected and realised price growth

A: Expected price growth

B: Realised price growth



Notes: Panel A of the figure shows the time series of expected input price growth (blue dashed line) alongside expected own-price growth (black line). The gray bars indicate the portion of the increase in expected own-price growth that can be attributed to rising input prices. Panel B presents the same decomposition for realised input and sales price growth. All data are sourced from SIGE.

Panel A of Figure 8 shows the time series of the expected increase in input price (blue dashed line) together with the expected own price growth (black line). From Table 1, we estimate that a 1 percentage point increase in expected input prices leads to a 0.3 percentage point increase in expected sales prices. Multiplying the series of expected input prices by this coefficient yields the contribution of input price expectations to sales price expectations, shown by the gray bars.

Between 2022 and 2023, the expected growth in input prices increased sharply, from below 2% to above 8%. Over the same period, sales price expectations increased from roughly 1% to more than 4%. Despite the pass-through being incomplete, higher input price expectations accounted for a substantial share of the increase. At the peak of sales price expectations, more than 2 percentage points out of the observed 4–5% growth were attributable to rising input price expectations.

Panel B of Figure 8 repeats the exercise for realised own-price growth, where the estimated pass-through was about 0.2. Here too, input price expectations emerge as an important driver of actual price increases. Of the 6% realised price growth observed at the peak, roughly 2 percentage points can be explained by higher expected input prices. These results confirm the central role of rising input costs in fueling the recent inflationary episode.

4 Robustness

In this section, we conduct several robustness checks to further validate our main findings. First, we assess the persistence of the documented effects over time. Second, we address potential endogeneity in input price forecast errors by regressing them on firm-level controls and using the residuals as exogenous variation in input prices. We further validate this approach by showing that forecast errors are uncorrelated with firm-level demand indicators and observable characteristics, while their correlation with oil prices and the euro–dollar exchange rate supports a supply-shock interpretation. Third, we estimate a range of alternative model specifications, incorporating different fixed effects, standard error adjustments, time periods, and trimming procedures. Fourth, we confirm that the pass-through estimates remain consistent when using realised input price growth instead of forecast errors. Finally, we show that allowing for time-varying coefficients does not alter our main conclusion on the contribution of rising input prices to the surge in firms' sales prices.

Persistence of the impact. To evaluate the persistence of the effects, Tables A.10 and A.11 present the estimated coefficients for the expected own price growth as well as the 6 and 12-month-ahead expected inflation. The dependent variable is shifted forward by up to three quarters to capture dynamic effects. As observed, the impact of input price surprises dissipates after two to three quarters.

Exogeneity of input price forecast errors. Next, we address potential endogeneity concerns in input price forecast errors that could affect our results. We do so by regressing forecast errors on firm size, geographic area, and sector while also including date and firm fixed effects. The residuals from this regression are then used in the baseline specification instead of the raw forecast errors. The results, reported in Table A.13, show that the estimated coefficients remain consistent in both sign and magnitude, confirming that our findings are robust to this adjustment.

In Column 4 of Table A.16, we further validate the construction of the input price forecast errors by regressing them on the observable characteristics over which the survey is stratified to ensure representativeness of the Italian economy. Specifically, we include categorical variables for firm size (baseline: fewer than 200 employees), sector (baseline: manufacturing), and geographical location of the headquarters (baseline: North-West). We find no systematic correlation between forecast errors and these observable characteristics, suggesting that the errors are not mechanically driven by structural differences across firms.

In Table A.17, we also evaluate whether forecast errors may reflect demand-driven rather than supply-driven dynamics. In Column 1, we regress forecast errors on a set of survey-based demand indicators. Firms report whether demand for their products has decreased, remained stable, or increased over the past three months and expected demand over the following three months (baseline: decrease). In addition, firms indicate the importance of several factors as drivers of business activity and pricing decisions, on a scale from –3 (strong negative effect) to +3 (strong positive effect). To increase statistical power, we recode these variables into binary indicators equal to one if the factor is reported as relevant (non-zero response) and zero otherwise. None of the coefficients are statistically significant, suggesting that demand conditions do not correlate with input price forecast errors.

In Column 2, we regress forecast errors on quarterly log changes in the euro–U.S. dollar exchange rate and the price of Brent crude oil, both of which represent key exogenous supply-side drivers. Since these variables are time-varying aggregates, we exclude date fixed effects in this specification otherwise they would be absorbed. The results show a positive correlation with oil prices and a negative correlation with the euro–dollar exchange rate. These signs are as expected: higher oil prices raise production and transport costs, which likely leads firms to underestimate the extent of input price increases, resulting in positive forecast errors; conversely, an appreciation of the euro (a higher EUR/USD) lowers the cost of imported inputs, generating negative forecast errors when firms over-predict input cost pressures.

Finally, Column 3 combines firm-level demand controls with the macroeconomic supply variables. When date fixed effects are excluded, some demand variables become statistically significant, reflecting the fact that not all macroeconomic shocks are absorbed. This underlines the importance of including time fixed effects in our baseline specification: once these are accounted for, the potential influence of unobserved aggregate shocks is controlled, and firm-level demand factors no longer explain forecast errors. Taken together, this validation exercise strengthens the causal interpretation of our baseline results by showing that input price forecast errors are orthogonal to demand conditions and mainly capture exogenous supply-side shocks.

Alternative model specifications. We re-estimate the baseline analysis under a range of alternative specifications. Table A.14 reports the results using expected price growth as the dependent variable. Column 1 includes firm and time-by-sector fixed effects, Column 2 clusters standard errors at the firm and time-by-sector level, Column 3 adds lagged input price forecast errors as additional controls, Column 4 restricts the sample to the pre-COVID period, and Columns 5 and 6 apply more aggressive trimming procedures to limit the influence of outliers. None of these alternative specifications alters our main conclusion: input price forecast errors systematically translate into firms' own price expectations.

In Table A.15, we demonstrate that our findings on the asymmetric pass-through of input prices to firms' expectations are not driven by the high-inflation period. To test this, we restrict the sample to observations up until 2021Q4, before the inflation surge. Even in this subsample, the magnitude of the pass-through from positive input price forecast errors to firms' realised price growth remains significantly higher than that of negative forecast errors. Similarly, in line with our baseline results, firms' inflation expectations respond only to positive forecast errors, confirming that the high-inflation period does not drive our results.

Alternative measure of input price shocks. In Columns 1–3 of Table A.16, we report the estimated pass-through on firms' expected and realised price growth when using realised input price growth instead of forecast errors. This is an important robustness check because it provides a direct benchmark: if our results were driven by systematic biases in expectations or by endogenous adjustment to anticipated cost changes, the pass-through estimated with realised input price growth could differ markedly from the baseline. To ensure comparability, past input price growth is standardised to induce a 1 percentage point increase in expected input price growth (Column 1). The estimated pass-through to expected and realised own price growth amounts to 0.36 and 0.14 percentage points, respectively—magnitudes that are highly consistent with our baseline estimates.

Time variation of the estimates. Figure A.5 in the Appendix shows that allowing for time-varying coefficients does not alter our main conclusion on the contribution of rising input prices to the surge in firms' sales prices. Panel A of the figure reports coefficients from regressions of expected sales price growth on input price forecast errors estimated over two-year rolling windows (the first covering 2017Q1–2019Q3, then shifted one quarter at a time). Consistent with Table 3, the pass-through to sales price expectations declined somewhat in 2022–23, when firms placed more weight on aggregate shocks. Nevertheless, using these time-varying coefficients to compute the contribution of input price expectations (Panel B) shows that the main result is robust: around 2 percentage points of the increase in sales price expectations can still be attributed to higher input price expectations.

5 Conclusion

Input price shocks significantly shape firm expectations and pricing decisions, with important implications for inflation dynamics, especially during periods of high inflation and supply disruptions. Understanding the size and asymmetry of this pass-through, and how it varies across firms and macro conditions, is critical for monetary policy. This study provides new evidence on how input cost shocks affect firms' inflation expectations and pricing behavior.

Our results provide robust evidence of a positive pass-through from input costs to both firms' expectations and realised pricing decisions. Unexpected increases in input prices lead firms to revise upward their inflation and own-price expectations, and to raise actual prices accordingly. We also uncover a marked asymmetry: firms respond strongly to cost increases but only weakly to cost declines. This asymmetry implies that inflationary pressures may persist even after shocks subside, complicating stabilisation efforts. The magnitude of the pass-through further depends on macroeconomic conditions and firm-specific characteristics. Finally, rising input cost expectations are shown to have been a key driver of the inflation surge in 2022–2023.

These findings carry important policy implications. The asymmetry we document shows that firms respond strongly to rising input costs but only weakly to falling ones, implying that curbing inflation is more challenging than stimulating it, as upward pressures tend to persist even after shocks ease. We also uncover information frictions in how firms alternate between firm-specific and aggregate signals, underscoring the need for central banks to internalise these dynamics when designing communication strategies. Moreover, heterogeneity in market power, financial conditions, and adjustment frequency influences the strength of pass-through, highlighting the importance of policies that address structural rigidities and prevent inflationary pressures from becoming concentrated in particular sectors.

In addition, our findings emphasise the importance of central bank communication. We show that providing firms with clear and timely information about current inflation can significantly dampen the transmission of input price shocks to aggregate expectations. This underscores the value of transparent, proactive communication as a complement to conventional monetary tools, particularly in high-inflation periods when anchoring expectations is most urgent.

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A Appendix

This appendix provides additional tables and figures that complement the results discussed in the main text.

Table A.1: Summary statistics

	Obs.	Mean	p10	p50	p90	St. Dev.
Expected input price gr.	25710	3.54	0.00	2.00	10.00	5.35
Expected own price gr.	25670	2.13	0.00	1.00	5.00	3.88
Realized own price gr.	16361	2.68	0.00	1.00	8.20	5.39
Expected infl. (6m)	21983	2.70	0.30	1.50	7.00	2.83
Expected infl. (12m)	21975	2.51	0.40	1.50	6.00	2.49
Expected infl. (24m)	21978	2.31	0.50	1.80	5.00	2.15
Expected infl. (36-60m)	21986	2.22	0.50	1.90	5.00	1.96
Input price FE	25935	1.07	-5.00	0.00	7.80	7.60

Notes: The table reports several summary statistics for the expected input price growth, own price growth, realised price growth, expected inflation rate across different horizons and the input price forecast errors. The analysis is based on data from the SIGE for the period 2017Q3–2024Q4.

Table A.2: Input price forecast errors and firms' inflation expectations

	(1) Expected infl. (6m)	(2) Expected infl. (12m)	(3) Expected infl. (24m)	(4) Expected infl. (36-60m)
Input price FE	0.0359***	0.0241**	0.0135	0.00920
	(0.0104)	(0.0104)	(0.0102)	(0.00986)
Constant	2.693***	2.409***	2.164***	2.057***
	(0.0955)	(0.0937)	(0.0966)	(0.107)
Observations	21614	21606	21607	21614
R^2	0.797	0.731	0.634	0.564
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for inflation expectations across different horizons regressed on input price forecast errors. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

Table A.3: The asymmetric pass-through of input price forecast errors to inflation expectations

	(1) Expected infl. (6m)	(2) Expected infl. (12m)	(3) Expected infl. (24m)	(4) Expected infl. (36-60m)
Input price FE (+)	0.0560***	0.0409***	0.0260*	0.0203
	(0.0151)	(0.0152)	(0.0148)	(0.0142)
Input price FE (-)	-0.00279	-0.00859	-0.0106	-0.0122
	(0.0161)	(0.0167)	(0.0161)	(0.0166)
Constant	2.664***	2.384***	2.146***	2.041***
	(0.0959)	(0.0943)	(0.0978)	(0.108)
Observations	21614	21606	21607	21614
R^2	0.797	0.731	0.635	0.564
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for inflation expectations across different horizons regressed on input price forecast errors. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

Table A.4: Testing the heterogeneous pass-through across firms' size

	(1) Expected own price gr.	(2) Realized own price gr.	(3) Expected infl. (12m)	(4) Expected infl. (36-60m)
Input price FE	0.0767***	0.0341***	0.00794***	0.00640***
	(0.00386)	(0.00675)	(0.00186)	(0.00186)
200-999 employees × Input price FE	0.000527	0.0354***	-0.00444	-0.00935***
	(0.00670)	(0.0115)	(0.00321)	(0.00320)
Above 1000 employees × Input price FE	0.0190	0.0671***	0.00629	-0.0000583
	(0.0130)	(0.0238)	(0.00611)	(0.00607)
Observations	25206	16069	21607	21615
R^2	0.442	0.447	0.735	0.575
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table reports regression results where the dependent variable is firms' expectations, and the main explanatory variable is the input price forecast error, defined as the difference between realised and expected input price growth. To assess heterogeneity by firm size, the forecast error is interacted with firm size categories, as well as with control variables. The reference category is firms with fewer than 200 employees. Additional control variables are included (not reported in the table) as discussed in the main text. The analysis uses quarterly data from the SIGE survey covering the period 2017Q3 to 2024Q4. Standard errors are clustered at the firm level.

Table A.5: Testing the heterogeneous pass-through across sectors

	(1) Expected own price gr.	(2) Realized own price gr.	(3) Expected infl. (12m)	(4) Expected infl. (36-60m)
Input price FE	0.0613***	0.0466***	0.00301	0.00119
	(0.00421)	(0.00717)	(0.00213)	(0.00213)
Industry × Input price FE	0.0621***	0.180***	-0.0195**	-0.0171**
	(0.0169)	(0.0270)	(0.00802)	(0.00795)
Commerce × Input price FE	0.0641***	-0.0247	0.0103*	0.00728
	(0.0111)	(0.0190)	(0.00547)	(0.00544)
Services × Input price FE	0.0161**	-0.0228*	0.00821**	0.00550
	(0.00779)	(0.0134)	(0.00385)	(0.00385)
Constructions × Input price FE	0.00638	-0.0381**	0.00597	0.00579
	(0.00932)	(0.0165)	(0.00423)	(0.00422)
Observations	25206	16069	21607	21615
R^2	0.454	0.477	0.732	0.569
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table reports regression results where the dependent variable is firms' expectations, and the main explanatory variable is the input price forecast error, defined as the difference between realised and expected input price growth. To assess heterogeneity by sectors, the forecast error is interacted with sector categories, as well as with control variables. The reference category is firms in the manufacturing. Additional control variables are included (not reported in the table) as discussed in the main text. The analysis uses quarterly data from the SIGE survey covering the period 2017Q3 to 2024Q4. Standard errors are clustered at the firm level.

Table A.6: Testing the heterogeneous pass-through across uncertainty terziles

	(1) Expected own price gr.	(2) Realized own price gr.	(3) Expected infl. (12m)	(4) Expected infl. (36-60m)
Input price FE	0.0769***	0.0341***	0.00334	-0.00250
	(0.00518)	(0.00937)	(0.00257)	(0.00256)
High uncertainty × Input price FE	0.0252***	0.0473***	0.00360	0.00573
	(0.00748)	(0.0133)	(0.00368)	(0.00367)
Observations	16405	10440	14118	14116
R^2	0.488	0.478	0.743	0.590
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table reports regression results where the dependent variable is firms' expectations, and the main explanatory variable is the input price forecast error, defined as the difference between realised and expected input price growth. To assess heterogeneity by uncertainty, the forecast error is interacted with a categorical variable identifying the top and bottom terziles of uncertainty, as well as with control variables. The reference category is firms whose uncertainty is in the bottom terzile. Additional control variables are included (not reported in the table) as discussed in the main text. The analysis uses quarterly data from the SIGE survey covering the period 2017Q3 to 2024Q4. Standard errors are clustered at the firm level.

Table A.7: Testing the heterogeneous pass-through across price growth volatility terziles

	(1) Expected own price gr.	(2) Realized own price gr.	(3) Expected infl. (12m)	(4) Expected infl. (36-60m)
Input price FE	0.0314***	0.00466	0.0130***	0.00301
	(0.00784)	(0.0143)	(0.00351)	(0.00351)
High price volatility × Input price FE	0.0447***	0.0389**	-0.0112***	0.000781
	(0.00903)	(0.0163)	(0.00404)	(0.00404)
Observations	16350	10372	14013	14022
R^2	0.467	0.519	0.744	0.593
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table reports regression results where the dependent variable is firms' expectations, and the main explanatory variable is the input price forecast error, defined as the difference between realised and expected input price growth. To assess heterogeneity by price growth volatility, the forecast error is interacted with a categorical variable identifying the top and bottom terziles of price growth volatility, as well as with control variables. The reference category is firms whose price growth volatility is in the bottom terzile. Additional control variables are included (not reported in the table) as discussed in the main text. The analysis uses quarterly data from the SIGE survey covering the period 2017Q3 to 2024Q4. Standard errors are clustered at the firm level.

Table A.8: Testing the heterogeneous pass-through across treated and non treated firms

	(1) Expected own price gr.	(2) Realized own price gr.	(3) Expected infl. (12m)	(4) Expected infl. (36-60m)
Input price FE	0.0830^{***}	0.0390^{***}	0.0129^{***}	0.0104^{***}
	(0.00491)	(0.00869)	(0.00275)	(0.00280)
Info treated × Input price FE	-0.00761	0.0161	-0.00850^{***}	-0.0104^{***}
	(0.00627)	(0.0110)	(0.00321)	(0.00327)
Observations	25204	16068	21605	21613
R^2	0.440	0.445	0.753	0.584
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table reports regression results where the dependent variable is firms' expectations, and the main explanatory variable is the input price forecast error, defined as the difference between realised and expected input price growth. To assess heterogeneity by treatment status, the forecast error is interacted with a dummy variable identifying firms which received the information treatment, as well as with control variables. The reference category is firms which did not receive the inflation information. Additional control variables are included (not reported in the table) as discussed in the main text. The analysis uses quarterly data from the SIGE survey covering the period 2017Q3 to 2024Q4. Standard errors are clustered at the firm level.

Table A.9: Testing the heterogeneous pass-through across balance sheet variables

	(1) Realized own price gr.	(2) Realized own price gr.	(3) Realized own price gr.
Input price FE	0.0644^{***}	0.0367^{***}	0.0293^{***}
	(0.0101)	(0.0101)	(0.0108)
High profit margin × Input price FE	-0.0266^{*}		
	(0.0142)		
High markup × Input price FE		0.0261^{*}	
		(0.0136)	
High liquidity ratio × Input price FE			0.0400^{***}
			(0.0148)
Observations	9532	9744	10013
R^2	0.493	0.499	0.469
Controls	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table reports regression results where the dependent variable is firms' expectations, and the main explanatory variable is the input price forecast error, defined as the difference between realised and expected input price growth. To assess heterogeneity by net profit margins, markup and liquidity ratio, the forecast error is interacted with a categorical variable identifying the top and bottom terziles of the distribution, as well as with control variables. The reference category is firms whose values is in the bottom terzile. Additional control variables are included (not reported in the table) as discussed in the main text. The analysis uses quarterly data from the SIGE survey covering the period 2017Q3 to 2024Q4. Standard errors are clustered at the firm level.

Table A.10: Input price forecast errors and firms' expected price expectations, persistency

	(1) Expected own price gr.	(2) F.Expected own price gr.	(3) F2.Expected own price gr.	(4) F3.Expected own price gr.
Input price FE	0.299***	0.165***	0.113***	0.0212
	(0.0274)	(0.0251)	(0.0290)	(0.0278)
Constant	1.682***	1.733***	1.460***	1.755***
	(0.200)	(0.232)	(0.215)	(0.233)
Observations	25205	20036	18674	17147
R^2	0.439	0.440	0.438	0.436
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for expected own price growth on input price forecast errors. The dependent variable is shifted forward by up to three quarters. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

Table A.11: Input price forecast errors and firms' expected inflation, persistency

	(1) Expected infl. (6m)	(2) F.Expected infl. (6m)	(3) F2.Expected infl. (6m)	(4) F3.Expected infl. (6m)
Input price FE	0.0359***	0.0293**	0.0168	0.00593
	(0.0104)	(0.0121)	(0.0125)	(0.0119)
Constant	2.693***	2.663***	2.671***	2.841***
	(0.0955)	(0.116)	(0.121)	(0.125)
Observations	21614	17292	16170	14914
R^2	0.797	0.798	0.795	0.793
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for the 6-month ahead expected inflation on input price forecast errors. The dependent variable is shifted forward by up to three quarters. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

Table A.12: Input price forecast errors and firms' expected inflation, persistency

	(1) Expected infl. (12m)	(2) F.Expected infl. (12m)	(3) F2.Expected infl. (12m)	(4) F3.Expected infl. (12m)
Input price FE	0.0241**	0.0274**	0.0192	0.0111
	(0.0104)	(0.0122)	(0.0123)	(0.0119)
Constant	2.409***	2.316***	2.346***	2.434***
	(0.0937)	(0.109)	(0.110)	(0.119)
Observations	21606	17291	16177	14917
R^2	0.731	0.730	0.730	0.727
Controls	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for the 12-month ahead expected inflation on input price forecast errors. The dependent variable is shifted forward by up to three quarters. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

Table A.13: Input price forecast errors and firms' expected and realised own price growth

	(1) Expected own price gr.	(2) Realized own price gr.	(3) Expected infl. (6m)	(4) Expected infl. (12m)	(5) Expected infl. (24m)	(6) Expected infl. (36-60m)
Input price FE, resid	1.087***	0.616***	0.128***	0.0869**	0.0569	0.0453
	(0.106)	(0.150)	(0.0400)	(0.0400)	(0.0393)	(0.0384)
Constant	2.136***	2.706***	2.645***	2.445***	2.218***	2.120***
	(0.115)	(0.163)	(0.0605)	(0.0529)	(0.0493)	(0.0532)
Observations	25205	16067	21614	21606	21607	21614
R^2	0.451	0.474	0.798	0.732	0.637	0.567
Controls	YES	YES	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for expected own price growth, and realised price growth, all regressed on the residuals of input price forecast errors on firm-level characteristics. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4. Standard errors are clustered at the firm level.

Table A.14: Input price forecast errors and firms' expected own price growth, robustness

	(1) Cluster: ID Time*Sector	(2) Fixed effects: ID Time*Sector	(3) Lag shock	(4) Before 2021	(5) Trimming 2-98	(6) Trimming 5-95
Input price FE	0.299***	0.281***	0.277***	0.384***		
	(0.0340)	(0.0276)	(0.0314)	(0.0555)		
Lag input price FE			0.0904***			
			(0.0243)			
Input price FE, 2-98					0.326***	
					(0.0236)	
Input price FE, 5-95						0.350***
						(0.0234)
Constant	1.682***	2.051***	1.713***	0.785**	1.649***	1.682***
	(0.198)	(0.114)	(0.268)	(0.337)	(0.184)	(0.149)
Observations	25205	25205	17712	9552	24299	21685
R^2	0.439	0.451	0.468	0.503	0.447	0.508
Controls	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for the expected own price growth on input price forecast errors. A battery of different specifications is estimated. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2024Q4.

Table A.15: Input price forecast errors and firms' expectations, low inflation period

	(1) Expected own price gr.	(2) Expected own price gr.	(3) Expected infl. (6m)	(4) Expected infl. (6m)	(5) Expected infl. (12m)	(6) Expected infl. (12m)
Input price FE	0.436***		0.0377***		0.0413***	
	(0.0517)		(0.00832)		(0.00871)	
Input price FE (+)		0.453***		0.0437***		0.0479***
		(0.0724)		(0.0111)		(0.0116)
Input price FE (-)		0.388***		0.0196		0.0209
		(0.0765)		(0.0134)		(0.0141)
Constant	0.957***	0.946***	1.114***	1.111***	1.214***	1.210***
	(0.298)	(0.300)	(0.0724)	(0.0725)	(0.0866)	(0.0866)
Observations	12841	12841	11123	11123	11139	11139
R^2	0.483	0.483	0.636	0.636	0.617	0.617
Controls	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The table reports regression results for the firms' expectations on input price forecast errors. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The analysis is based on data from the SIGE for the period 2017Q3–2021Q4.

Table A.16: Determinants of firms' input price expectations and forecast errors

	(1) Expected input price gr.	(2) Expected own price gr.	(3) Realized own price gr.	(4) Input price FE
Past input price gr.	1.000***	0.357***	0.141***	
	(0.0389)	(0.0227)	(0.0294)	
200-999 employees				-0.0472
				(0.0974)
Above 1000 employees				-0.0747
				(0.148)
Industry				-0.0774
				(0.183)
Commerice				-0.516**
				(0.242)
Services				-0.211
				(0.165)
Constructions				-0.347
				(0.243)
Nord-east				-0.219
				(0.225)
Center				0.0560
				(0.430)
South and Islands				-0.350
				(0.253)
Constant	1.933***	1.471***	2.294***	0.622***
	(0.0614)	(0.0361)	(0.0473)	(0.156)
Observations	42692	42585	25410	25480
R^2	0.576	0.428	0.435	0.283
Controls FE	YES	YES	YES	YES

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Columns 1–3 report regression results of firms' expectations on realised input price growth. Column 4 presents regression results of firms' input price forecast errors on observable characteristics. Forecast errors are defined as the difference between realised and expected input price growth. All regressions include additional controls, as described in the main text (not reported here). Column 4 uses as baseline categories firms with fewer than 200 employees, firms operating in the manufacturing sector, and firms headquartered in the North-West. The analysis is based on data from the SIGE covering the period 2017Q3–2024Q4.

Table A.17: Determinants of firms' input price forecast errors

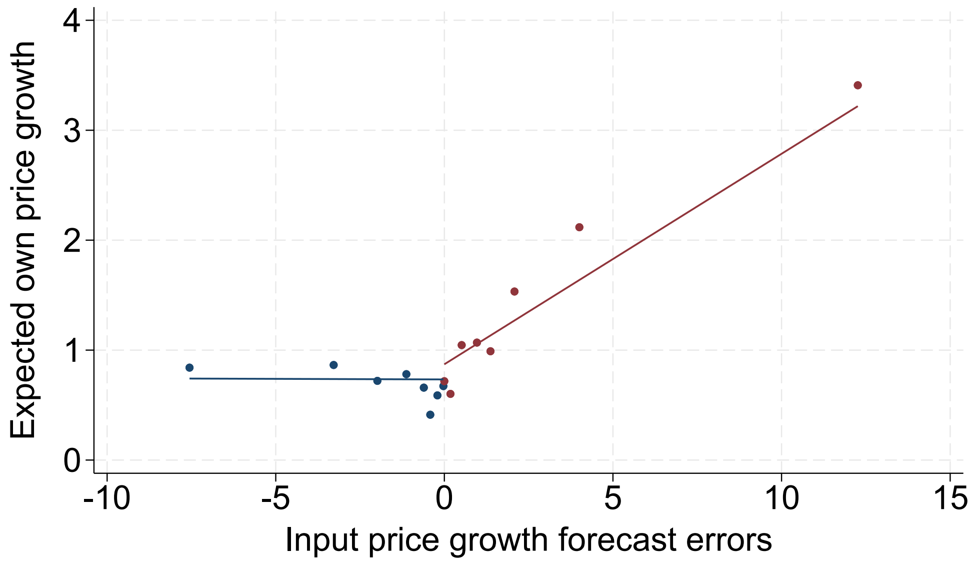
	(1) Input price FE	(2) Input price FE	(3) Input price FE
Past demand, same	-0.0465		0.00478
	(0.0429)		(0.0447)
Past demand, increase	0.0222		0.223***
	(0.0483)		(0.0517)
Exp. demand, same	-0.0284		-0.139***
	(0.0477)		(0.0513)
Exp. demand, increase	-0.0460		-0.123**
	(0.0538)		(0.0570)
Demand for prices	-0.00631		-0.0419
	(0.0377)		(0.0402)
Demand for business	0.0278		0.0345
	(0.0384)		(0.0413)
EUR-USD ER		-9.794***	-9.807***
		(0.567)	(0.626)
Brent Crude price		0.00166***	0.000760
		(0.000631)	(0.000678)
Constant	0.325***	0.260***	0.312***
	(0.0549)	(0.00164)	(0.0580)
Observations	21179	25480	21179
R^2	0.284	0.187	0.186
Controls FE	YES	YES	YES
Date FE	YES	NO	NO

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

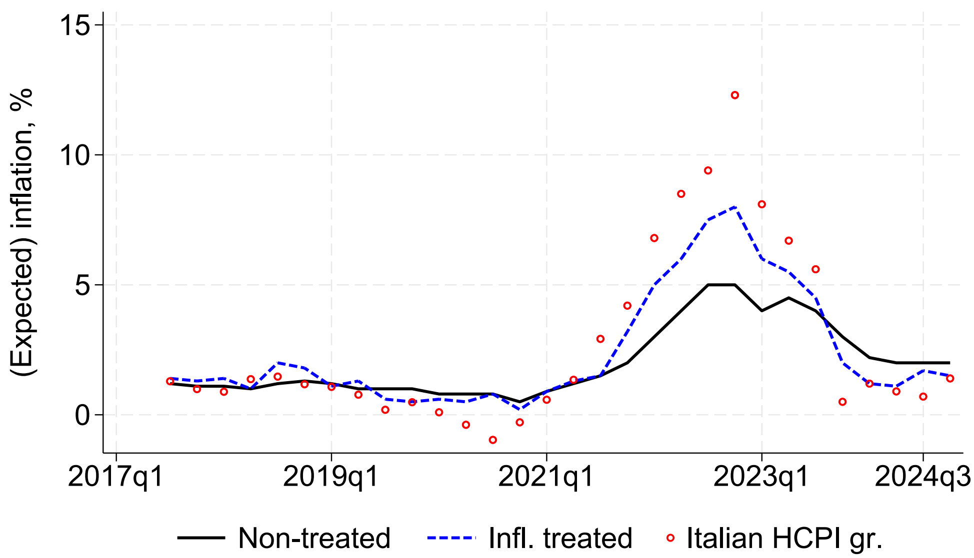
Notes: The table reports regression results for the firms' input price forecast errors on a battery of firm-specific and macroeconomic controls. The input price forecast errors are defined as the difference between realised and expected input price growth. Additional controls are included, as discussed in the main text (but not shown here). The baseline categories are firms which report a decrease in their past and expected demand. The analysis is based on data from the SIGE for the period 2017Q3–2024Q4.

Figure A.1: Input price forecast errors vs expected own price growth, low inflation



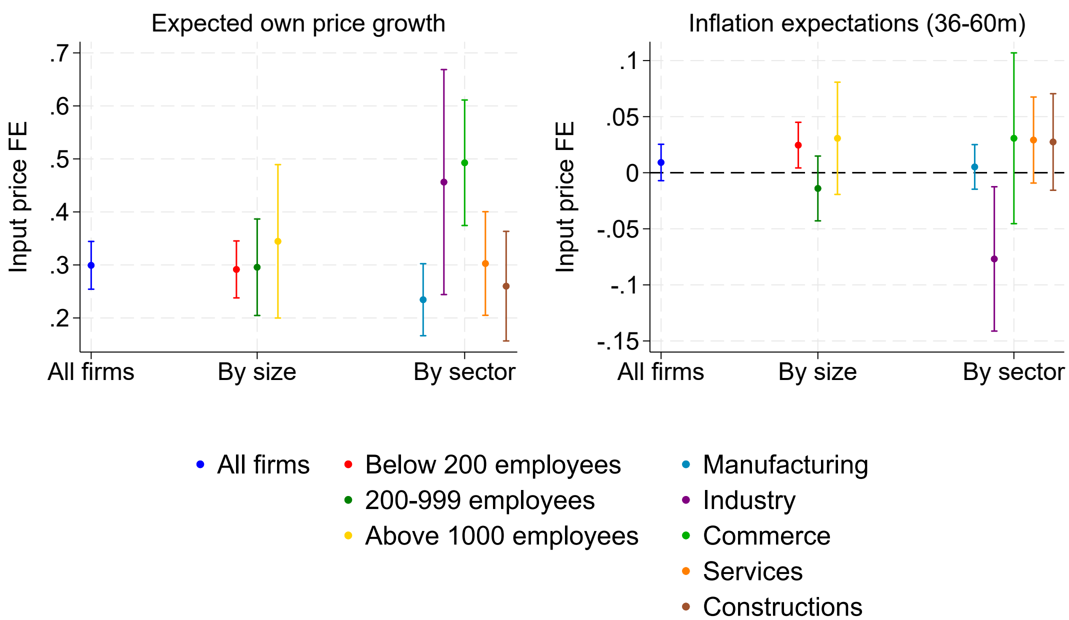
Notes: The figure displays the binned scatterplot illustrating the relationship between input price forecast errors and the expected price growth. The red and blue lines show the best linear fit between the variables of interest. The input price forecast errors are defined as the difference between realised and expected input price growth. The data are sourced from the SIGE for the period 2017Q3–2021Q3

Figure A.2: Time series of the median 12-month ahead expected inflation by treatment status



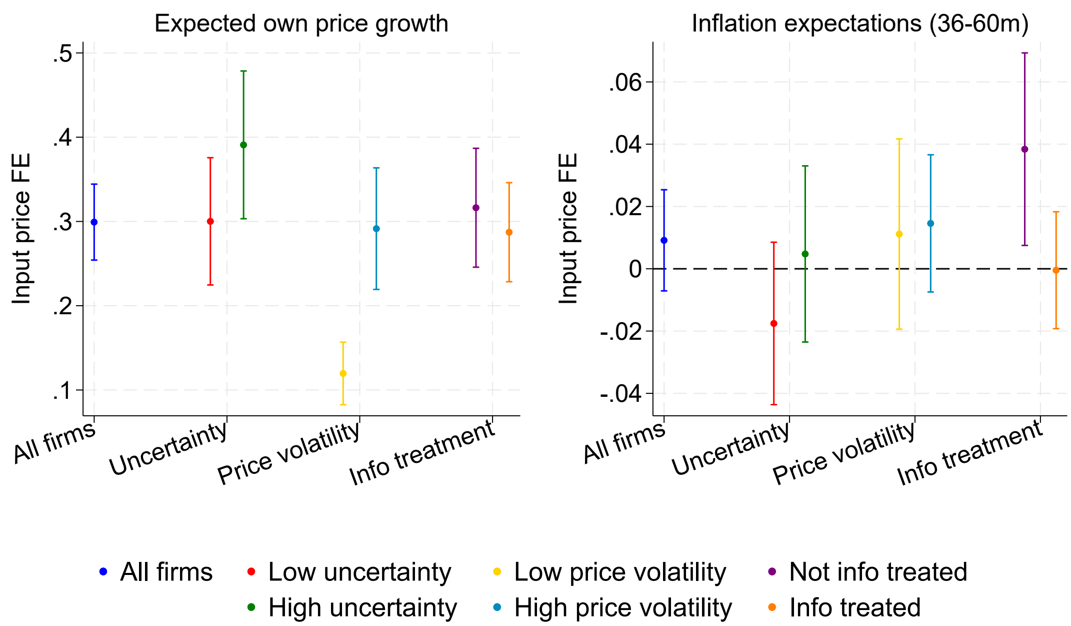
Notes: The figure plots the evolution over time of the median 12-month ahead expected inflation for firms which receive the information treatment and those which do not. The data are sourced from the SIGE.

Figure A.3: The pass-through of input price forecast errors across size and sectors



Notes: The figure presents regression results for expected own price growth and the average expected inflation for the 36-60 month horizon, in relation to input price forecast errors across firms' characteristics. Input price forecast errors are defined as the difference between realised and expected input price growth. The bands represent 90% confidence intervals. Additional controls are included (discussed in the main text but not shown). The analysis is based on SIGE data covering the period from 2017Q3 to 2024Q4.

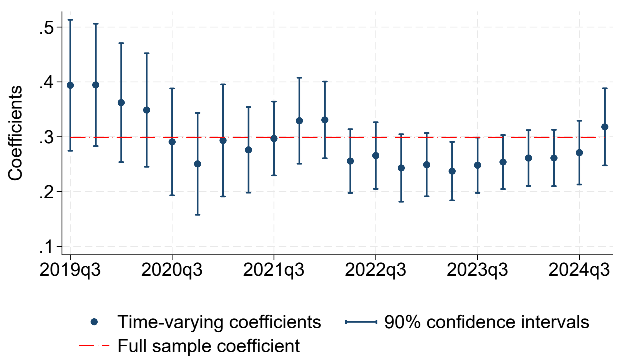
Figure A.4: The pass-through of input price forecast errors across firms' economic conditions



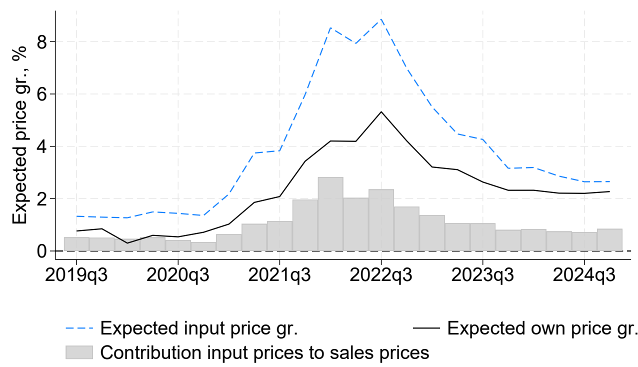
Notes: The figure presents regression results for expected own price growth and the average expected inflation for the 36-60 month horizon, in relation to input price forecast errors across firms' characteristics. Input price forecast errors are defined as the difference between realised and expected input price growth. The bands represent 90% confidence intervals. Additional controls are included (discussed in the main text but not shown). The analysis is based on SIGE data covering the period from 2017Q3 to 2024Q4.

Figure A.5: The contribution of input prices to expected and realised price growth

A: Time-varying pass-through



B: Expected price growth



Notes: Panel A of the figure reports the coefficients and confidence bands from regressing expected own price growth on input price forecast errors using a two-year rolling window. That is, the first coefficient is estimated for the period 2017Q1–2019Q3, and the window is then shifted forward one quarter at a time. The horizontal red dashed line marks the coefficient estimated using the full sample, included for reference. Panel B shows the time series of expected input price growth (blue dashed line) alongside expected own-price growth (black line). The gray bars represent the portion of the increase in expected own-price growth that can be attributed to rising input prices, as implied by the time-varying coefficients. All data are sourced from SIGE.

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