The Speed of Firm Response to Inflation

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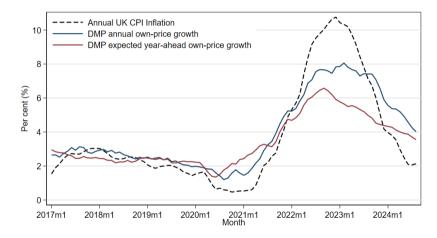
1-2 October 2024 BoC-ECB-NY Fed Conference

The views expressed here are those of the authors, and not necessarily those of the Bank of England or its committees.

Motivation

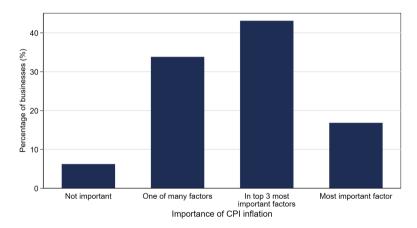
- Inflation rates in the UK and other advanced economies increased sharply in 2021/22 before falling over 2023/24.
- Alongside the sharp increase in inflation rates, short-term inflation expectations also increased.
 - * In August 2024, firms in the Decision Maker Panel (DMP) survey expected their own prices to increase by 3.4% over the next 12 months. Expectations for CPI inflation over the next year were 2.6%.
- This paper: How do monthly CPI inflation releases affect firms' inflation perceptions and expectations?
- A better understanding of expectation formation by businesses is important for monetary policymakers trying to bring inflation down, as well as for the large academic literature on expectation formation.

Annual CPI inflation increased sharply in 2021/22 before falling in 2023/24



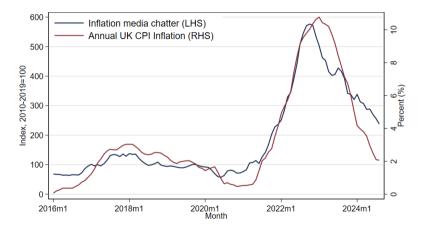
Notes: The series are three-month moving averages.

60% of firms consider CPI to be one of the top three most important factors for pricing decisions in 2023.



Notes: The figure is based on data collected between May and July 2023.

Media coverage of inflation has closely tracked aggregate inflation trends



Notes: The series are three-month moving averages. 'Inflation media chatter' is calculated as the ratio of articles mentioning the words 'inflation'/CPI'/consumer price index' in UK newspapers scaled by the total number of articles published. The index is normalised to have an average value of 100 between 2010-2019.

Three Main Findings

1. Firms are aware of aggregate inflation changes. A 1pp increase in CPI inflation \rightarrow 0.7pp increase in CPI inflation perceptions of firms in the days (even hours!) following the release.

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- 1. Firms are aware of aggregate inflation changes. A 1pp increase in CPI inflation \rightarrow 0.7pp increase in CPI inflation perceptions of firms in the days (even hours!) following the release.
- 2. There is a significant pass-through of CPI inflation changes to firms' *own*-price expectations over the next 12 months.
 - * This effect is significant over 2022-2024, but absent in the 2017-2021 period. The effects are stronger for increases in headline CPI inflation.

Three Main Findings

- 1. Firms are aware of aggregate inflation changes. A 1pp increase in CPI inflation \rightarrow 0.7pp increase in CPI inflation perceptions of firms in the days (even hours!) following the release.
- 2. There is a significant pass-through of CPI inflation changes to firms' *own*-price expectations over the next 12 months.
 - * This effect is significant over 2022-2024, but absent in the 2017-2021 period. The effects are stronger for increases in headline CPI inflation.

3. Mechanisms:

- * Positive CPI inflation changes \rightarrow higher near-term CPI inflation expectations, lower expected volume growth, higher expected cost growth.
- * Positive CPI inflation changes \rightarrow higher expected borrowing costs, consistent with an anticipated monetary policy response.
- * Firm own-price expectations are more responsive to CPI releases when inflation media coverage is elevated.

Related Literature

- High-frequency news: Gorodnichenko, Melnick, Kutai (2023); Binder (2021); Bottone and Rosalia (2019); Enders, Hunnekes, Muller (2019); Di Pace, Mangiante, Masolo (2023); Lamla and Vinogradov (2019); Rast (2021); Coibion, Gorodnichenko, Weber (2022); Lewis, Makridis, Mertens (2019)
 - * **Contribution:** Firms respond to monthly CPI releases by changing their current CPI perceptions and own-price expectations.
- (In)-attention: Savignac, Gautier, Gorodnichenko, Coibion (2021), Weber et al. (2023); Candia, Coibion, Gorodnichenko (2021); Bracha and Tang (2022); Pfauti (2023); Cavallo, Cruces, Perez-Truglia (2018); Korenok, Munro, Chen (2022)
 - * **Contribution:** The responsiveness to CPI outturns is stronger in a high-inflation environment and when inflation media coverage is higher.
- Subjective models: Macaulay (2022); McClure, Coibion, Gorodnichenko (2022); Candia, Coibion, Gorodnichenko (2021); Andre, Pizzinelli, Roth, Wohlfart (2022)
 - * **Contribution:** Firms' responsiveness to CPI is consistent with a supply-side view of inflation over 2022-2024.

Outline



2 Methodology

3 Results

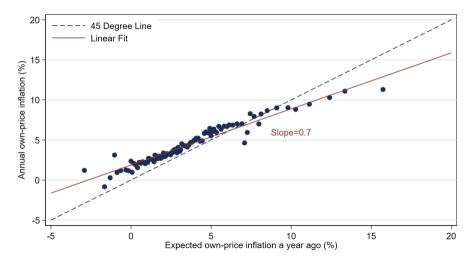
4 Conclusion

The Decision Maker Panel

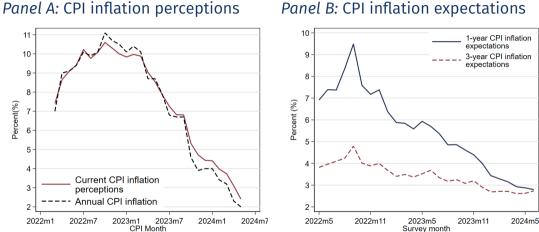
- Monthly online panel survey of UK businesses (5-10 minute survey).
- Mainly completed by CFOs/Finance Directors and CEOs of firms.
- Jointly organised by the Bank of England, University of Nottingham, and King's College London. Launched in late 2016.
- Surveys around 2,500 firms monthly, covering around 4% of UK employment.
 Figure
- We ask firms about recent developments and year-ahead expectations for sales, prices, employment, and investment.
- ► Firms are asked to provide a five-point distribution for year-ahead expectations → allows us to analyze the mean, standard deviation, and skewness of expectations at the *firm level*. • Screenshot
- The DMP has been used to study multiple policy issues, including Brexit, Covid-19, inflation, and the impact of higher interest rates.

Realised and expected firm own-price growth

Firms in the DMP have a good sense about their annual price growth.



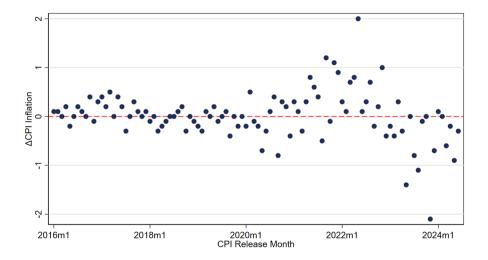
CPI inflation perceptions and expectations



Panel B: CPI inflation expectations

CPI Question

Changes in annual UK CPI inflation, 2016 - May 2024



Data

Outline

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Event study methodology

- To test the effects of a change in CPI inflation on firms' inflation perceptions and expectations, we focus on a balanced two-day window around each release date.
- For firm i in industry w, responding in month m on date j of the event window, we estimate the following specification:

$$Y_{i,w,m,j} = \alpha_w + \alpha_m + \sum_{j=-2}^{+2} \gamma_j + \sum_{k=-2}^{+2} \lambda_k \Delta CPI_m \times \mathbf{1}[Day = k] + \varepsilon_{i,m,j}$$

- * α_m : Month fixed effects; α_w : Industry fixed effects; γ_j : Response window fixed effects. Standard errors $\varepsilon_{i,m,j}$ clustered at the firm level.
- * λ_k : Effects of CPI inflation release ΔCPI_m on each date of the release window. k = -1 is the omitted category.
- This specification can be estimated at the daily or hourly frequency around CPI releases. • Alternative: DiD Specification • Example: May 2022

1/

Balance test across survey window

No significant differences in key firm characteristics in the days before vs. after a CPI release.

| | (1) | (2) | (3) | (4) | (5) |
|------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|
| Dependent variable: | log Latest | log Latest | log Latest | log Latest | Survey |
| | Productivity | Assets | Sales | Employment | Duration |
| Sample: | | | 2022-2024 | | |
| Event Window: | | | $\pm {f 2}$ Day | | |
| | | | | | |
| =1 Post-release | -0.019 | 0.010 | 0.013 | 0.061 | 0.444 |
| | (0.030) | (0.070) | (0.064) | (0.053) | (0.896) |
| Constant | 3.983 ^{***} (0.026) | 9.111 ^{***} (0.062) | 9.793 ^{***} (0.056) | 4.235 ^{***} (0.046) | 22.600 ^{***} (0.791) |
| Industry fixed effects | Yes | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes | Yes |
| R ² | 0.258 | 0.182 | 0.175 | 0.106 | 0.030 |
| Observations | 3,771 | 5,082 | 4,022 | 5,075 | 5,089 |
| | | | | | |

Notes: Robust standard errors are reported in parentheses, stars indicate *** p < 0.01, ** p < 0.05, *

p < 0.1.

Number of Responses

Employment Labour productivity

Methodology

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Outline

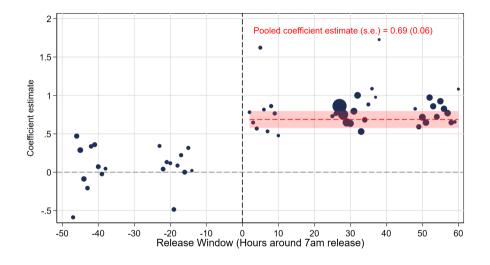
🕕 Data

2 Methodology



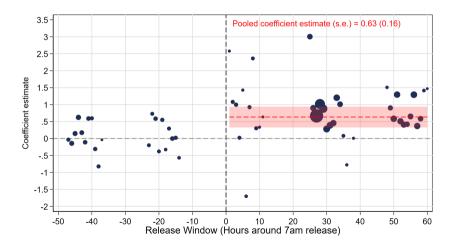
4 Conclusion

CPI releases and CPI inflation perceptions: Hourly event window



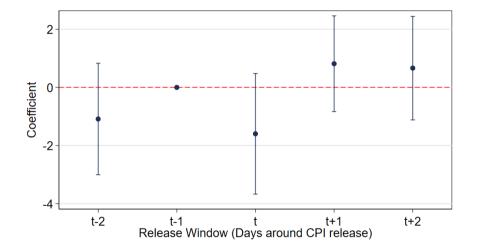
▶ Daily event window) ▶ Extended event window) ▶ Main DiD Results

CPI releases and <u>expected own-price growth</u>: Hourly event window (2022-2024)



ion

But, no effect of CPI inflation news on expected own-price growth





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CPI releases and expected own-price growth: Additional results

- 1. **Heterogeneity over time:** We find that the responsiveness of own-price expectations is only significant in the period 2022-2024, but not in the period 2017-2021. Table
- 2. **Nonlinearity of effects:** Firm own-price expectations are more responsive to positive CPI inflation changes compared with decreases in headline CPI inflation. Table

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CPI releases and expected own-price growth: Robustness

- Further test of identification assumption: Response patterns in months with/without CPI release Figure
- Extended event window Figure
- Responsiveness to PPI changes Table
- Additional heterogeneity results Table
- Robustness to additional controls Table
- Effect on inflation uncertainty and inflation skewness Table
- Daily dataset Table

Mechanisms

- Why might firms increase their own-price expectations in response to higher aggregate inflation?
- Several potential explanations:
 - * CPI inflation increases could signal more inflation persistence.
 - * Positive demand shock Prices and output move in same direction.
 - * Negative supply shock Prices and output move in opposite direction.
- We can test these alternative hypotheses using data on firm expectations in the DMP: (1) CPI inflation expectations; (2) unit cost growth; (3) real sales growth; (4) expected interest rate on borrowing.
- In addition, firms may be more responsive to CPI outturns when media coverage of inflation is elevated, consistent with an (in)attention mechanism.

Mechanism 1: Effect of CPI inflation changes on CPI expectations, cost growth, volume growth, and interest rate expectations

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|-------------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Dependent variable: | One-yea | ar ahead | Expect | ed cost | Expected | real sales | Expected interest |
| | expect | ted CPI | gro | wth | gro | owth | rate |
| Event Window: | \pm 2 Day | | \pm 2 Day | | \pm 2 Day | | \pm 2 Day |
| Sample: | 2022-2024 | | 2022-2024 | | 2022-2024 | | 2022-2024 |
| | | | | | | | |
| Δ CPI Inflation $	imes$ Post | 0.247 ^{**} (0.097) | 0.321 ^{***} (0.108) | 0.453 (0.312) | 0.669* (0.363) | -1.203 ^{**} (0.577) | -0.042 (0.735) | 0.305 [*] (0.179) |
| Constant | 5.766*** (0.039) | 5.730 ^{***} (0.012) | 7.583 ^{***} (0.109) | 7.228 ^{***} (0.015) | 3.238 ^{***} (0.223) | 3.021 ^{***} (0.033) | 6.130 ^{***} (0.077) |
| Firm fixed effects | No | Yes | No | Yes | No | Yes | No |
| Industry fixed effects | Yes | No | Yes | No | Yes | No | Yes |
| Release window fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| R ² Observations | 0.443 5,347 | 0.768 3,728 | 0.096 3,383 | 0.683 1,951 | 0.045 4,973 | 0.581 3,458 | 0.092 1,869 |

Notes: Standard errors are clustered at the firm level and reported in parentheses, stars indicate *** p < 0.01, ** p < 0.05, * p < 0.1

Wage expectations
 A second constructions

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Mechanism 2: Interaction of CPI inflation changes with inflation media coverage

| | (1) | (2) | (3) | (4) |
|--|---------------------------------|-------------------------------|--------------------------------|--------------------------------|
| Dependent variable: | Expected own-price growth | | | |
| Event Window: | ±2 Day | | | |
| Sample: | 2017-2024 | | | |
| Δ CPI Inflation $	imes$ Post | 0.445 ^{***} (0.122) | 0.239 [*] (0.144) | 0.233 (0.144) | 0.239 [*] (0.144) |
| Δ CPI Inflation \times Post \times Inflation Media Chatter_3 | | 0.296** (0.126) | | |
| Δ CPI Inflation \times Post \times Inflation Media $Chatter_{-5}$ | | | 0.302 ^{**} (0.127) | |
| Δ CPI Inflation \times Post \times Inflation Media $Chatter_{-7}$ | | | | 0.296 ^{**} (0.129) |
| Industry fixed effects | Yes | Yes | Yes | Yes |
| Release window fixed effects | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes |
| R ² Observations | 0.245 15,423 | 0.246 15,259 | 0.246 15,259 | 0.246 15,259 |
| 005017010115 | 15,423 | 15,259 | 15,259 | 15,259 |

Notes: Inflation media chatter is the share of articles in British newspapers which mention the terms 'inflation' or 'CPI' or 'Consumer Price Index'. The variable Inflation Media Chatter_3 is the average inflation media index in the three days prior to a CPI release, normalised to have o mean an unit standard deviation. Standard errors are clustered at the firm level and reported in parentheses, stars indicate *** p < 0.05, *p < 0.1, *p < 0.05, *p < 0.1

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Outline

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2 Methodology

3 Results



Conclusions

- This paper analyses how firms update their inflation perceptions and expectations in response to monthly CPI inflation releases.
- Firms pay attention to CPI inflation trends and update their current CPI perceptions within hours of the latest data release.
- Furthermore, firms update their own-price expectations in response to CPI releases. This effect is present in 2022-2024, but not in previous years. Firms also update short-term CPI expectations.
- Firms seem to interpret CPI changes over 2022-2024 as signals about the supply-side of the economy: Higher CPI leads to lower expected volume growth and higher expected cost growth.
- The response to CPI inflation changes is stronger in periods with more coverage of inflation in the media.

Thank you!

DMP survey example question: Expected own-price growth

Decision Maker Panel



Decision Maker Panel



Looking ahead, from now to 12 months from now, what approximate % change in your AVERAGE PRICE would you expect in each of the following scenarios?

Note:

Price growth scenarios should be ordered from the lowest to the highest.

The LOWEST % change in my prices would be about:

A LOW % change in my prices would be about:

A MIDDLE % change in my prices would be about:

A HIGH % change in my prices would be about:

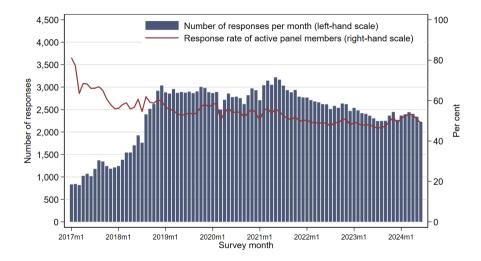
The HIGHEST % change in my prices would be about

| | 2 | 96 |
|--|---|----|
| | 3 | % |
| | 4 | % |
| | 5 | % |
| | 8 | 96 |

Please assign a percentage likelihood (probability) to the % changes in your AVERAGE PRICES you entered (values should sum to 100%).

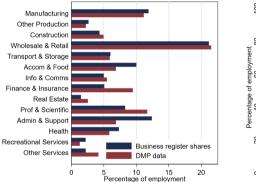
| LOWEST: The likelihood of realising about 2% would be: | 5 % |
|---|-------|
| LOW: The likelihood of realising about 3% would be: | 15 % |
| MIDDLE: The likelihood of realising about 4% would be: | 25 % |
| HIGH: The likelihood of realising about 5% would be: | 20 % |
| HIGHEST: The likelihood of realising about 8% would be: | 35 % |
| Total | 100 % |

DMP monthly response rate

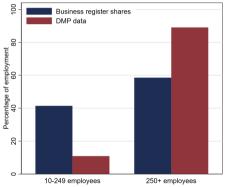


DMP matches UK industrial and regional spread

Panel A: By Industry



Panel B: By Region





Decision Maker Panel



BANK OF ENGLAND

We would now like to ask you about your expectations for annual consumer price inflation in the UK economy as a whole.

As a percentage, what do you think is the current annual CPI inflation rate in the UK? And, what do you think the annual CPI inflation rate will be in the UK, both one year from now and three years from now?

Note: Consumer price inflation is the rate at which the prices of goods and services bought by households rise or fail. It is measured by the Consumer Prices Index (CPI). The annual inflation rate compares prices for the latest month with the same month a year ago.

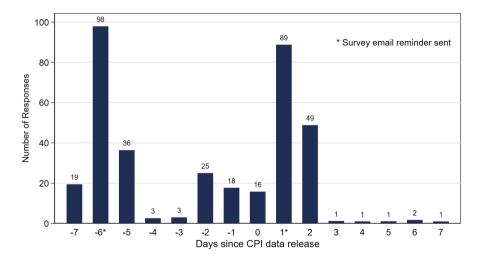
Current rate of inflation Inflation one year from now Inflation three years from now

| 9 |
|---|
| 9 |
| 9 |

Bank of England | Decision Maker Panel



Average number of responses in event window





Alternative: Difference-in-differences methodology

- To test the effects of a change in CPI inflation on firms' own expected price growth, we focus on a balanced two-day window around each release date.
- For firm i in industry w, responding in month m on date j of the event window, we estimate the following specification:

$$Y_{i,w,m,j} = \alpha_w + \alpha_m + \sum_{j=-2}^{+2} \gamma_j + \lambda \Delta CPI_m \times Post_j + \varepsilon_{i,m,j}$$

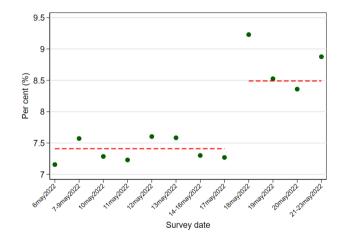
- * α_m : Month fixed effects: α_w : Industry fixed effects
- * γ_i : Response window fixed effects.
- * λ : Effects of CPI release ΔCPI_m on expected inflation in the days following the release vs. prior.
- * Standard errors $\varepsilon_{i,m,j}$ clustered at the firm level.
- Extended event windows across months Further Details

Alternative: Extended event windows

- One limitation of our methodology is that CPI releases usually occur on the second Wednesday of the (two-week) DMP survey window.
- As a result, there are only three days in the 'post' period in a given month (i.e. Wed, Thurs, Fri).
- One workaround for this is to build an extended event window around each CPI release which covers days across multiple waves.
- We operationalise this by building a panel of ±20 calendar days around each CPI release.
- Furthermore, we limit each window such that there is only 1 CPI release in it.
- This will allow us to analyse how firms update their expectations over a long horizon than two days.

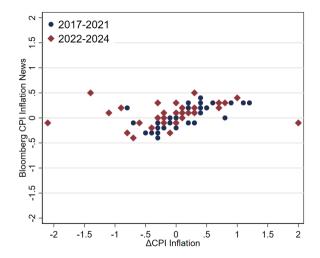


Example: Current CPI inflation perceptions in May 2022



Note: On 18 May 2022, annual CPI inflation increased from 7% to 9%.

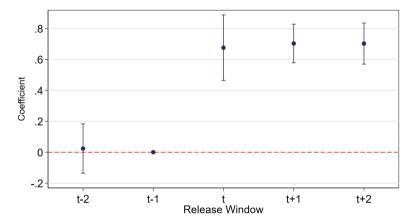
CPI releases vs. CPI news, 2018-2024



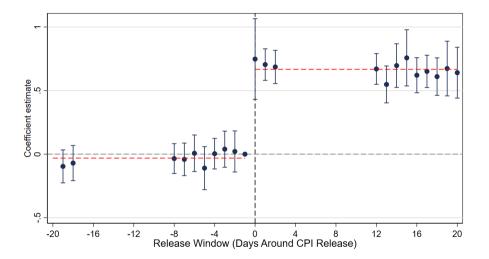


CPI releases and CPI inflation perceptions: Daily event window

Firms update their perceptions of current CPI inflation immediately following the release date.



CPI releases and CPI inflation perceptions: Extended event window



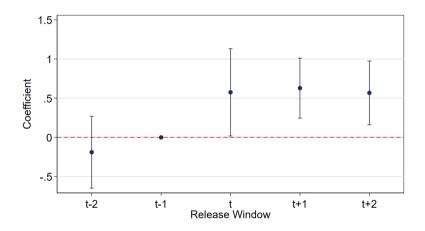


CPI releases and CPI inflation perceptions: Main DiD results

| | (1) | (2) | (3) | (4) | (5) |
|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Dependent variable: | (| Current CP | I inflation | perception | S |
| Sample: | | | 2022-2024 | • | |
| Event Window: | \pm 1 Day | $\pm {f 2}$ Day | \pm 5 Day | \pm 7 Day | \pm 7 Day |
| | | | | | |
| Δ CPI Inflation $	imes$ Post | 0.702 ^{***} (0.076) | 0.687 ^{***} (0.057) | 0.670 ^{***} (0.048) | 0.689 ^{***} (0.037) | 0.700*** (0.037) |
| Constant | 7.740 ^{***} (0.026) | 7.675 ^{***} (0.020) | 7.683 ^{***} (0.018) | 7.775 ^{***} (0.016) | 7.783 ^{***} (0.002) |
| Firm fixed effects | No | No | No | No | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes | No |
| Release window fixed effects | Yes | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes | Yes |
| Test coefficient = 1 (p-value) R ² Observations | 0.000 0.822 3,268 | 0.000 0.821 5,347 | 0.000 0.801 6,679 | 0.000 0.771 10,562 | 0.000 0.880 8,893 |



CPI releases and <u>expected own-price growth</u>: Daily event window (2022-2024)





CPI releases and expected own-price growth: Main DiD Results

| | (1) | (2) | (3) | (4) | (5) |
|--------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Dependent variable: | | Expecte | d own-prid | ce growth | |
| Event Window: | ±1 Day | ± 2 Day | ± 5 Day | \pm 7 Day | ±7 Day |
| | | | | | |
| Panel A: 2022-2024 | | | | | |
| Δ CPI Inflation $	imes$ Post | 0.523 ^{**} (0.223) | 0.634 ^{***} (0.157) | 0.382*** (0.125) | 0.285 ^{***} (0.099) | 0.306*** (0.100) |
| Constant | 5.411*** (0.078) | 5.347 ^{***} (0.067) | 5.342*** (0.062) | 5.376*** (0.052) | 5.312*** (0.002) |
| R ² Observations | 0.122 | 0.107 5.090 | 0.101 6,457 | 0.094 9,991 | 0.631 8,387 |
| | 3,.72 | 5,000 | 0,457 | ,,,,, | 0,507 |
| Panel B: 2017-2024 | | | | | |
| Δ CPI Inflation \times Post | 0.358 ^{**} (0.176) | 0.445 ^{***} (0.122) | 0.328 ^{***} (0.095) | 0.220 ^{***} (0.074) | 0.215 ^{***} (0.067) |
| Constant | 3.497 ^{***} (0.038) | 3.457 ^{***} (0.034) | 3.383 ^{***} (0.031) | 3.493 ^{***} (0.028) | 3.470 ^{***} (0.001) |
| R ² Observations | 0.261 9,484 | 0.245 15,423 | 0.241 21,065 | 0.241 30,036 | 0.624 27,136 |
| Firm fixed effects | No | No | No | No | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes | No |
| Release window fixed effects | Yes | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes | Yes |

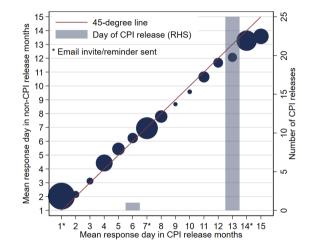


CPI releases and expected own-price growth: 2017-2021 vs. 2022-2024

| | (1) | (2) | (3) | |
|---|---------------------------------|---------------------------------|---------------------------------|--|
| Dependent variable: | Expected own-price growth | | | |
| Event Window: | ± 2 Day | \pm 5 Day | \pm 7 Day | |
| Sample: | | 2017-2024 | | |
| | | | | |
| Δ CPI Inflation $	imes$ Post $	imes$ 2017-2021 | 0.020 (0.191) | 0.190 (0.142) | 0.082 (0.112) | |
| Δ CPI Inflation \times Post \times 2022-2024 | 0.668 ^{***} (0.157) | 0.400 ^{***} (0.125) | 0.288 ^{***} (0.098) | |
| Constant | 3.436 ^{***} (0.079) | 3.372 ^{***} (0.055) | 3.472 ^{***} (0.040) | |
| Industry fixed effects | Yes | Yes | Yes | |
| Release window fixed effects | Yes | Yes | Yes | |
| Month fixed effects | Yes | Yes | Yes | |
| Test equality of coefficients (p-value) | 0.009 | 0.262 | 0.166 | |
| R Observations | 0.246 15,423 | 0.241 21,065 | 0.241 30,036 | |

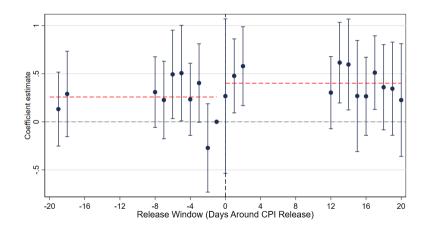


Response patterns in months with/without a CPI release (2022-2024)





CPI releases and expected own-price growth: Extended event window (2022-2024)





Impact of CPI inflation changes on own-price expectations: Test for non-linearities

| | (1) | (2) | (3) |
|--|-------------------------|-------------|-------------|
| | | | |
| Dependent variable: | Expected own-price grow | | |
| Event Window: | \pm 2 Day | \pm 5 Day | \pm 7 Day |
| Sample: | | 2022-2024 | |
| | | | |
| Δ CPI Inflation \times Post $\times \Delta$ CPI Inflation $<$ 0 | 0.590** | 0.250 | 0.154 |
| | (0.269) | (0.203) | (0.155) |
| Δ CPI Inflation \times Post $\times \Delta$ CPI Inflation \ge O | 1.148*** | 1.010*** | 0.671*** |
| | (0.341) | (0.287) | (0.226) |
| Constant | 4.986*** | 5,019*** | 5.256*** |
| | (0.207) | (0.140) | (0.082) |
| Industry fixed effects | Yes | Yes | Yes |
| Release window fixed effects | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes |
| R ² | 0.107 | 0.102 | 0.094 |
| Observations | 5,090 | 6,457 | 9,991 |
| Test coefficients equal (p-value) | 0.200 | 0.034 | 0.065 |

Notes: This table tests whether the responsiveness of own-price expectations to CPI inflation changes is different for positive vs. negative changes. The estimation period is 2022 to 2024. Standard errors are clustered at the firm level and reported in parentheses, stars indicate *** p < 0.01, ** p < 0.05, * p < 0.1.

Impact of Bloomberg CPI inflation news on own-price expectations

| | (1) | (2) | (3) | (4) | |
|---|---------------------------------|---------------------------------|---------------------|---------------------------------|--|
| Dependent variable: | Expected own-price growth | | | | |
| Event Window: | ± 2 Day | \pm 5 Day | \pm 7 Day | \pm 7 Day | |
| Sample: | | 2022 | -2024 | | |
| | | | | | |
| Bloomberg CPI Inflation News $	imes$ Post | 1.142 [*] (0.648) | 0.294 (0.512) | 0.165 (0.402) | 0.307 (0.375) | |
| Constant | 5.275 ^{***} (0.072) | 5.320 ^{***} (0.064) | 5.368*** (0.053) | 5.299 ^{***} (0.009) | |
| Firm fixed effects | No | No | No | Yes | |
| Industry fixed effects | Yes | Yes | Yes | No | |
| Release window fixed effects | Yes | Yes | Yes | Yes | |
| Month fixed effects | Yes | Yes | Yes | Yes | |
| R ² Observations | 0.104 5,090 | 0.100 6,457 | 0.093 9,991 | 0.630 8,387 | |

Notes: CPI inflation news is defined as the difference between the CPI inflation outturns and the Bloomberg survey median forecast for CPI inflation. Standard errors are clustered at the firm level and reported in parentheses, stars indicate *** p < 0.01, ** p < 0.05, * p < 0.1.

Impact of CPI inflation changes and PPI inflation changes on own-price expectations

| | (1) | (2) | (3) | (4) |
|---|---------------------------------|---------------------------------|---------------------------------|---------------------|
| Dependent variable: | Exp | ected owr | n-price gro | owth |
| Event Window: | | ±2 | Day | |
| Sample: | 2022-2024 | | | |
| Δ CPI Inflation \times Post | 0.634 ^{***} (0.157) | | | 0.650*** (0.183) |
| Δ PPI Input Inflation $	imes$ Post | | 0.027 (0.058) | | -0.002 (0.116) |
| Δ PPI Output Inflation \times Post | | | 0.121 (0.084) | -0.020 (0.182) |
| Constant | 5.347 ^{***} (0.067) | 5.331 ^{***} (0.070) | 5.333 ^{***} (0.067) | 5.346*** (0.073) |
| Industry fixed effects | Yes | Yes | Yes | Yes |
| Release window fixed effects | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes |
| R ² Observations | 0.107 5,090 | 0.104 5,090 | 0.104 5,090 | 0.107 5,090 |



Impact of CPI inflation changes on own-price expectations: Further heterogeneity results

| | (1) | (2) | (3) | (4) | (5) |
|--|---------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Dependent variable: | | Expecte | d own-pric | e growth | |
| Event Window: | | | ±2 Day | | |
| Sample: | | | 2022-2024 | , | |
| Δ CPI Inflation $	imes$ Post | 0.634 ^{***} (0.157) | | | | |
| Δ CPI Inflation \times Post \times Goods | | 0.637** (0.254) | | | |
| Δ CPI Inflation \times Post \times Services | | 0.583*** (0.200) | | | |
| Δ CPI Inflation $	imes$ Post $	imes$ Firm size $<$ 250 | | | 0.653*** (0.184) | | |
| Δ CPI Inflation $	imes$ Post $	imes$ Firm size \geq 250 | | | 0.637** (0.296) | | |
| Δ CPI Inflation \times Post \times CPI not most important | | | (| 0.631*** (0.198) | |
| Δ CPI Inflation \times Post \times CPI most important | | | | 0.683 | |
| Δ CPI Inflation \times Post \times Competitor prices not most important | | | | | 0.411 (0.277) |
| Δ CPI Inflation \times Post \times Competitor prices most important | | | | | 0.730 (0.191) |
| Industry fixed effects | Yes | Yes | Yes | Yes | Yes |
| Release window fixed effects | Yes | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes | Yes |
| R ² Observations Test coefficients equal (p-value) | 0.107 5,090 | 0.111 5,090 0.867 | 0.115 5,090 0.963 | 0.111 5,090 0.872 | 0.108 5,090 0.343 |

Impact of CPI inflation changes on own-price expectations: Additional controls

| | (1) | (2) | (3) | | |
|--|---------------------|----------------------------------|----------------------|--|--|
| Dependent variable: | | d own-pric | (0) | | |
| Event Window: | Expecte | ±2 Day | e growen | | |
| Sample: | 2022-2024 | | | | |
| | | | | | |
| Δ CPI Inflation \times Post | 0.634*** (0.157) | 0.443*** (0.139) | 0.651*** (0.168) | | |
| Annual own-price growth _{it} | | 0.213 ^{***} (0.014) | | | |
| Inflation uncertainty _{it} | | 0.633*** (0.052) | | | |
| Annual real sales growth _{it} | | 0.007 ^{***} (0.002) | | | |
| Expected real sales growth _{it} | | -0.035 ^{***} (0.006) | | | |
| Sales uncertainty _{it} | | -0.019 (0.015) | | | |
| $\Delta \ln \text{EPU}_t$ | | | -0.068 (0.077) | | |
| $\Delta \ln(FTSE)_{t-1}$ | | | 4.447 (11.162) | | |
| $\Delta \ln(USD/GBP \text{ Rate})_{t-1}$ | | | 28.953** (14.311) | | |
| $\Delta \ln(FTSE Volatility)_{t-1}$ | | | 1.402 (2.600) | | |
| Industry fixed effects | Yes | Yes | Yes | | |
| Release window fixed effects | Yes | Yes | Yes | | |
| Month fixed effects | Yes | Yes | Yes | | |
| R ² Observations | 0.107 5,090 | 0.327 4,724 | 0.112 4,861 | | |

Impact of CPI inflation changes on own-price expectations: Daily dataset

| | (1) | (2) | (3) | | |
|-------------------------------------|---------------------------------|---------------------------------|---------------------------------|--|--|
| Dependent variable: | Expected own-price grow | | | | |
| Event Window: | ± 2 Day | \pm 5 Day | \pm 7 Day | | |
| Sample: | 2022-2024 | | | | |
| | | | | | |
| Δ CPI Inflation $	imes$ Post | 0.722 ^{***} (0.179) | 0.453 ^{***} (0.167) | 0.344 ^{***} (0.121) | | |
| Constant | 5.344 ^{***} (0.060) | 5.333 ^{***} (0.055) | 5.359 ^{***} (0.045) | | |
| Release window fixed effects | Yes | Yes | Yes | | |
| Month fixed effects | Yes | Yes | Yes | | |
| R ² Observations | 0.687 129 | 0.670 155 | 0.661 217 | | |

Notes: Robust standard errors are reported in parentheses, stars indicate *** p < 0.01, ** p < 0.05, * p < 0.1.



Impact of CPI inflation changes on inflation uncertainty and skewness

| | (1) | (2) | (3) | (4) |
|---|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Dependent variable: | Inflation uncertainty | | | skewness |
| Event Window: | | Dav | | Day |
| Sample: | 2022 | 2-2024 | 2022 | -2024 |
| · · · | | - | | |
| Δ CPI Inflation \times Post | 0.102 (0.074) | | 0.871 (1.232) | |
| Δ CPI Inflation \times Post $\times \Delta$ CPI $<$ 0 | | 0.155 (0.125) | | 1.991 (2.237) |
| Δ CPI Inflation \times Post $\times \Delta$ CPI \ge 0 | | 0.132 (0.164) | | 1.190 (2.588) |
| Constant | 2.626 ^{***} (0.032) | 2.590 ^{***} (0.096) | 9.758 ^{***} (0.426) | 9.213 ^{***} (1.483) |
| Industry fixed effects | Yes | Yes | Yes | Yes |
| Release window fixed effects | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes |
| R ² Observations Test coefficients equal (p-value) | 0.107 5,090 | 0.107 5,090 0.909 | 0.038 5,090 | 0.038 5,090 0.815 |

Impact of CPI inflation changes on expected wage growth

| | (1) | (2) | (3) | (4) | |
|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--|
| Dependent variable: | Expected | l wage growth | Expected wage growth | | |
| Event Window: | ± | 2 Day | ±: | 2 Day | |
| Sample: | 20 | 22-2024 | 202 | 2-2024 | |
| | | | | | |
| Δ CPI Inflation \times Post | -0.070 (0.118) | -0.213 [*] (0.125) | | | |
| Δ CPI Inflation \times Post $\times\Delta$ CPI Inflation $<$ 0 | | | -0.099 (0.211) | -0.194 (0.182) | |
| Δ CPI Inflation \times Post $\times\Delta$ CPI Inflation \geq 0 | | | 0.167 (0.254) | 0.218 (0.273) | |
| Constant | 5.121 ^{***} (0.050) | 5.049 ^{***} (0.012) | 4.952 ^{***} (0.180) | 4.715 ^{***} (0.193) | |
| Firm fixed effects | No | Yes | No | Yes | |
| Industry fixed effects | Yes | No | Yes | No | |
| Release window fixed effects | Yes | Yes | Yes | Yes | |
| Month fixed effects | Yes | Yes | Yes | Yes | |
| R ² Observations Test coefficients equal (p-value) | 0.061 5,586 | 0.657 3,873 | 0.061 5,586 0.425 | 0.658 3,873 0.183 | |



Impact of CPI inflation changes on three-year ahead CPI inflation expectations

| | (1) | (2) | (3) | (4) |
|--|-------------------------|---------------------------------|-------------------------|-------------------------|
| Dependent variable: | 3-year CPI expectations | | 3-year CPI expectation: | |
| Event Window: | ± | 2 Day | ± | 2 Day |
| Sample: | 202 | 22-2024 | 202 | 2-2024 |
| Δ CPI Inflation \times Post | 0.038 (0.084) | 0.050 (0.086) | | |
| Δ CPI Inflation \times Post $\times\Delta$ CPI Inflation $<$ 0 | | | 0.238* (0.128) | 0.123 (0.114) |
| Δ CPI Inflation \times Post $\times\Delta$ CPI Inflation \geq 0 | | | -0.073 (0.213) | -0.196 (0.235) |
| Constant | 3.670*** (0.037) | 3.594 ^{***} (0.010) | 3.683*** (0.146) | 3.760*** (0.151) |
| Firm fixed effects | No | Yes | No | Yes |
| Industry fixed effects | Yes | No | Yes | No |
| Release window fixed effects | Yes | Yes | Yes | Yes |
| Month fixed effects | Yes | Yes | Yes | Yes |
| R ² Observations Test coefficients equal (p-value) | 0.115 5,347 | 0.669 3,728 | 0.116 5,347 0.221 | 0.669 3,728 0.228 |



