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IZA DP No. 17935

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ABSTRACT

Which Macroeconomic News Matters for Price-Setting?*

We examine how macroeconomic news affects firms' extensive-margin price-setting plans in a survey that we rolled out with randomized daily invitations. These plans predict future realized inflation. Using a high-frequency event study framework, we find that inflation and employment surprises imply significant and sizable revisions in firms' pricing plans. There is a limited role for news about the trade balance, but no significant role for other commonly studied data releases, e.g., industrial production. We also study news coverage and agents' news search behavior, finding that the intensive-margin response of media coverage and news search may partly drive our main results.

JEL Classification: E30, E31, E32, C83

Keywords: daily data, firms, price-setting, macroeconomic data releases

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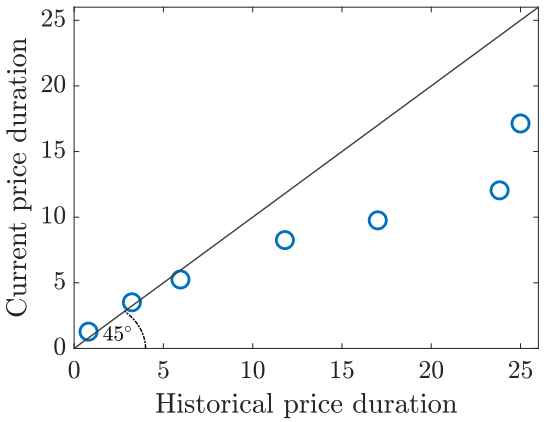
1 Introduction

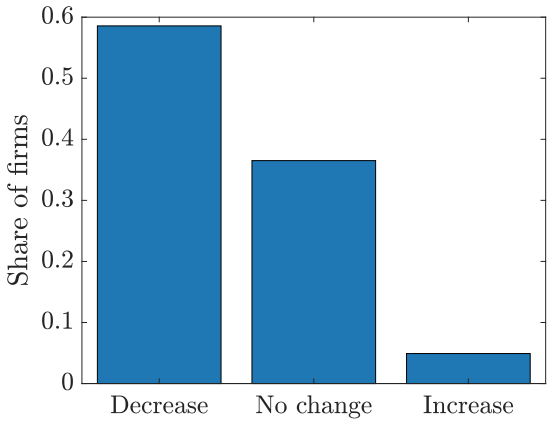
Firms tend to change their prices infrequently. In practice, this may be due to informational frictions, limited planning capacities, or simply because consumers might dislike frequent price changes. In theory, this can be modeled through the presence of menu costs. Such models predict that price-adjustment frequencies respond endogenously to macroeconomic developments. Consistent with this prediction, price-adjustment frequencies increased sharply during the recent inflation surge (e.g., Cavallo, Lippi, and Miyahara, 2024). Likewise, firms report that the duration for which they maintain constant sales prices decreased considerably, as can be seen from Figure 1 based on our survey among German firms.

Figure 1: Reported sales price duration from our survey in 2022 and 2023

(a) Historical vs. contemporaneous duration



(b) Changes in duration



Notes: The figure shows survey evidence from the *German Business Panel*. The underlying questions ask firms about the historical (horizontal axis in Panel (a)) and contemporaneous (vertical axis in Panel (a)) price durations of their main product. Panel (a) provides a binscatter plot, and Panel (b) is the histogram of reported changes in durations, computed as contemporaneous minus historical price duration at the firm level. These questions were asked from July 2022 to September 2023. More details on the survey are provided in Section 3. The exact formulation of the underlying question is in Appendix B.

In this paper, we aim to understand the drivers of these developments and ask which type of news from macroeconomic data releases matters for the extensive margin price-setting plans of firms during the post-Covid inflation surge. To this end, we run a daily survey among German firms with randomized daily invitations. The randomization ensures that the daily cross-sectional composition of firms is stable, permitting us to compare survey responses around various macroeconomic news events at a daily frequency. We consider six

distinct types of macroeconomic data releases, finding that firms' extensive margin pricing plans respond significantly to news about inflation, employment, and the trade balance. Conversely, firms' plans do not respond significantly to news about industrial production, manufacturing orders, and the ifo index. The latter index captures the general economic sentiment and outlook among firms in Germany.[1] We also investigate the role of media news coverage and agents' search for news. Along the extensive margin of news coverage and searches, we find significant increases for almost all estimates. This suggests that the media do report on all macroeconomic data releases, and agents pay attention as searches increase. However, along the intensive margin of news coverage and searches, we find that both measures increase substantially stronger for inflation, employment, and ifo index releases.[2] Finally, we discuss how these estimates can be reconciled and argue which theoretical framework may be consistent with our results. Such a framework encompasses menu costs and rational inattention (e.g., Yang, 2022), complemented by heterogeneous news coverage from a media sector (e.g., Chahrour, Nimark, and Pitschner, 2021).

To motivate our focus on macroeconomic data releases, we present a stylized menu cost framework. The model clarifies why information about macroeconomic data is useful from the perspective of a firm that needs to set its sales price but is subject to a fixed price adjustment cost. We show that firms need to forecast aggregate prices and wages to form their optimal extensive margin sales price plans. Extensions beyond the simple model require firms to forecast additional macroeconomic variables, providing an incentive to firms to monitor various data releases. On the contrary, firms may find it costly to monitor all data releases, a behavior modeled in theories of rational inattention (e.g., Maćkowiak and Wiederholt, 2009, 2015). Which force dominates and which data releases matter is an empirical question to which we contribute causal evidence based on novel daily survey data.

[1]The ifo index, formally, "ifo Business Climate Index", is a monthly aggregate indicator that is based on the "ifo Business Climate Survey", a well-established monthly firm panel. For more details, see https://www.ifo.de/en/survey/ifo-business-climate-index-germany.

[2]To be precise, we interpret estimates that are statistically different from zero as evidence in favor of an extensive-margin response. In turn, we interpret meaningful differences in estimated magnitudes across different types of data releases as evidence in favor of differential responses at the intensive margin.

The main data is based on the *German Business Panel*, an online survey of German firms that elicits plans, expectations, and opinions of executives and decision-makers (Bischof, Doerrenberg, Rostam-Afschar, Simons, and Voget, 2024). We designed a sampling scheme for this survey to allow the construction of daily time series from July 2021 to June 2024, covering the post-Covid inflation surge period (see also Hack and Rostam-Afschar, 2024): On each working day, we invite a random subset of firms to participate in the survey. This ensures that response numbers and the composition of firms is stable around macroeconomic data releases.[3] The key outcome is the extensive margin price-setting plan over the next 12 months. While these are self-reported plans, we show that they predict future realized CPI, suggesting that plans also translate into actions. We construct additional daily time series that measure the number of newspaper articles reporting on each news event (news coverage) to investigate the role of media reporting in our results. Similarly, we also construct daily time series that measure the Google search intensity for each event from Google Trends (news searches). Finally, our regressors of interest are forecast errors from macroeconomic data releases (macro news), computed as the realized value minus a corresponding professional forecast from before the data release from Bloomberg.

We provide causal evidence by regressing the change in the outcome of interest on the forecast error for a given type of data release, e.g., CPI releases. The change is given by the reported average sales price plan from the first day up until h days after a data release, minus the average plans within h days before the release. We refer to h as the window length, which ranges from two to ten days. A short window length has the advantage that other types of events are less likely to confound our results, whereas a larger window length captures effects that take more time to materialize, e.g., due to planning frictions.

We find that news about CPI inflation and employment leads to statistically significant and economically meaningful changes in extensive margin sales price plans. Quantitatively, a

[3] In Hack and Rostam-Afschar (2024), we (i) show that response numbers and the composition are also stable across workdays and the days of the month, and (ii) use the daily data to study how firms respond to oil supply, (conventional) monetary policy, and forward guidance shocks.

standard deviation surprise increase in inflation yields an increase in pricing plans between 0.23 and 0.55 standard deviations. A standard deviation surprise increase in employment yields upward revisions in pricing plans up to 0.62 standard deviations. For news about the trade balance, we find a statistically significant effect on sales price plans, albeit moderate in magnitude. In contrast, surprises about industrial production, manufacturing orders, and the ifo index do not significantly move pricing plans, regardless of the window length. This suggests that only a subset of macroeconomic news matters for price-setting of firms, with news about inflation and employment being particularly important. This result is in line with our motivational model, in which firms are interested in inflation and labor market developments because they need to forecast wages and prices to form their optimal extensive margin price plans.[4]

We investigate whether selective media coverage or news search behavior can explain the result that only a subset of the macro news matters. If the media do not report on some news event, it may be that firms are not aware of it and, thus, do not respond. We reject this hypothesis. Media reporting about a given type of macro data increases significantly around the corresponding data release, irrespective of the type of data being released. We view this as evidence in favor of news coverage of all events along the extensive news coverage margin. Quantitatively, however, we uncover meaningful differences in magnitudes across news events, suggesting a differential response along the intensive margin of news reporting. News coverage about inflation, employment, and the ifo index is sizable, whereas the estimated effects are small for the remaining data releases. This suggests that the strong effects of inflation and employment news on price plans may be partly driven by more media coverage. The statistically insignificant effect of ifo index surprises on sales price plans may be due to demand and supply shocks having opposite implications for price-setting, but may move the ifo index in the same direction.[5]

[4]Empirically, we focus on employment releases since there is no corresponding "wage inflation release". The employment release is also advantageous because it is typically covered in the media. Moreover, all else equal, higher employment implies higher labor market tightness, which points towards higher wages.

[5]This is because the ifo index captures the general sentiment of firms in Germany. Sentiment may decline

We also investigate whether agents search more for a given type of macro data after its data release. For example, do Google searches for inflation increase after CPI announcements? We confirm this for all types of macro data under consideration, except for manufacturing orders. This confirms a response along the extensive margin of news searches. Thus, we can plausibly rule out that agents, albeit not necessarily firms, are fully unaware of these data releases. However, we find meaningful differences in news searches along the intensive margin. We find that the effects are substantially stronger in magnitude for inflation, employment, and ifo surprises. In contrast, the magnitudes are small for all remaining data releases. Thus, we find the same pattern across macroeconomic data releases as for news coverage. This correlation across estimates may suggest that news searches could capture the endogenous response to (selective) news coverage of data releases. Taken together, we conclude that media reporting and news searches may explain why inflation and employment surprises yield strong and significant price plan revisions.

Lastly, we estimate cumulative impulse responses to macroeconomic news, showing that news about CPI inflation, employment, and the trade deficit have persistent effects on firms' pricing plans. Furthermore, we provide additional evidence regarding CPI releases and discuss how our results relate to the contemporaneous work from Yotzov, Bloom, Bunn, Mizen, and Thwaites (2024). Finally, we establish the robustness of these results with respect to the inclusion of important control variables and fixed effects, the sample period, and the composition of response timing in the underlying survey.

Related literature. We relate to multiple strands of literature. The first literature focuses on macroeconomic news from data releases. Kroner (2023) studies financial market responses to different types of data releases to elicit changes in investor attention before and after the post-Covid inflation surge. York (2023) studies which macroeconomic data releases drive U.S. households' inflation expectations, finding that news about unemployment and CPI are

after a contractionary demand shock, but also after a contractionary supply shock. However, the supply shocks induce firms to increase prices, whereas the demand shocks may imply price decreases. For more details on the ifo index, see https://www.ifo.de/en/survey/ifo-business-climate-index-germany.

key.[6] Relative to these papers, we focus on extensive margin price-setting plans of firms, which are particularly important in menu cost models with lumpy price adjustments. To the best of our knowledge, we are the first to study how different data releases drive these pricing plans. Interestingly, however, one commonality with the above papers is that news about inflation and employment is particularly important. Further research constructs and studies a composite news index that explains stock returns (Modugno and Palazzo, 2025), and studies how various data releases drive exchange rates (Anderson, Bollerslev, Diebold, and Vega, 2003; Evans and Lyons, 2008) and financial markets (Born, Dovern, and Enders, 2023b; Bianchi, Ludvigson, and Ma, 2024; Kerssenfischer and Schmeling, 2024), whereas Gürkaynak, Kısacıkoğlu, and Wright (2020) focus on the multi-dimensionality of data releases beyond headline numbers.[7] These studies are closely related, but none of them estimates which types of macroeconomic news matter for firms' pricing plans. There are two additional papers focusing exclusively on inflation releases, studying how stock markets (Gil de Rubio Cruz, Osambela, Palazzo, Palomino, and Suarez, 2023) and firms (Yotzov et al., 2024) respond to inflation data releases.[8] The latter paper finds that changes in monthly CPI inflation (not inflation surprises) drive firms' intensive margin own-price growth expectations. While changes in inflation are partly predictable, they argue that these changes are more salient to firms because they are frequently discussed in the media. We reconcile their arguments on media coverage with our findings by showing that media coverage of inflation is more pronounced when the inflation surprises are large. Overall, we view our results on inflation releases as complementary and believe that both inflation changes and surprises may matter for firms' pricing plans.[9] Further, we offer additional insights by comparing different types

[6] Singh and Mitra (2022) follows a similar approach, focusing on U.S. household expectations regarding economic conditions, whereas Bui (2025) analyses the response of South African firms to various news events and related news coverage.

[7] Further related are Angeletos, Iovino, and La'O (2016) who study the welfare effects of the information that firms use for their pricing decisions.

[8] Relatedly, Binder (2021) studies household inflation expectations around the June 2021 U.S. CPI release.

[9] In addition, the advantages of our data are that we have (i) stable survey response numbers around inflation releases, (ii) pass balance tests even without controlling for fixed effects, and (iii) can study persistence via impulse responses. In turn, the advantages of Yotzov et al. (2024) are that they can control for individual fixed effects due to the monthly panel structure, cleanly measuring how inflation releases drive

of macroeconomic data releases beyond inflation announcements. Finally, in complementary work, Gautier, Savignac, and Coibion (2025) study inflation expectations and the pass-through to price plans between 2020 and 2024, but they do not explicitly link their results to macroeconomic data releases.

The second strand of literature focuses on daily variation, notably on how household inflation expectations adjust around (monetary) policy announcement days (e.g., Binder, Campbell, and Ryngaert, 2024; De Fiore, Maurin, Mijakovic, and Sandri, 2024b; De Fiore, Lombardi, and Pierres-Tejada, 2024a; Rast, 2022). Further papers provide a daily analysis of monetary policy surprises on firm expectations (Bottone and Rosolia, 2019; Enders, Hünnekes, and Müller, 2019; Di Pace, Mangiante, and Masolo, 2025), social media-based inflation expectations (Born, Dalal, Lamersdorf, and Steffen, 2023a), commodity prices (Miranda-Pinto, Pescatori, Prifti, and Verduzco-Bustos, 2023), house prices (Gorea, Kryvtsov, and Kudlyak, 2022), economic sentiment (Lewis, Makridis, and Mertens, 2019), inflation (Jacobson, Matthes, and Walker, 2023), and consumption and employment (Buda, Carvalho, Corsetti, Duarte, Hansen, Ortiz, Rodrigo, and Rodríguez Mora, 2023). In our own previous work, we also study how firms' plans and expectations respond to monetary policy and oil supply shocks, using the same daily data (Hack and Rostam-Afschar, 2024).

Third, we also relate to research on firms' expectation formation and on extensive margin price-adjustment frequencies. Papers on expectation formation argue that firms respond strongly to idiosyncratic news (e.g., Born, Enders, Menkhoff, Müller, and Niemann, 2023c; Lein, 2010), extrapolate from firm-level and industry-level information to the macroeconomy (e.g., Andrade, Coibion, Gautier, and Gorodnichenko, 2022; Dovern, Müller, and Wohlrabe, 2023), while Hirshleifer and Sheng (2022) argue that micro and macro news may be complementary. Empirical work on extensive margin price-setting of firms typically focuses on firm-level variation (e.g., Gagliardone, Gertler, Lenzu, and Tielens, 2025), on specific industries such as retail (e.g., Karadi, Amann, Bachiller, Seiler, and Wursten, 2023), or on industry

inflation expectations, and, ultimately, the pricing plans of firms.

heterogeneity (e.g., Gautier, Karadi, Amann, Conflitti, Faber, Fabo, Fadejeva, Fuss, Kosma, Jouvanceau et al., 2023), whereas macro-level evidence on price-adjustment frequencies remains at the descriptive level (e.g., Cavallo et al., 2024). Theoretical papers on extensive margin price-setting of firms typically employ a menu cost framework (e.g., Golosov and Lucas, 2007; Alvarez, Lippi, and Oskolkov, 2022), with recent extensions suggested to match the relation between price-adjustment frequencies and inflation (Blanco, Boar, Jones, and Midrigan, 2024b,a). Our study complements these works by delivering new empirical evidence on how different types of macroeconomic news influence price-setting and on news coverage and searches as one potential mechanism.[10]

Finally, we also relate to the extensive survey literature on expectation formation among firms from Germany (e.g., Enders, Hünnekes, and Müller, 2022; Link, Peichl, Roth, and Wohlfart, 2023; Link, Peichl, Pfäuti, Roth, and Wohlfart, 2025) and beyond (e.g., Coibion, Gorodnichenko, and Kumar, 2018; Coibion, Gorodnichenko, and Ropele, 2020; Andrade et al., 2022; Savignac, Gautier, Gorodnichenko, and Coibion, 2024; Mikosch, Roth, Sarferaz, and Wohlfart, 2024). Finally, Candia, Coibion, and Gorodnichenko (2023) provides a recent overview of this large literature.

2 A motivational model

We present a motivational model to expound on firms' information requirements for making extensive margin sales price plans and decisions. The model is deliberately kept stylized. It is a simple firm pricing decision problem where price adjustment is subject to a fixed cost, in the spirit of conventional menu cost models (e.g., Golosov and Lucas, 2007).

[10] Related theoretical work examines how media reporting may influence inflation expectations (Chahrour, Shapiro, and Wilson, 2025) and business cycle fluctuations (Chahrour et al., 2021).

The model. We consider firm i that decides on its nominal sales price P_{it} by maximizing

$$\max_{\{P_{it+s}\}} \mathbb{E}\left[\sum_{s=0}^{\infty} \frac{\Lambda_{t+s}}{P_{t+s}}\Big(P_{it+s}\ y_{it+s} - W_{t+s}\ n_{it+s} - \kappa_{t+s}\ P_{t+s}\ y_{t+s}\ \mathbb{1}\{P_{it+s} \neq P_{it+s-1}\}\Big) \mid \mathcal{I}_{it}\right] \quad (1)$$

subject to its constant returns to scale production function $y_{it} = n_{it}$ with labor being the only production factor, and a demand schedule $y_{it} = (P_{it}/P_t)^{-\epsilon}\ y_t$, with constant elasticity of substitution $\epsilon > 1$. The term in parentheses in (1) is the nominal flow profit given by nominal revenue minus the nominal wage bill minus the menu cost. Nominal profits are converted to real profits and discounted via the price index P_t and the stochastic discount factor Λ_t. The variables W_t, P_t, and y_t denote the aggregate nominal wages, the aggregate nominal price index, and real aggregate output, respectively. The firm takes these variables as given but may be imperfectly informed about them, depending on the firm's information set $\mathcal{I}_{it}$. Further, the firm pays a nominal fixed cost $\kappa_t\ P_t\ y_t$ when it decides to change its price $P_{it+s} \neq P_{it+s-1}$ for $s \geq 0$ as captured by the indicator function, taking the previous price P_{it-1} as given.

Extensive margin choices. We assume that prices in future periods are flexible, i.e., $\kappa_t = \kappa > 0$ but $\kappa_{t+s} = 0\ \ \forall s > 0$, which renders the decision problem static. This assumption allows us to easily characterize the firm's pricing decision and the information that is valuable from a firm perspective. We do this to obtain the simplest possible framework that still allows us to highlight which information is useful for firms to make their pricing decisions.[11] In addition, we assume that all random variables that the firm needs to forecast are uncorrelated from the perspective of the firm, i.e., the joint density factorizes into marginal densities. While this allows for the convenient separation of expectations over aggregate prices, wages, and output, it is not crucial for our main argument that the firm needs to forecast various

[11] For more involved menu cost setups that are used to derive the implications for macroeconomic aggregates, we refer the reader to the literature (e.g., Alvarez et al., 2022; Gagliardone et al., 2025).

macroeconomic variables for its pricing choice.[12]

To solve for the optimal pricing decision of the firm, note that the optimal price choice conditional on price adjustment is a constant markup over nominal marginal cost, i.e., $P_{it} = \mu\, W_{it}$, with markup $\mu = -\epsilon/(1-\epsilon) > 1$. In a second step, one must check whether the value of adjusting exceeds the value of not adjusting to characterize the extensive margin choice.

Proposition 1. *Suppose $P_{it-1} = \mu W_{t-1}$ and $\mathbb{E}\left[W_t|\mathcal{I}_{it}\right] > W_{t-1}$, then the firm changes its price on the extensive margin if and only if*

$$f\left(\mathbb{E}\left[g_p(P_t)|\mathcal{I}_{it}\right],\ \mathbb{E}\left[g_w(W_t)|\mathcal{I}_{it}\right]\right) > \kappa\mu^{\epsilon}, \qquad \textit{with}$$

$$f\left(\mathbb{E}\left[g_p(P_t)|\mathcal{I}_{it}\right],\ \mathbb{E}\left[g_w(W_t)|\mathcal{I}_{it}\right]\right) = \left(\frac{W_{t-1}^{1-\epsilon}}{\mathbb{E}\left[P_t^{1-\epsilon}|\mathcal{I}_{it}\right]}\right)\left(\mathbb{E}\left[\left(\frac{W_t}{W_{t-1}}\right)^{1-\epsilon}|\mathcal{I}_{it}\right](\mu-1) - \mu + \mathbb{E}\left[\frac{W_t}{W_{t-1}}|\mathcal{I}_{it}\right]\right).$$

The proof and all other derivations are in Appendix A. The assumption that the price was optimal in period $t-1$, together with expected positive wage inflation, implies that the optimal reset price in t is higher than the previous period's price.[13] Intuitively, the firm decides to pay the menu cost when the benefit of adjusting exceeds the fixed cost (as a constant fraction of nominal output), scaled by μ^{ϵ}.

Discussion. The important insight from the proposition is that the firm's beliefs about aggregate prices and wages matter for the extensive margin sales price decision. This gives the firm an incentive to monitor macroeconomic data releases that are informative about aggregate prices and wages.[14] The former is informative about the firm's relative price and, hence, for the demand the firm faces, conditional on its price choice. The latter is informative about (nominal) marginal costs. Naturally, this points towards CPI inflation

[12] As becomes clear from the proof of Proposition 1 in Appendix A, relaxing this assumption makes the information requirement for the firm's extensive margin pricing decisions larger because the firm additionally needs to forecast output and account for the correlation between output, prices, and wages. Accounting for these effects plausibly strengthens the incentives of firms to monitor macroeconomic data releases.

[13] The assumptions are not crucial but ease our subsequent discussion on the signs of the derivatives of f.

[14] Allowing future menu costs, i.e., $\kappa_{t+s} > 0$ for some $s > 0$, the firm would need to form expectations about future prices beyond period t, possibly increasing incentives for firms to monitor aggregate data.

and employment data releases possibly being closely monitored.[15]

The proposition further suggests that the firm may update the extensive margin sales price plans as new information, possibly from macroeconomic data releases, about aggregate prices and wages comes in. To see this, consider, e.g., that the firm possesses an initial information set so that $f < \kappa\mu^{\epsilon}$. That is, the firm plans not to adjust the price in period t. As new (inflation) data becomes available, the firm might update its belief about P_t upward, e.g., because a subset of the support of P_t is shifted upwards or a higher probability is assigned to larger P_t realizations. If this updating is sufficiently strong, the above inequality may flip so that the firm actually plans to adjust its price in period t given the new information set. Likewise, when wage expectations increase, the constant markup implies a higher optimal reset price, possibly changing the firm's extensive margin price plan.

Finally, we note that the presented model is deliberately kept stylized. Labor is the only production input, which implies that firms only need to form expectations about the price of labor. However, with more realistic technology that features further inputs, the firm would need to form expectations about all corresponding input prices. Such inputs may be capital, intermediate inputs, possibly imported, and so on. Thus, while inflation and employment releases are a natural starting point, we believe that the set of news that firms consider may be considerably broader. On the one hand, this motivates us to consider various data releases because all of them could be informative for pricing decisions. On the other hand, it is likely that firms find it costly to monitor all data releases and may focus on those that are the most informative, as posited by theories of rational inattention (Maćkowiak and Wiederholt, 2009, 2015). After all, which releases are informative for extensive margin pricing decisions is an empirical question to which our estimates in Section 5 can speak. To be able to deliver these results, we require novel daily data, which we introduce next.

[15]Employment data releases may be informative about whether or not the labor market is hot, which is a useful input to forecast aggregate wages.

3 Data

We combine three sources of information to examine which macroeconomic news matters for firms' price-setting behavior. The primary data source is our own daily firm survey, the *German Business Panel* (GBP). Second, we collect additional daily measures of news supply based on newspaper articles and corresponding measures of news demand based on Google Trends. Finally, we combine these daily outcomes with forecast errors around macroeconomic data releases using forecasts from Bloomberg. The data releases under consideration pertain to the CPI inflation, employment, industrial production, trade deficits, manufacturing orders, and the ifo index.

3.1 Price-setting plans

German Business Panel. The GBP is an online survey that was introduced in 2020 and regularly interviews decision-makers of firms operating in Germany. Around 90 percent of the survey respondents are the owner or the CEO, and the sample is relatively representative of the target population of German firms along many important characteristics (Bischof et al., 2024). Since mid-2021, the survey explicitly asks for the extensive margin price-setting plans of firms based on the following question.

> *What decisions are you planning to make in the next 12 months?*
>
> (a) *Increase sales prices*
>
> (b) *Decrease sales prices*
>
> (c) *No change in sales prices*

We use this question to construct a daily time series of firms' extensive margin sales price plans. Before this, we discuss why the GBP is suited for a daily time series approach.

Sampling scheme. The GBP is particularly suited for a daily analysis due to our survey design. It is a semi-annual panel with rolling invitations. On each working day, we invite a

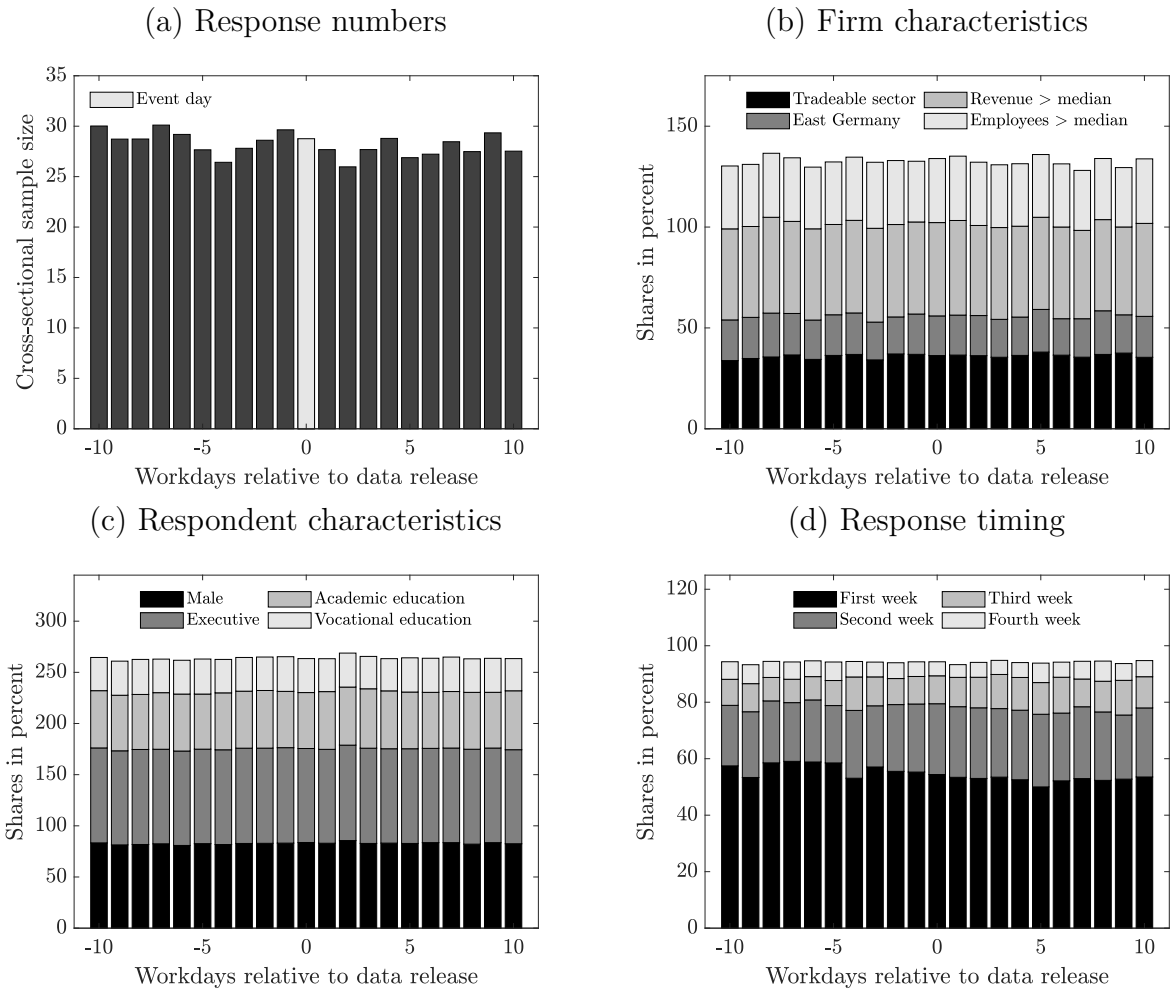
random subset of firms to participate in the survey. The timing of the responses is such that around 30 percent of the survey responses arrive only one day after the survey invitation was sent. Furthermore, more than 90 percent of the responses are received within one day of the invitation link being opened for the first time. Overall, on average, around 45 survey responses arrive each day, and 60 responses on workdays. The overall response numbers are stable across different workdays and days of the month. In Hack and Rostam-Afschar (2024), we provide more details about the survey design, response numbers, and survey reminders. The response numbers for those firms that answer the sales price plan question are lower, amounting to 31 per workday. Importantly, however, the response numbers are stable around the data releases that we consider. We show this in Panel (a) of Figure 2 for all data releases jointly and for each type of data release separately in Figure C.1 in Appendix C.

Firm composition. We demonstrate in Hack and Rostam-Afschar (2024) that the randomization part of the sampling scheme successfully induces a stable composition of firms among many observable characteristics. Anticipating our application to macroeconomic data releases, we further check whether the composition of firms is stable around the data releases under consideration. The results are displayed for firm characteristics, respondent characteristics, and response timing in Panels (b), (c), and (d) of Figure 2, respectively.[16] For firm characteristics, we measure the share of firms operating in East Germany and the share of firms with above-median export shares (tradeable sector), above-median revenue, and above-median number of employees. The considered respondent characteristics include the share of respondents who are male, work in the executive body of the firm, and have either an academic or vocational education.[17] Finally, we measure response timing by the share of firms that respond within the first 7, 14, 21, and 28 days after the invitation date. Overall,

[16] All shares are computed by dividing by all firms that answer a respective survey question. The displayed shares add up to more than 100 percent since the displayed groups are not mutually exclusive. The details on the computation of these shares and the underlying survey questions are provided in Appendix B of Hack and Rostam-Afschar (2024).

[17] We investigate respondent characteristics as Savignac et al. (2024) show that the respondent may matter for inflation expectations of French firms.

Figure 2: Survey response numbers and composition around data releases



Notes: The figure shows the average cross-sectional response numbers surrounding all macroeconomic data releases in Panel (a), as well as the composition of survey responses surrounding all data releases by firm characteristics, respondent characteristics, and response timing in Panels (b) to (d), respectively. The composition bars may exceed 100 percent since the categories are not mutually exclusive. The data releases under consideration are CPI inflation, employment, industrial production, trade deficits, manufacturing orders, and the ifo index. We provide the same statistics for each type of data release separately in Figures C.1 to C.4 in Appendix C.

we find no evidence for changes in the composition of responding firms around the data releases under consideration. We obtain the same conclusion when repeating these balance tests for each type of macro data release separately and provide the corresponding results in Figures C.2-C.4 in Appendix C. Thus, we can use the data as a repeated cross-section around data releases that is unlikely to be confounded by compositional changes.[18]

[18]The panel dimension of the GBP is biannual and, hence, not suited for a panel analysis of daily shocks. However, the low-frequency panel dimension and the use of the data as repeated cross-section may mitigate "learning-through-survey" concerns (Kim and Binder, 2023).

Daily time series. Given the stable composition of firms, we construct a daily time series of extensive margin sales price plans following Hack and Rostam-Afschar (2024). We encode the extensive margin pricing plan of firm i that files the survey on day t in variable p_{it} and take the cross-sectional arithmetic average on each day as

$$p_t = \frac{1}{N_t} \sum_{i=1}^{N_t} \tilde{p}_{it} \times 100, \qquad \text{with} \quad p_{it} = \begin{cases} +1 & \text{if increase} \\ 0 & \text{if no change} \\ -1 & \text{if decrease.} \end{cases} \tag{2}$$

The underlying question has been available since survey wave three, so we can compute a daily time series from July 15, 2021, until June 30, 2024.

Link to CPI inflation. We assess how the daily time series of pricing plans relates to realized prices, as measured by CPI inflation. To this end, we present a four-week backward-looking moving average of our daily time series to facilitate readability.[19] In Panel (a) of Figure 3, we present this version of the daily time series as well as the monthly year-over-year CPI inflation, which takes the constant monthly value on each day within the month. Both series display similar dynamics over time, which reassemble an inverse U-shape around the inflation surge episode. Moreover, the price plan series leads CPI inflation. This makes sense since it may take time for the plans to be realized. Quantitatively, the contemporaneous correlation coefficient between both time series is 0.70, whereas the correlation between plans and next month's CPI inflation increases to 0.78. To further investigate the predictive power of the pricing plans, we consider a simple forecasting regression using the time series from Panel (a) of Figure 3. We project the three-month lead of CPI inflation on contemporaneous CPI inflation as a baseline. Then, we add the (four-week moving average) pricing plan as a second regressor. The R^2 increases from 0.62 in the baseline to 0.83 with the pricing

[19] The estimation results are, of course, based on the original series and do not require this moving average. Table C.1 in Appendix C provides descriptive statistics for the raw time series.

plans included. Likewise, the Kleibergen-Paap F statistic increases from 94.0 to 131.9. Both statistics indicate that the contemporaneous pricing plans are informative for future inflation beyond the contemporaneous inflation realization.[20] Overall, this suggests that the extensive margin sales price plans are relevant and plausibly translate into actual price changes in the near future.

3.2 Additional data

News coverage and searches. We construct additional daily time series for each type of data release based on media reporting and Google Trends, which capture news coverage and news searches, respectively. We first select a keyword that clearly relates to the data release under consideration. For example, the keyword for CPI releases is "inflation". Then, the daily time series of CPI inflation news coverage is given by the number of newspaper articles on each day that mention the keyword inflation in the article headline, and analogously for all other types of data releases. The set of newspapers includes all non-regional newspapers contained in the WISO database.[21] For news demand via Google Trends, we follow the methodology from Eichenauer, Indergand, Martínez, and Sax (2022) through which we obtain a daily series of search intensities for each of the keywords. We present the keywords for all surprises in Table B.1 in Appendix B, along with a brief discussion.[22]

We present the evolution of news coverage and searches for inflation as four-week backward-looking moving averages in Panel (b) of Figure 3. Both series follow a similar pattern as realized CPI inflation and the pricing plans from Panel (a). While news coverage correlates

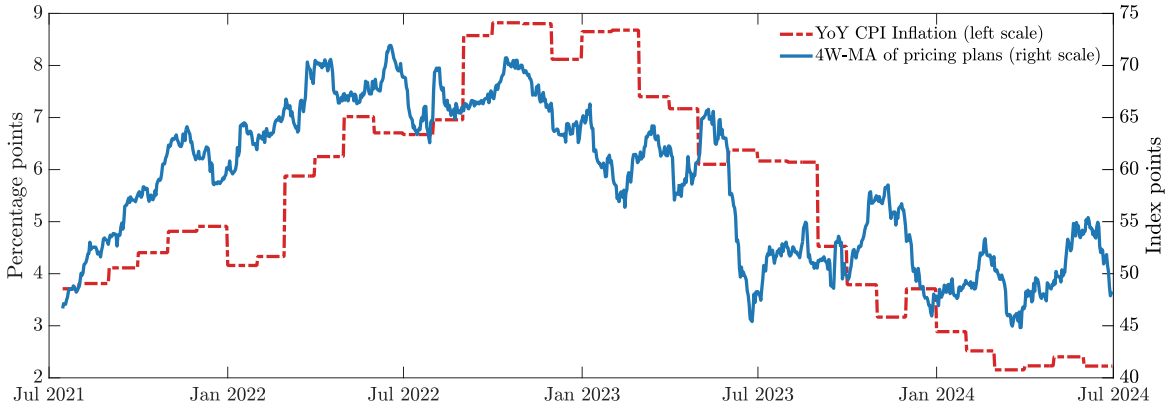
[20] If we include monthly lags of CPI inflation in both regressions, we obtain similar results, suggesting that the predictive power of the pricing plans is unlikely to be driven by misspecification of the autoregressive component of the inflation process.

[21] This database covers all major newspapers in Germany, except the *Frankfurter Allgemeine Zeitung* and *Süddeutsche Zeitung*. Ex-ante, it could be a concern that we miss important media reporting and, thus, fail to detect an increase in reporting around data releases. Ex-post, we find statistically significant increases around *all* types of data releases, suggesting that this concern is irrelevant in our setting.

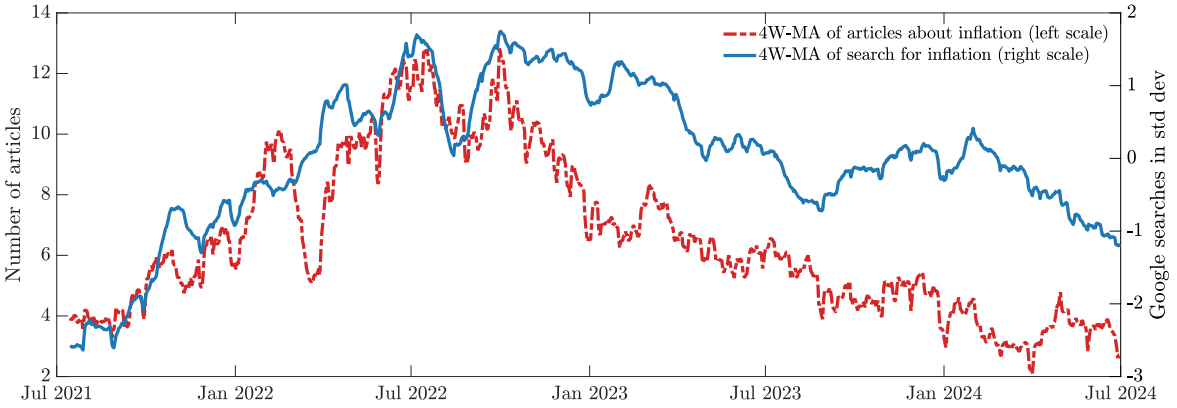
[22] We use broad keywords that ought to capture reporting or searches for the corresponding macroeconomic variable. If a keyword also captures other topics unrelated to the corresponding variable, our approach remains valid as long as reporting or searches about these other topics do not increase differentially around data releases, since we study changes in reporting or searches around data releases in Section 5.

Figure 3: Time series of price plans, news coverage, news searches, and macroeconomic news

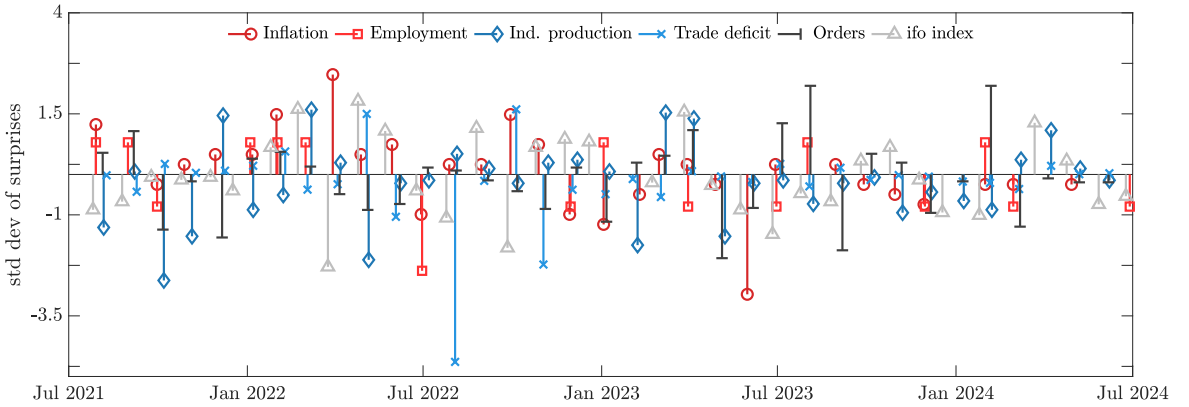
(a) Inflation and sales price plans



(b) News coverage and news searches



(c) Macroeconomic news



Notes: The figure shows the time series of year-over-year CPI inflation and a four-week backward-looking moving average of the daily sales price plan time series in Panel (a). Panel (b) shows four-week backward-looking moving averages of the number of newspaper articles featuring the word "inflation" in the headline (news coverage) and the Google search intensity for the word "inflation" (news searches). Finally, Panel (c) presents the macroeconomic news from data releases for all events with a non-zero forecast error.

with inflation over the entire sample, we find that news searches for inflation remain elevated even when CPI inflation was close to the target value of two percent toward the end of our sample. The time series for the remaining data releases are in Figures C.5 and C.6, and summary statistics of the raw series are in Table C.1 in Appendix C.

Macroeconomic news. We compute macroeconomic news as the forecast errors from macroeconomic data releases. The forecast error is given by the announced realization minus a professional consensus forecast obtained from Bloomberg. Using such forecast errors is advantageous because they purge predictable variation. More details on the underlying data and the computation of forecast errors are provided in Appendix B.

In total, we have around 36 releases for each variable, corresponding to one release per month between July 15, 2021, and June 30, 2024.[23] Days without a release assume a zero value. In Panel (c) of Figure 3, we display the time series of all forecast errors that take non-zero values, scaled to have unit variance.[24] The surprises are well-distributed throughout the sample period, with positive and negative surprises of different magnitudes for all indicators. Sometimes, multiple distinct data releases occur on the same day.[25] However, the surprise components of the announcements are not correlated. The absolute value of the correlation coefficient between any two time series of surprises is never larger than 0.01. Therefore, we can disentangle the effect of these different surprises on the outcomes of interest.

4 Econometric approach

We estimate two types of specifications: (i) macro event study regressions that compare firm answers filed before and after macro news events, and (ii) daily impulse responses to macro

[23]The exception is CPI inflation with 70 releases, as there is a separate release for an early estimate and the final number. However, forecast errors for the final number are always zero and, thus, provide no identifying variation.

[24]We re-scale so that the variance equals unity after dropping all zeros. The summary statistics (before scaling) are provided in Table C.1 in Appendix C.

[25]For example, for 9 out of 36 releases of the early CPI inflation estimate, unemployment numbers are released on the same day.

news that allow us to measure the persistence of the effects.

General framework. We estimate the effects of macroeconomic news based on the following daily regression model

$$y_{t,h} = \alpha^h + \beta^h \, x_t + \Gamma^h \, Z_{t-1} + v_{t,h}, \tag{3}$$

where $v_{t,h}$ is an error term, Z_{t-1} is a vector of controls, x_t is the regressor of interest (e.g., a forecast error), and $y_{t,h}$ is the outcome variable. Subscript h may either capture the window length in our macro event study framework or the horizon of a cumulative impulse response in our local projection framework. With this, (3) nests all regression models under consideration. Time subscript t denotes days, including weekends. The estimation sample runs from June 15, 2021, until June 30, 2024. The baseline control vector Z_{t-1} comprises 28 daily lags of the time series underlying the outcome, $y_{t,h}$, and the previous value of the data release under consideration. For example, when studying CPI data releases, we control for the CPI inflation from the previous release. Throughout, we report confidence bands based on standard errors that are robust to heteroskedasticity and serial correlation. In Section 5, we further provide a sensitivity analysis that presents various modifications of our baseline setup, e.g., the inclusion of calendar time fixed effects and additional controls.

Macro event study. Our main specification is a macro event study that relates the news component of a data release to the revision in firms' pricing plans.[26] We estimate this based on (3) with the left-hand side variable being

[26]Such event study specifications are often used to analyze how survey responses respond to macroeconomic announcements (e.g., Enders et al., 2019; Di Pace et al., 2025; Yotzov et al., 2024). The "event study" terminology stems from the macroeconomic literature on macro data releases (e.g., Gürkaynak et al., 2020) and must not be confused with the event studies in microeconometrics that are dynamic versions of a difference-in-difference design.

$$y_{t,h} = \sum_{s=1}^{h} \left(\tilde{p}_{t+s} - \tilde{p}_{t-s} \right), \tag{4}$$

with $\tilde{p}_t$ denoting the (weighted) average price-setting plan on day t, as explained along with equation (2). Note that we reweigh each daily observation to ensure that each firm enters the outcome variable with the same weight (Hack and Rostam-Afschar, 2024).[27] Therefore, the outcome $y_{t,h}$ is the average firm plan within h days after t minus the average firm plan within h days before t. We refer to h as the window length and consider $h = 2, 5, 10$. A short window length has the advantage that other types of events are less likely to confound our results, whereas a larger window length captures effects that take more time to materialize, e.g., due to planning frictions.[28] Finally, the regressor of interest, x_t, is a macroeconomic news time series given by the forecast error, as explained in Section 3. This event study approach yields the causal effect of the macro news under consideration if no confounding events occur at the same time that correlate with the forecast error under consideration.

We further consider a slightly modified specification when either news coverage or news searches are the outcome variables. This specification differs in three aspects. First, we do not weigh the outcome variables because the problem of time-varying response numbers is less relevant.[29] Second, the regressor x_t denotes an indicator variable that is only activated when a data release for the macro variable under consideration occurs. We do this because our measures of news coverage and news searches are not directional. For example, we expect that reporting about CPI inflation increases around CPI announcements, irrespective of the sign of the forecast error. Finally, we always control for an indicator that is activated when any of the other news under consideration is released.[30]

[27] Without weights, firms that file the survey on days with generally lower response numbers (e.g., weekends) would have more influence on the outcome than other firms that file on days with higher response numbers. In Hack and Rostam-Afschar (2024), we provide a more detailed discussion on this matter.

[28] An additional advantage of a larger window length is that more firm responses enter the left-hand side variable, which makes the measurement of the outcome more reliable.

[29] Moreover, Google provides no information on total searches, so that weighting becomes also infeasible.

[30] We do so because, occasionally, different data releases occur on the same day. By adding this control

Cumulative local projection. To investigate whether and which macro news drives price-setting plans persistently, we further estimate cumulative local projections as in Andrade et al. (2022) and Hack and Rostam-Afschar (2024). To this end, we estimate (3) for $h = 0, 1, .., 100$ to obtain a daily response with x_t being a forecast error of interest. The left-hand side variable is given by the average sales price plan between t and $t + h$, i.e., $y_{t,h} = \sum_{s=0}^{h} \tilde{p}_{t+s}$, with the above weighting scheme in place such that all firm responses have the same influence on this outcome variable.

5 Results

We present the main event study estimates for six macroeconomic data releases. The results show that firms revise their extensive margin sales price plans in response to macroeconomic news but only for a subset of data releases, i.e., inflation, employment, and trade deficit releases. We investigate the transmission of these surprises via news coverage and news searches. Finally, we study the dynamic effects of data releases, discuss the relation to the literature, and provide a sensitivity analysis.

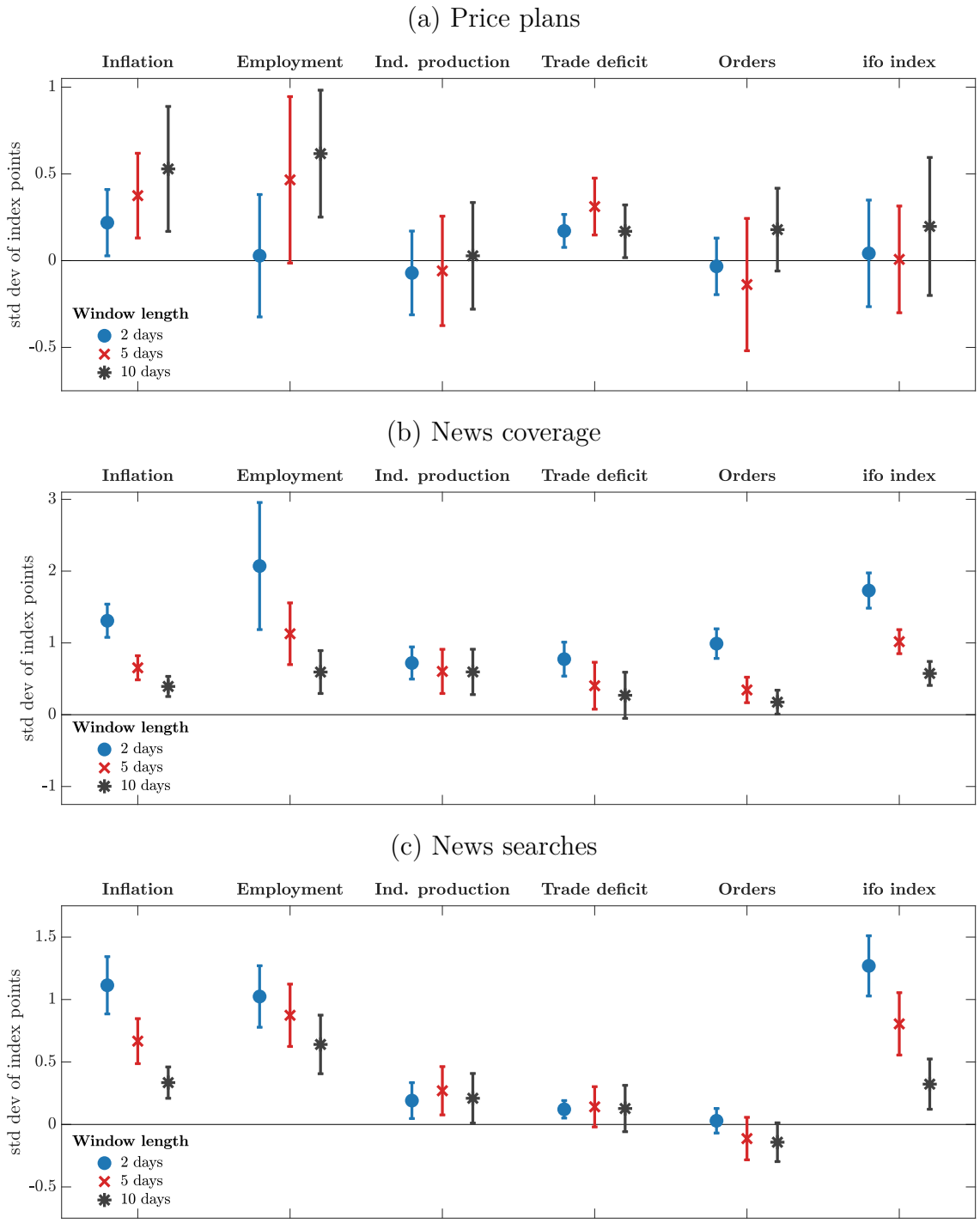
5.1 Event study estimates

Price plans. The event study estimates that measure the revisions in sales price plans in response to news (surprises) from macroeconomic data releases are displayed in Panel (a) of Figure 4. Both the outcome variable and the surprises are scaled to have unit variance to ease the interpretation of the estimates. The markers indicate the OLS point estimates of β^h from equation (3), and the whiskers indicate 95 percent confidence bands. The corresponding type of data release is stated above the estimates.

We find that inflation news leads to upward revisions in pricing plans, which are statistically significant at the five percent level, regardless of the window length under consideration. The

variable, we distinguish changes in news coverage and searches from those days when no other news is released.

Figure 4: Event studies around macroeconomic data releases



Notes: This figure presents the event study estimates based on equation (3) as specified in Section 4. Each marker corresponds to an OLS estimate, and the whiskers indicate 95 percent confidence bands based on standard errors robust to heteroskedasticity and serial correlation. The labels at the top refer to the data release under consideration. The window length indicates the number of days over which the average outcome before and after each release is computed. Panel (a) provides the results for sales price plans, and the reported coefficients correspond to the forecast error from the respective data release. In Panels (b) and (c), we present the results for news coverage and news searches, and the reported coefficients correspond to an indicator that is activated when the respective data release occurs. All outcome variables are standardized, and the forecast errors are scaled to have unit variance to ease interpretation.

point estimates increase monotonically with the window length. In response to a standard deviation inflation surprise, there is a 0.23 standard deviation increase with a two-day window length, which increases to a 0.55 standard deviation change with a ten-day window length. This suggests that it takes a few days for firms to process the news and update their plans. For employment surprises, we observe the same pattern, where the estimates increase with the window length, with magnitudes being larger for the five-day and ten-day windows. The estimate corresponding to the five-day window is 0.47, but borderline insignificant at the five percent level, with a p-value of 0.057. With the ten-day window, however, we find an upward revision in sales price plans of 0.62 standard deviations, which is statistically significant at the one percent level. The third data release that yields statistically significant effects is news about the trade deficit. When the trade deficit is higher than expected, firms revise their plans upward by 0.17 to 0.32 standard deviations. These effects are statistically significant at the five percent level but are also smaller in magnitude and do not increase (monotonically) with the window length, compared with inflation and employment surprises.

The effects of the remaining data releases – industrial production, manufacturing orders, and the ifo index – are statistically indistinguishable from zero at all conventional significance levels. Further, almost all point estimates are very close to zero. The only exceptions are the ifo index and orders releases, which display a somewhat larger (insignificant) point estimate when using a window length of ten days. We conclude that these data releases have no detectable effect on the average extensive margin sales price plans.

Overall, we find that only a subset of news matters for pricing plans. We view it as implausible that this result is driven by the inclusion of news releases that are generally unimportant. Industrial production is a key indicator of economic activity at a monthly frequency, and manufacturing orders and the ifo index are often prominently reported in the media. Moreover, Kerssenfischer and Schmeling (2024) document a significant response in sovereign bond yields to these data releases, suggesting that they are generally relevant.

News coverage and searches. Next, we investigate whether news coverage and news searches may explain why only a subset of news affects price-setting plans. In Panels (b) and (c) of Figure 4, we present the responses in news coverage and news searches to macroeconomic data releases. As explained in the preceding Sections 3 and 4, the regressor of interest is not a forecast error but an indicator variable that is one when the macro data under consideration is released and zero otherwise, and the outcome variable is specific to the data release under consideration.[31]

Focusing on news coverage, the aim is to understand whether the price plans are unresponsive to certain data releases due to a lack of news coverage. Our results indicate that news coverage around data releases increases significantly at the five percent level around the corresponding releases for all variables and almost all window lengths under consideration. The effects are strongest for the two-day event window and decrease monotonically as the window length increases. This makes sense since media coverage of news typically decreases over time after the news event. These results allow us to reject the hypothesis that some macroeconomic news does not matter for price plans because there is no media coverage. This finding is about the extensive margin of coverage, i.e., whether coverage increases significantly or not. Quantitatively, however, we find more pronounced increases in news coverage for inflation, employment, and ifo index releases compared with the remaining releases. The larger estimates for this subset of news suggest the intensive margin of media coverage may partly explain why inflation and employment news drive pricing plans. Importantly, news about inflation and employment may be useful to disentangle shocks to aggregate supply and demand. In contrast, the price response to the ifo index, a measure of firm sentiment, may be unclear since a positive ifo surprise has opposite implications for price-setting depending on whether it is driven by supply or demand shocks. This might explain why the estimated effect of the ifo index surprise on price plans displays relatively wide standard errors, even

[31] We always control for an indicator that is activated when any other news (from the other five types of variables under consideration) is released. In Table D.1, we present the associated point estimates, which capture spillovers across news types, e.g., whether news coverage or searches regarding inflation change after non-inflation data releases. The results suggest limited evidence for spillovers.

though news coverage and searches increase.

Focusing on news searches, we investigate whether agents are aware of a given data release and search for related information. Indeed, agents search significantly more for related information after almost all data releases. Manufacturing orders are the only exception for which this is not the case.[32] These results suggest that agents are aware of the corresponding data releases. We view this as evidence in favor of the extensive margin of news search. Quantitatively, we find evidence for differences along the intensive margin of news searches: inflation, employment, and ifo index news induce a substantially stronger increase in searches, mirroring the results from news coverage. As for news coverage, we find that the effects are more pronounced for a short window length. The strong correlation between the estimates for news coverage and news searches is consistent with news searches capturing agents' endogenous response in information acquisition activities to changes in the news coverage (or news supply) around data releases. Relatedly, Mikosch et al. (2024) present evidence in favor of such information acquisition activities and show export-oriented firms acquire more information about the exchange rate.

Summary. The analysis yields three key conclusions. First, only a subset of macroeconomic news drives firms' extensive margin pricing plans. Second, we find significant increases for almost all estimates along the extensive margin of news coverage and searches. This suggests that the media report on all macroeconomic data releases, and agents pay attention as searches increase. Third, along the intensive margin of news coverage and searches, we find that both measures increase substantially stronger for three out of six data releases, suggesting that there can be a role for heterogeneous news coverage and searches.

These findings are consistent with a menu cost model in which agents pay attention only to a limited subset of news, for example, due to rational inattention. Conditional on paying

[32]We further check whether this changes if we use other related keywords such as "Auftragseingang" (new incoming orders) or "Auftragslage" (stock of orders) to measure searches for this type of data release. However, we find only small and insignificant effects for these alternatives. Thus, we conclude that this is not driven by our keyword choice. We do this only for orders because we find significant effects for all other data releases.

attention to a given type of news, news coverage may still influence the intensity of information acquisition activities. These activities may ultimately impact the firms' information set and optimal pricing plans in line with the motivational model presented in Section 2.

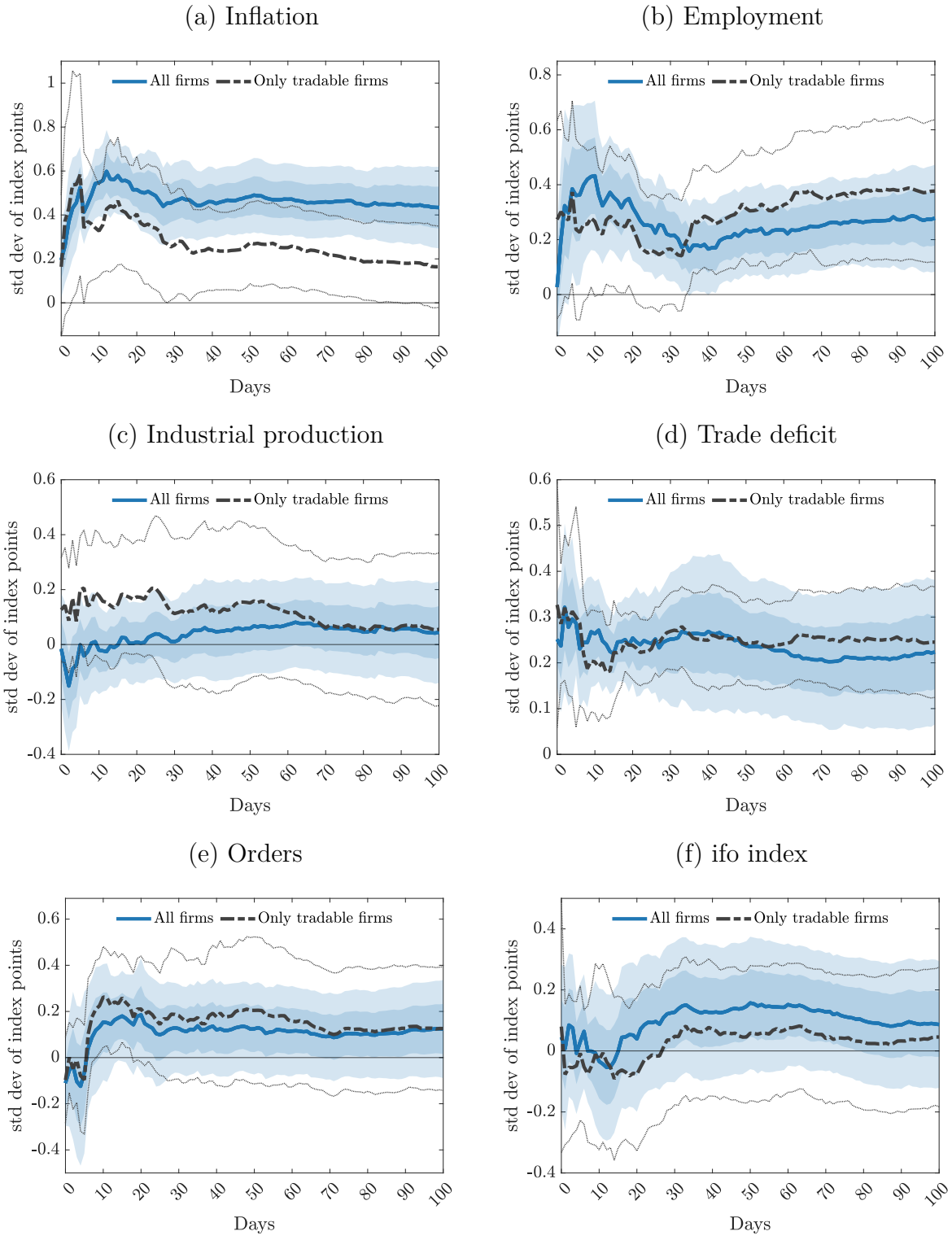
5.2 Additional results

Cumulative impulse responses. Using the local projection framework as specified in Section 4, we estimate cumulative impulse responses of the extensive margin price plans to each of the macroeconomic news. The impulse response point estimates are given by the solid blue lines in Figure 5. The shaded blue areas indicate confidence bands at 68 and 95 percent. As for the event study estimates, we find that inflation, employment, and trade deficit surprises yield immediate responses that are statistically significant at the five percent level. The effects are remarkably persistent over the entire 100-day response horizon under consideration. This suggests that the price plan responses are not transitory and, thus, likely translate into actual price changes. Such an interpretation is also consistent with the fact that the price plans predict future inflation, as demonstrated in Section 3.

Tradable sector firms. As we find a particular role for news about the trade deficit, we investigate whether this is driven by export-oriented firms. We follow Hack and Rostam-Afschar (2024) and construct a daily time series of price plans for firms operating in the tradable sector, defined as those with above-median export shares. The corresponding point estimates are shown as dashed black lines, and the thin dotted lines indicate 95 percent confidence bands. We find that these firms respond less persistently to inflation news. Interestingly, however, the responses to all other news, including trade deficit news, differ hardly from the overall response. This suggests that our estimates are not particularly driven by firms that have high (or low) export shares.

Relation to the literature. We first discuss our findings in relation to papers that have compared different data releases (e.g., Kroner, 2023; Singh and Mitra, 2022; York, 2023),

Figure 5: Dynamic responses of price-setting plans to macroeconomic news



Notes: This figure presents cumulative impulse responses of the sales price plan based on equation (3) as specified in Section 4. The solid blue line corresponds to the OLS estimate for each forecast error from the respective data release. The blue-shaded areas indicate 95 and 68 percent confidence bands based on standard errors robust to heteroskedasticity and serial correlation. The bold dashed line shows the response of the sales price plan, computed based only on firms with above-median export share (tradable firms). The thin dotted lines indicate the corresponding 95 percent confidence bands.

followed by a discussion of contemporaneous work focusing on CPI releases and firms' price-setting (Yotzov et al., 2024). While existing research on different data releases focuses on expectations and changes in investor attention, we find it quite striking that their results also suggest that employment and CPI releases are important, echoing our main results. This suggests that the importance of these two releases may be a more general feature that might hold across economies, time periods, and different outcome variables.

Next, we compare our responses to inflation news with the work by Yotzov et al. (2024), who study the own-price growth expectations of U.K. firms. Consistent with their work, we find rapid transmission from inflation news to price plans of firms. However, different from our findings, they detect these effects only in response to inflation changes, not to inflation surprises. Two remarks are in order. First, their relatively wide confidence bands do not allow them to rule out that surprises matter too. Second, our results also hold if we simultaneously control for the change in inflation around data releases; see Table E.1. If anything, the effects of the surprises become larger and remain statistically significant at the five percent level. Finally, they justify their result by arguing that firms respond to media headlines about the change in inflation. However, we find that news coverage of inflation does depend on the size of the CPI surprise. Specifically, we find that media reporting about inflation increases more around those CPI releases that are associated with a larger forecast error, as we show in Table D.2. Likewise, news searches also increase by more, suggesting that agents pick up this information; see Table D.2.[33] In addition, Link et al. (2023) show that the forecasts of German firms are closer to professional forecasters and less dispersed compared to household forecasts. Overall, we view our results on inflation as complementary to theirs and argue that both inflation changes and inflation surprises likely play a role in firms' pricing plans.

[33]We test this by augmenting the news coverage event study by an additional indicator variable that is only activated for releases with an above-median absolute value of the forecast error.

5.3 Sensitivity analysis

We show that our baseline results are insensitive to various modeling choices. The corresponding results are provided in Appendix E. All event study estimates are collected in Tables E.1-E.3, and the corresponding impulse responses are in Figures E.1-E.4.

Control variables. We investigate the sensitivity of our results to adding potentially important covariates to our baseline specification. First, we run a specification where we include all six macroeconomic news series simultaneously to ensure that we can disentangle the different types of news. Second, we include not only the forecast error but also the change in the macroeconomic variable under consideration to separate the pure change from the actual surprise. Third, we additionally control for macroeconomic conditions and monetary policy by including 28 daily lags of the oil price, the DAX stock index, and the three-month Euribor rate. Across all event study specifications, we find effects similar to the baseline. Only for the third specification, magnitudes become slightly smaller, and the corresponding impulse responses are less precisely estimated. This may not be too surprising as we augment the specification with 84 additional control variables, which mechanically absorb a sizable amount of variation.

Covid-19. Another concern pertains to the end of the Covid-19 pandemic being part of our sample. To inspect whether this affects our results, we add pandemic controls to the baseline specification. First, we additionally control for the Covid-19 stringency index as well as the log of the cumulative Covid-19 case count and the log of the cumulative Covid-19 deaths. Second, we also re-estimate the baseline specification using a shorter sample that starts only in July 2022, excluding the relevant pandemic periods. The resulting event study estimates and impulse responses remain similar in magnitude and statistical significance. The only noteworthy exceptions are the estimates for employment surprises, which increase in magnitude in the post-Covid subsample.

Late respondents. We further inspect whether the timing with which respondents file the survey affects our results. First, we re-estimate the baseline specification using firm plans that are computed only from firms that respond within seven days (the median response time) after the survey invitation is sent. Second, we also re-estimate the baseline specification using firm plans that are only based on firms that respond on the same day on which they open the survey. Both exercises address the concern that "late responders" may differ in terms of unobserved heterogeneity. The latter specification may be a particularly good test of unobserved heterogeneity since it is plausible that respondents become aware of the content of the survey only after having started it.[34] Then, the randomization should address unobserved heterogeneity. All results are reasonably close to the baseline, suggesting that response timing and the prevalence of late responders are inconsequential to our findings.

Seasonality. Finally, one may be concerned about seasonality and other regularities due to calendar time. We investigate whether including additional seasonality controls affects the results. Specifically, we add either month fixed effects, week fixed effects, or weekday fixed effects to the regression. While the week fixed effects absorb a considerable amount of variation, lowering the employment effects, we nevertheless find that all relevant estimates remain as significant as in the baseline.

6 Conclusion

This paper analyzes which macroeconomic news matters for the extensive-margin price-setting plans of firms. The key results are based on our survey with randomized daily invitations, enabling us to estimate daily event studies and daily impulse responses. We complement this with additional daily data on news coverage and news searches. Our analysis yields three key findings. First, only a subset of macroeconomic news drives the exten-

[34] Even if a firm has answered the survey in the previous wave, this is typically six months in the past, making it unlikely that respondents fully recall the survey contents. This also mitigates "learning-through-survey" concerns (Kim and Binder, 2023).

sive margin pricing plans of firms. The news that matters stems from inflation, employment, and trade balance surprises, leading to persistent revisions in firms' price plans. In contrast, releases about industrial production, manufacturing orders, and the ifo index tend to be irrelevant. Second, along the extensive margin of news coverage and searches, we find significant increases for almost all estimates. This suggests that the media report on macroeconomic data releases, and agents pay attention as searches increase. Third, along the intensive margin of news coverage and searches, we find that both measures increase substantially more for inflation, employment, and ifo index releases. Finally, we discuss how these findings can be reconciled and argue which theoretical framework may be consistent with our results. Such a framework encompasses menu costs, as well as rational inattention and heterogeneous news coverage by a media sector. Future work may include these ingredients in a structural framework that can be disciplined with the data moments that we provide.

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Supplemental Appendix

Appendix A Model derivations

Optimal reset price. Under the assumption that $\kappa_{t+s} = 0$ for all $s > 0$, and by inserting the production function and demand schedule, it follows that the firm's pricing problem can be expressed as follows

$$\max_{P_{it}} \mathbb{E}\left[y_t \left(\left(\frac{P_{it}}{P_t} \right)^{-\epsilon} \left(\frac{P_{it}}{P_t} - \frac{W_t}{P_t} \right) - \kappa \, \mathbb{1}\{P_{it} \neq P_{it-1}\} \right) \mid \mathcal{I}_{it} \right] + V_{t+1}, \tag{A.1}$$

where the continuation value is given by

$$V_{t+1} = \max_{\{P_{it+s}\}_{s=1}^{\infty}} \mathbb{E}\left[\sum_{s=1}^{\infty} \frac{\Lambda_{t+s}}{P_{t+s}} \Big(P_{it+s} \, y_{it+s} - W_{t+s} \, n_{it+s} \Big) \mid \mathcal{I}_{it} \right]. \tag{A.2}$$

Since there is no price rigidity after period t, the optimal choice of P_{it} is independent of the continuation value. Thus, differentiating (A.1) with respect to P_{it} under the assumption $P_{it} \neq P_{it-1}$ yields the first order condition

$$0 = (1 - \epsilon) + \epsilon \left(\frac{P_{it}}{P_t} \right)^{-1} \frac{W_t}{P_t} \Rightarrow P_{it} = \mu W_t, \tag{A.3}$$

with $\mu = -\epsilon/(1-\epsilon)$ and P_{it} is the optimal reset price, conditional on price adjustment.

Proof of Proposition 1. The firm chooses to pay the menu cost if and only if

$$\mathbb{E}\left[y_t \left(\left(\frac{P_{it}}{P_t} \right)^{-\epsilon} \left(\frac{P_{it}}{P_t} - \frac{W_t}{P_t} \right) - \kappa \right) \mid \mathcal{I}_{it} \right] > \mathbb{E}\left[y_t \left(\frac{P_{it-1}}{P_t} \right)^{-\epsilon} \left(\frac{P_{it-1}}{P_t} - \frac{W_t}{P_t} \right) \mid \mathcal{I}_{it} \right], \tag{A.4}$$

where P_{it} denotes the optimal reset price derived above. Substituting out P_{it} and P_{it-1} using the optimal markup rule, and some algebra gives

$$\mu^{-\epsilon} \, \mathbb{E}\left[y_t \left(\frac{W_{t-1}}{P_t} \right)^{1-\epsilon} \Big((W_t/W_{t-1})^{1-\epsilon} (\mu - 1) + W_t/W_{t-1} - \mu \Big) \mid \mathcal{I}_{it} \right] > \mathbb{E}\left[y_t \kappa \mid \mathcal{I}_{it} \right]. \tag{A.5}$$

Finally, the result follows from pulling in the expectation operator, exploiting the fact that all random variables are uncorrelated from the perspective of the firm. □

Appendix B Data sources

Survey data. The question underlying the main outcome variable, the sales price plan, is stated in Section 3 in the main text. The time series is taken from the GBP Daily Business Database. We use additional survey questions to assess whether the composition of firms varies around macroeconomic data releases. The underlying questions and their mapping to our composition variables are described in Appendix B of Hack and Rostam-Afschar (2024). In Section 1, we use two additional survey questions to motivate the focus on extensive margin price plans. Below, we present the question regarding historical price durations in both the German original and its translation.

> Original: *In welchem Intervall haben Sie in der Vergangenheit den Preis Ihres Hauptproduktes bzw. Ihrer Hauptdienstleistung angepasst?*
>
> (a) *Täglich*
>
> (b) *Wöchentlich*
>
> (c) *Monatlich*
>
> (d) *Alle 2 Monate*
>
> (e) *Alle 3 Monate*
>
> ...
>
> (f) *Alle 23 Monate*
>
> (g) *Alle 24 Monate*
>
> (h) *Alle 25 Monate oder seltener*

> Translation: *At what interval have you historically adjusted the price of your main product or service in the past?*
>
> (a) *Daily*
>
> (b) *Weekly*
>
> (c) *Monthly*
>
> (d) *Every 2 months*
>
> (e) *Every 3 months*
>
> ...
>
> (f) *Every 23 months*

(g) *Every 24 months*

(h) *Every 25 months oder seltener*

The corresponding question about contemporaneous price durations replaces the underlined words in the question with "do you currently plan to adjust" ("planen Sie aktuell" for the German original). We convert the answers to monthly price durations. Both questions have been asked only in waves 5 and 6 of the survey. Thus, the responses span the period from July 2022 until September 2023.

News coverage and news searches. To measure news coverage and searches, we use the keywords provided in the second column of Table B.1. For trade deficits, we use "export" and "import" as two distinct keywords and construct two separate time series, which we average to a single time series used in the estimation. We do so because single terms referring to the trade balance (or current account) display virtually no media coverage. We chose all keywords to be as comprehensive as possible. Therefore, the level of the time series is not necessarily a good measure of news coverage and searches for the corresponding data release. However, we argue that the change in media reporting or Google searches around data releases is primarily driven by the data releases themselves. For example, the word "production" is very general and may be used in many different contexts. However, when the use of the word "production" increases sharply around industrial production data releases, this increase is plausibly driven by these data releases.

The news coverage for a given type of data release is measured by the daily number of articles that mention the keyword in the headline. We consider all non-regional newspapers from the WISO Archive. This includes, e.g., Handelsblatt, Zeit, Focus, Spiegel, including their online versions, which enhances availability.[35]

News searches are measured using the same keywords to construct daily time series of Google search intensities based on Google Trends. We follow Eichenauer et al. (2022), who provide an approach to obtain consistent daily time series through multiple querying of Google Trends.[36] Importantly, the level of the resulting time series lacks a clear interpretation because Google does not provide the actual search count. Therefore, we standardize all time series based on Google Trends.

[35]The full list is as follows: Börsen Zeitung, Focus Money, Focus, Jüdische Allgemeine, Der Spiegel online, Welt am Sonntag, Welt Online, Zeit online, Zeit Journals (Campus, Geschichte, Wissen), Christ und Welt, Handelsblatt Morning Briefing, Le Monde Diplomatique, Stern, Handelsblatt Online, Handelsblatt, Der Spiegel, taz, FAZ Einspruch, Die Zeit. The interested reader may notice that two important German newspapers, Süddeutsche Zeitung und Frankfurter Allgemeine Zeitung, are not included. Ex-ante, one may be concerned that we miss an important aspect of media reporting. However, ex-post, this concern is unwarranted, as we find significant increases in media reporting for all news events.

[36]We use their R package *trendecon* to implement the construction of daily time series on news searches.

Table B.1: Variables corresponding to macroeconomic data

Variable	Keyword	Measurement	Forecast error
Inflation	Inflation	Year-over-year CPI inflation released by the GFSO *Statistic Code 61111*.	We compute the forecast error directly for CPI inflation.
Employment	Arbeitslosenquote (unemployment rate)	Unemployment rate released by the Federal Employment Agency.	We compute the forecast error directly for the unemployment rate. We multiply the forecast error by minus one to obtain an employment surprise.
Ind. production	Produktion (production)	Industrial production index released by the GFSO per monthly press release (*GENESIS table 42153–0001*). The released value is already seasonally adjusted (X13 JDemetra+) by the GFSO.	We compute the forecast error for the month-over-month growth rate of the industrial production index due to forecast availability.
Trade deficit	Export, Import	Monthly German trade balance in Billion Euros released by the GFSO per monthly press release (*GENESIS tables 51000-0020 and 51000-0021*). The released value is already seasonally adjusted (X-13 Arima) by the GFSO.	We compute the (natural) logarithm of the nominal trade balance value and subtract the logarithm of the corresponding forecast. We multiply the forecast error by minus one to obtain a trade deficit surprise.
Orders	Auftrag (order)	Month-over-month growth rate of real new orders in manufacturing released by the GFSO per monthly press release (*GENESIS table 42155-0004*). The released value is already seasonally adjusted (X13 JDemetra+) by the GFSO.	We compute the forecast error directly for this growth rate.
ifo index	ifo	We take the ifo index as it is released by the ifo institute.	We compute the forecast error directly for the ifo index.

Notes: Keywords are those words that are used to measure media reporting and Google searches for the respective variable. We provide the English translation in parentheses when the German term differs from the English translation. GFSO refers to the German Federal Statistical Office.

Macroeconomic data releases. The macroeconomic data releases, the primary data sources, and the construction of the corresponding forecast errors are stated in Table B.1. The forecast underlying the forecast errors is a professional consensus forecast from Bloomberg. Specifically, we take the forecasts as well as the realized value from Bloomberg's economic calendar. A particular advantage of these forecasts is that they are publicly available, which makes it easier for agents to retrieve them.[37]

Additional variables for sensitivity analysis. We use daily DAX stock index closing values from Yahoo Finance (*GDAXI*), the daily three-month Euribor rates from the Bundesbank's time series database (*ST0316*), and the oil spot price for Western Texas Intermediate is taken from St. Louis Federal Reserve's FRED (*DCOILWTICO*). The daily Covid-19 stringency index is computed by the Oxford Coronavirus Government Response Tracker as a composite measure of nine metrics that measure the stringency of non-pharmaceutical interventions to fight Covid-19 (Hale, Angrist, Goldszmidt, Kira, Petherick, Phillips, Webster, Cameron-Blake, Hallas, Majumdar et al., 2021).[38] This index is available for Germany until the end of 2022 and we set all later observations to zero since no Covid-19 related non-pharmaceutical interventions were in place anymore. Daily Covid-19 cases and deaths in Germany are taken from the World Health Organization.

To compute a separate daily time series for tradable sectors, we follow Hack and Rostam-Afschar (2024) and proceed as follows. We take the export shares from the Institut für Mittelstandsforschung in Bonn, which are computed based on the (confidential) VAT tax statistic of the Federal Statistical Office.[39] Export shares are defined as revenue from exports divided by total revenues and available at the one-digit industry level based on the WZ2008 industry classification, which we can use to match the export shares with the firm-level survey responses. We use the most recent export shares for 2021, but the shares have been stable in the past.

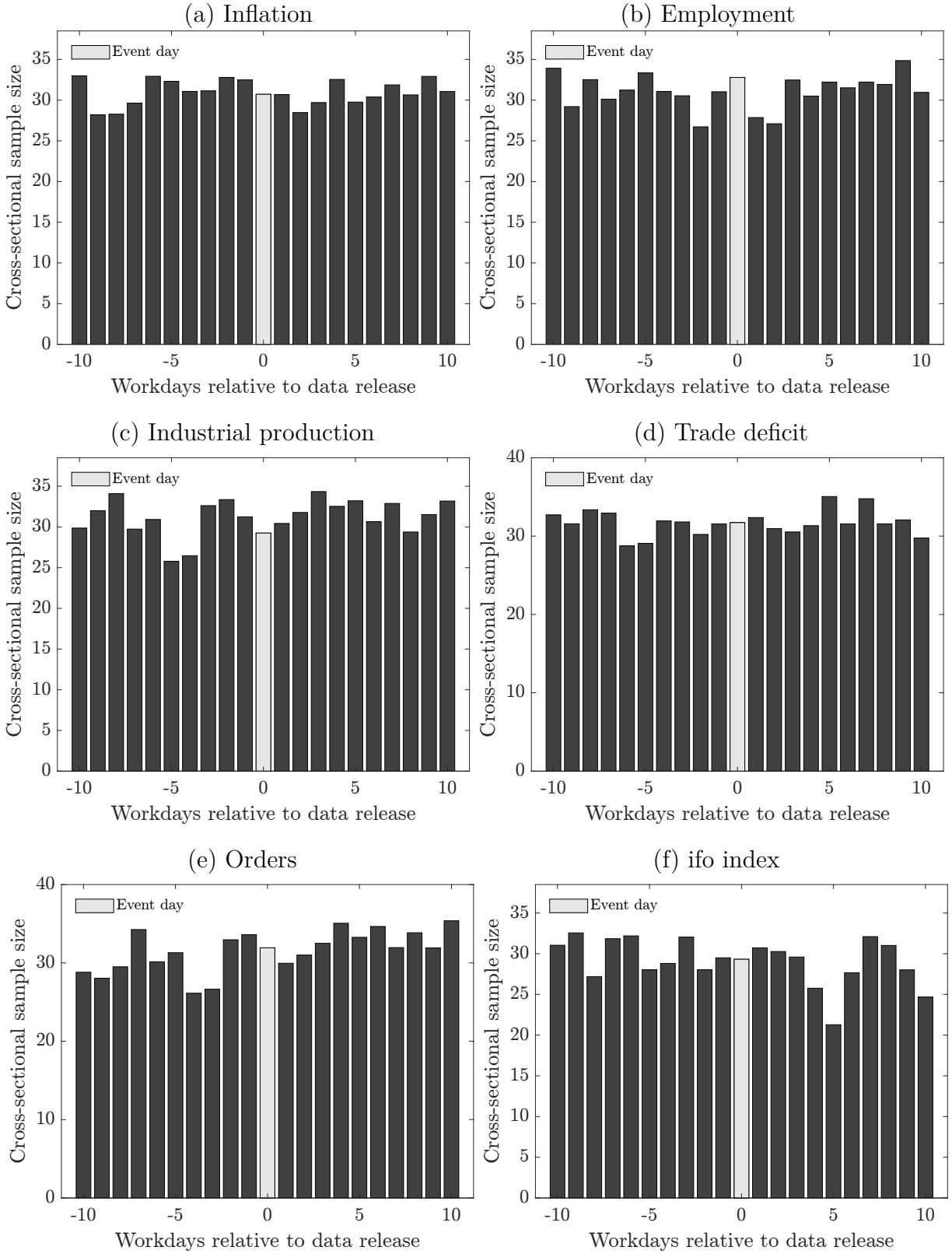
[37]The forecasts can be accessed here: https://www.bloomberg.com/markets/economic-calendar.

[38]The data can be downloaded from here: https://github.com/OxCGRT/covid-policy-dataset.

[39]The data can be found here: https://www.ifm-bonn.org. Their computation is based on the fact that revenues exported to a different country are VAT-exempt. Hence, one can divide tax-exempted revenues by total revenues to obtain the export shares at the firm-level in the VAT data.

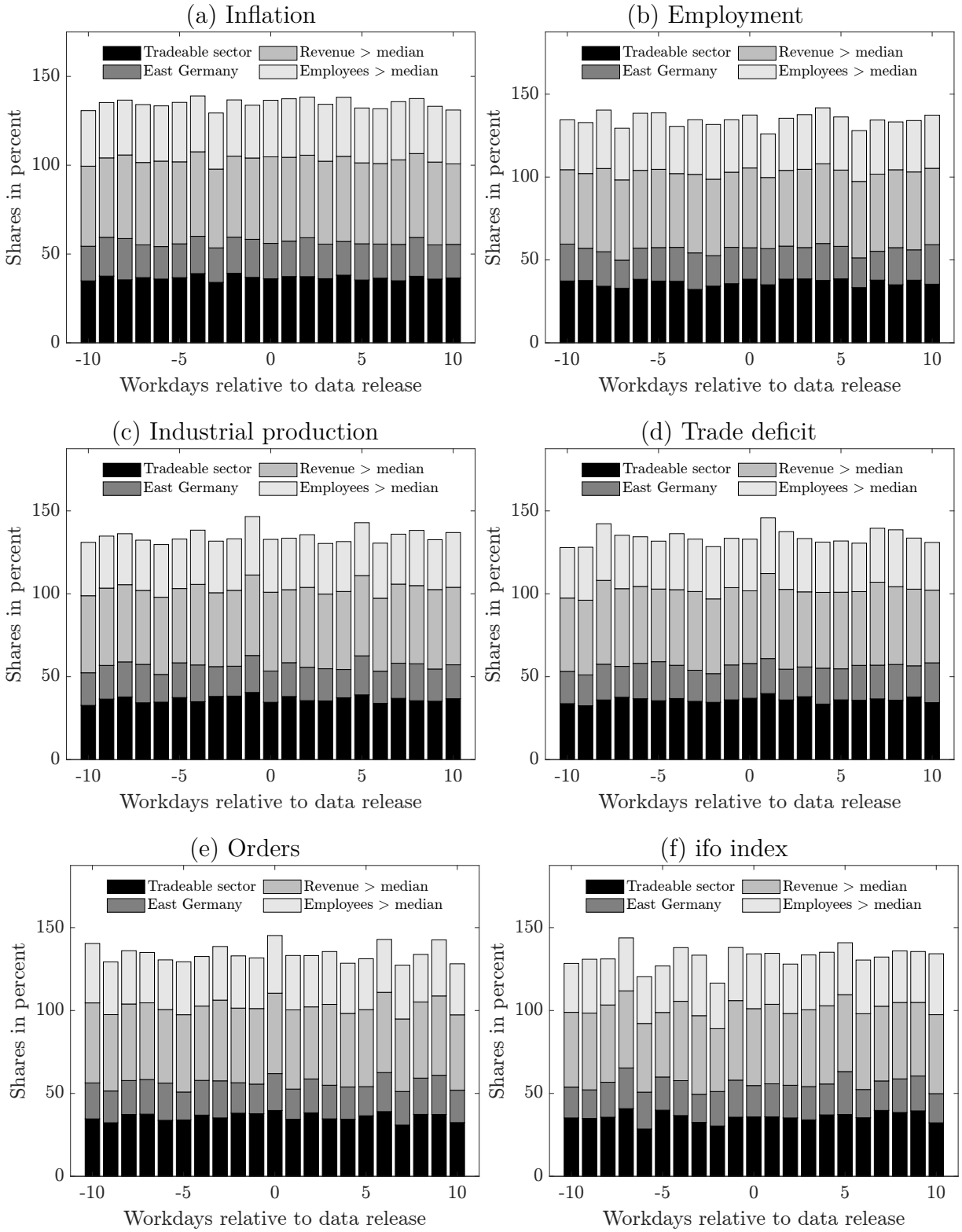
Appendix C Data statistics

Figure C.1: Survey response numbers around data releases



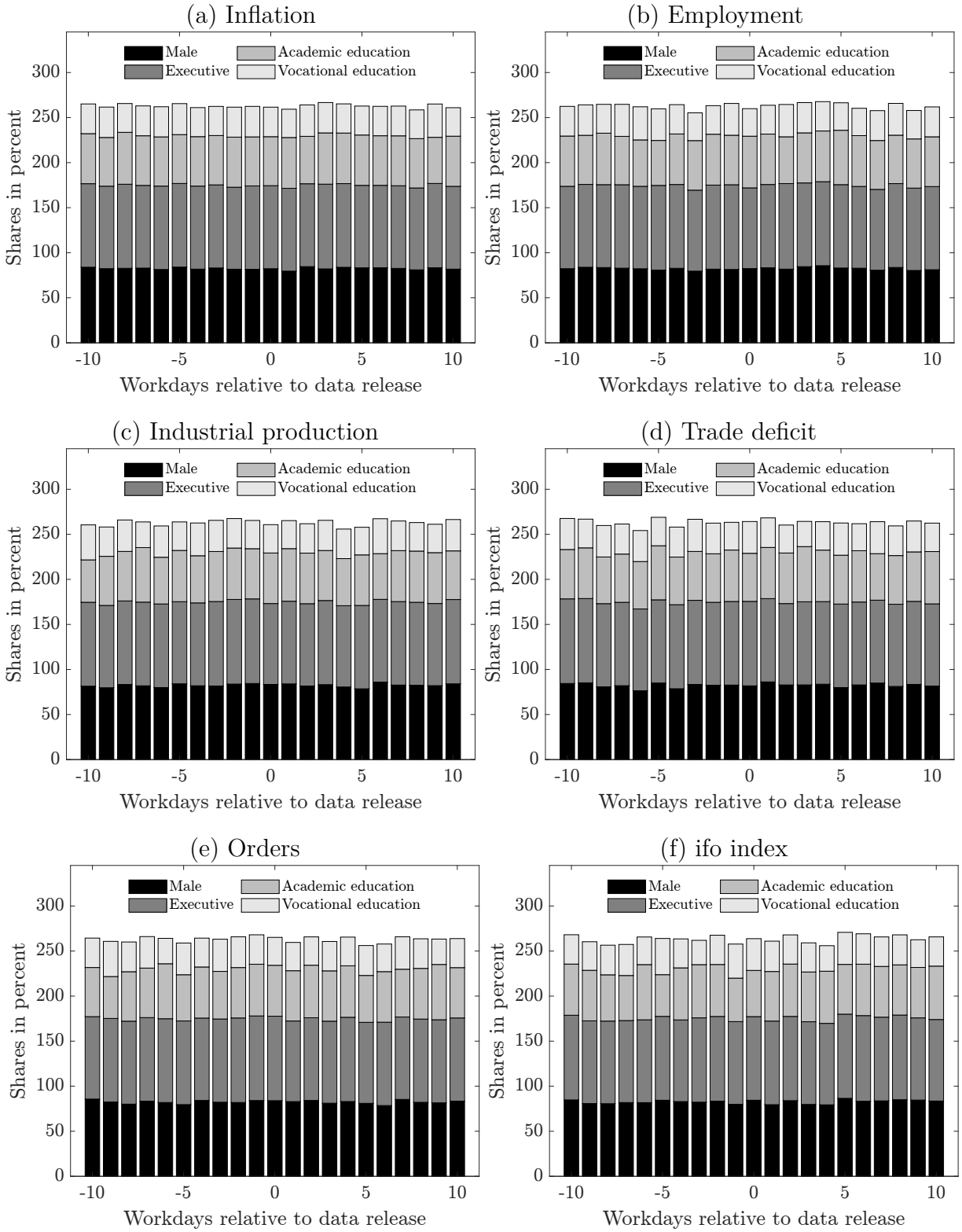
Notes: The figure shows the average cross-sectional response numbers surrounding each macroeconomic data release.

Figure C.2: Composition around data releases: firm characteristics



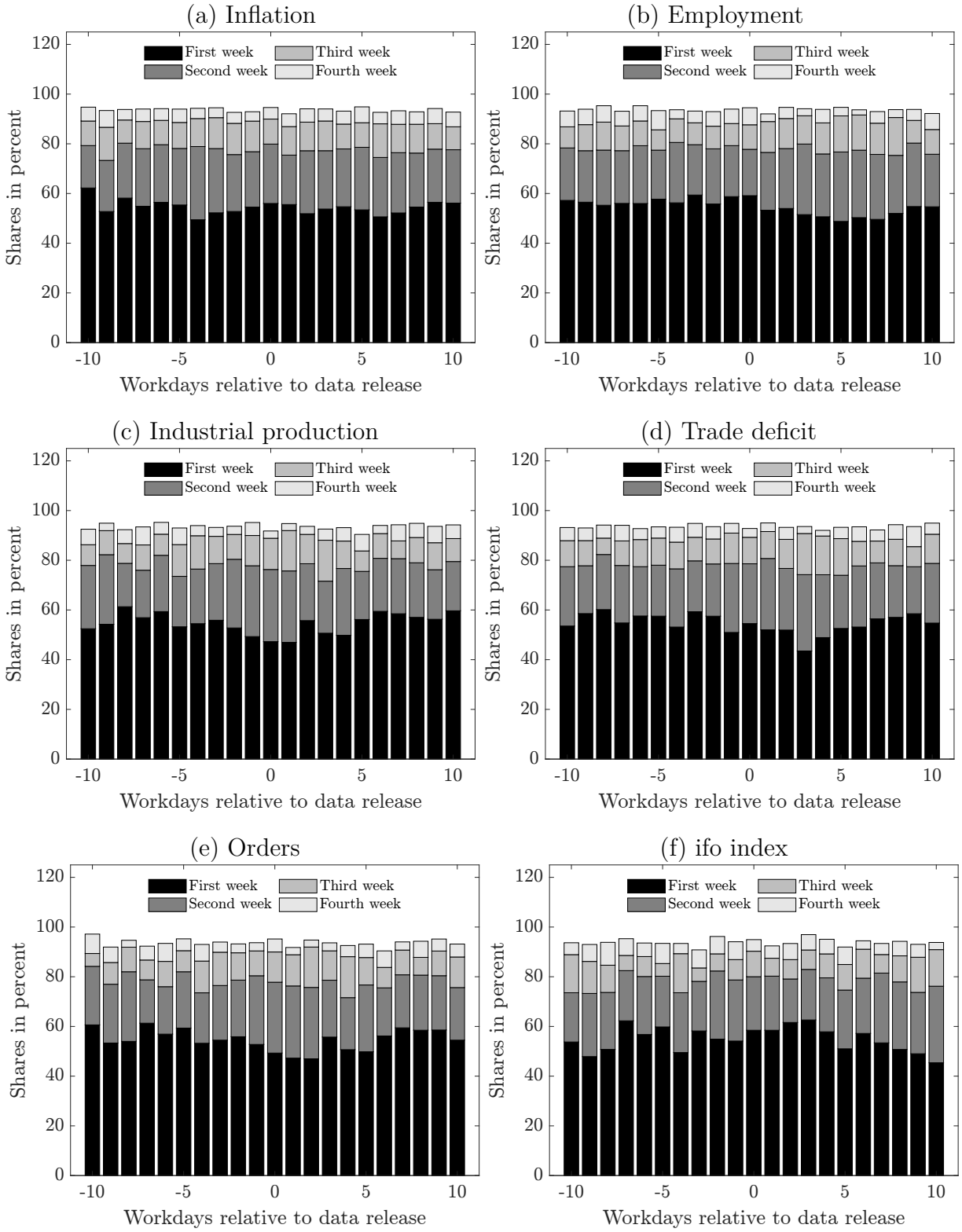
Notes: The figure shows the composition of survey responses surrounding each data release by firm characteristics. The composition bars may exceed 100 percent since the categories are not mutually exclusive.

Figure C.3: Composition around data releases: respondent characteristics



Notes: The figure shows the composition of survey responses surrounding each data release by respondent characteristics. The composition bars may exceed 100 percent since the categories are not mutually exclusive.

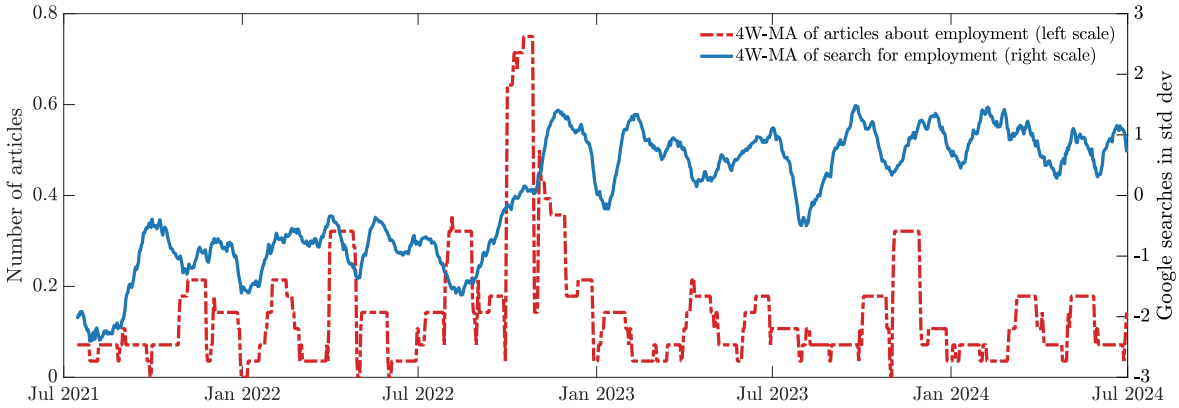
Figure C.4: Composition around data releases: response timing



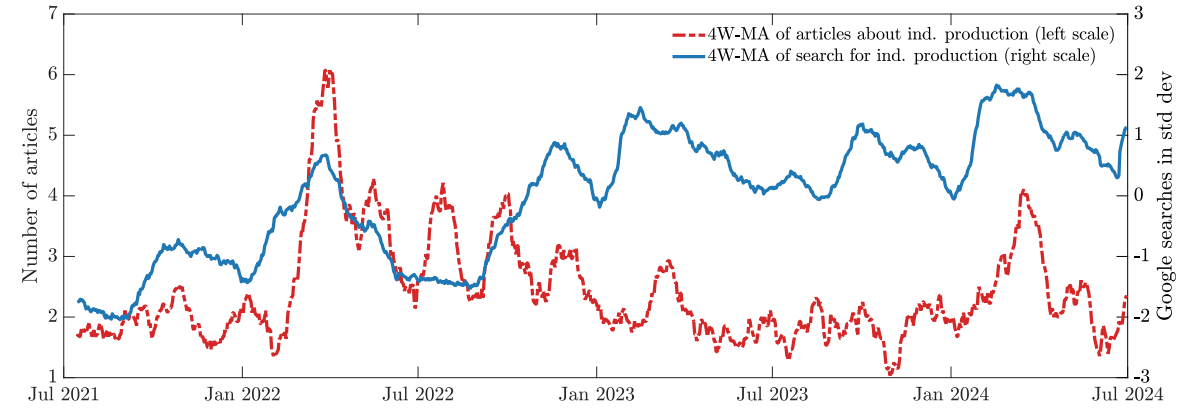
Notes: The figure shows the composition of survey responses surrounding each data release by response timing. The composition bars may exceed 100 percent since the categories are not mutually exclusive.

Figure C.5: News coverage and searches

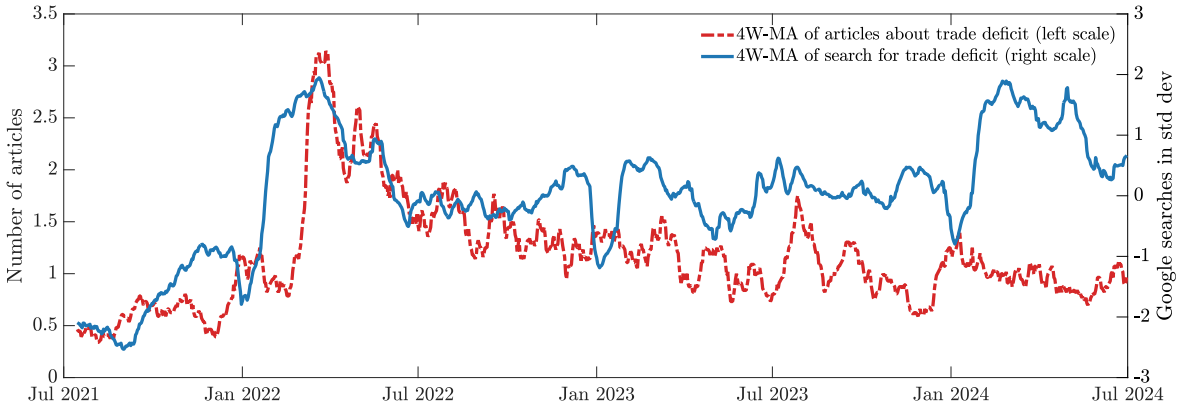
(a) Employment



(b) Industrial production



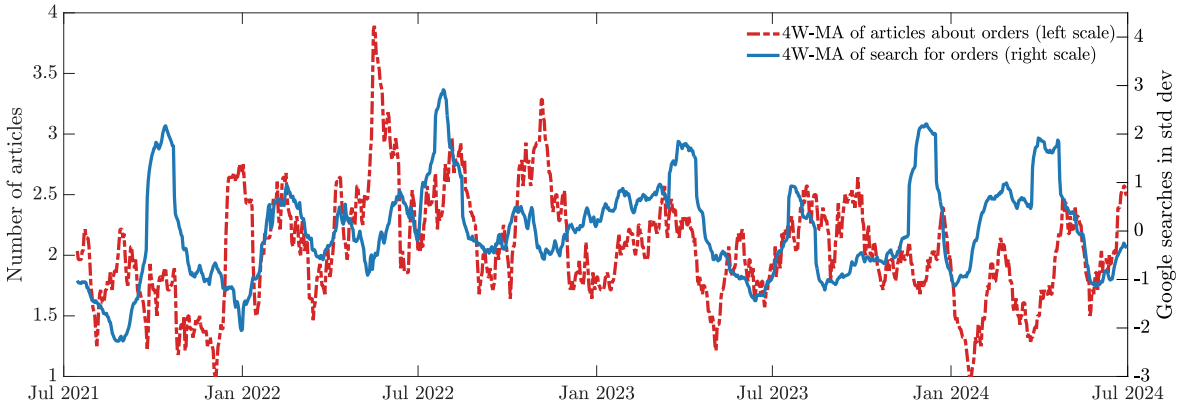
(c) Trade deficit



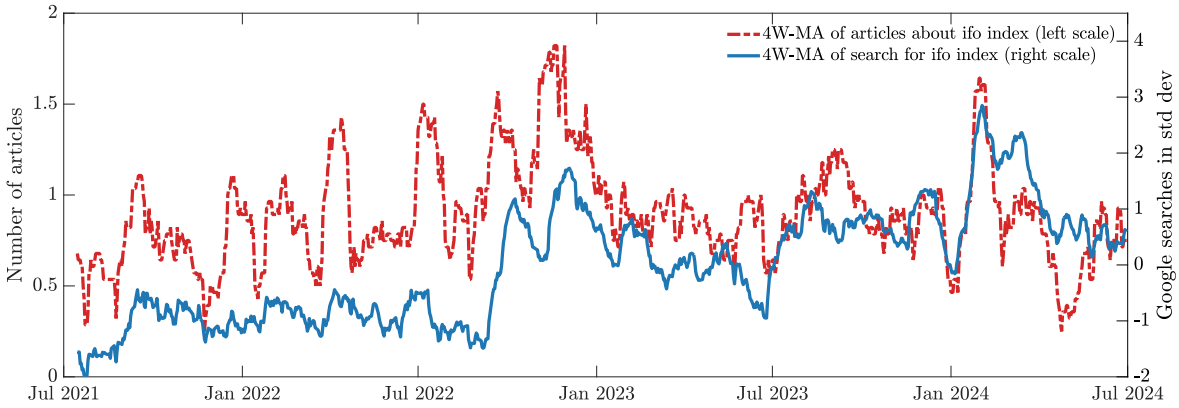
Notes: The figure shows the daily time series of the four-week backward-looking moving averages of the number of newspaper articles (news coverage) featuring the keyword associated with the data release under consideration, as well as the corresponding time series of the Google search intensity for the same keyword (news searches). The keywords are provided in Table B.1 in Appendix B. Note that our empirical approach leverages the change in coverage and searches around data releases, as the level of these series does not necessarily provide a good approximation of the actual level of coverage and searches; see the discussion in Appendix B.

Figure C.6: News coverage and searches

(a) Orders



(b) ifo index



Notes: The figure shows the daily time series of the four-week backward-looking moving averages of the number of newspaper articles (news coverage) featuring the keyword associated with the data release under consideration, as well as the corresponding time series of the Google search intensity for the same keyword (news searches). The keywords are provided in Table B.1 in Appendix B. Note that our empirical approach leverages the change in coverage and searches around data releases, as the level of these series does not necessarily provide a good approximation of the actual level of coverage and searches; see the discussion in Appendix B.

Table C.1: Summary statistics for all daily variables

	Mean	Std. dev.	Min	Max	N
Sales price plan	58.958	22.841	-100.000	100.000	1082
News coverage					
Inflation	6.541	5.710	0.000	37.000	1082
Employment	0.145	0.619	0.000	9.000	1082
Ind. production	2.415	2.163	0.000	13.000	1082
Trade deficit	1.168	1.204	0.000	11.500	1082
Orders	2.059	1.969	0.000	14.000	1082
ifo index	0.896	1.344	0.000	10.000	1082
News searches					
Inflation	64.233	21.032	13.199	157.175	1082
Employment	57.936	20.241	1.214	128.279	1082
Ind. production	66.714	15.531	18.886	172.847	1082
Trade deficit	80.680	19.337	31.169	120.861	1082
Orders	64.260	19.077	18.056	218.894	1082
ifo index	44.205	27.505	-11.527	181.217	1082
Non-zero forecast errors					
Inflation	0.031	0.405	-1.200	1.000	29
Employment	-0.013	0.126	-0.300	0.100	16
Ind. production	-0.311	1.372	-3.600	2.200	35
Trade deficit	-15.626	74.710	-346.574	120.397	34
Orders	-0.463	4.102	-8.500	9.000	35
ifo index	-0.100	1.487	-3.400	2.700	34

Notes: The table shows summary statistics for the daily time series used in the analysis of the full sample from July 15, 2021, to June 30, 2024. The summary statistics for the forecast errors exclude the zero values. The ifo index forecast error refers to a forecast error in levels for the ifo index, which takes values between 0 and 100. All other forecast errors have percentage point interpretations and are scaled so that unity corresponds to one percentage point. Note that there are considerably fewer forecast errors for employment, as the forecast errors often equal zero. The definitions of all forecast errors are in Appendix B.

Appendix D Additional results

Table D.1: Event studies for news coverage and searches

	Inflation			Employment			Ind. production			Trade deficit			Orders			ifo Index		
Window (h)	2	5	10	2	5	10	2	5	10	2	5	10	2	5	10	2	5	10
News coverage																		
Event in column	**1.31**	**0.65**	**0.39**	**2.07**	**1.13**	**0.59**	**0.72**	**0.60**	**0.60**	**0.77**	**0.40**	0.27	**0.99**	**0.34**	**0.17**	**1.73**	**1.02**	**0.57**
	(0.12)	**(0.09)**	**(0.07)**	**(0.45)**	**(0.22)**	**(0.15)**	**(0.11)**	**(0.16)**	**(0.16)**	**(0.12)**	**(0.17)**	(0.16)	**(0.11)**	**(0.09)**	**(0.08)**	**(0.13)**	**(0.09)**	**(0.09)**
Remaining events	0.00	-0.03	0.04	**0.17**	**0.11**	0.05	**0.20**	**0.15**	**0.26**	0.15	0.04	0.15	**0.19**	0.08	**0.12**	0.09	**-0.17**	**-0.17**
	(0.05)	(0.06)	(0.07)	**(0.06)**	**(0.05)**	(0.04)	**(0.07)**	**(0.06)**	**(0.08)**	(0.08)	(0.08)	(0.08)	**(0.05)**	(0.05)	**(0.05)**	(0.05)	**(0.05)**	**(0.05)**
News searches																		
Event in column	**1.11**	**0.67**	**0.33**	**1.02**	**0.87**	**0.64**	**0.19**	**0.27**	**0.21**	**0.12**	0.14	0.13	0.03	-0.11	-0.14	**1.27**	**0.81**	**0.32**
	(0.12)	**(0.09)**	**(0.06)**	**(0.13)**	**(0.13)**	**(0.12)**	**(0.07)**	**(0.10)**	**(0.10)**	**(0.04)**	(0.08)	(0.09)	(0.05)	(0.09)	(0.08)	**(0.12)**	**(0.13)**	**(0.10)**
Remaining events	-0.08	-0.01	0.10	**0.11**	0.07	0.05	0.07	0.09	0.12	**0.04**	0.03	0.03	0.03	-0.06	-0.05	-0.04	**-0.22**	**-0.18**
	(0.05)	(0.07)	(0.08)	**(0.05)**	(0.07)	(0.06)	(0.04)	(0.06)	(0.07)	**(0.02)**	(0.04)	(0.05)	(0.04)	(0.06)	(0.06)	(0.05)	**(0.07)**	**(0.07)**

Notes: This table presents the event study estimates based on equation (3) as specified in Section 4. Standard errors robust to heteroskedasticity and serial correlation are in parentheses. Estimates that are statistically significant at the five percent level are bold to ease readability. The column labels refer to the data release under consideration and the window length, which indicates the number of days over which the average outcome before and after each release is computed. The outcomes are the standardized news coverage and news searches series. The regressor of interest is an indicator variable that is activated on release days for the macroeconomic variable under consideration (already displayed in Figure 4 in the main text). Additionally, we provide the estimates corresponding to a second indicator variable that is activated when any of the other five data are released to capture spillovers (remaining events).

Table D.2: Event studies for news coverage and searches: inflation releases

Window (h)	2	5	10
News coverage			
All inflation releases	**0.95**	**0.35**	0.14
	(0.11)	**(0.08)**	(0.09)
Inflation release with large surprise	**2.39**	**1.56**	**1.14**
	(0.21)	**(0.19)**	**(0.19)**
Differential effect for large surprise	**1.45**	**1.21**	**1.00**
	(0.24)	**(0.22)**	**(0.23)**
News searches			
All inflation releases	**0.85**	**0.42**	0.15
	(0.11)	**(0.08)**	(0.08)
Inflation release with large surprise	**1.92**	**1.42**	**0.90**
	(0.26)	**(0.25)**	**(0.18)**
Differential effect for large surprise	**1.08**	**1.00**	**0.75**
	(0.29)	**(0.27)**	**(0.21)**

Notes: This table presents the event study estimates based on equation (3) as specified in Section 4. Standard errors robust to heteroskedasticity and serial correlation are in parentheses. Estimates that are statistically significant at the five percent level are bold to ease readability. Window (length) indicates the number of days over which the average outcome before and after each release is computed. The outcomes are the standardized inflation news coverage and inflation news searches series. The regressor of interest is an indicator variable that is activated on inflation release days. Additionally, we include another indicator variable that is activated when the inflation release yields a large surprise, which is defined by an above-median absolute forecast error. The effect of the latter indicator provides the differential effect, and the sum of both estimates provides the total effect for large surprises in rows two and five.

Appendix E Sensitivity analysis

Table E.1: Event studies for price plans: sensitivity analysis

	Inflation			Employment			Ind. production			Trade deficit			Orders			ifo Index		
Window (h)	2	5	10	2	5	10	2	5	10	2	5	10	2	5	10	2	5	10
Baseline	**0.23**	**0.39**	**0.55**	0.03	0.47	**0.62**	-0.07	-0.06	0.03	**0.18**	**0.32**	**0.17**	-0.03	-0.14	0.18	0.04	0.01	0.20
	(0.10)	**(0.13)**	**(0.19)**	(0.18)	(0.24)	**(0.19)**	(0.12)	(0.16)	(0.15)	**(0.06)**	**(0.08)**	**(0.07)**	(0.08)	(0.20)	(0.12)	(0.16)	(0.16)	(0.20)
Add. macro controls	0.18	**0.26**	**0.44**	-0.12	0.22	**0.42**	-0.07	-0.09	-0.02	**0.21**	**0.28**	0.17	-0.07	-0.12	0.08	0.10	0.13	0.28
	(0.10)	**(0.11)**	**(0.15)**	(0.18)	(0.22)	**(0.19)**	(0.13)	(0.15)	(0.15)	**(0.07)**	**(0.10)**	(0.10)	(0.08)	(0.17)	(0.14)	(0.17)	(0.15)	(0.15)
All surprises controls	**0.23**	**0.39**	**0.55**	0.02	0.46	**0.61**	-0.07	-0.06	0.02	**0.18**	**0.32**	**0.17**	-0.03	-0.14	0.19	0.04	0.01	0.20
	(0.10)	**(0.13)**	**(0.19)**	(0.18)	(0.25)	**(0.20)**	(0.12)	(0.16)	(0.15)	**(0.06)**	**(0.08)**	**(0.07)**	(0.08)	(0.20)	(0.12)	(0.16)	(0.16)	(0.20)
Change news control	**0.23**	**0.51**	**0.67**	0.23	1.18	**1.40**	-0.09	-0.13	0.09	0.05	**0.26**	0.02	-0.09	-0.29	0.08	-0.02	0.04	0.38
	(0.11)	**(0.20)**	**(0.31)**	(0.29)	(0.61)	**(0.47)**	(0.13)	(0.20)	(0.20)	(0.07)	**(0.08)**	(0.14)	(0.11)	(0.19)	(0.16)	(0.23)	(0.27)	(0.32)
Exclude Covid-19	0.27	**0.43**	**0.59**	0.35	**1.06**	**0.99**	-0.16	-0.02	0.03	**0.13**	**0.23**	**0.16**	0.03	-0.06	0.24	-0.21	-0.22	-0.08
	(0.17)	**(0.18)**	**(0.19)**	(0.19)	**(0.15)**	**(0.20)**	(0.21)	(0.24)	(0.23)	**(0.05)**	**(0.08)**	**(0.05)**	(0.11)	(0.24)	(0.14)	(0.20)	(0.14)	(0.25)
Covid-19 controls	0.18	**0.34**	**0.46**	0.07	**0.51**	**0.68**	-0.06	-0.04	0.07	**0.17**	**0.30**	**0.14**	-0.04	-0.15	0.16	0.04	0.01	0.20
	(0.10)	**(0.13)**	**(0.18)**	(0.17)	**(0.24)**	**(0.18)**	(0.12)	(0.16)	(0.16)	**(0.05)**	**(0.08)**	**(0.07)**	(0.08)	(0.19)	(0.13)	(0.15)	(0.15)	(0.18)
Same-day senders	**0.19**	**0.37**	**0.51**	0.11	**0.55**	**0.75**	-0.09	-0.13	-0.02	**0.16**	**0.27**	**0.21**	0.04	-0.10	0.20	0.02	0.03	0.16
	(0.06)	**(0.13)**	**(0.16)**	(0.15)	**(0.20)**	**(0.19)**	(0.13)	(0.18)	(0.15)	**(0.06)**	**(0.07)**	**(0.08)**	(0.10)	(0.22)	(0.12)	(0.15)	(0.14)	(0.19)
Early respondents	0.15	**0.35**	**0.45**	-0.08	0.19	**0.41**	-0.05	-0.06	-0.02	**0.23**	**0.32**	**0.30**	-0.12	-0.11	0.21	-0.13	0.08	0.26
	(0.10)	**(0.16)**	**(0.19)**	(0.17)	(0.21)	**(0.16)**	(0.11)	(0.13)	(0.09)	**(0.07)**	**(0.11)**	**(0.08)**	(0.11)	(0.17)	(0.12)	(0.17)	(0.12)	(0.15)
Month FE	**0.23**	**0.36**	**0.50**	-0.03	0.38	**0.50**	-0.05	-0.08	-0.02	**0.16**	**0.32**	0.16	-0.03	-0.17	0.17	0.03	-0.01	0.17
	(0.11)	**(0.13)**	**(0.20)**	(0.17)	(0.24)	**(0.19)**	(0.13)	(0.17)	(0.15)	**(0.05)**	**(0.10)**	(0.09)	(0.09)	(0.20)	(0.13)	(0.16)	(0.16)	(0.20)
Week FE	**0.24**	**0.33**	**0.51**	-0.03	0.32	**0.36**	-0.02	-0.07	0.06	**0.20**	**0.35**	**0.16**	0.02	-0.20	0.17	0.02	-0.05	0.25
	(0.12)	**(0.12)**	**(0.16)**	(0.18)	(0.21)	**(0.17)**	(0.11)	(0.12)	(0.10)	**(0.08)**	**(0.08)**	**(0.07)**	(0.09)	(0.18)	(0.10)	(0.16)	(0.15)	(0.14)
Weekday FE	**0.23**	**0.39**	**0.55**	0.01	0.47	**0.62**	-0.08	-0.05	0.02	**0.17**	**0.31**	**0.16**	-0.04	-0.15	0.17	0.05	0.01	0.20
	(0.10)	**(0.12)**	**(0.18)**	(0.17)	(0.24)	**(0.19)**	(0.12)	(0.15)	(0.16)	**(0.06)**	**(0.09)**	**(0.08)**	(0.09)	(0.19)	(0.12)	(0.15)	(0.16)	(0.20)

Notes: This table presents the event study estimates based on equation (3) as specified in Section 4. Standard errors robust to heteroskedasticity and serial correlation are in parentheses. Estimates that are statistically significant at the five percent level are bold to ease readability. The column labels refer to the data release under consideration and the window length, which indicates the number of days over which the average outcome before and after each release is computed. The outcome is the standardized sales price plan, and the regressor of interest is the forecast error corresponding to the respective data release, scaled to have unit variance to ease interpretation. All specifications include the baseline controls. Additional macro controls include 28 daily lags of the DAX stock index, the oil price, and the three-month Euribor interest rate. All surprise controls include all six forecast errors in each regression. Change news controls include the first difference of the macroeconomic variable from the data release under consideration. Exclude Covid-19 refers to the baseline specification, but the estimation sample starts in July 2022. Covid-19 controls include the Covid-19 stringency index, the log of cumulative cases, and the log of cumulative deaths. FE refers to the addition of the corresponding fixed effects.

Table E.2: Event studies for news coverage: sensitivity analysis

	Inflation			Employment			Ind. production			Trade deficit			Orders			ifo Index		
Window (h)	2	5	10	2	5	10	2	5	10	2	5	10	2	5	10	2	5	10
Baseline	**1.31**	**0.65**	**0.39**	**2.07**	**1.13**	**0.59**	**0.72**	**0.60**	**0.60**	**0.77**	**0.40**	0.27	**0.99**	**0.34**	**0.17**	**1.73**	**1.02**	**0.57**
	(0.12)	**(0.09)**	**(0.07)**	**(0.45)**	**(0.22)**	**(0.15)**	**(0.11)**	**(0.16)**	**(0.16)**	**(0.12)**	**(0.17)**	(0.16)	**(0.11)**	**(0.09)**	**(0.08)**	**(0.13)**	**(0.09)**	**(0.09)**
Add. macro controls	**1.27**	**0.63**	**0.34**	**1.95**	**1.04**	**0.48**	**0.65**	**0.60**	**0.58**	**0.78**	**0.41**	**0.29**	**0.91**	**0.30**	0.09	**1.69**	**0.96**	**0.52**
	(0.09)	**(0.07)**	**(0.05)**	**(0.40)**	**(0.19)**	**(0.12)**	**(0.13)**	**(0.15)**	**(0.13)**	**(0.12)**	**(0.13)**	**(0.14)**	**(0.12)**	**(0.09)**	(0.10)	**(0.13)**	**(0.09)**	**(0.07)**
All surprises controls	**1.25**	**0.61**	**0.34**	**2.09**	**1.16**	**0.60**	**0.73**	**0.63**	**0.60**	**0.72**	**0.42**	0.31	**1.00**	**0.34**	**0.18**	**1.72**	**1.02**	**0.57**
	(0.12)	**(0.10)**	**(0.08)**	**(0.49)**	**(0.24)**	**(0.17)**	**(0.12)**	**(0.16)**	**(0.17)**	**(0.12)**	**(0.17)**	(0.19)	**(0.10)**	**(0.09)**	**(0.09)**	**(0.12)**	**(0.08)**	**(0.08)**
Change news control	**1.31**	**0.65**	**0.39**	**2.06**	**1.13**	**0.60**	**0.72**	**0.60**	**0.60**	**0.77**	**0.40**	0.28	**0.99**	**0.35**	**0.18**	**1.69**	**1.00**	**0.55**
	(0.11)	**(0.08)**	**(0.07)**	**(0.44)**	**(0.22)**	**(0.15)**	**(0.11)**	**(0.16)**	**(0.16)**	**(0.12)**	**(0.17)**	(0.16)	**(0.10)**	**(0.09)**	**(0.08)**	**(0.12)**	**(0.09)**	**(0.09)**
Exclude Covid-19	**1.22**	**0.61**	**0.34**	**2.26**	**1.19**	**0.62**	**0.78**	**0.70**	**0.65**	**0.68**	**0.24**	0.03	**0.89**	**0.31**	**0.17**	**1.73**	**0.98**	**0.57**
	(0.12)	**(0.07)**	**(0.06)**	**(0.59)**	**(0.28)**	**(0.17)**	**(0.14)**	**(0.17)**	**(0.16)**	**(0.12)**	**(0.12)**	(0.10)	**(0.10)**	**(0.10)**	**(0.08)**	**(0.15)**	**(0.10)**	**(0.10)**
Covid-19 controls	**1.30**	**0.64**	**0.37**	**2.05**	**1.10**	**0.56**	**0.72**	**0.60**	**0.59**	**0.78**	**0.41**	0.28	**0.98**	**0.33**	0.15	**1.71**	**0.99**	**0.54**
	(0.11)	**(0.07)**	**(0.07)**	**(0.44)**	**(0.20)**	**(0.13)**	**(0.11)**	**(0.16)**	**(0.16)**	**(0.12)**	**(0.16)**	(0.16)	**(0.10)**	**(0.09)**	(0.10)	**(0.12)**	**(0.08)**	**(0.08)**
Month FE	**1.29**	**0.62**	**0.35**	**2.04**	**1.08**	**0.56**	**0.70**	**0.57**	**0.55**	**0.76**	**0.38**	0.24	**0.99**	**0.34**	**0.18**	**1.72**	**1.00**	**0.56**
	(0.11)	**(0.08)**	**(0.06)**	**(0.45)**	**(0.21)**	**(0.13)**	**(0.11)**	**(0.14)**	**(0.14)**	**(0.11)**	**(0.14)**	(0.13)	**(0.11)**	**(0.09)**	**(0.09)**	**(0.12)**	**(0.09)**	**(0.09)**
Week FE	**1.20**	**0.40**	**0.26**	**1.86**	**0.65**	**0.29**	**0.61**	**0.33**	**0.24**	**0.75**	**0.29**	0.14	**0.99**	**0.19**	0.09	**1.50**	**0.63**	**0.44**
	(0.10)	**(0.05)**	**(0.04)**	**(0.41)**	**(0.13)**	**(0.07)**	**(0.10)**	**(0.09)**	**(0.07)**	**(0.10)**	**(0.12)**	(0.08)	**(0.09)**	**(0.07)**	(0.06)	**(0.12)**	**(0.08)**	**(0.07)**
Weekday FE	**1.25**	**0.69**	**0.38**	**2.04**	**1.13**	**0.58**	**0.61**	**0.57**	**0.57**	**0.69**	**0.40**	0.26	**0.85**	**0.35**	0.13	**1.68**	**1.01**	**0.55**
	(0.12)	**(0.08)**	**(0.07)**	**(0.45)**	**(0.22)**	**(0.14)**	**(0.13)**	**(0.16)**	**(0.17)**	**(0.12)**	**(0.17)**	(0.17)	**(0.11)**	**(0.10)**	(0.09)	**(0.12)**	**(0.09)**	**(0.09)**

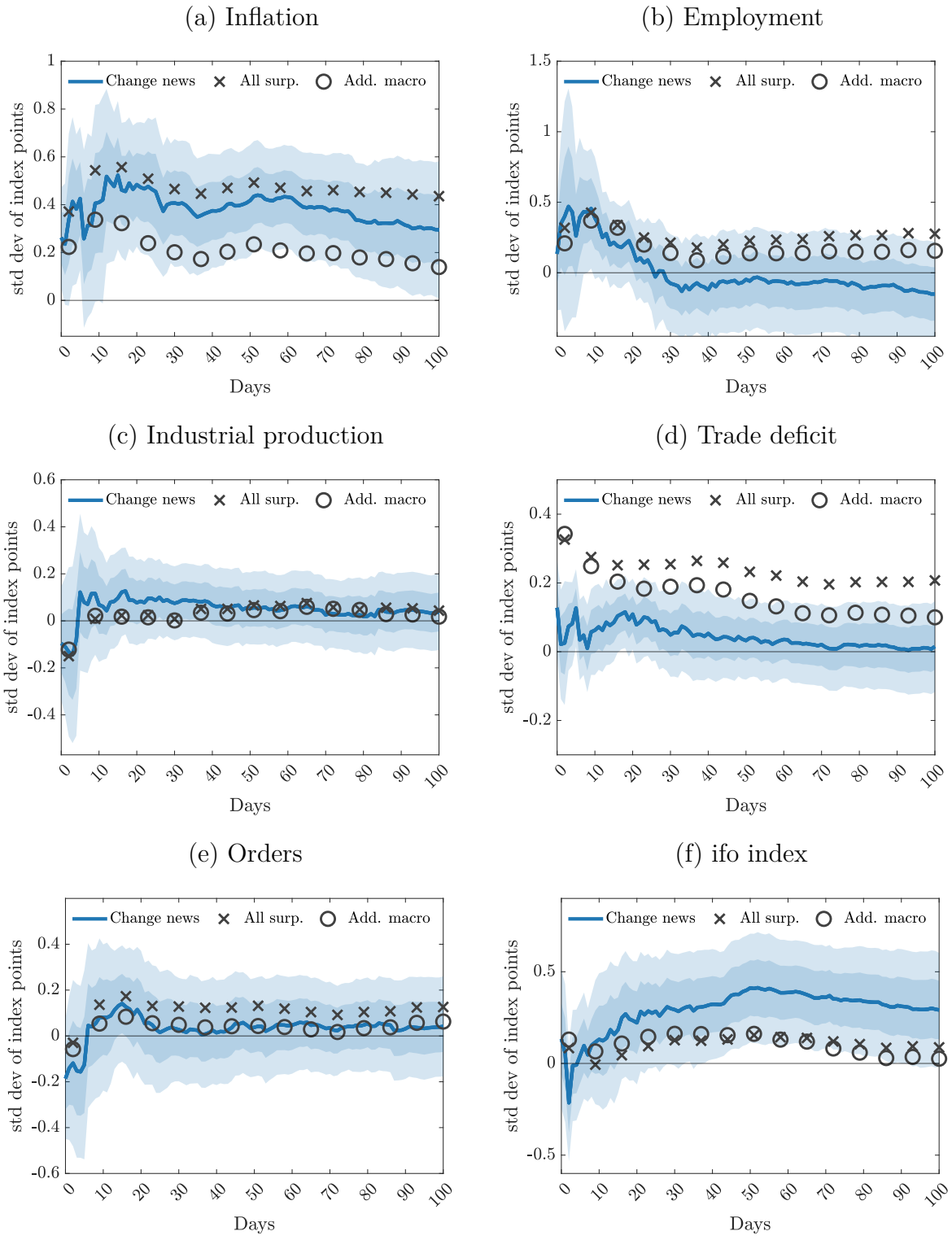
Notes: This table presents the event study estimates based on equation (3) as specified in Section 4. Standard errors robust to heteroskedasticity and serial correlation are in parentheses. Estimates that are statistically significant at the five percent level are bold to ease readability. The column labels refer to the data release under consideration and the window length, which indicates the number of days over which the average outcome before and after each release is computed. The outcomes are the standardized news coverage series, and the regressor of interest is an indicator variable that is activated on release days for the macroeconomic variable under consideration. All specifications include the baseline controls. Additional macro controls include 28 daily lags of the DAX stock index, the oil price, and the three-month Euribor interest rate. All surprise controls include all six forecast errors in each regression. Change news controls include the first difference of the macroeconomic variable from the data release under consideration. Exclude Covid-19 refers to the baseline specification, but the estimation sample starts in July 2022. Covid-19 controls include the Covid-19 stringency index, the log of cumulative cases, and the log of cumulative deaths. FE refers to the addition of the corresponding fixed effects.

Table E.3: Event studies for news coverage: sensitivity analysis

	Inflation			Employment			Ind. production			Trade deficit			Orders			ifo Index		
Window (h)	2	5	10	2	5	10	2	5	10	2	5	10	2	5	10	2	5	10
Baseline	**1.11**	**0.67**	**0.33**	**1.02**	**0.87**	**0.64**	**0.19**	**0.27**	**0.21**	**0.12**	0.14	0.13	0.03	-0.11	-0.14	**1.27**	**0.81**	**0.32**
	(0.12)	**(0.09)**	**(0.06)**	**(0.13)**	**(0.13)**	**(0.12)**	**(0.07)**	**(0.10)**	**(0.10)**	**(0.04)**	(0.08)	(0.09)	(0.05)	(0.09)	(0.08)	**(0.12)**	**(0.13)**	**(0.10)**
Add. macro controls	**1.12**	**0.66**	**0.32**	**0.99**	**0.83**	**0.60**	**0.17**	**0.24**	**0.22**	**0.12**	0.14	0.12	-0.01	-0.16	**-0.18**	**1.28**	**0.79**	**0.30**
	(0.10)	**(0.08)**	**(0.06)**	**(0.12)**	**(0.11)**	**(0.13)**	**(0.07)**	**(0.09)**	**(0.10)**	**(0.04)**	(0.09)	(0.09)	(0.06)	(0.11)	**(0.09)**	**(0.12)**	**(0.11)**	**(0.09)**
All surprises controls	**1.06**	**0.63**	**0.30**	**0.99**	**0.83**	**0.59**	**0.17**	**0.24**	0.18	**0.10**	0.11	0.08	0.02	-0.10	-0.14	**1.27**	**0.81**	**0.32**
	(0.12)	**(0.10)**	**(0.07)**	**(0.13)**	**(0.14)**	**(0.13)**	**(0.07)**	**(0.10)**	(0.10)	**(0.03)**	(0.07)	(0.09)	(0.05)	(0.09)	(0.08)	**(0.12)**	**(0.13)**	**(0.10)**
No controls	**1.11**	**0.66**	**0.33**	**1.03**	**0.87**	**0.64**	**0.19**	**0.27**	**0.21**	**0.12**	0.14	0.13	0.03	-0.11	-0.14	**1.19**	**0.73**	**0.25**
	(0.10)	**(0.08)**	**(0.06)**	**(0.12)**	**(0.12)**	**(0.12)**	**(0.07)**	**(0.10)**	**(0.10)**	**(0.04)**	(0.08)	(0.09)	(0.05)	(0.09)	(0.08)	**(0.10)**	**(0.11)**	**(0.09)**
Exclude Covid-19	**0.94**	**0.50**	**0.23**	**0.89**	**0.83**	**0.65**	**0.20**	0.20	0.14	**0.13**	0.15	0.10	0.05	-0.14	-0.18	**1.33**	**0.88**	0.27
	(0.09)	**(0.07)**	**(0.09)**	**(0.15)**	**(0.14)**	**(0.15)**	**(0.09)**	(0.13)	(0.13)	**(0.04)**	(0.10)	(0.12)	(0.06)	(0.10)	(0.10)	**(0.15)**	**(0.17)**	(0.14)
Covid-19 controls	**1.11**	**0.66**	**0.33**	**1.03**	**0.88**	**0.64**	**0.20**	**0.28**	**0.23**	**0.12**	0.14	0.12	0.03	-0.12	-0.15	**1.27**	**0.80**	**0.32**
	(0.11)	**(0.09)**	**(0.08)**	**(0.13)**	**(0.13)**	**(0.12)**	**(0.07)**	**(0.10)**	**(0.10)**	**(0.04)**	(0.08)	(0.09)	(0.05)	(0.09)	(0.08)	**(0.12)**	**(0.12)**	**(0.10)**
Month FE	**1.09**	**0.63**	**0.29**	**0.91**	**0.66**	**0.39**	**0.17**	**0.22**	**0.16**	**0.11**	0.11	0.08	0.03	-0.12	-0.15	**1.27**	**0.81**	**0.33**
	(0.11)	**(0.08)**	**(0.06)**	**(0.12)**	**(0.13)**	**(0.12)**	**(0.07)**	**(0.08)**	**(0.08)**	**(0.03)**	(0.07)	(0.08)	(0.05)	(0.08)	(0.08)	**(0.13)**	**(0.13)**	**(0.10)**
Week FE	**0.99**	**0.42**	**0.21**	**0.82**	**0.39**	**0.23**	**0.16**	0.13	0.07	**0.13**	**0.13**	0.07	0.08	-0.03	-0.03	**1.11**	**0.60**	**0.38**
	(0.11)	**(0.07)**	**(0.05)**	**(0.11)**	**(0.09)**	**(0.08)**	**(0.06)**	(0.07)	(0.05)	**(0.03)**	**(0.05)**	(0.04)	(0.05)	(0.06)	(0.06)	**(0.11)**	**(0.11)**	**(0.09)**
Weekday FE	**1.11**	**0.71**	**0.34**	**1.02**	**0.93**	**0.65**	**0.18**	**0.26**	**0.20**	**0.10**	0.12	0.11	-0.04	-0.09	**-0.16**	**1.21**	**0.79**	**0.30**
	(0.11)	**(0.09)**	**(0.06)**	**(0.12)**	**(0.13)**	**(0.12)**	**(0.07)**	**(0.10)**	**(0.10)**	**(0.04)**	(0.08)	(0.10)	(0.04)	(0.08)	**(0.08)**	**(0.12)**	**(0.13)**	**(0.10)**

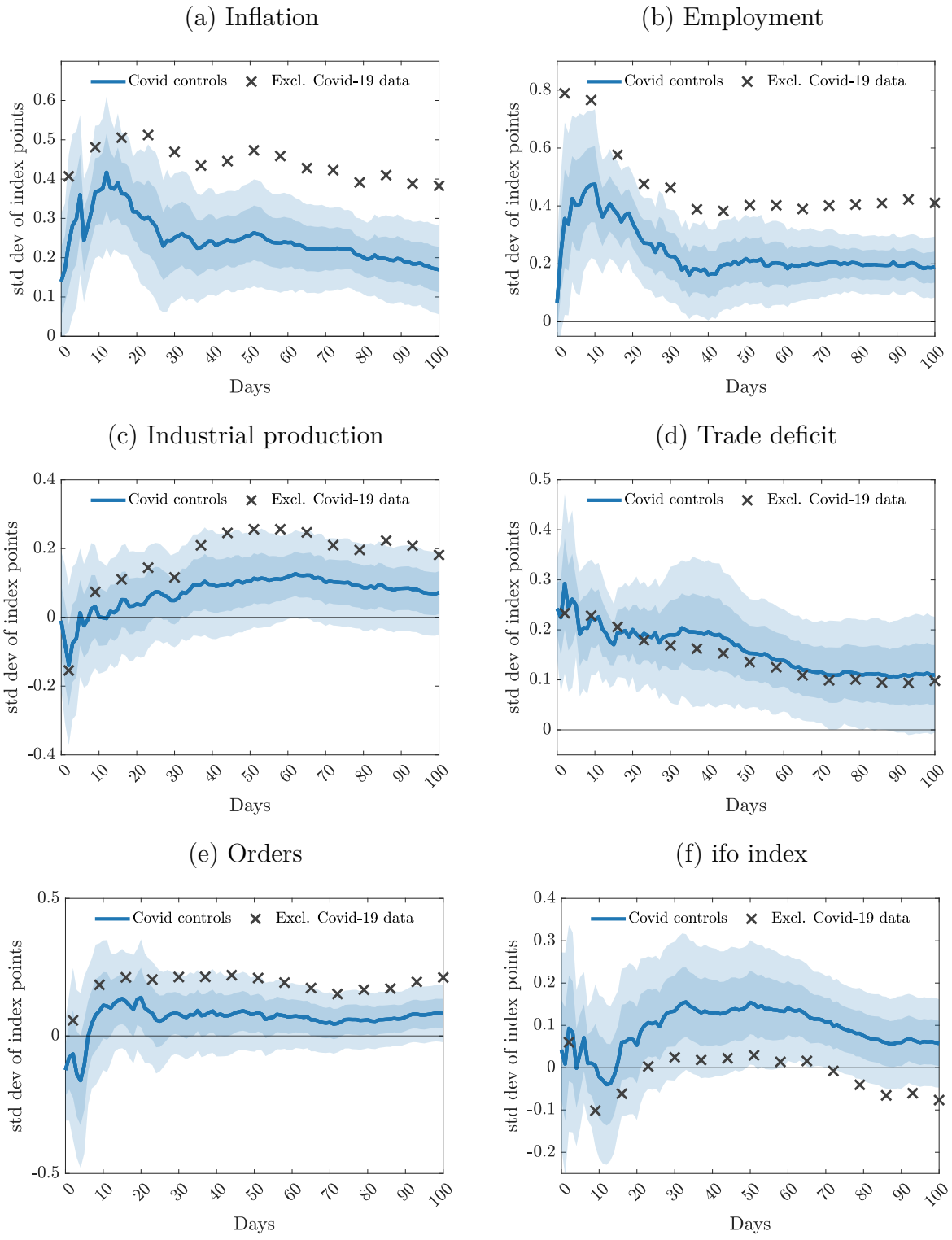
Notes: This table presents the event study estimates based on equation (3) as specified in Section 4. Standard errors robust to heteroskedasticity and serial correlation are in parentheses. Estimates that are statistically significant at the five percent level are bold to ease readability. The column labels refer to the data release under consideration and the window length, which indicates the number of days over which the average outcome before and after each release is computed. The outcomes are the standardized news searches series, and the regressor of interest is an indicator variable that is activated on release days for the macroeconomic variable under consideration. All specifications include the baseline controls. Additional macro controls include 28 daily lags of the DAX stock index, the oil price, and the three-month Euribor interest rate. All surprise controls include all six forecast errors in each regression. Change news controls include the first difference of the macroeconomic variable from the data release under consideration. Exclude Covid-19 refers to the baseline specification, but the estimation sample starts in July 2022. Covid-19 controls include the Covid-19 stringency index, the log of cumulative cases, and the log of cumulative deaths. FE refers to the addition of the corresponding fixed effects.

Figure E.1: Dynamic responses of price plans: additional controls



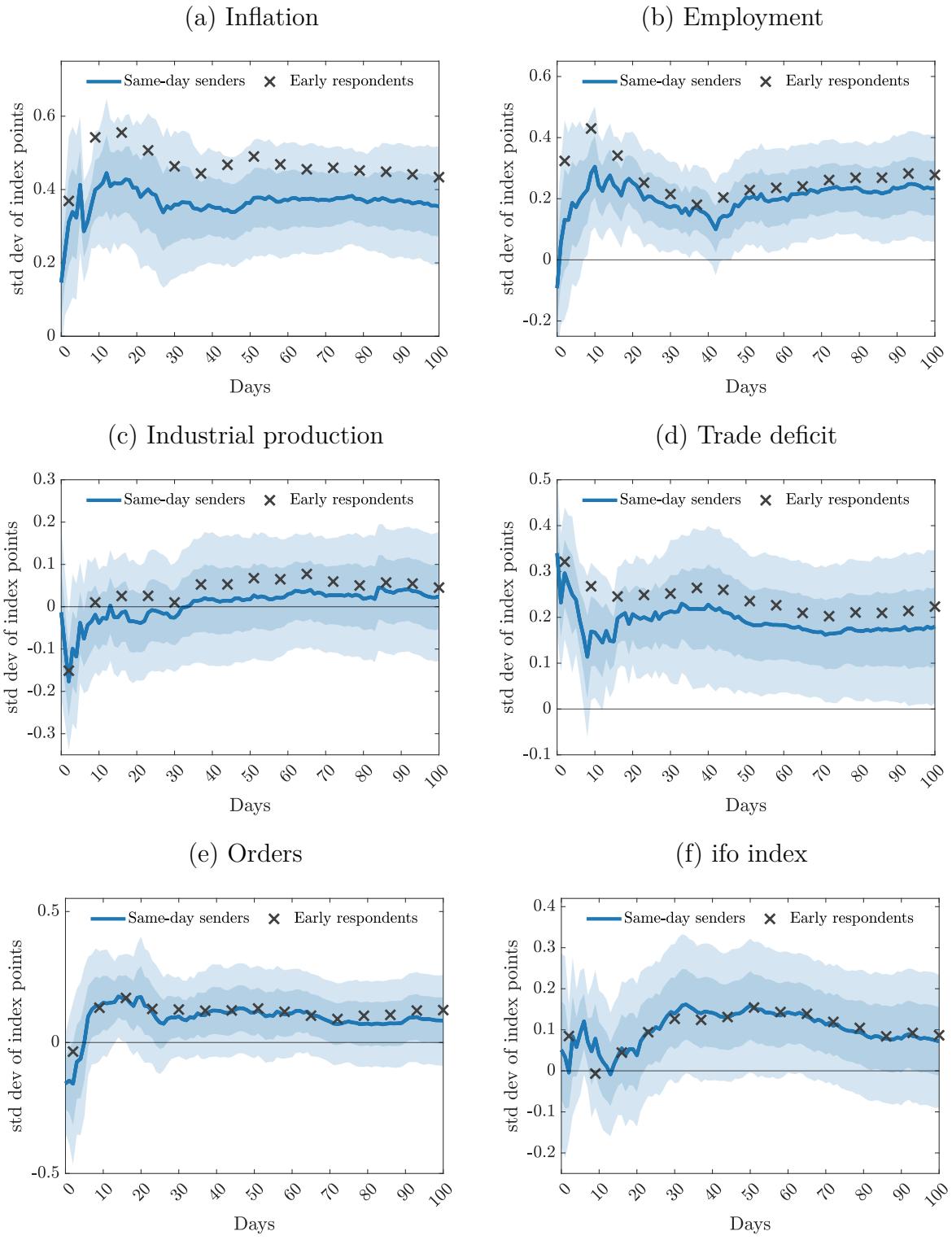
Notes: This figure presents cumulative impulse responses of the sales price plan based on equation (3) as specified in Section 4. The solid blue line corresponds to the OLS estimate for each forecast error from the respective data release. The blue-shaded areas indicate 95 and 68 percent confidence bands based on standard errors robust to heteroskedasticity and serial correlation. The corresponding specifications are explained in the notes of Table E.1, which provides the corresponding event study estimates.

Figure E.2: Dynamic responses of price plans: Covid-19



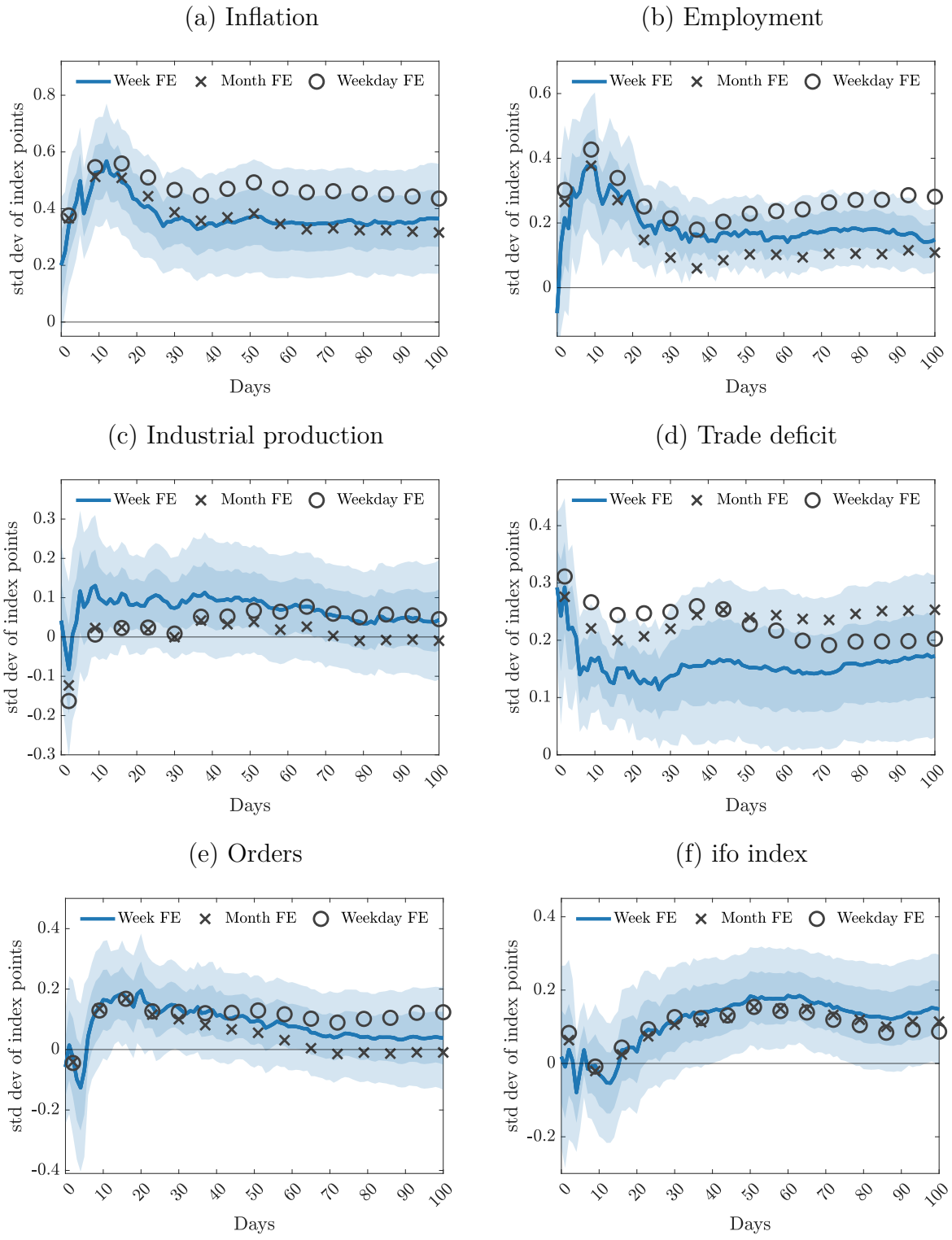
Notes: This figure presents cumulative impulse responses of the sales price plan based on equation (3) as specified in Section 4. The solid blue line corresponds to the OLS estimate for each forecast error from the respective data release. The blue-shaded areas indicate 95 and 68 percent confidence bands based on standard errors robust to heteroskedasticity and serial correlation. The corresponding specifications are explained in the notes of Table E.1, which provides the corresponding event study estimates.

Figure E.3: Dynamic responses of price plans: response timing



Notes: This figure presents cumulative impulse responses of the sales price plan based on equation (3) as specified in Section 4. The solid blue line corresponds to the OLS estimate for each forecast error from the respective data release. The blue-shaded areas indicate 95 and 68 percent confidence bands based on standard errors robust to heteroskedasticity and serial correlation. The corresponding specifications are explained in the notes of Table E.1, which provides the corresponding event study estimates.

Figure E.4: Dynamic responses of price plans: additional fixed effects



Notes: This figure presents cumulative impulse responses of the sales price plan based on equation (3) as specified in Section 4. The solid blue line corresponds to the OLS estimate for each forecast error from the respective data release. The blue-shaded areas indicate 95 and 68 percent confidence bands based on standard errors robust to heteroskedasticity and serial correlation. The corresponding specifications are explained in the notes of Table E.1, which provides the corresponding event study estimates.