Estimating perceived monetary policy rules for Sweden

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Private agents' perceptions of how the central bank will respond to new information shape how interest rates react to macroeconomic news and are therefore central to the transmission of monetary policy.

In this article, we estimate a time-varying perceived monetary policy rule for Sweden using surveys of professional forecasters. The estimated rule exhibits substantial variation over time, but overall, the Riksbank is perceived to respond more strongly to expected inflation than to the expected output gap. Extending the baseline specification, we find little evidence that the exchange rate is perceived to enter the policy rule independently of its implications for expected inflation and real activity.

We then use an event-study approach to derive an independent, market-based counterpart to the survey-based rule from the response of interest rates to inflation and GDP surprises. Market rates respond positively and significantly to both, with stronger responses to inflation surprises. Finally, we find some evidence that market responses to macroeconomic news are stronger when the Riksbank is perceived to place greater weight on the corresponding variable, although this result is limited to a subset of financial instruments.

1 Introduction

Private agents' expectations about how the Riksbank will react to new information are a key determinant of how policy decisions transmit to longer-term interest rates and broader financial conditions. If market participants understand the central bank's reaction function, that is, how it will respond to new information, part of the adjustment to shocks can occur through prices and expectations even before policy is changed (Woodford, 2005).[1] For policy analysis, this makes market participants'

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[1] Another case when perceptions are economically important is discussed in Bauer et al. (2024b). Using a simple theoretical framework, they show that if the public expects a strong response to inflation, this can

perceived reaction function a useful object to monitor—yet it is not directly observable and may vary over time.

Identifying the perceived reaction function of a central bank requires measuring its expected responses to movements in its goal variables. A common approach to evaluate market participants' expectations about future monetary policy is to use asset prices or survey forecasts of the policy rate. While these are informative about expected outcomes, they are not informative about the policy reaction function itself. Alternatively, estimated policy rules within structural or semi-structural models reflect the econometrician's model and information set rather than agents' subjective beliefs.

In this article, we estimate a perceived monetary policy rule for Sweden. Our approach to capturing the perceived reaction function of the Riksbank consists of estimating a perceived time-varying monetary policy rule that defines a systematic relation between the policy rate and some indicators of macroeconomic conditions using granular survey data on professional forecasts. We use data from the Riksbank monthly survey of professional forecasters from October 2006 to November 2025. Building on Bauer et al. (2024a), we form panels for each monthly survey consisting of forecasts for the policy rate, inflation and the output gap for the available forecast horizons for each forecaster. The estimated forward-looking policy rule relates the expected policy rate to expectations for inflation and real activity. This approach uses the joint distribution of individual forecasts to recover the response coefficients that are most consistent with respondents' policy rate expectations and thereby provides a structured time-varying metric of perceived policy behaviour. More precisely, it defines perceived monetary policy as the estimated coefficients on inflation and the output gap that, in a given month, rationalise the individual policy rate forecasts as a linear function of the corresponding forecasts for inflation and the output gap. The perceived policy rule is estimated with and without interest rate smoothing (inertia).

Three results stand out. First, forecasters perceive the Riksbank as responding more strongly to expected inflation deviations than to the expected output gap. Second, there is variation in both responses over time, with the 2012-2017 period showing a stronger perceived response of the Riksbank to movements in inflation than during other periods. Third, our results are robust to considering an inertial rule, alternative measures of real activity and an alternative method to control for disagreement about the long term. To address the concern of potential misspecification of the estimated perceived policy rule, we extend our baseline specification with survey forecasts of the exchange rate – a potentially important variable given that Sweden is a small open economy. We find limited evidence that the exchange rate is perceived to enter the policy rule beyond its implications for expected inflation and real activity.

The method in Bauer et al. (2024a) builds on the assumption that a simple Taylor rule is a credible "model" of how monetary policy is perceived to respond to

improve the trade-off between stabilising output and inflation by limiting the change in actual inflation going forward.

macroeconomic conditions.[2] However, this functional form can provide a more or less accurate approximation of respondents' views at different points in time.[3] Variation in the estimated coefficients may, therefore, partly reflect changes in the degree of misspecification rather than changes in the underlying perceived policy weights.

Our application of this method to Sweden involves both gains and limitations. An important advantage is that the survey provides longer-horizon expectations, which reduces the risk of contamination from expected near-term monetary policy shocks and helps identify disagreement about the steady state across respondents. However, respondents are not asked explicitly about how the Riksbank would adjust the policy rate conditional on macroeconomic outcomes. The mapping from policy rate forecasts to perceived policy responses is therefore less straightforward than in Bauer et al. (2024a).

To validate the conclusions from our survey-based perceived policy rule, we estimate an alternative perceived rule using financial market data, identified from the causal effect of inflation and GDP forecast revisions on policy rate forecast revisions. Specifically, we estimate event-study regressions of interest rate changes on inflation and GDP surprises—measured as the difference between the released value and the consensus forecast prior to the announcement—in narrow windows around the data releases. Under the assumption that these interest rate changes reflect revisions to expectations about the future policy rate, the estimated coefficients can be interpreted as the Riksbank's expected reaction to the data surprises.

We find that positive surprises in inflation and GDP releases cause statistically significant increases in market rates, consistent with the interpretation that financial markets perceive the Riksbank to raise the policy rate in response to this news. Consistent with our survey-based perceived policy rule, the implied response is stronger for inflation surprises than for GDP surprises. In terms of magnitude, the estimates align more closely with the survey-based rule in the specification with policy rate inertia.

In addition, we use rolling-window estimates of our event-study regressions and find that the perceived responses to inflation and GDP surprises vary over time in a manner that qualitatively matches the time variation in the survey-based rule. For example, according to both estimation methods, the Riksbank was perceived to

[2] Even though simple policy rules are not followed mechanically (see, e.g., Svensson, 2017), it is common for central banks to consider some type of simple policy rules as input into policy deliberations or in the external communication (see, e.g., Garga et al., 2025). In theory, optimal policy can be derived by minimising the expected loss of the policymaker, but in practice this is not directly applicable and simple policy rules can be useful. In DSGE models – the workhorse model used for policy analysis in many central banks – monetary policy is often modelled using some version of a Taylor rule. This is also the case for the Riksbank's DSGE model MAJA (see Corbo and Strid (2020) for more details).

[3] For Sweden, Jonsson and Katinic (2017) argue that Swedish monetary policy has been in line with a Taylor rule with a time-varying long-term rate between 1995-2017. In a recent paper, Nakamura et al. (2025) study monetary policy in the United States and highlight that the Federal Reserve at times has deviated strongly from the Taylor rule, in particular during the recent inflation surge. Similar evidence for Sweden is documented by Gustafsson and Nessén (2026).

respond relatively more strongly to deviations in its goal variables during 2012-2017 than in other periods.

Overall, the market-perceived rule yields conclusions similar to those from the survey-based rule. The quantitative evidence, however, is more nuanced. Allowing the sensitivity of interest rates to macroeconomic news to vary with our survey-based measure of perceived policy responsiveness, we find some evidence that rates respond more to inflation and GDP surprises when the Riksbank is perceived to place a greater weight on the respective variable. This would suggest that time variation in the survey-based rule matters for the transmission of macroeconomic news to market rates. However, since the estimated interaction effects are only statistically significant for a subset of interest rates and depend on the specification used to estimate the survey-based coefficients, these results should be interpreted with caution.

This article contributes to the literature on monetary policy expectations and transmission by developing a survey-based, time-varying measure of the perceived policy reaction function for Sweden. Existing work often infers changes in expected policy paths from financial market prices, particularly in high-frequency event-study settings around macroeconomic and policy announcements (for example, Kuttner 2001, Gürkaynak et al. 2005, or Nakamura and Steinsson 2018) or estimates policy rules within structural and semi-structural models under a maintained information set (for example, Clarida et al. 2000). Our contribution is to complement these approaches with a direct measure of how market participants perceive the Riksbank's systematic response to macroeconomic conditions, and how that perception evolves over time. By adapting the framework of Bauer et al. (2024a) to a small open economy and explicitly assessing the perceived role of the exchange rate, the article also offers a practical monitoring device for policy analysis and for interpreting variation in the sensitivity of market rates to macroeconomic news.

2 Survey data

To estimate survey-based perceived monetary policy rules for Sweden, we utilise panel data on professional forecasts. The Riksbank commissions Origo Group to measure expectations of several macroeconomic variables among money market participants, labour market parties and purchasing managers.[4] The money market participants' survey is conducted monthly, whereas the survey including all participants is conducted quarterly.[5] Origo Group publishes moments from the survey

[4] The survey has been published in some form since 1995. Between 2000-2024, the survey was carried out by Kantar Prospera.

[5] All participants are asked about their expectations for inflation, wage increases, GDP and the policy rate in Sweden. Money market participants are also asked about their expectations for the Swedish 5-year government bond rate and the EUR and USD exchange rates. Money market participants include banks, investment firms and pension funds. Labour market parties refer to employer and employee organisations. Since September 2009, the survey has been conducted monthly among money market participants. For an overview of the survey, see Lundgren (2021).

each month, focusing on the mean value of the respondents. The underlying microdata includes the (anonymised) individual respondents from each institution.[6]

For this article, we utilise data for the period October 2006 to November 2025. We focus on the money market participants' survey and use the monthly panel data from September 2009; before then, the survey was quarterly. Money market participants are surveyed about their expectations for the key variables: the policy rate, inflation and GDP growth, at three different horizons: one year, two years, and five years ahead.[7]

The expected policy rate is straightforward to include in our analysis, but we need to make some assumptions for inflation and GDP.

Until 2017, inflation expectations were measured as the expected percentage increase in the consumer price index (CPI). After the Riksbank adopted the CPI with a fixed interest rate (CPIF) as the target index in September 2017, respondents were asked about their expectations for inflation measured both as CPI and CPIF. For this latter period, we use CPIF as our measure of inflation.

For GDP, respondents are asked about expected GDP growth, but monetary policy rules are typically specified in terms of the output gap.[8] To construct a measure of the output gap, we follow a method similar to that in Bauer et al. (2024a). First, to construct forecasts for expected real GDP, we combine (i) the level of real GDP from the National Institute of Economic Research (NIER) and (ii) the survey respondents' forecast for real GDP growth. Because respondents do not have access to the outcomes for real GDP in the quarter of the survey, we construct a common nowcast for real GDP in each quarter based on forecasts from the NIER.[9] Then, because the respondents only report their expected growth rates for years one, two and five, we use interpolation to compute the growth rate for years three and four, assuming a monotonic function. Next, we compute the expected level of real GDP at the different horizons.

To construct the GDP gap, we also need a measure of expected potential GDP, GDP^*. This variable is not included in the survey. Instead, we use the projected potential GDP from the NIER—again using real-time data with the most recent vintage before

[6] In a recent paper, Gemmi and Valchev (2026) show that professional forecasters' survey responses are biased when there are strategic incentives to stand out. They argue that it is not necessarily enough to have anonymous surveys to solve this issue, if respondents also respond to non-anonymous surveys. The Origo data used in this article is both anonymous and proprietary, commissioned by the Riksbank, limiting the scope of such strategic incentives.

[7] See Appendix A for descriptive figures for these variables.

[8] GDP growth can be high in different parts of the business cycle and may therefore not be a good indicator of resource utilisation.

[9] If there is a published forecast from the NIER in the same month as the survey, we use that forecast. Otherwise, we use the most recent forecast. If the release from NIER is in the same month but shortly after the survey wave (at the end of the same month), we will assume that respondents have access to that information, that is, we take into consideration the latest GDP release (already observed by respondents) and assume that everyone makes the same nowcast for the current quarter.

the survey date.[10] Constructing the output gap in this way means that we assume that the survey respondents share the same forecast for potential output.

For a survey at time t, the expected GDP gap at horizon h, y_{t+h}, is computed based on the standard formula:

(1) $$y_{t+h} = \frac{GDP_{t+h} - GDP^*_{t+h}}{GDP^*_{t+h}},$$

where GDP_{t+h} is the forecast of GDP at horizon h, and GDP^*_{t+h} is the forecast for potential GDP. Table 1 presents some summary statistics for the survey data. The total sample over the period October 2006 to November 2025 consists of 18,514 observations, with an average of 31 respondents per wave and three forecast horizons. Over this period, average inflation was 1.85 per cent, and the average expected GDP gap was negative at –1.23 per cent.[11] The expected policy rate was 1.63 per cent, and expectations for the policy rate over this period ranged between –1 and 6 per cent.

Table 1. Summary statistics of surveyed expectations

Variable	Mean	Std. dev.	Min.	25th pct.	Median	75th pct	Max.
Policy rate	1.63	1.35	-1.00	0.50	1.50	2.50	6.00
Inflation	1.85	0.75	-2.00	1.50	1.90	2.10	8.50
GDP gap	-1.23	3.16	-19.80	-2.91	-1.04	0.97	13.60

Note. Summary statistics for the sample period October 2006 to November 2025.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

3 A perceived forward-looking monetary policy rule for Sweden

3.1 Estimating a monetary policy rule based on survey data

To recover the perceived monetary policy rule, we assume that simple policy rules are a useful descriptive device to characterise monetary policy and that forecasters first form a view of the key macroeconomic variables, inflation and output, and then use a policy rule to arrive at their policy rate forecast, conditional on these variables. This

[10] Again, if the release from NIER is shortly after the survey wave, we use the potential GDP from those projections. This will only be the case in the months when the NIER updates their projections: typically, March, June, September and December. The projections are typically published towards the end of the month, whereas the survey is carried out in the first half of the month.

[11] Figure 8 in Appendix A illustrates the GDP gap across surveys and by horizons for the sample period.

allows us to interpret the estimated coefficients of the policy rule as the perceived monetary policy responses to inflation and output.[12]

The simple monetary policy rule we assume is in the spirit of the Taylor rule and takes the following form:

$$i_t = r_t^* + \pi_t^* + \beta_t(\pi_t - \pi_t^*) + \gamma_t y_t + u_t. \quad (2)$$

Here the nominal policy rate, i_t, is determined by the long-run neutral real rate r_t^*, the inflation target π_t^*, current deviations from the inflation target ($\pi_t - \pi_t^*$), the output gap y_t, and an exogenous monetary policy shock u_t. To estimate the parameters of the policy rule in equation (2), we regress the policy rate forecasts on inflation and GDP gap forecasts. At each time t, where t is the time of the survey, we do this for a panel of forecasts made by forecaster j at horizon h:

$$E_t^j i_{t+h} = a_t^j + \hat{\beta}_t E_t^j \pi_{t+h} + \hat{\gamma}_t E_t^j y_{t+h} + e_{t+h}^j, \quad (3)$$

where a_t^j is a forecaster fixed effect capturing beliefs about long-run inflation and the long-run real rate. The interpretation of the fixed effect is that it represents the individual and time-dependent assessment of the neutral rate of interest.[13] The estimation exploits variation across forecasters and forecast horizons, to retrieve the time-varying parameters $\hat{\beta}_t$ and $\hat{\gamma}_t$.

It is an empirical fact that the policy rate is typically adjusted gradually.[14] To capture this, the simple policy rule can be adjusted to include inertia, or interest rate smoothing (here ρ_t governs the degree of smoothing):

$$i_t = \rho_t i_{t-3} + (1 - \rho_t)[r_t^* + \pi_t^* + \beta_t(\pi_t - \pi_t^*) + \gamma_t y_t] + u_t, \quad (4)$$

where we include the policy rate lagged by a quarter (i_{t-3}). To estimate the parameters of equation (4)—now including the time-varying parameter ρ_t—we estimate the following regression with inertia:

$$E_t^j i_{t+h} = a_t^j + \hat{\rho}_t i_{t+h-3} + \hat{\beta}_t E_t^j \pi_{t+h} + \hat{\gamma}_t E_t^j y_{t+h} + e_{t,t+h}^j. \quad (5)$$

We do not observe i_{t+h-3} in the survey. Therefore, we interpolate the respondents' policy rate expectations at horizons of three months, one year, two years and five years. We assume a monotonic function and interpolate to approximate the policy rate in the previous quarter (for each forecast horizon) using the policy rate at the time of the survey combined with individual expectations.[15]

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[12] It is possible to make a broader interpretation of the estimated coefficients of the policy rule. Instead of reflecting perceived monetary policy, we can think of them reflecting the perceived endogenous co-movement between the policy rate and these macroeconomic conditions.

[13] Bauer et al. (2024a) include forecaster-fixed effects to reflect that forecaster beliefs about the long-run real rate and inflation (r_t^* and π_t^* in equation (2)) may be correlated with their forecasts for inflation and the output gap and, therefore, we should control for these. In our baseline estimation, we include such fixed effects, but since we only have three observations per forecaster and survey month, we also consider an alternative specification in Appendix B. In the alternative specification, we instead include variables in deviation from their long-run expected values, that is, in deviation from the five-year expectations.

[14] See, for instance, Sveriges Riksbank (2024).

[15] We use a monotone piecewise cubic interpolation to capture the curvature of the expected forward curve. The results are robust to alternative cubic interpolation methods. Accurately capturing this curvature

The estimation strategy relies on an ordinary least squares model and four main assumptions. First, the estimation requires that there is variation in expected inflation and output across forecasters.[16] Second, economic forecasts should be exogenous to the expected monetary policy shock from the simple policy rule, $E_t^j u_{t+h}$. Bauer et al. (2024a) discuss how it is unlikely that this assumption holds exactly and, therefore, some endogeneity bias may arise. While expected monetary policy shocks may contaminate expectations at short horizons, longer term expectations available in the survey data for Sweden somewhat limit this concern.

Third, we assume that forecasts for the policy rate are made according to the simple monetary policy rule. We obtain an average R^2 across surveys that is very similar to what Bauer et al. (2024a) present. However, while the survey used in Bauer et al. (2024a, 2024b) asks forecasters specifically about the macroeconomic assumptions underlying their policy rate forecasts, the wording is less specific in the Origo survey, and respondents are simply asked about their expectations at different horizons.[17] Under the assumption that the rule is well specified—that is, the respondents' policy rate forecasts correspond to their perceived policy responses to macroeconomic conditions—we can make a causal interpretation of the estimated coefficients as response coefficients. Finally, the fourth assumption is that parameters are constant over the forecast horizon.

A potential concern is that misspecification of the policy rule drives the variation in our estimates over time. In Section 3.3, we show that our results are robust to different specifications of the rule.

3.2 A time-varying perceived monetary policy rule for Sweden

Table 2 shows the coefficients of the baseline rules with and without inertia (interest rate smoothing) estimated over the whole sample. The estimated coefficient for inflation is substantially larger than that for the GDP gap for both specifications. Accounting for the lagged policy rate leads to estimated coefficients on inflation and the GDP gap that are considerably smaller. This is expected since, when we include the lagged policy rate, the coefficients only capture the perceived short-term response of the policy rate.

is important for our estimates: by contrast, a simple linear interpolation implies a persistence coefficient consistently above one, which appears economically implausible.

[16] Since we estimate policy rule within each cross-section, it requires either that we observe variation across respondents or within respondent but across horizons.

[17] See Appendix A for more details on the Origo survey.

Table 2. Average estimated policy rule with and without inertia

	Policy rate	
	(1)	(2)
Policy rate$_{t-1}$		0.983*** (0.006)
Inflation	0.659*** (0.076)	0.044*** (0.007)
GDP gap	0.194*** (0.029)	-0.008** (0.003)
Observations	18,229	18,229
R^2	0.805	0.996
Within R^2	0.296	0.986
Individual-time FE	YES	YES

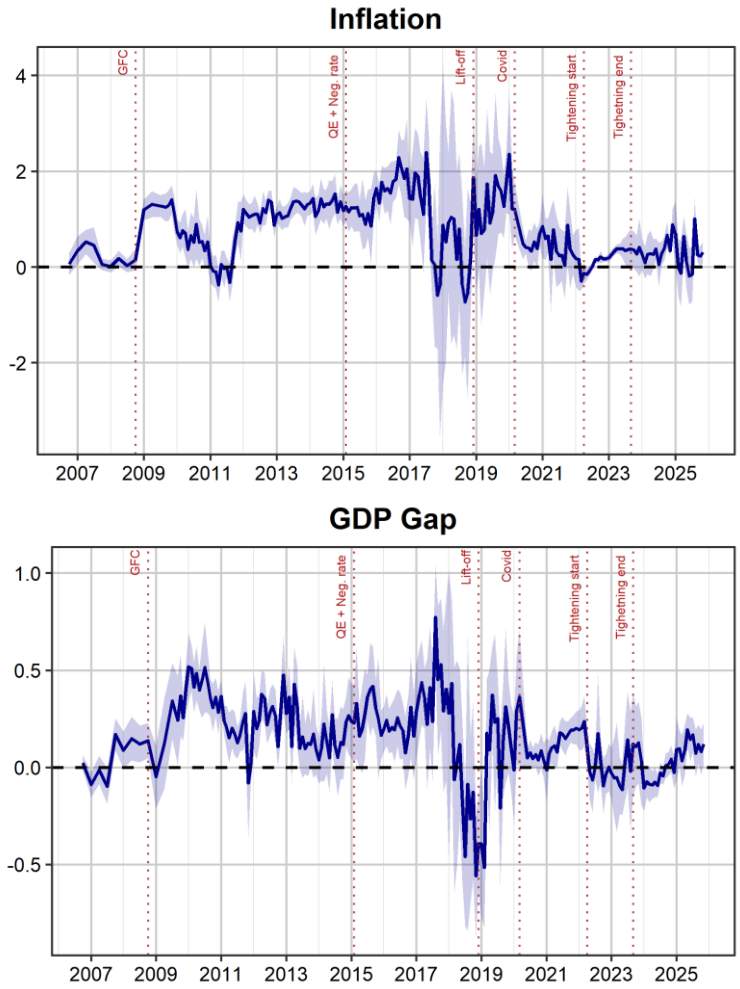
Note. Column (1) corresponds to Equation (3) and column (2) corresponds to Equation (5). Regressions are estimated on monthly surveys (quarterly frequency before September 2009) from October 2006 to November 2025. Standard errors clustered at the respondent-time level are shown in parentheses.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

We move on to a narrative interpretation of the time-varying rule. Overall – and in line with the Riksbank's primary price stability objective – we find that throughout the sample period the Riksbank is viewed as placing relatively greater weight on inflation than on the output gap, that is, the estimated coefficient on inflation is larger than the coefficient on the output gap. In addition, we find qualitatively similar patterns for the estimated coefficient on inflation for both specifications. Our measure of the GDP gap is likely subject to measurement errors due to the existence of uncertainty around the level of potential GDP. This can potentially bias our results and explain the negative coefficient on the GDP gap in column (2). To address this concern, we later present robustness checks of our main results assuming alternative measures of real activity in the policy rule.

Figure 1 shows the time variation in the estimated parameters for the perceived monetary policy rule without inertia, that is, according to Equation (3). The blue solid lines report the point estimates, and the shaded regions report 95 per cent confidence intervals. The top panel shows that the coefficient on inflation, $\hat{\beta}_t$, is relatively stable leading up to the Great Financial Crisis (GFC) and then increases around the onset of the GFC before falling back in 2010. In June 2010, the Riksbank started tightening monetary policy. Over the next two years, the Riksbank expressed concerns about rising household debt, and one interpretation consistent with the low $\hat{\beta}_t$ is that – at this time – forecasters did not think that the policy rate hikes were motivated by the economic outlook but rather by such financial stability concerns (see, for example, Svensson, 2017, Bylund et al., 2023, and Coglianese et al., 2025).

Figure 1. Parameter estimates for perceived policy rule



Note. Estimated policy-rule coefficients for inflation, $\hat{\beta}_t$, and the output gap, $\hat{\gamma}_t$. The blue lines refer to the estimated coefficients from Equation (3), estimated on monthly surveys (quarterly frequency before September 2009) from October 2006 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

In late 2011, $\hat{\beta}_t$ goes back to the level seen before June 2010 and is relatively stable around 1-1.5 until 2016. In February 2015, the Riksbank cut the policy rate to -0.10 per cent. The policy rate cut was combined with an announcement of asset purchases as well as an assurance that the central bank was ready to do more. In February 2016, following unexpectedly low inflation outcomes, the Riksbank also emphasised that it was ready to make monetary policy even more expansionary to ensure confidence in the inflation target, and $\hat{\beta}_t$ increases somewhat around this time.

Between 2017 and the end of 2018, when the policy rate was raised, $\hat{\beta}_t$ varies substantially and is overall less precisely estimated. This could be consistent with money market participants not perceiving a consistent reaction function for the Riksbank during this period. Leading up to 2020, $\hat{\beta}_t$ increases but the confidence intervals are much wider than in the years prior to 2017. From March 2020, at the

beginning of the Covid pandemic, money market participants again expect the Riksbank to put a lower weight on inflation. This is in line with the discussion in Bauer et al. (2024a), that the perceived coefficients are lower in times of crises. One explanation for this can be that the central bank is perceived to pursue risk management rather than act on the economic outlook.

The estimates of $\hat{\beta}_t$ trend downward until the start of monetary policy tightening in April 2022. This marks a turning point for $\hat{\beta}_t$, but the estimated coefficient remains at a relatively low level until 2024. Compared to the pre-Covid period, particularly the years prior to 2018, there is a clear shift downwards. Furthermore, from the second half of 2024 until the end of the sample period, $\hat{\beta}_t$ fluctuates substantially.

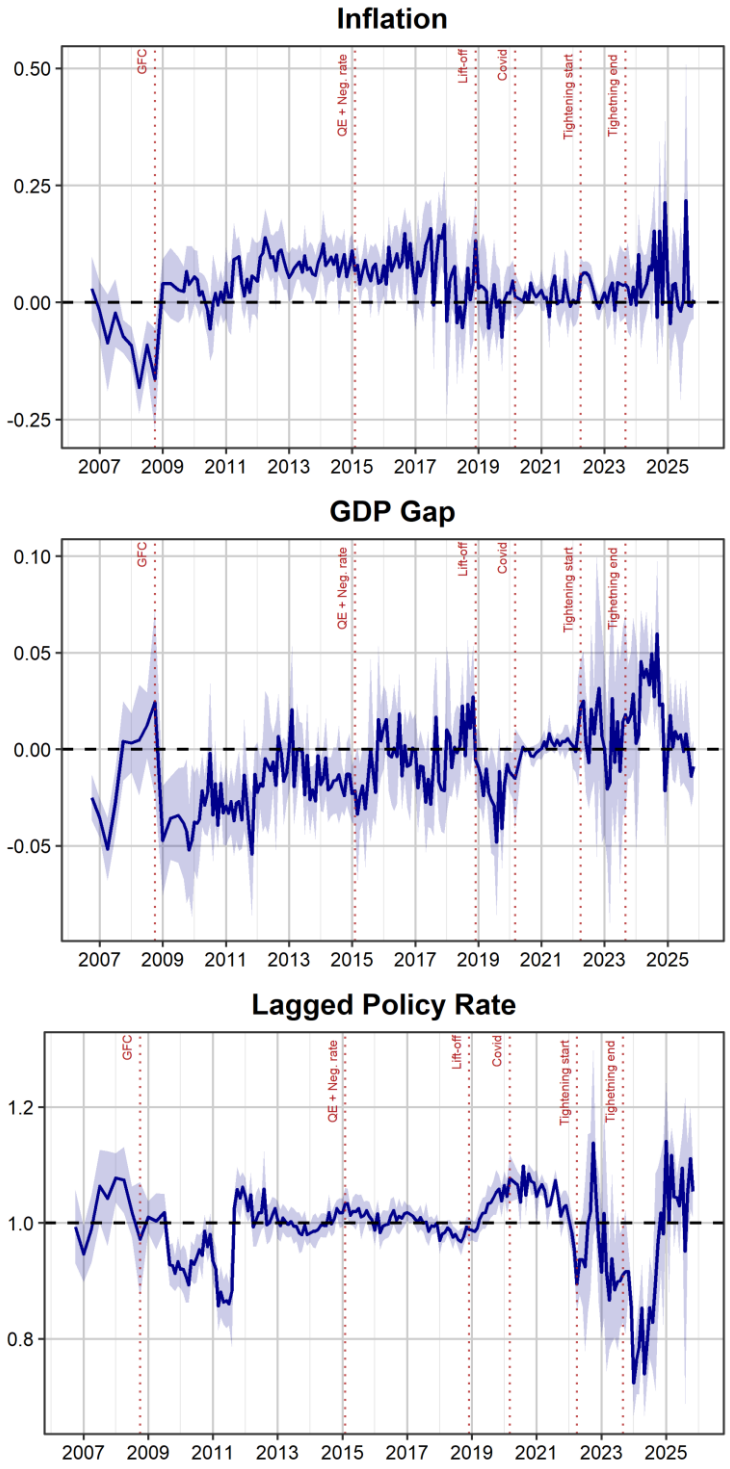
The bottom panel shows the coefficient on the expected GDP-gap, $\hat{\gamma}_t$. As expected, given the Riksbank's price stability objective, the magnitude of this coefficient is smaller than that of the coefficient on inflation, and the patterns are somewhat less clear. At the beginning of the sample period, $\hat{\gamma}_t$ moves from around zero to positive. Then, at the onset of the GFC, $\hat{\gamma}_t$ initially falls back to zero before trending up to around 0.5 in 2010.

When the Riksbank starts expressing concerns about rising household debt, $\hat{\gamma}_t$ trends downward, from around 0.5 to (briefly) around zero, until around 2012. $\hat{\gamma}_t$ then moves between around 0.1 and around 0.4 until 2017 when, as for inflation, there are more pronounced swings in the estimated coefficient and the standard errors increase. The perceived weight on the GDP gap even falls to a negative number before lift-off in December 2018.

Similar to the estimated coefficient for inflation, $\hat{\gamma}_t$ falls at the beginning of the Covid pandemic as money market participants expect the Riksbank to put a lower weight on macroeconomic conditions. Following Covid, $\hat{\gamma}_t$ gradually increases until monetary policy tightening begins in 2022 when the estimated coefficient falls back and fluctuates around zero. Starting in the second half of 2024, $\hat{\gamma}_t$ increases and turns positive in the beginning of 2025.

Empirically, monetary policy is often adjusted gradually. Therefore, for the rest of the article we emphasise the results for the policy rule with inertia based on Equation (5). Figure 2 shows the estimated coefficients for the perceived policy rule with inertia. Accounting for the lagged policy rate affects the interpretation of the coefficients on inflation and the GDP gap – here they only capture the perceived short-term response of the policy rate. As in Bauer et al. (2024a), the estimated coefficients are therefore smaller than if we do not include interest rate smoothing. If we focus on level shifts and abstract away from short-term noise, the variation over time in the estimated coefficient on inflation, $\hat{\beta}_t$, is qualitatively similar to Figure 1. There is a clear level shift in the period 2012-2017. During this period, $\hat{\beta}_t$ is larger and more precisely estimated than in the years prior to 2012. From 2017, $\hat{\beta}_t$ is less precisely estimated and overall smaller in magnitude.

Figure 2. Parameter estimates for perceived policy rule with inertia



Note. Estimated policy-rule coefficients for inflation, $\hat{\beta}_t$, the output gap, $\hat{\gamma}_t$, and the lagged policy rate $\hat{\rho}_t$. The blue lines refer to the estimated coefficients from Equation (5), estimated on monthly surveys (quarterly frequency before September 2009) from October 2006 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

For the inertial rule, $\hat{\beta}_t$ is low (even negative) in the period leading up to the GFC but increases quickly at the onset of the crisis. The perceived weight on inflation again drops, slightly and temporarily, in 2010 during the period when the Riksbank expressed concerns about rising household debt. Following this period, $\hat{\beta}_t$ moves around 0.05-0.1. As for the policy rule without inertia, there is more variation and $\hat{\beta}_t$ is less precisely estimated in the period between 2017 and 2019. While the perceived weight on inflation is low already following lift-off at the end of 2018, it remains low during the Covid pandemic and until the Riksbank starts hiking the policy rate in 2022. At the onset of monetary policy tightening, we see a short-lived increase in $\hat{\beta}_t$. Then, in the most recent years, we note that $\hat{\beta}_t$, while somewhat higher than during the period between 2020-2022, is overall imprecisely estimated. These are years when we have also seen an increase in various measures of uncertainty.

The coefficient on the GDP gap, $\hat{\gamma}_t$, is presented in the middle panel. $\hat{\gamma}_t$ moves from a negative number to just above zero before the onset of the GFC, when it falls to around -0.05. It remains negative, but relatively close to zero, until after 2011 and then starts to move back towards just below zero.[18] Between 2015 and 2018, $\hat{\gamma}_t$ hovers around zero, before trending upwards (slightly) leading up to lift-off at the end of 2018. Following lift-off, $\hat{\gamma}$ again falls and remains negative until the beginning of the Covid pandemic in 2020. After around two years at zero, $\hat{\gamma}_t$ starts to increase somewhat as the Riksbank starts hiking the policy rate. It drops in the beginning of 2023 but then increases in 2024 before moving down again in 2025. In 2023, the Riksbank was still signalling that the policy rate would remain high for longer. The policy rate cuts in the most recent monetary policy cycle started in May 2024. Overall, in 2024 inflation decreased or was even below the target of 2 per cent and the real economy was weak. In 2025, the trade-off between inflation and the real economy was different since inflation was assessed to be temporarily above the target, while the real economy was still weak.

In the bottom panel we show the estimated coefficient on the lagged policy rate, $\hat{\rho}_t$. We note that the coefficient fluctuates around one until mid-2009 when it drops somewhat. $\hat{\rho}_t$ remains below one until around 2012. Between 2012 and the end of 2018 (lift-off), $\hat{\rho}_t$ is very close to one. Starting shortly after lift-off, $\hat{\rho}_t$ increases and remains above one until the start of the policy rate hikes in 2022. We see a sharp drop right at the start of the monetary policy tightening, but early on during the tightening, the perceived inertia increases again before decreasing towards the end of 2022 and then even further in the beginning of 2024. In the spring of 2024, the Riksbank starts cutting the policy rate and the perceived inertia remains low. $\hat{\rho}_t$ starts trending up in the second half of 2024 and fluctuates around 1.05-1.10 from the beginning of 2025.

A unique feature of our survey data is that we can compare the perceived policy rule of the money market participants to that of other economic agents – labour market parties and purchasing managers. In Appendix B we show the perceived policy rules

[18] In simple policy rules with fixed coefficients, the coefficient on the output gap is positive. While a negative coefficient may imply that the output gap is not perceived to be relevant for monetary policy, due to some considerations, we note that the estimated coefficient is small. Table 2 shows that it is -0.008 on average over the sample period.

for these other agents. For the policy rule without inertia, there are clear qualitative similarities for a large part of the sample period.

3.3 Potential misspecifications and robustness checks

We have estimated two versions of a time-varying perceived monetary policy rule, with and without interest rate inertia. A causal interpretation of these estimates relies on the assumption that forecasters form expectations about key macroeconomic variables and subsequently map these expectations into a policy rate forecast using a perceived policy rule specified as in Equations (2) and (4). If these perceived rules are mis-specified—for example due to omitted variables—part of the estimated time variation in the coefficients may reflect changes in the relevance of those omitted variables rather than genuine shifts in perceived policy preferences.[19]

We therefore assess robustness along three dimensions. First, we reproduce the analysis using GDP growth as an alternative activity measure, which also helps alleviate concerns that measurement error in the GDP gap may affect the estimates. Second, we use five-year-ahead expectations to proxy respondents' perceived long-run levels of inflation and the real rate instead of relying on respondent fixed effects. Third, we allow for a potentially omitted open-economy state variable by introducing the exchange rate. Across these alternatives, our results remain broadly similar.

Our baseline estimation is based on using the GDP gap as our measure of resource utilisation, but it is robust to using alternative measures of GDP. There are two main reasons for this robustness check. First, since survey respondents do not report their estimate of the GDP gap, we must – as described in Section 2 – make some assumptions to construct this variable. Specifically, we assume that the survey respondents share the same forecast for potential output and the same nowcast for real GDP. Second, while it is common to use the GDP gap in the policy rule, there are alternative activity measures that do not rely on the unobservable variable, potential GDP. Therefore, as a robustness check, we also estimate a perceived monetary policy rule using GDP growth, as well as a version without any activity measure, instead of the GDP gap. We show that the estimated coefficient for inflation is robust to using an alternative measure of the state of the real economy (see Appendix B). The estimated response to inflation in the inertial rule remains quantitatively similar irrespective of the measure of activity.

Following Bauer et al. (2024a), forecaster fixed effects can be viewed as absorbing heterogeneity in the long-run component of interest rate forecasts—that is, disagreement about long-run inflation and real rates that loads into the perceived intercept and is common across horizons within a survey wave. A distinctive feature of our data is that respondents report five-year-ahead expectations for the key macroeconomic variables, which provides a direct proxy for these long-run beliefs. This is particularly valuable in our setting because each respondent provides forecasts

[19] Bauer et al. (2024a) address this concern and assess if a more comprehensive rule, including a role for financial conditions, changes the time variation. They conclude that while financial conditions are perceived to have a substantial and significant effect, including financial conditions has little effect on the estimates of interest.

at only a limited number of horizons per wave, making fixed-effects estimation potentially noisy. We therefore re-estimate the perceived policy rule in deviations from each respondent's own five-year expectations (and, in the inertial specification, analogously net out the long-run component of the lagged rate term). The resulting coefficient paths are qualitatively similar to the main estimates: while the deviations approach implies some level differences early in the sample—most visibly for the non-inertial inflation coefficient—the time-variation patterns and the estimates in recent years are very close (Appendix B).

Finally, given that Sweden is a small open economy, we extend the baseline specification by allowing for a potential role of the exchange rate in the perceived monetary policy rule. For a central bank with a price stability objective – and a flexible inflation target – the exchange rate should matter for policy only through its effects on inflation and real economic activity. Nevertheless, market participants may believe that the Riksbank responds to exchange rate movements beyond these channels. This belief could be shaped by frequent communication on exchange rate developments, by past currency reserve operations with significant exchange rate effects (Artta et al., 2025), or by the view that inflation and the output gap do not fully summarize the state of the Swedish economy (Leitemo and Söderström, 2005).[20]

The Origo survey includes money market participants' forecasts for the exchange rates EURSEK and USDSEK at one- and two-year horizons. We build an exchange rate index of these two exchange rates based on KIX weights.[21]

To isolate perceived exchange rate considerations beyond expected inflation and economic activity, we first regress exchange rate expectations on inflation and output-gap expectations at the same forecast horizon:

$$E_t^j FX_{t+h} = a_t^j + \lambda_t E_t^j \pi_{t+h} + \xi_t E_t^j y_{t+h} + \sigma_{t,t+h}^j. \quad (6)$$

The residual $\sigma_{t,t+h}^j$ captures variation in exchange rate expectations that are orthogonal to the expected paths of inflation and the output gap. We then include this purged exchange rate component in the perceived policy rule with inertia to estimate the following regression:

$$E_t^j i_{t+h} = a_t^j + \tilde{\rho}_t i_{t+h-3} + \tilde{\beta}_t E_t^j \pi_{t+h} + \tilde{\gamma}_t E_t^j y_{t+h} + \tilde{\mu}_t \hat{\sigma}_{t,t+h}^j + e_{t,t+h}^{j,FX}. \quad (7)$$

[20] Leitemo and Söderström (2005) study whether the exchange rate should be included in the monetary policy rule in the framework of a New-Keynesian model of a small open economy. They find that, in this model framework, the gains from including the exchange rate in an optimised Taylor rule are small (in addition, because there is uncertainty about the exchange rate model, the unmodified Taylor rule is more robust to model uncertainty). The intuition is simple, since changes in the exchange rate affect both inflation and output, the added value of allowing for a separate response to the exchange rate is small. For financially robust advanced economies, Stone et al. (2009) also find that the gains from adding the exchange rate to the monetary policy rule are relatively small. However, distinguishing between demand and supply (cost-push) shocks, they argue that for supply shocks it can be beneficial to put some weight on the exchange rate.

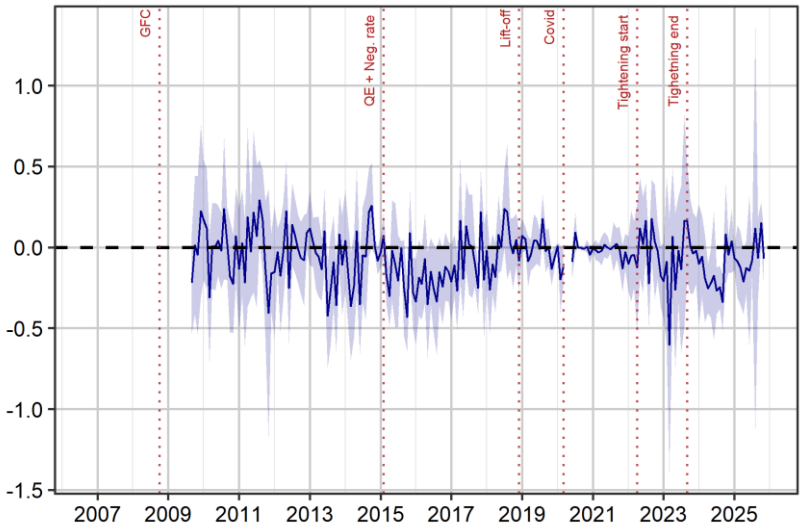
[21] While updated yearly, the weights for the euro area and the US remain relatively stable over time. For simplicity, we assume the weights for the US and the euro area to be constant at their 2024 level of respective 0.85 and 0.15. For more information on the theory and practice behind the general KIX index, see Erlandsson and Markowski (2006).

The coefficient $\tilde{\mu}_t$ captures the extent to which forecasters expect the policy rate to respond to exchange rate movements over and above their effects on expected inflation and the output gap. Because a higher exchange rate index corresponds to a weaker krona, a positive value of $\tilde{\mu}_t$ indicates that participants expect tighter monetary policy following a krona depreciation (conditional on inflation and activity expectations).

Figure 3 shows the evolution of $\tilde{\mu}_t$ over time. The estimated exchange rate term is, for most of the sample, economically small and statistically not different from zero. This implies that, on average, market participants do not view the Riksbank as systematically reacting to exchange rate movements over and above the information contained in expected inflation and expected real activity. Deviations from zero are concentrated in a few episodes that coincide with 'regime changes' or stress, most notably around the QE and negative interest rate period and during the 2022-2023 tightening phase. It indicates that money market participants may (temporarily) assign an independent policy role to exchange rate developments in such environments. A weaker krona may then coincide with higher risk premia, weaker demand prospects, or expectations of a lower policy rate path. Alternatively, the residual may reflect disagreement about the effects of exchange rate movements. Respondents may believe that the Riksbank assigns less pass-through from depreciation to inflation, or less weight to its effects on real activity, than they do. Overall, the evidence is consistent with a perceived policy rule in which the exchange rate is generally a second-order consideration, punctuated by occasional episodes in which it is viewed as temporarily salient.[22]

[22] However, it does not rule out that other variables omitted in our baseline specification, such as financial conditions and households' debt level, may be relevant for the perceived policy rule.

Figure 3. Estimated impact of the exchange rate on the policy rate forecast net of its effect on inflation



Note. Estimated policy-rule coefficients for the residualised exchange rate index $\tilde{\mu}_t$ from Equation (7), estimated on monthly surveys from October 2009 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details. The exchange rate index is built with 85% weight on EURSEK and 15% on USDSEK. Higher values indicate a weaker krona.

Sources: Kantar Prospera, Origo Group and the Riksbank.

4 Perceived monetary policy in financial markets

Having established that perceived monetary policy estimated from survey data varies over time, we now turn to estimating perceptions about monetary policy from financial markets. Following Hamilton et al. (2011) and Bauer et al. (2024a, 2024b), we estimate the market-perceived rule using changes in interest rates in narrow windows around the release of macroeconomic news. Specifically, we compare the release of actual inflation and GDP data to the consensus forecasts of the same variables using the average market forecast collected by Bloomberg. The basic idea is that changes in interest rates around the release dates mainly reflect changes in market expectations about the Riksbank's response to this news.

The purpose of this exercise is twofold. First, estimating the response of interest rates to macroeconomic news and analysing how the coefficients vary over time serves as a robustness check of our estimation strategy based on survey data. The advantage of using financial market data is that we estimate the causal effect of revisions to the market's inflation and GDP forecasts on revisions to policy rate forecasts under the assumption that no other news affecting the forecasts is systematically released simultaneously. Given the narrow window in which we measure the forecast revisions, this assumption is likely to hold in practice. Second, using financial market data also allows us to estimate whether the estimated perceived monetary policy rule from the survey data matters for the transmission of macroeconomic news to interest rates.

We start by estimating the following event-study regression

$$\Delta i_t = \alpha + \theta News_t^c + \epsilon_t, \quad (8)$$

where Δi_t is the daily change in a given interest rate on the release date of macroeconomic news and $News_t^c$ is the difference between the actual value of news category c (either CPIF or GDP) and the average market forecast, that is, the surprise component of the published statistic.

To match the survey data, we estimate the effect on interest rates with one-, two-, and five-year maturities for the sample period October 2006 to November 2025. The interest rates we consider are forward rate agreements (FRAs) with maturity four and eight quarters ahead, two- and five-year government bond yields, and one-, two-, and five-year swap rates.[23] For the macro news, we use surprises in the monthly CPI releases until September 2017 and CPIF thereafter, as we do for the survey data. In October 2024, Statistics Sweden started publishing flash estimates of the Consumer Price Index one week before the release of the actual value. We use the flash estimates for the part of the sample for which they are available. For GDP, released quarterly, we use the surprise of the actual GDP year-on-year growth. In Table 7 in Appendix B, we show that our results are robust to using surprises in the unemployment rate as an alternative measure of the Riksbank's perceived response to real activity.

Table 3 shows the estimates of the event-study regression equation (8) to both inflation and GDP growth surprises. Panel (a) shows the response of interest rates to a one percentage point inflation surprise. Overall, all interest rates react positively and significantly at the one-percent level. In other words, when the released inflation data is higher than expected, interest rates increase, indicating that financial markets expect the Riksbank to react to this news by raising the policy rate. The estimated coefficients are quite small. The coefficients vary between around 0.1 and 0.14, meaning that a 10-basis point positive surprise in inflation leads to a 1-1.4 basis point increase in interest rates.[24]

[23] The FRA contracts are close proxies for the expected future Swedish policy rate. The contracts offer cash settlement of the difference between the ex-ante agreed-upon fixed rate and the actual rate of the three-month Stockholm Interbank Offered Rate (STIBOR) on the settlement day. STIBOR, in turn, is a reference rate that shows the average interest rate at which a number of active banks on the Swedish money market are willing to lend to one another, without collateral, at different maturities.

[24] Our estimated coefficients are similar in terms of magnitude to those estimated by Bauer et al. (2024b) for US data over the period January 2014 to March 2022. See Panel A of Table 1 in their paper.

Table 3. Event-study regression of interest rates on macroeconomic news

	FRA4	FRA8	Gov. 2y	Gov. 5y	Swap 1y	Swap 2y	Swap 5y
				(a) Inflation			
θ	0.141*** (0.023)	0.128*** (0.017)	0.123*** (0.018)	0.111*** (0.018)	0.099*** (0.015)	0.112*** (0.017)	0.100*** (0.016)
R^2	0.170	0.202	0.234	0.158	0.274	0.236	0.162
N	230	230	230	230	230	230	230
				(b) GDP			
θ	0.017*** (0.005)	0.018*** (0.006)	0.023*** (0.005)	0.024*** (0.006)	0.013*** (0.005)	0.017*** (0.005)	0.020*** (0.005)
R^2	0.107	0.082	0.174	0.153	0.106	0.116	0.125
N	76	76	76	76	76	76	76

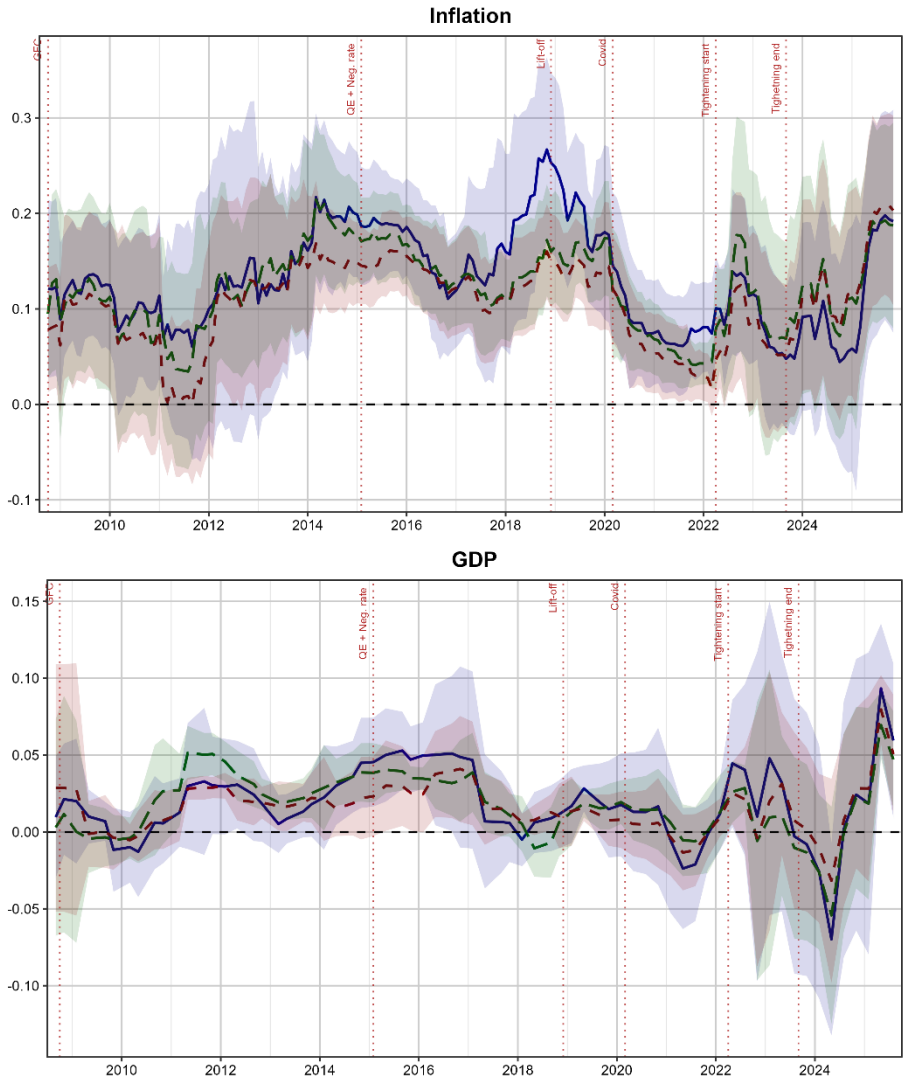
Note. Estimated coefficients θ and regression R2 from event-study regressions $\Delta i_t = \alpha + \theta News_t^c + \epsilon_t$, where Δi_t is the daily change in a given interest rate on days of macroeconomic news and $News_t^c$ is the surprise component of the news in category $c \in (CPIF, GDP)$, defined as the difference between the actual value and the consensus forecast. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Sample period: October 2006 to November 2025. See text for details.

Sources: Bloomberg and Macrobond.

Panel (b) shows the response of interest rates to a one percentage point surprise in year-on-year GDP growth. Again, the estimated coefficients are positive and significant at the one-percent level, indicating that financial markets expect the Riksbank to react to surprises in GDP growth by raising the policy rate. Quantitatively, the estimated effects are smaller than those for the inflation surprises. The estimated coefficients vary between 0.013 and 0.024, meaning that a 10-basis point positive surprise in the release of the GDP growth data leads to a 0.13-0.24 basis point increase in interest rates.

Overall, these estimates are qualitatively in line with the results from the survey-based estimates of the Riksbank's perceived monetary policy rule. Both methods suggest that the Riksbank is perceived to respond relatively more to inflation compared to GDP.

Figure 4. Rolling window estimates of interest rates on macroeconomic news



Note. Estimated two-year rolling window coefficients θ from event-study regressions $\Delta i_t = \alpha + \theta News_t^c + \epsilon_t$, where Δi_t is the daily change in a given interest rate on days of macroeconomic news and $News_t^c$ is the surprise component of the news in category $c \in (CPIF, GDP)$, defined as the difference between the actual value and the consensus forecast. Blue solid line is estimated with the FRA8 rate as the outcome variable, green long dashed lines with the two-year government bond yield, and the red dashed lines with the two-year swap rate. The shaded regions show 95% confidence intervals based on heteroskedasticity-robust standard errors. Sample period: October 2006 to November 2025. See text for details.

Sources: Bloomberg and Macrobond.

As a second step, we estimate how these coefficients vary over time by estimating a two-year rolling window of Equation (8).[25] Figure 4 shows the rolling window estimates for the inflation and GDP growth surprises, displayed in the top and bottom panel, respectively. To conserve space, we show only the estimates for the two-year maturity interest rates in the main text. The estimates for the one- and five-year maturity interest rates, which yield very similar results, are shown in Figure 15 and

[25] The estimates are similar both in terms of precision and variation over time if we use a three-year window instead (not shown).

Figure 16 in Appendix B. The blue solid lines report the point estimates for the FRA8 rate, the green long dashed lines report the point estimates for the two-year government bond yield, and the red dashed lines report the point estimates for the two-year swap rates. The shaded regions report 95 per cent confidence intervals.

Given that the rolling window estimates smooth out a lot of the month-to-month volatility, the estimates are less volatile compared to the survey-based estimates in Figure 1 and Figure 2. However, there are a lot of qualitative similarities between the estimates. Starting with inflation and the inflation surprises, we see that the estimated coefficients fell somewhat during the period when the Riksbank expressed concerns about rising household debt, particularly for the two-year swap rate. They then rose and remained elevated until the first year after the QE and negative interest rate period before falling during 2017. The coefficients rose during the lift-off period in 2019, particularly for the FRA8 rate, and then fell during Covid. The coefficients rose after the start of the 2022 tightening cycle and then reverted by the end of the cycle. Finally, the coefficients are somewhat elevated during the end of the sample in 2025.

The estimated coefficients on the GDP growth surprises are smaller and vary less over time compared to the coefficients of the inflation surprises. This is again consistent with the estimated survey-based coefficients. The coefficients were at the lower end after the GFC, before increasing between 2010 and 2012. The coefficients increased again and remained elevated during the first part of the QE and the negative interest rate period. They then fell in 2017 and remained low until the beginning of the tightening cycle in 2022. The coefficients fell to around -0.05 in early 2024, before rebounding and reaching a peak of over 0.05 in 2025.

Finally, we estimate how the sensitivity of interest rates to macroeconomic news depends on the coefficients from the survey-based rules. To this end, we estimate the following event-study regression

$$\Delta i_t = \alpha + \theta News_t^c + \xi z_t^c + \kappa News_t^c z_t^c + \epsilon_t, \tag{9}$$

where $z_t^c \in (\hat{\beta}_t, \hat{\gamma}_t)$, that is, either the estimated perceived inflation or GDP gap coefficient. We estimate the interaction with both the coefficients from the specification with and without inertia, that is, the coefficients from Equations (3) and (5), respectively. A positive interaction coefficient, κ, indicates that interest rates are more sensitive to macroeconomic news when the Riksbank is – according to the survey-based rule – perceived to be more responsive to economic conditions.

To ensure the exogeneity of the perceived coefficients with respect to the news, we use estimates from the most recent survey conducted before the news was released. In most cases, this corresponds to using coefficients from the same period as the news release, since the interview period typically occurs before the news release. When a survey is conducted after the news release, we instead use the coefficients from the previous period. For example, we interact the inflation news released in January 2024 with the perceived coefficient from December 2023, since the interview period began on January 17 while the news was released on January 15.

Table 4. Event-study regression of interest rates on inflation news

	FRA4	FRA8	Gov. 2y	Gov. 5y	Swap 1y	Swap 2y	Swap 5y
				(a) Inertia			
θ	0.131***	0.122***	0.109***	0.098***	0.087***	0.100***	0.096***
	(0.032)	(0.019)	(0.022)	(0.023)	(0.016)	(0.018)	(0.019)
ξ	-0.055	0.044	-0.060	-0.068	-0.017	-0.019	-0.015
	(0.091)	(0.050)	(0.057)	(0.068)	(0.036)	(0.044)	(0.051)
κ	0.291	0.233	0.444	0.375	0.412**	0.423*	0.126
	(0.651)	(0.251)	(0.344)	(0.405)	(0.197)	(0.226)	(0.282)
R^2	0.174	0.207	0.247	0.168	0.288	0.246	0.163
N	229	229	229	229	229	229	229
				(b) Without inertia			
θ	0.160***	0.130***	0.132***	0.107***	0.106***	0.120***	0.107***
	(0.041)	(0.029)	(0.033)	(0.031)	(0.025)	(0.029)	(0.028)
ξ	-0.000	0.009*	-0.001	-0.001	-0.001	0.001	-0.000
	(0.007)	(0.006)	(0.005)	(0.005)	(0.003)	(0.004)	(0.005)
κ	-0.031	0.000	-0.016	0.006	-0.012	-0.013	-0.011
	(0.036)	(0.028)	(0.028)	(0.029)	(0.024)	(0.026)	(0.026)
R^2	0.172	0.212	0.234	0.158	0.276	0.238	0.163
N	229	229	229	229	229	229	229

Note. Estimated coefficients θ, ξ, and κ and regression R2 from event-study regressions $\Delta i_t = \alpha + \theta News_t^c + \xi z_t^c + \kappa News_t^c z_t^c + \epsilon_t$, where Δi_t is the daily change in a given interest rate on days of macroeconomic news, $News_t^c$ is the surprise component of the news in category $c \in (CPIF)$, defined as the difference between the actual value and the consensus forecast, and $z_t^c \in (\hat{\beta}_t, \hat{\gamma}_t)$, is the estimated perceived responses to inflation and GDP from the survey data. Panel (a) shows the interaction with the coefficient with inertia and Panel (b) the coefficients without inertia. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Sample period: October 2006 to November 2025. See text for details.

Sources: Bloomberg, Macrobond, Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

Table 4 shows the estimates of the event-study regression for the inflation surprises and their interaction with the estimated perceived inflation coefficient from the survey data. Panel (a) shows the interactions with the coefficient with inertia. The estimated interaction coefficient, κ, is positive, indicating that a larger than expected inflation data release has a larger effect on interest rates when the Riksbank is perceived to be more responsive to inflation. In terms of magnitudes, the coefficients vary between 0.126 and 0.444. The coefficients are only significant for the one- and two-year swap rates, which represent the most liquid segment of the interest rate derivatives market, and the part most tightly linked to expectations about the near-term policy path. For these variables, the coefficients are 0.412 and 0.423, respectively, meaning that if the Riksbank is perceived to react 0.01 percentage point more strongly to inflation, a 10-basis points surprise in the inflation data release leads to an additional 0.04 basis points increase in the one and two-year swap rates, respectively. This corresponds to a 4.6 and 4 per cent increase in the respective average responses.

Panel (b) shows the results when using the interaction with the inflation coefficient without inertia. For all outcome variables, the interaction coefficients are small and insignificant, indicating that interest rates do not react differently when the Riksbank is perceived to be more responsive to inflation.

Finally, we note that the addition of the interaction with either the coefficient with or without inertia does not substantially alter the estimate of the non-interacted coefficient, θ, compared to the results in Table 3.

Table 5. Event-study regression of interest rates on GDP growth news

	FRA4	FRA8	Gov. 2y	Gov. 5y	Swap 1y	Swap 2y	Swap 5y
				(a) Inertia			
θ	0.018*** (0.006)	0.020*** (0.007)	0.026*** (0.006)	0.025*** (0.008)	0.015*** (0.005)	0.020*** (0.006)	0.020*** (0.007)
ξ	-0.072 (0.260)	-0.113 (0.293)	-0.405 (0.249)	-0.329 (0.257)	-0.243 (0.194)	-0.258 (0.232)	-0.068 (0.238)
κ	0.006 (0.197)	0.105 (0.202)	0.061 (0.191)	-0.012 (0.205)	0.049 (0.179)	0.099 (0.175)	-0.017 (0.174)
R^2	0.109	0.086	0.215	0.174	0.135	0.138	0.128
N	76	76	76	76	76	76	76
				(b) Without inertia			
θ	0.014*** (0.005)	0.016** (0.007)	0.018*** (0.006)	0.023*** (0.006)	0.009* (0.005)	0.014*** (0.005)	0.018*** (0.005)
ξ	0.007 (0.016)	0.008 (0.024)	0.020 (0.020)	0.017 (0.024)	0.007 (0.012)	0.006 (0.016)	0.001 (0.022)
κ	0.025 (0.023)	0.017 (0.027)	0.049** (0.024)	0.013 (0.028)	0.037** (0.017)	0.027 (0.018)	0.017 (0.026)
R^2	0.118	0.086	0.214	0.159	0.143	0.128	0.126
N	76	76	76	76	76	76	76

Note. Estimated coefficients θ, ξ, and κ and regression R2 from event-study regressions $\Delta i_t = \alpha + \theta News_t^c + \xi z_t^c + \kappa News_t^c z_t^c + \epsilon_t$, where Δi_t is the daily change in a given interest rate on days of macroeconomic news, $News_t^c$ is the surprise component of the news in category $c \in (CPIF)$, defined as the difference between the actual value and the consensus forecast, and $z_t^c \in (\hat{\beta}_t, \hat{\gamma}_t)$, is the estimated perceived responses to inflation and GDP from the survey data. Panel (a) shows the interaction with the coefficient with inertia and Panel (b) the coefficients without inertia. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Sample period: October 2006 to November 2025. See text for details.

Sources: Bloomberg, Macrobond, Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

Table 5 shows the estimates of the event-study regression of the GDP growth surprises and their interaction with the estimated perceived GDP gap coefficient from the survey data. Panel (a) shows the interaction with the coefficient with inertia. Apart from the regressions on the five-year government bond yield and swap rate, the interaction coefficients are positive, indicating that the response of interest rates to surprises in GDP growth is stronger when the Riksbank is perceived to be more responsive to GDP. However, the coefficients are not significant. The interpretation is further complicated by the fact that the GDP coefficient with inertia is negative on

average, as shown in Table 2.

Panel (b) shows the interaction with the coefficient without inertia. All coefficients are positive and significant for the two-year government bond yield and swap rate. For these two outcome variables, the values of the interaction coefficients are 0.049 and 0.037, respectively. This means that if the Riksbank is perceived to react 0.01 percentage point more strongly to GDP, a 10-basis points surprise in the GDP growth data release leads to an additional 0.005 and 0.003 basis points increase in the two-year government bond yield and swap rate, respectively. This corresponds to a 2.8 and 2.1 per cent increase in the respective average responses.

As for the inflation surprises, we note that the addition of the interaction with either the coefficient with or without inertia does not substantially alter the estimate of the non-interacted coefficient, θ, compared to the results in Table 3.

In summary, the estimated perceptions about monetary policy from financial markets yield similar conclusions to those derived from the survey data. That is, markets expect the Riksbank to raise interest rates in response to positive inflation and GDP growth surprises, with a relatively greater weight placed on inflation. The perceived responses vary over time, and the changes in the perceived responses qualitatively match the pattern estimated from the survey data. Moreover, we find some evidence that the estimated perception about monetary policy from the survey data matters for the transmission of macroeconomic news to interest rates. Specifically, we find that when the Riksbank is perceived to care more about inflation (GDP), interest rates respond more to surprises in inflation (GDP-growth) data releases. However, the coefficients are only significant for a subset of rates and depend on whether the surprises are interacted with the perceived coefficients estimated with or without inertia in the policy rule. The interaction results should therefore be interpreted with caution.

5 Concluding remarks

We have estimated perceived forward-looking monetary policy rules for Sweden based on the empirical strategy in Bauer et al. (2024a). We find substantial variation in the estimated coefficients over time. Throughout our sample, the Riksbank is perceived to place greater weight on inflation than on the output gap. This is not surprising given that the Riksbank has a primary price stability objective. We discuss the fact that a causal interpretation of our estimated coefficients relies on the assumption that the forecasts of the policy rate really capture perceived responses to macroeconomic condition, that is, that the policy rule is well-specified. In addition to considering policy rules with and without interest rate smoothing, we also consider an extension of the baseline rule to test for the extent to which forecasters expect the policy rate to respond to exchange rate movements beyond what is motivated by their effects on expected inflation and real activity. This is generally not the case, except during occasional episodes.

Expectations – or perceptions – of future monetary policy affect the sensitivity of interest rates to news today and therefore matter for the transmission of monetary policy through financial markets. In the second part of the article, we characterise the perceived monetary policy rule in financial markets. The estimated rule is qualitatively consistent with our survey-based perceived monetary policy rule. In both cases, the Riksbank is perceived to put greater weight on stabilising inflation and there is variation in the estimated coefficients over time. We also find that – for some financial instruments – the sensitivity of interest rates to inflation surprises rises when the (survey-based) perceived response increases. This implies that, in these cases, perceptions of the policy rule matter for market rates that transmit monetary policy to the real economy.

Finally, in this article we have focused on how money market players and financial markets perceive the central bank's behaviour. An obvious next step for future work is to assess whether this strategy is in line with what the central bank aims to communicate. Given that the Riksbank publishes a policy path – and has a long-standing history of publishing different kinds of alternative scenarios – it is possible to estimate a communicated monetary policy rule and relate this to the perceived rule as well as to measures of uncertainty. We leave this for future work.

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APPENDIX A – Additional details

Origo survey questions

What CPI inflation do you expect in Sweden over the coming year, that is, the annual rate calculated from:

- now and 12 months ahead, measured as the percentage change in the Consumer Price Index (CPI),
- and what is the annual rate for year 2, that is the period from month 12 to 24, and year 5, that is from month 48 to 60?

What CPIF inflation do you expect in Sweden over the coming year, that is, the annual rate calculated from:

- now and 12 months ahead, measured as the percentage change in the Consumer Price Index with a fixed interest rate (CPIF),
- and what is the annual rate for year 2, that is the period from month 12 to 24, and year 5, that is from month 48 to 60?

What GDP growth, in percent, do you expect Sweden to have:

- over the coming year, that is the annual rate calculated from now and 12 months ahead,
- and what is the growth rate for year 2, that is the period from month 12 to 24, and year 5, that is from month 48 to 60?

What level do you expect the Riksbank's policy rate (previously known as the repo rate) to be at in:

- 3 months;
- 12 months;
- 24 months;
- 60 months?

How much do you think one euro will cost in Swedish kronor in:

- 3 months;
- 12 months;
- 24 months?

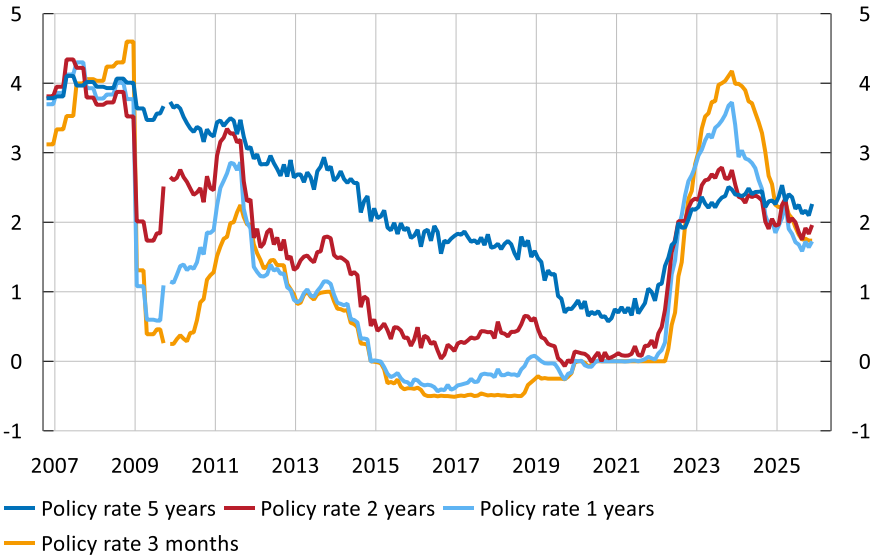
And one USD in:

- 3 months;
- 12 months;
- 24 months?

Origo survey data

Figure 5. Expected policy rate

Per cent

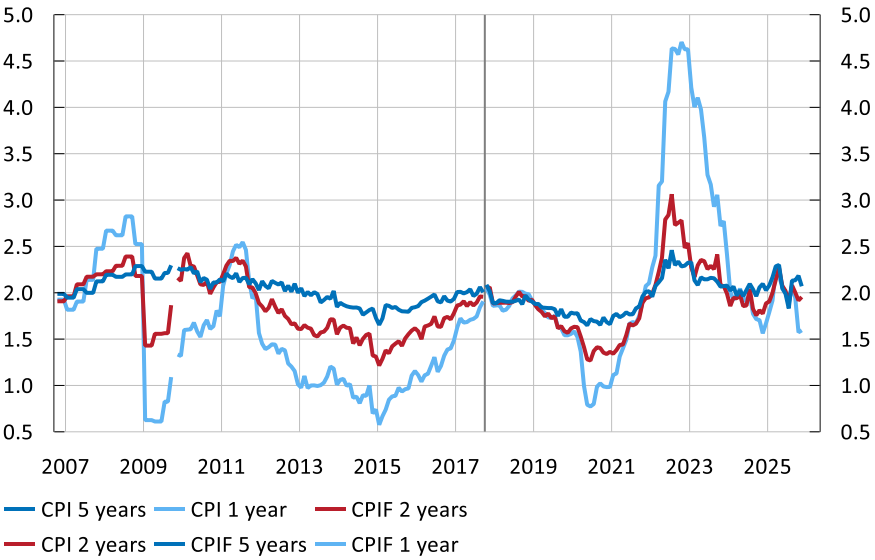


Note. Average policy rate forecast. Money market participants. Quarterly data before September 2009.

Source: Kantar Prospera and Origo Group.

Figure 6. Expected inflation

Per cent

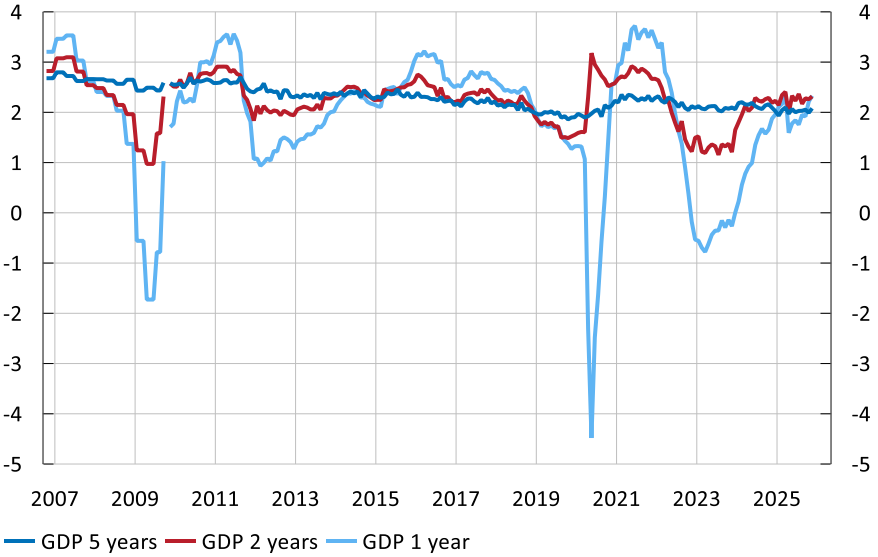


Note. Average expected CPI (until September 2017, marked by the vertical line) and CPIF (from October 2017 onward). Money market participants. Quarterly data before September 2009.

Source: Kantar Prospera and Origo Group.

Figure 7. Expected GDP growth

Annual percentage change

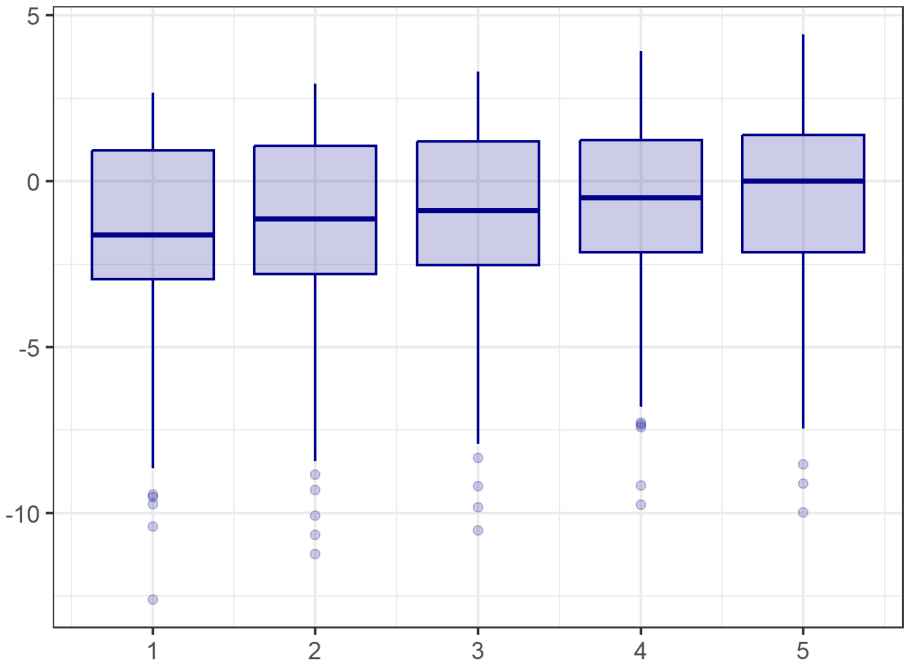


Note. Average real GDP-growth forecast. Money market participants. Quarterly data before September 2009.

Source: Kantar Prospera and Origo Group.

Illustration of the GDP gap

Figure 8. GDP gap by horizon



Note. The box plot illustrates the distribution of constructed expected GDP gaps by horizons for the sample period October 2006 to November 2025. Note that horizons three and four are imputed assuming a monotonic function. The upper edge of the box corresponds to the third quartile, the lower edge to the first quartile, and the middle line to the median. The height of the box corresponds to the interquartile range. The whiskers extend to the smallest and largest observations within 1.5 × IQR of the lower and upper quartiles, respectively; values beyond the whiskers are shown as outliers.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

APPENDIX B – Additional results

Table 6. Summary of events highlighted for the time-varying perceived monetary policy rule

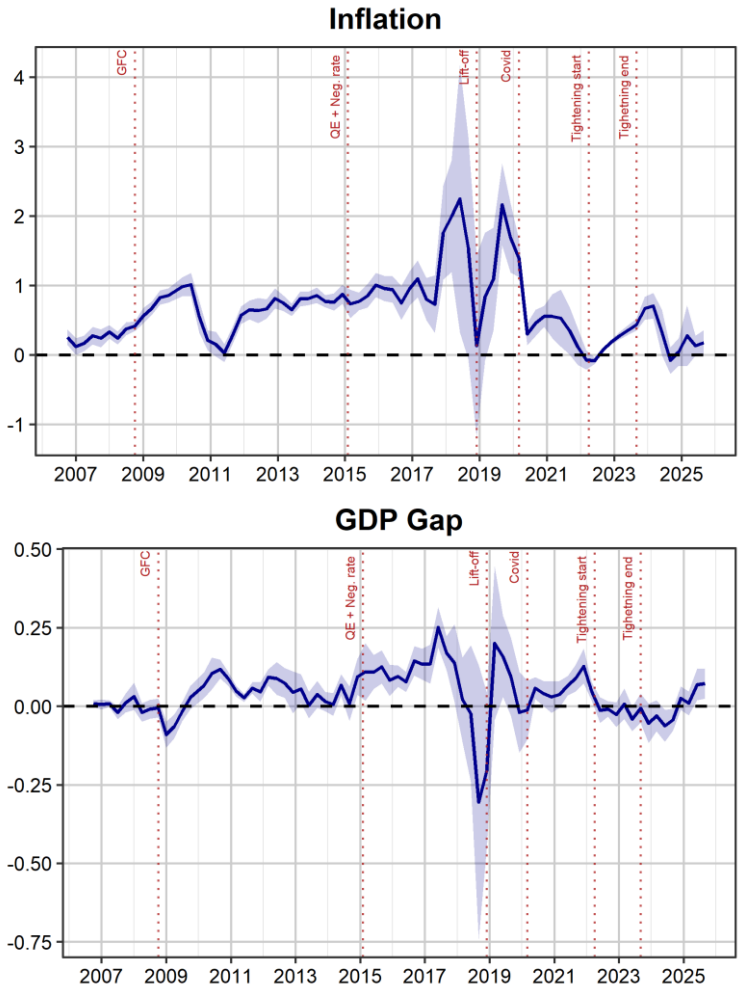
Date	Event
October 2008	Great Financial Crisis
February 2015	QE + negative interest rate
December 2018	Lift-off
March 2020	Covid
April 2022	Tightening starts
September 2023	Tightening ends

Estimating a perceived monetary policy rule for labour market parties and purchasing managers

Below we show the estimated time-varying perceived policy rule (both without and with inertia) for the non-money market participants, that is, the labour market parties and purchasing managers.

For the specification with inertia, the estimated perceived policy rule for non-money market participants differs more clearly from that of money market participants, both in levels and in the magnitude of time variation. The estimated coefficient on inflation is close to zero for most of the sample, with somewhat larger movements only around the period of Riksbank concerns about household debt and following the tightening cycle that began in 2022. One interpretation is that these respondents pay less attention to short-run monetary policy dynamics, so that the rule may be a less accurate approximation of their policy rate expectations in normal times. The coefficients on the GDP gap and the lagged policy rate, however, follow broadly similar qualitative patterns to those estimated for money market participants.

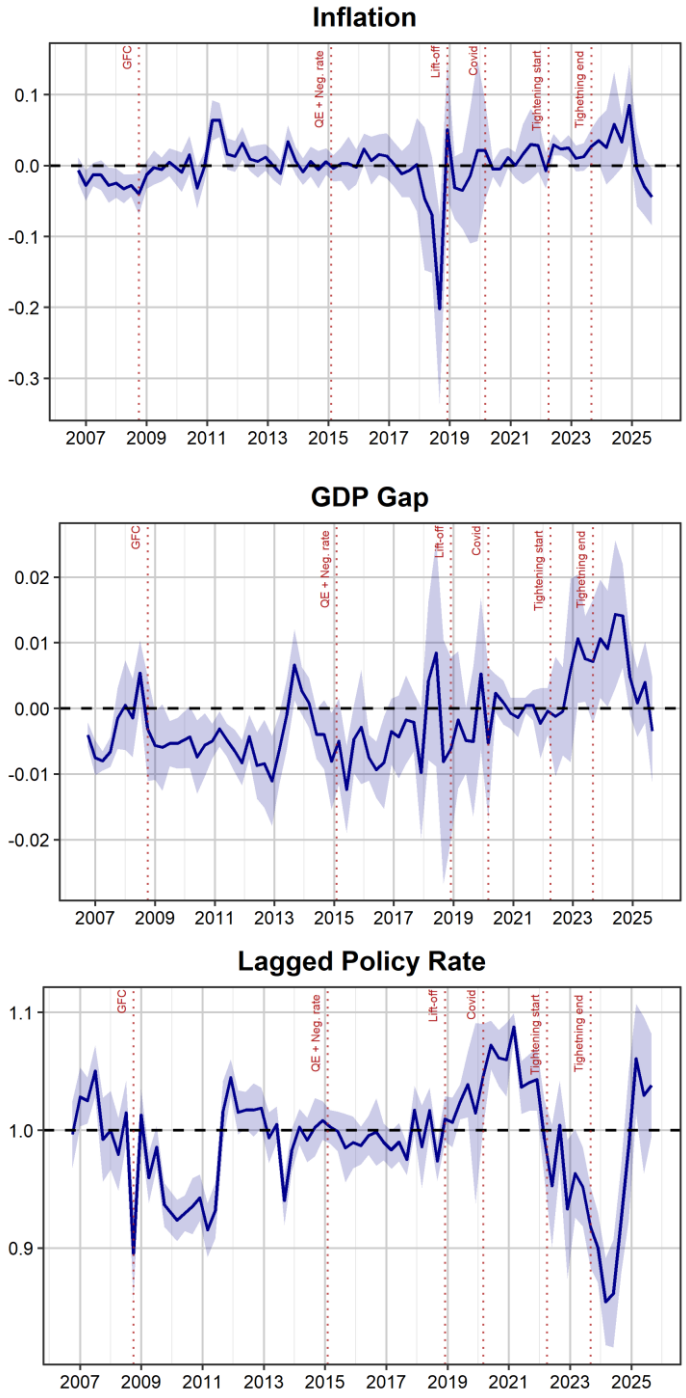
Figure 9. Parameter estimates for the perceived rule for labour market parties and purchasing managers



Note. Estimated policy-rule coefficients for inflation, $\hat{\beta}_t$,and the output gap, $\hat{\gamma}_t$. The blue lines refer to the estimated coefficients from Equation (3), estimated on quarterly surveys for non-money market participants (labour market parties and purchasing managers) from October 2006 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

Figure 10. Parameter estimates for the perceived rule with inertia for labour market parties and purchasing managers



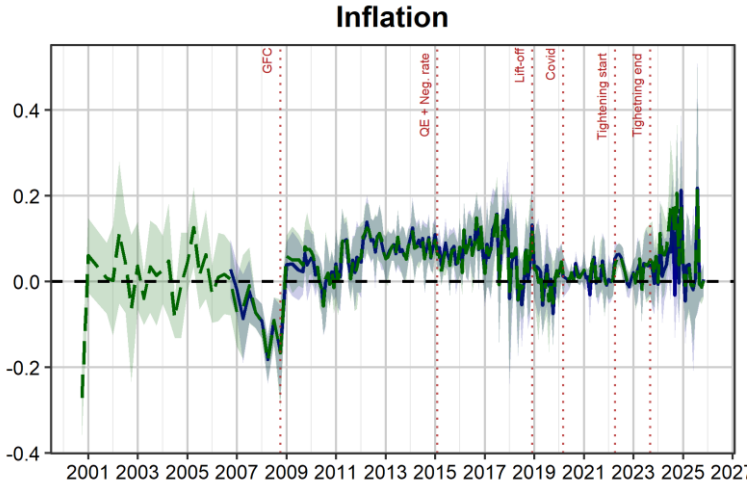
Note. Estimated policy-rule coefficients for inflation, $\hat{\beta}_t$, the output gap, $\hat{\gamma}_t$, and the lagged policy rate $\hat{\rho}_t$. The blue lines refer to the estimated coefficients from Equation (5), estimated on quarterly surveys for non-money market participants (labour market parties and purchasing managers) from October 2006 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

Estimating a perceived monetary policy rule with alternatives to the GDP gap

Figure 11 shows the estimated coefficient on inflation, the coefficient of main interest to us, with or without including the GDP gap in the inertial policy rule. The blue line shows the estimated coefficient from equation (5), that is, including the GDP gap, whereas the dashed green line shows the estimated coefficient from a regression where we exclude the GDP gap. There are no substantial differences between the blue and the dashed green lines. Figure 12 shows the estimated coefficients from a perceived rule with GDP growth instead of the GDP gap. While the coefficient on GDP growth differs from the one for the GDP gap, the estimated coefficient for inflation is also robust to using this alternative measure of the state of the real economy.

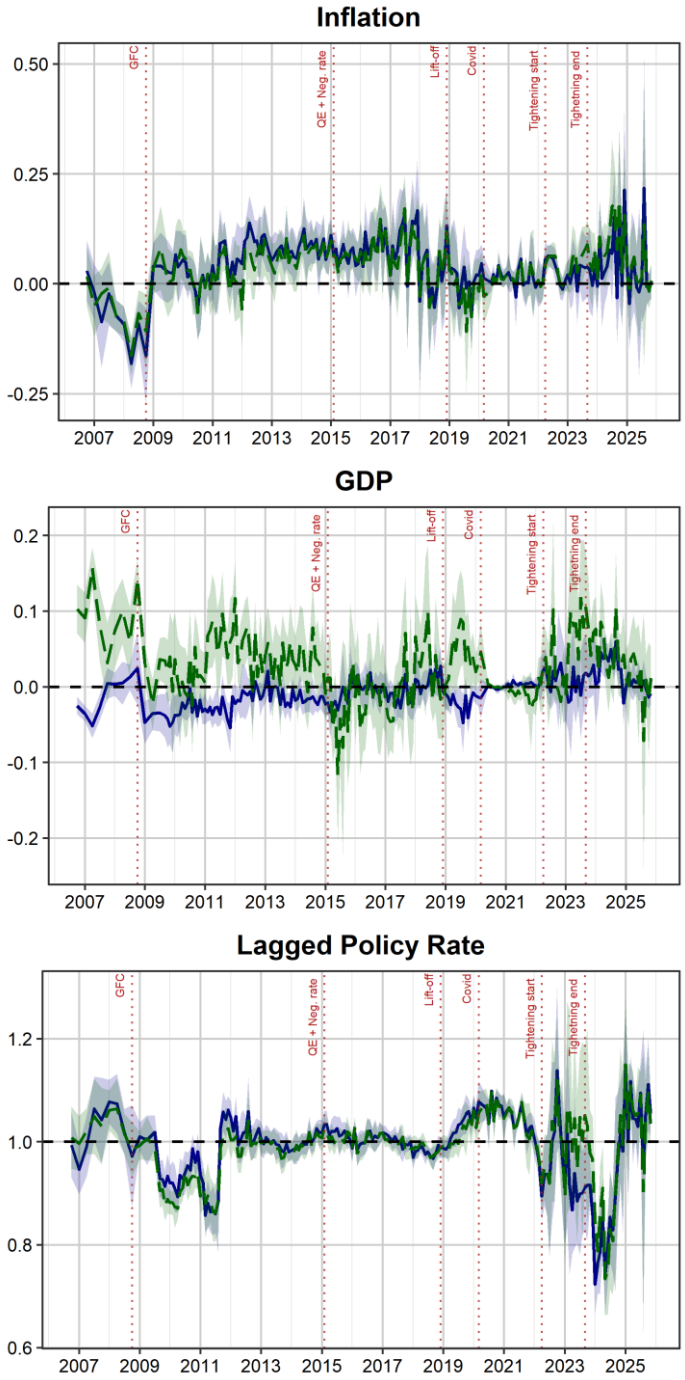
Figure 11. Estimated coefficient on inflation for the perceived rule with inertia, with (blue) or without (dashed green) the GDP gap



Note. Estimated policy-rule coefficients for inflation, $\hat{\beta}_t$. The blue line refers to the estimated coefficient on inflation from Equation (5), estimated on monthly surveys (quarterly frequency before September 2009) from October 2006 to November 2025. The dashed green line refers to estimated coefficients based on the following regression: $E_t^j i_{t+h} = a_t^j + \hat{\rho}_t i_{t+h-3} + \hat{\beta}_t E_t^j \pi_{t+h} + e_{t,t+h}^j$, estimated on monthly surveys (quarterly frequency before September 2009) from October 2000 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details.

Sources: Kantar Prospera and Origo Group.

Figure 12. Parameter estimates for the policy rule with inertia using the GDP-gap (blue) or GDP growth (dashed green)



Note. Estimated policy-rule coefficients for inflation, $\hat{\beta}_t$, the output gap, $\hat{\gamma}_t$, and the lagged policy rate $\hat{\rho}_t$. The blue lines refer to the estimated coefficients from Equation (5), estimated on monthly (quarterly frequency before September 2009) surveys from October 2006 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details. The dashed green lines refer to estimated coefficients using the expected GDP growth instead of the expected GDP gap.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

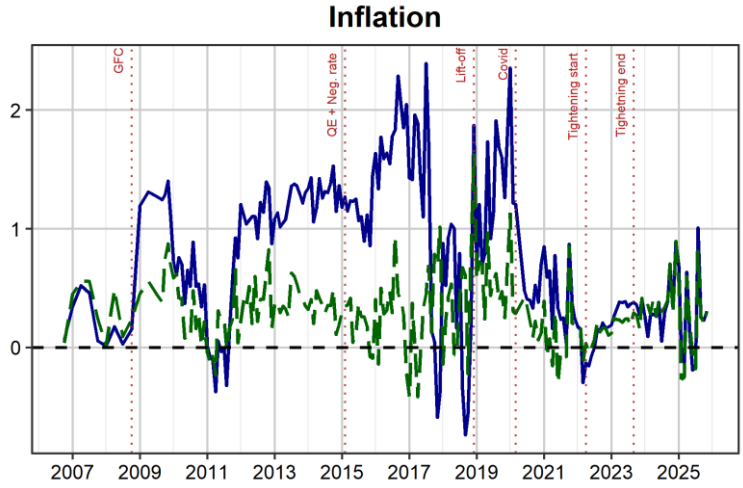
Estimating a perceived monetary policy rule without fixed effects

In the baseline estimation we include forecaster-fixed effects that we interpret as representing the individual and time-dependent assessment of the neutral rate. Because we only have three observations per forecaster and survey month, implementing fixed effects is not optimal.

We therefore estimate an alternative specification where we include variables in deviations from their long-run expected values. We replace inflation and the output gap (and the policy rate when we include inertia) by the variables $\tilde{\pi}_{t+h}$, $\tilde{y}_{t+h}$ (and $\tilde{\imath}_{t+h-3}$), where ~ denotes variables where we have subtracted the long-term (five year) expected value.

For the perceived rule without inertia, Figure 13 shows the estimated coefficient on inflation. There is a clear level difference between the blue (baseline) and green (with variables in deviation) lines in the earlier years. The qualitative pattern is, however, similar and in recent years the difference is very small. Figure 14 shows the corresponding figure for the policy rule with inertia with all three coefficients. The pattern is overall similar between the baseline and the alternative specification.

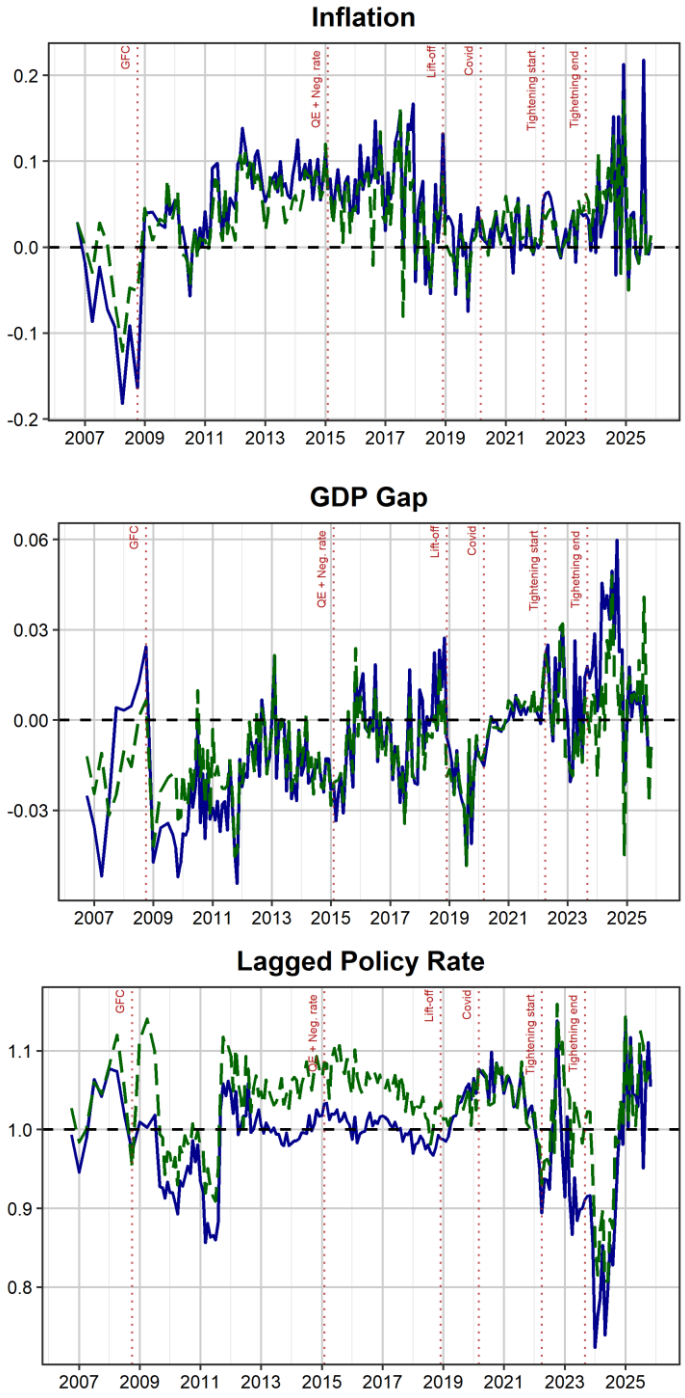
Figure 13. Parameter estimates for the perceived rule, using variables in deviation



Note. Estimated policy-rule coefficients for inflation, $\hat{\beta}_t$. The blue lines refer to the estimated coefficients from Equation (5). The dashed green line refers to estimated coefficients using deviations from the long run instead of fixed effects. Regressions are estimated on monthly (quarterly frequency before September 2009) surveys from October 2006 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

Figure 14. Parameter estimates for the perceived rule with inertia, using variables in deviation



Note. Estimated policy-rule coefficients for inflation, $\hat{\beta}_t$, the output gap, $\hat{\gamma}_t$, and the lagged policy rate $\hat{\rho}_t$. The blue lines refer to the estimated coefficients from Equation (5). The dashed green lines refer to estimated coefficients using deviations from the long run instead of fixed effects. Regressions are estimated on monthly (quarterly frequency before September 2009) surveys from October 2006 to November 2025. The shaded regions show 95% confidence intervals based on standard errors clustered at the respondent-time level. Vertical dashed lines highlight dates of specific events, see Appendix B for details.

Sources: Kantar Prospera, Origo Group, National Institute of Economic Research and own calculations.

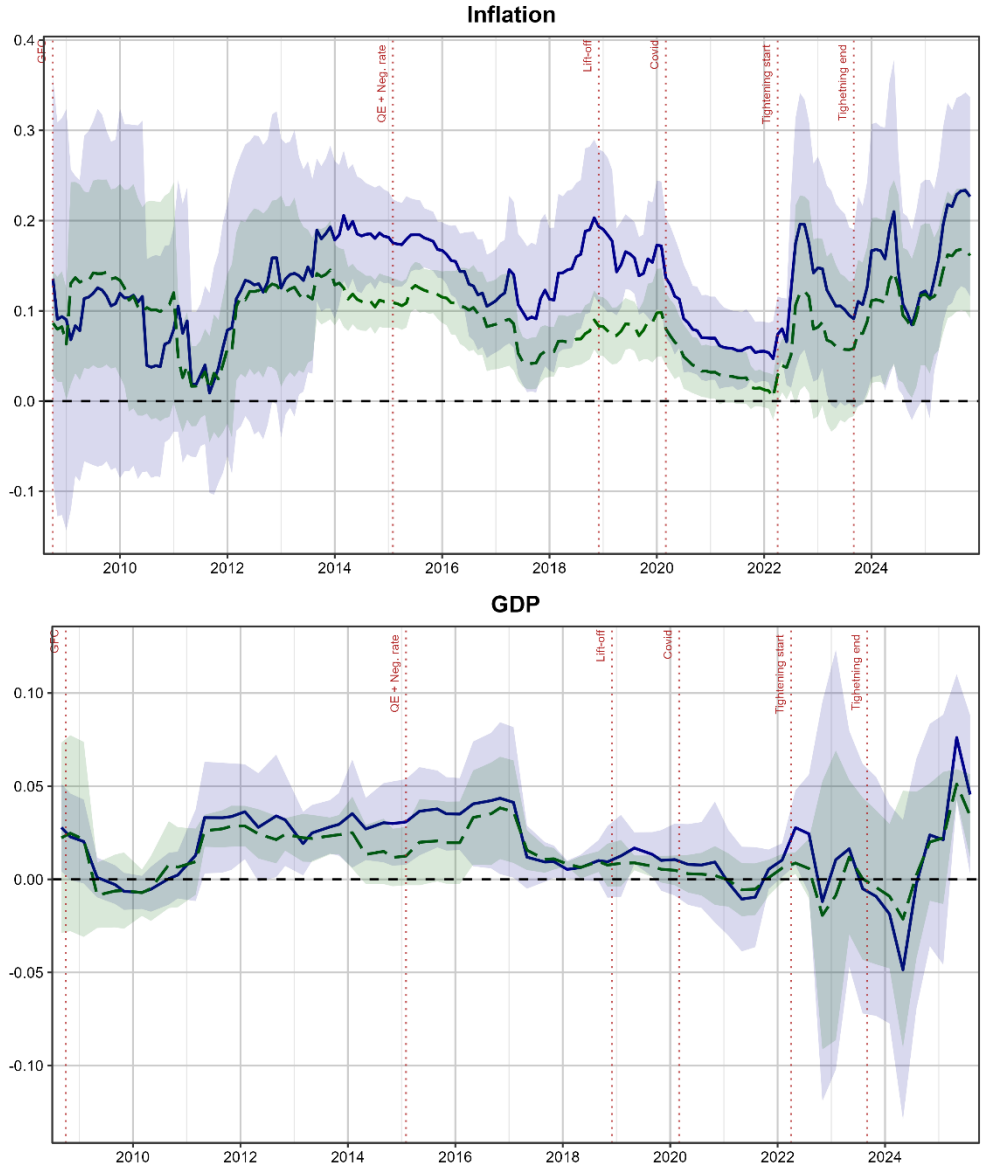
Table 7. Event-study regression: Unemployment rate surprises

	FRA4	FRA8	Gov. 2y	Gov. 5y	Swap 1y	Swap 2y	Swap 5y
			Unemployment rate				
θ	0.012** (0.009)	0.022** (0.011)	0.026*** (0.009)	0.025** (0.010)	0.017*** (0.006)	0.025*** (0.008)	0.021** (0.009)
R^2	0.019	0.020	0.042	0.028	0.035	0.044	0.029
N	230	230	230	230	230	230	230

Notes. Estimated coefficients θ and regression R2 from event-study regressions $\Delta i_t = \alpha + \theta News_t^c + \epsilon_t$, where Δi_t is the daily change in a given interest rate on days of macroeconomic news and $News_t^c$ is the surprise component of the news in category $c \in (Unemployment\ rate)$, defined as the difference between the actual value and the consensus forecast. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Sample period: October 2006 to November 2025. See text for details.

Sources: Bloomberg and Macrobond.

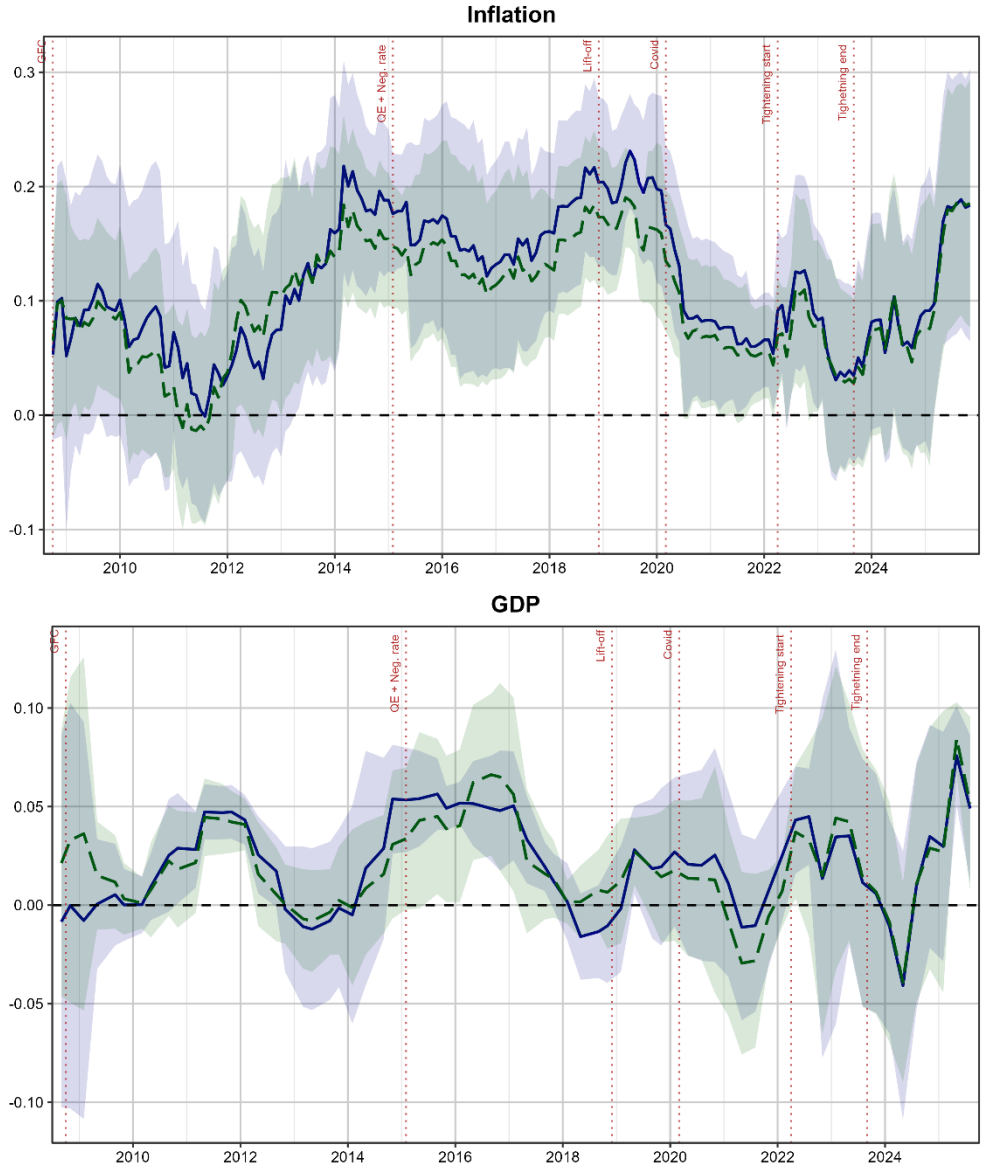
Figure 15. Rolling window estimates of interest rates on macroeconomic news



Note. Estimated two-year rolling window coefficients θ from event-study regressions $\Delta i_t = \alpha + \theta News_t^c + \epsilon_t$, where Δi_t is the daily change in a given interest rate on days of macroeconomic news and $News_t^c$ is the surprise component of the news in category $c \in (CPIF, GDP)$, defined as the difference between the actual value and the consensus forecast. The blue solid line is estimated with the FRA4 rate as the outcome variable and the green long dashed lines with the one-year swap rate. The shaded regions show 95% confidence intervals based on heteroskedasticity-robust standard errors. Sample period: October 2006 to November 2025. See text for details.

Sources: Bloomberg and Macrobond.

Figure 16. Rolling window estimates of interest rates on macroeconomic news



Note. Estimated two-year rolling window coefficients θ from event-study regressions $\Delta i_t = \alpha + \theta News_t^c + \epsilon_t$, where Δi_t is the daily change in a given interest rate on days of macroeconomic news and $News_t^c$ is the surprise component of the news in category $c \in (CPIF, GDP)$, defined as the difference between the actual value and the consensus forecast. The blue solid line is estimated with the five-year government bond yield as the outcome variable and the green long dashed lines with the five-year swap rate. The shaded regions show 95% confidence intervals based on heteroskedasticity-robust standard errors. Sample period: October 2006 to November 2025. See text for details.

Sources: Bloomberg and Macrobond.