Global Monetary Policy Surprises and Central Bank Information Effects

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Abstract

The importance of central bank information effects is the subject of ongoing debate. I investigate this question in an international context, bringing both new evidence and perspective. I compile monetary policy surprises for ten central banks. Following a surprise monetary tightening, economic forecasts improve in line with information effects. However, I show these surprises are predictable and follow the global interest rate cycle. They are positive during global tightenings and negative during global easings. After controlling for this predictability, economic forecasts do not improve, in line with standard monetary theory.

JEL Codes: E43, E52, E58
Keywords: information effect, forecasts, monetary policy surprise, central bank, global interest rate cycle

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1 Introduction

It is vital that central banks understand the economic impact of their decisions. Standard theory suggests that an unexpected monetary policy tightening causes economic forecasts to worsen. However, many papers document the opposite outcome (Romer and Romer 2000, Campbell et al. 2012, Nakamura and Steinsson 2018, Lunsford 2020). Their findings have been taken as evidence of the importance of central bank information effects. This theory holds that central banks have private information about the economy. By tightening policy, they signal their positive view of the economy to market participants, leading to forecasts of improved economic conditions (Berkelmans, 2011; Tang, 2015; Melosi, 2017; Frankel and Kartik, 2018; Andrade et al., 2019). Based on this theory, many papers decompose monetary policy surprises into their information component and the pure policy shock (Jarociński and Karadi, 2020; Andrade and Ferroni, 2021; Miranda-Agrippino and Ricco, 2021; Nunes, Ozdagli, and Tang, 2023). However, some papers argue that the importance of central bank information effects may have been overstated (Faust, Swanson, and Wright, 2004; Sastry, 2022; Bauer and Swanson, 2023a).

The debate around the importance of central bank information effects has focused primarily on the Federal Reserve. Indeed, this is why central bank information effects are synonymous with the "Fed information effect." However, there is only a limited number of Federal Reserve monetary policy events to study. For example, Nakamura and Steinsson (2018) look at 120 events.[1] With so few events, sample and specification decisions have led to large differences in results. Romer and Romer (2000) find information effects on inflation forecasts, Campbell et al. (2012) find information effects on unemployment but not on inflation forecasts, and Nakamura and Steinsson (2018) find information effects on GDP but not on inflation or unemployment forecasts. Bauer and Swanson (2023a) argue that monetary policy surprises are in part due to the "Fed response to news" channel, that is, the Fed has tended to respond more aggressively to changes in economic news than financial markets expected. This implies that if conditions are strong, then monetary policy surprises are likely to be more positive. Controlling for this, the authors do not find evidence for a Fed information effect.

In this paper, I investigate the strength of information effects in an international context, bringing both new evidence and perspective.

There is no theoretical reason to focus on just the Federal Reserve when studying the strength of information effects: A rise in interest rates at any central bank could convey information regarding that bank's private beliefs about the economy and lead to forecasts of improved domestic economic conditions. Instead, the focus on the Fed likely stems from data limitations, as it is difficult to obtain high-frequency data on interest rates, dates and times of monetary policy meetings, and the changes in forecasts around those meetings. I compiled these data for central banks in Australia, Canada, the eurozone, Japan, New Zealand, Norway, Sweden, Switzerland, and the United Kingdom. These

[1] The authors consider the period January 1995–March 2014, excluding unscheduled FOMC announcements and July 2008–June 2009.

data, together with data from the United States, allow me to examine central bank information effects from over two thousand largely novel monetary policy events.

I begin by demonstrating that monetary policy surprises from central bank meetings are associated with improvements in domestic economic forecasts around those meetings. To do this, I estimate the effect of monetary policy surprises on revisions to domestic forecasts of GDP growth, CPI inflation, and unemployment around central bank meetings. The direction of the coefficients lines up exactly with what information effects would suggest (positive monetary policy surprises lead to improved forecasts) and each of the coefficients is significant at least at the 10 percent level. I find similar results when examining individual central banks separately. Therefore, in the baseline regressions, I find strong suggestive evidence in favor of the importance of information effects.

However, I also find that monetary policy surprises show a global pattern. Monetary policy surprises follow the global interest rate cycle. When central banks are tightening (easing), monetary policy surprises are positive (negative). Nearly all the large deviations above and below zero in average developed country monetary policy surprises take place during global tightenings and easings, respectively. The size of these deviations is substantial. During significant global easings, the average monetary policy surprise from a single monetary policy meeting has been –4 basis points. And during significant global tightenings, the average monetary policy surprise from a single meeting has been 4 basis points. During the course of the Dot-Com bust and of the Great Recession, each central bank in my sample generated monetary policy surprises on average equivalent to approximately one quarter-point cut, while during the post-COVID tightening, this was approximately one quarter-point rise. This suggests markets underestimate the impact of the global interest rate cycle and the implications of changes in monetary policy at one central bank on other central banks.

I determine which factors most strongly predict monetary policy surprises. I find that the strongest predictor is a measure of the global interest rate cycle—the change in the six-month interest rate in foreign developed countries/zones over the past 30 days. A rise of 1 percent in this measure is associated with an 8.8 basis point positive monetary policy surprise. This measure also correlates strongly with revisions to economic forecasts. Therefore, the predictability of monetary policy surprises induces a more positive relationship between monetary policy surprises and revisions to economic forecasts. In contrast, domestic and US economic news releases as well as other domestic and US variables seem to have lower predictive power. This differs to the analysis in Bauer and Swanson (2023a), which focuses on capturing the "Fed response to news" through changes to domestic news and conditions.

I control for the predictability of monetary policy surprises and repeat the analysis looking for evidence of information effects. Controlling only for the change in the six-month foreign interest rate over the past 30 days nullifies the significant results favoring information effects. I also consider a specification including only time fixed effects. This controls for common variation across countries/zones, including the global interest rate cycle, and is only possible due to the international nature of my data. I again do not evidence in favor of central bank information effects. Instead, I find

that a positive monetary policy surprise leads to a significantly negative revision to GDP forecasts in line with standard monetary theory. I verify these results through robustness checks.

I also examine monetary policy surprises from minutes. In contrast to central bank meetings, monetary policy shocks from the release of minutes are associated with changes in economic forecasts in the direction suggested by standard monetary theory even without controlling for their predictability. This is likely because minutes are released several weeks after the meeting they relate to. Therefore, markets have already had several weeks to update their beliefs and have already observed the initial statement release. This suggests monetary policy surprises from minutes may be a purer surprise than those from meetings.

I conclude by looking at asset price movements around monetary policy events. I identify the events that most suggest the presence of central bank information effects using economic forecasts. Stock prices move in the opposite direction of the monetary policy surprise for most of these events, which aligns with standard monetary theory.

A wide range of papers find evidence of information effects. Romer and Romer (2000) were the first to argue for the empirical importance of information effects and found that Federal Reserve monetary policy announcements convey information about future inflation that can be used to predict the path of inflation. Campbell et al. (2012) find that monetary policy tightening lowers unemployment forecasts due to information effects and argue that this is a form of "Delphic forward guidance," whereby forward guidance conveys information about the path of the economy. Nakamura and Steinsson (2018) argue that monetary policy tightening leads to a rise in Blue Chip forecasts of GDP growth due to information effects. Lunsford (2020) argues that the strength of information effects depends on how information about monetary policy shocks is conveyed to the public, leading to stronger effects in the 2000–2003 period relative to the 2003–2006 period. Several recent papers decompose monetary policy surprises into their information component and pure policy shocks and find evidence in favor of information effects (Jarociński and Karadi (2020), Andrade and Ferroni (2021), Nunes, Ozdagli, and Tang (2023)). There is also a large literature studying the theoretical implications of information effects (Ellingsen and Soderstrom 2001, Berkelmans 2011, Tang 2015, Melosi 2017, Frankel and Kartik 2018, Andrade et al. 2019). The breadth and depth of this literature reflects the importance of understanding the role of information effects in monetary policy.

The empirical literature studies information effects using primarily monetary policy events at the Federal Reserve. Several papers look at information effects from monetary policy events in the eurozone (Jarociński and Karadi 2020, Andrade and Ferroni 2021, Jarociński 2022). Cieslak and Schrimpf (2019) decompose monetary policy events at the Federal Reserve, the European Central Bank, the Bank of England, and the Bank of Japan into monetary news and non-monetary news. However, the authors focus on the financial question of how asset prices respond immediately to these different types of news and do not look at the macroeconomic effects. To my knowledge, my paper is the first to use events at a wide range of central banks to look—in the manner of Romer and Romer 2000, Campbell et al. 2012, and Nakamura and Steinsson 2018—at the extent to which

information effects from monetary policy surprises affect macroeconomic expectations.

A handful of papers argue that central bank information effects may be overstated. In an early critique, Faust, Swanson, and Wright (2004) show that US economic forecasts are not made more accurate by incorporating US monetary policy surprises. My paper is most related to Bauer and Swanson (2023a). They argue that markets have systematically underestimated how strongly the Federal Reserve has responded to domestic economic news and conditions. Controlling appropriately for this "Fed response to news" channel overturns the evidence favoring strong central bank information effects. They also find little to no evidence of information effects in a survey of forecasters. The authors expand these results in Bauer and Swanson (2023b). Sastry (2022) decomposes the factors that cause markets and central banks to hold different beliefs about the current economic situation and how monetary policy will respond. By applying a model to Federal Reserve monetary policy surprises, the author finds that the different beliefs are due to markets under-reacting to public signals, with information effects playing almost no role. Each of these critiques measures information effects only from the Federal Reserve. Cieslak (2018) and Schmeling, Schrimpf, and Steffensen (2022) also show that monetary policy surprises may be predictable, but focus on the financial implications for asset pricing rather than on the macroeconomic impact.

My paper studies the predictability of monetary policy surprises and its implications for central bank information effects in an international context. I would highlight four contributions to this literature. First, I apply a large data set of monetary policy surprises across ten developed countries/zones. This allows me to study in greater detail, and with greater power, this question through a range of different approaches. Second, I demonstrate that average monetary policy surprises across developed countries move in tandem with the global interest rate cycle. When interest rates are rising (falling), monetary policy surprises deviate positively (negatively) from zero, often to a large degree. I find that recent changes in interest rates most strongly predict average monetary policy surprises, with the recent change in foreign interest rates as the strongest individual predictor. Third, I show that controlling only for time fixed effects, which capture common variation across countries/zones, also yields results that are suggestive of standard monetary theory and not of strong central bank information effects. This assuages concerns that the choice or specification of controls may affect the results. Fourth, I investigate the importance of information effects coming from minutes rather than those from the initial statement. With minutes, I find results that align with standard monetary theory (and not information effects) without controlling for the predictability of the monetary policy surprises. This may be because the predictability is less prominent in monetary policy surprises from minutes, which suggests they may be purer surprises.

This paper may also help to resolve a puzzling feature of the results in Bauer and Swanson (2023a). A key feature of the "Fed response to news" channel that Bauer and Swanson propose is not just that financial markets incorrectly predict how central banks will respond to news, but that they persistently predict an under-response. Market participants have a financial incentive to correctly predict the response of the Federal Reserve to news, so it is surprising that they are consistently wrong in one direction. Bauer and Swanson (2023b) suggest this is because the strength of the Federal Reserve's

response to news has grown substantially over time, and financial markets learn adaptively about how much the Federal Reserve will respond. Since the strength of the Fed's response has always been growing, financial markets have always under-predicted the strength of the response. The results in this paper suggest a second possible explanation. I find that monetary policy surprises move strongly with the global interest rate cycle. Moreover, monetary policy surprises from developed central banks are primarily predicted by global factors, and controlling for global factors (either foreign interest rates or time fixed effects) nullifies the analysis that favors strong information effects. Therefore, my paper suggests that financial markets may underestimate the global cycles driving and informing monetary policy. Economists themselves have only recently begun to understand the importance and wide implications of global cycles (Miranda-Agrippino and Rey, 2020, 2022), so it is not surprising that financial markets may also have underestimated their significance.

I outline the data used in the paper in Section 2. I show that simple regressions of revisions to economic forecasts on monetary policy surprises suggest strong information effects in Section 3. In Section 4, I show that monetary policy surprises follow the global interest rate cycle to a large degree, that they are predictable, and that this predictability is likely to affect the results in Section 3. I control for this channel and then repeat the regression analysis in Section 5 finding reduced evidence favoring information effects. I verify that the results are robust in Section 6. I consider similar regressions but using monetary policy surprises from minutes in Section 7. I examine additional evidence using high-frequency movements in asset prices around monetary policy events in Section 8. Section 9 concludes.

2 Data

I use a high-frequency approach to identify the impact of monetary policy surprises from ten central banks in developed countries/zones on economic forecasts. I focus on the central banks of developed countries/zones because it seems more likely that they have detailed private information that could cause information effects and because it is easier to obtain data for these countries/zones. I require three types of data for each of the ten countries/zones: (1) high-frequency data on interest rates, (2) dates and times of monetary policy meetings, and (3) regularly updated economic forecasts.

The interest rate data are primarily from Refinitiv, which offers intraday tick data from 1996 onward. I download data on benchmark bonds (for example, the closest one-, two-, three, five-, or ten-year bond for which the underlying bond changes over time), non-benchmark bonds (for example, a specific bond expiring on a specific day), and interest rate swaps for each country/zone. Refinitiv has an additional paywall for some US interest rate data, so I complement the Refinitiv data with CME interest rate swap data for the United States. I complement eurozone interest rate data with German data.

I compile dates and times of monetary policy meetings and minutes releases. The primary source is

Bloomberg. When dates/times were not available on Bloomberg, I augmented this with data directly from national central bank websites. I also verified the releases using two additional websites that provide dates/times of central bank events (`www.investing.com` and `www.centralbanknews.info`). I reconcile the results from the different sources and adjust appropriately for time zone differences. By default, I exclude monetary policy meetings that took place in 2020 from my regression analysis due to the large forecast revisions in the first year of the COVID-19 pandemic. In a robustness check, I demonstrate that adding these events back does not qualitatively affect the results.

I use a high-frequency approach to identify the surprise associated with central bank events. I use a similar but extended window to Gürkaynak, Sack, and Swanson (2005) to measure the surprises. I measure the interest rate before the event using the earliest available interest rate in a window from 10 minutes before to immediately beforehand. If this is not available, I use the latest available interest rate in a window from 1 hour before to 10 minutes before the event. I measure the interest rate after the meeting using the latest available interest rate in a window from 10 minutes to 20 minutes after the meeting. If this is not available, I use the earliest available interest rate in a window from 20 minutes after to 1 hour after the event. I use this extended window as my primary measure because data is less available in the narrow 30-minute window especially for the smaller central banks in my sample. However, the results are similar when I consider the 30-minute window.

I measure the monetary policy surprise by looking at the average change in interest rates in a narrow window around the maturity of interest. I focus on two maturities: six-month interest rates that are measured with bonds and swaps with a maturity of one year or less, and two-year interest rates measured with bonds and swaps with a maturity of one to three years. I denote the monetary policy surprise as $\Delta I_{mat,z,t}$, where mat is the maturity I consider, z is the country/zone where the central bank meeting takes place, and t is the time of the release associated with the meeting. I also construct the monetary policy surprise using a second approach where I fit a Nelson-Siegel yield curve using the interest rate data before and after the announcement, and measure the 6-month (2-year) monetary policy surprise as the change in the 6-month (2-year) interest rate for those fitted yield curves. I take several steps to clean the interest rate data. Crucially, I consider only bonds and swaps for which I have data both before and after the monetary policy event, so that I do not compare distinct bonds that could have different rates for other reasons. The interest rate data are based on indicative quotes submitted by banks. I drop any quote that is the same as a previously submitted quote to avoid the possibility that quotes have not been updated. Note that interest rates are measured precisely and that interest rate quotes are constantly changing, so it is highly unlikely that they would remain exactly the same even if a monetary policy announcement was unsurprising. I also remove a limited number of other outlier quotes that appear to be mismeasured. I provide more details on the construction of the monetary policy surprises in Appendix A.

I compare the monetary policy surprises I construct with established measures. My six-month measure for the United States shows a correlation of 0.84 with the monetary policy surprise measure from Nakamura and Steinsson (2018) (and updated in Acosta (2023)). My six-month measure for the United Kingdom shows a correlation of 0.66 with the monetary policy surprises from Cesa-Bianchi,

Thwaites, and Vicondoa (2020). My six-month measure for the Eurozone shows a correlation of 0.92 with the 6-month OIS measure from the Euro Area Monetary Policy Event-Study Database (EA-MPD), which was developed in Altavilla et al. (2019). I consider additional robustness checks. I verify that different sources and the different types of interest rate data I use yield similar monetary policy surprises. I demonstrate that the monetary policy surprises I construct under the two different approaches are highly correlated. And I show that including or excluding outliers has only a small impact on the surprises. These robustness checks are shown in detail in Table A.1.

I obtain economic forecasts for the countries/zones in my panel from Consensus Economics. Consensus Economics compiles forecasts at the start of each month for key economic indicators for the current year and subsequent year. The forecast for the current year is likely to respond more to monetary policy surprises that occur earlier in the year than to those that occur later in the year, because the earlier surprises have more of the year remaining to have an effect. Therefore, I focus on the forecast for the closest year that has at least six months remaining; for January through June, I look at the change in the forecast for the current year, and for July through December, I look at the change in the forecast for the subsequent year. I focus on the GDP growth, CPI inflation, and unemployment forecasts. I consider the mean of all forecasts available for a given variable in a given month. Forecasters are asked to complete the survey each month on a specific date, which is a Monday near the start of the month. The survey date is the same across all countries/zones. For each monetary policy meeting, I normally look at the one-month revision in the forecast around that meeting, that is, the change from the forecast issued during the first survey before the meeting to the forecast issued during the first survey after the meeting. Most forecasters complete the survey on the survey date,[2] but in the event survey respondents respond at different times, I also repeat the analysis with the two-month revision in the forecast around the meeting as a robustness check, which yields similar results.[3]

Table 1 summarizes the data. There are 2,992 monetary policy events for which I am able to construct monetary policy surprises. Of these, 2,136 relate to meetings (statements) and 856 relate to minutes. I am able to construct monetary policy surprises around the release of minutes for six countries in the panel. The number of events varies depending on the frequency with which the central banks hold meetings and the availability of data for that central bank. GDP growth and inflation forecasts are available for all the countries/zones in my panel, while unemployment forecasts are available for all the countries/zones except Norway, Sweden, and Switzerland.

I also consider the high-frequency change in stocks and exchange rates before and around central bank events. These are constructed using Refinitiv data and are measured in similar high-frequency

[2]Representatives of Consensus Economics commented that most respondents complete the survey on the survey date, but a limited number complete it a little early or a little late. Thank you to Vaishali Garga, who shared details from her conversations with Consensus Economics on this subject.

[3]There is a large jump in the forecast for unemployment in the United Kingdom for the current year from 3.2 percent in September 2014 to 6.3 percent in October 2014. Outside of COVID-19, this is by far the largest change in unemployment in my sample. While the Scottish Independence Referendum took place around that period, I do not see why it would lead to such a change, so I exclude it.

Table 1: Data Summary by Country/Zone

Country/Zone	Start Year	Meeting	Minutes	CPI	GDP	Unemp.
Australia	1998	282	182	y	y	y
Canada	2001	188	0	y	y	y
Switzerland	2004	85	0	y	y	n
Eurozone	1999	298	78	y	y	y
United Kingdom	1997	291	165	y	y	y
Japan	1998	204	157	y	y	y
Norway	2000	193	0	y	y	n
New Zealand	1999	174	0	y	y	y
Sweden	1999	130	75	y	y	n
United States	1990	291	199	y	y	y
Total		2136	856			

Notes: The start year represents the first year I am able to construct either the six-month or two-year monetary policy surprise for that country/zone. The number of statements/minutes counts the number of events for which I can construct either the six-month or two-year monetary policy surprise. The final three columns show whether CPI, GDP, and unemployment forecasts are available by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

windows to the monetary policy surprises.[4] I obtain data on the policy rates on a given day in each country/zone from the Bank for International Settlements.

3 Measuring Central Bank Information Effects: Baseline Regressions

I begin by presenting baseline results on the impact of monetary policy surprises from central bank meetings on the revision to forecasts around those meetings. This follows the approach in Nakamura and Steinsson (2018), who treat the monetary policy surprise as causal and argue that since GDP forecasts rise following monetary policy surprises, positive monetary policy surprises convey positive information about the economy. The specification is given in Equation (1). I denote the time of the next survey that takes place after a monetary policy event at time t as $s(t)$, so $\Delta_{s(t)-1m,s(t)}VarForecast_z$ represents the revision in the forecast of a variable observed in the survey after a monetary policy event relative to the survey one month prior. I present the results in Table 2. Each column shows a regression of the change in a domestic economic forecast around a monetary policy meeting on a measure of the monetary policy surprise associated with that meeting. The first two regressions show the change in CPI forecasts, the next two show the change in GDP forecasts, and the last two show the change in unemployment forecasts. The odd-numbered regressions show the impact of the six-month monetary policy surprise, while the even ones show the impact of the two-year monetary policy surprise.

[4] I use the following stock indexes: ASX200 (AUS), TSX Composite (CAN), SMI (CHE), Euro Stoxx 50 (ECB), FTSE100 (GBR), TOPIX (JPN), OBX (NOR), NZX50 (NZL), and OMX Stockholm 30 (SWE). I measure exchange rates relative to the USA except for the USA, which I measure relative to Canada.

Table 2: Fed Information Effect: Pooled, No Controls

$\Delta_{s(t)-1m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
$\Delta I_{6m,z,t}$	0.208*		0.202*		-0.110$^+$	
	(0.100)		(0.102)		(0.065)	
$\Delta I_{2y,z,t}$		0.270$^+$		0.174*		-0.135$^+$
		(0.143)		(0.078)		(0.071)
N	1781	1958	1756	1935	1412	1581
R^2	0.004	0.006	0.003	0.002	0.003	0.004

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

$$\Delta_{s(t)-1m,s(t)}VarForecast_z = \alpha + \beta\Delta I_{z,t} + u_{z,t} \tag{1}$$

The results in Table 2 suggest the existence of strong central bank information effects. The implication of the third regression is that a 1 basis point rise in six-month interest rates around a monetary policy meeting in a country/zone is associated with a 0.202 basis point rise in forecast GDP growth in that country/zone. This result is significant at the 5 percent level. Similarly, a 1 basis point rise in 2-year interest rates around a monetary policy event in a country/zone is associated with a 0.174 basis point rise in GDP forecasts in that country/zone, which is also significant at the 5 percent level. These results fit the central bank information effect channel; that is, markets interpret the rise in interest rates as a signal that central banks have positive, private information about the health of the economy, and so raise their GDP forecasts. This result runs counter to standard monetary theory, which posits that a rise in interest rates will lead to a contraction in economic growth and therefore lower forecasts of GDP growth. Surprise interest rate rises are associated with increases in forecast inflation and decreases in forecast unemployment at each interest rate maturity. All of the coefficients are significant at at least the 10 percent level, and the direction of the coefficients again supports strong central bank information effects and contradicts standard monetary theory.

In Table 3, I present results on how monetary policy surprises affect domestic economic forecasts for each central bank in my sample. The regression structure is similar to Table 2, except I interact the monetary policy surprise variable with dummy variables for each country/zone in the panel so I can examine the impact of monetary policy surprises in each country/zone separately. The regression approach is given by Equation (2). Therefore, the coefficient for $\Delta I_z * \mathbb{1}_z$ for Sweden represents the impact of a 1 basis point positive monetary policy surprise at central bank meetings in Sweden on the revision to Swedish economic forecasts around those meetings. For example, the coefficient in the penultimate row of the first regression implies that a 1 basis point rise in six-month interest rates around monetary policy events in Sweden is associated with a 1.15 basis point rise in Swedish CPI forecasts. Unemployment forecasts are only available for some countries/zones—the cells are blank if these data are not available. A monetary policy surprise tightening is associated with a significant rise in forecast CPI inflation (considering either maturity of monetary policy surprises)

Table 3: Fed Information Effect: By Country/Zone, No Controls

$\Delta_{s(t)-1m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
ΔI Maturity	ΔI_{6m}	ΔI_{2y}	ΔI_{6m}	ΔI_{2y}	ΔI_{6m}	ΔI_{2y}
$\Delta I_z * \mathbb{1}_{AUS}$	-0.034	-0.188	-0.029	0.058	0.031	0.038
	(0.201)	(0.207)	(0.344)	(0.282)	(0.161)	(0.148)
$\Delta I_z * \mathbb{1}_{CAN}$	0.359^{+}	0.548**	0.667*	0.476*	-0.201	-0.149
	(0.205)	(0.199)	(0.307)	(0.223)	(0.157)	(0.108)
$\Delta I_z * \mathbb{1}_{CHE}$	0.703*	0.937*	0.989**	0.826^{+}		
	(0.309)	(0.398)	(0.317)	(0.467)		
$\Delta I_z * \mathbb{1}_{ECB}$	0.653	1.115	-1.704*	-1.971*	0.086	0.279
	(1.130)	(1.430)	(0.860)	(0.879)	(0.448)	(0.347)
$\Delta I_z * \mathbb{1}_{GBR}$	-0.283	-0.215	0.043	0.152	-0.048	-0.215
	(0.595)	(0.611)	(0.271)	(0.338)	(0.155)	(0.207)
$\Delta I_z * \mathbb{1}_{JPN}$	2.659	1.105	3.712	3.072	-0.457	0.073
	(1.807)	(1.690)	(3.797)	(3.725)	(1.036)	(0.858)
$\Delta I_z * \mathbb{1}_{NOR}$	0.191	0.051	0.061	0.172		
	(0.266)	(0.214)	(0.177)	(0.195)		
$\Delta I_z * \mathbb{1}_{NZL}$	0.216	0.329*	0.388	0.261	-0.342*	-0.347*
	(0.189)	(0.165)	(0.365)	(0.327)	(0.159)	(0.156)
$\Delta I_z * \mathbb{1}_{SWE}$	1.153**	1.669**	0.300	0.215		
	(0.447)	(0.606)	(0.701)	(0.798)		
$\Delta I_z * \mathbb{1}_{USA}$	0.068	0.206	0.244	0.117	-0.081	-0.115
	(0.160)	(0.242)	(0.330)	(0.314)	(0.096)	(0.140)
N	1781	1958	1756	1935	1412	1581
R^2	0.025	0.032	0.027	0.018	0.018	0.019
Zone Dummies	*	*	*	*	*	*

Notes: $^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

for four countries/zones (Canada, New Zealand, Sweden, and Switzerland), a significantly positive rise in forecast GDP growth for two countries (Canada and Switzerland), and a significantly negative fall in forecast unemployment growth for one country (New Zealand).[5] Therefore, the estimates for individual central banks also seem to support the existence of strong central bank information effects.

$$\Delta_{s(t)-1m,s(t)}VarForecast_z = \alpha_z \mathbb{1}_z + \beta_z \Delta I_{z,t} \mathbb{1}_z + u_{z,t} \tag{2}$$

[5]Only one coefficient is significant in the direction suggested by standard monetary theory across all three variables: A surprise monetary policy tightening is associated with a significant fall in forecast GDP inflation in the eurozone.

4 Monetary Policy Surprises and the Global Interest Rate Cycle

In this section, I examine global patterns in monetary policy surprises, their predictability, and the implications for the results in Section 3.

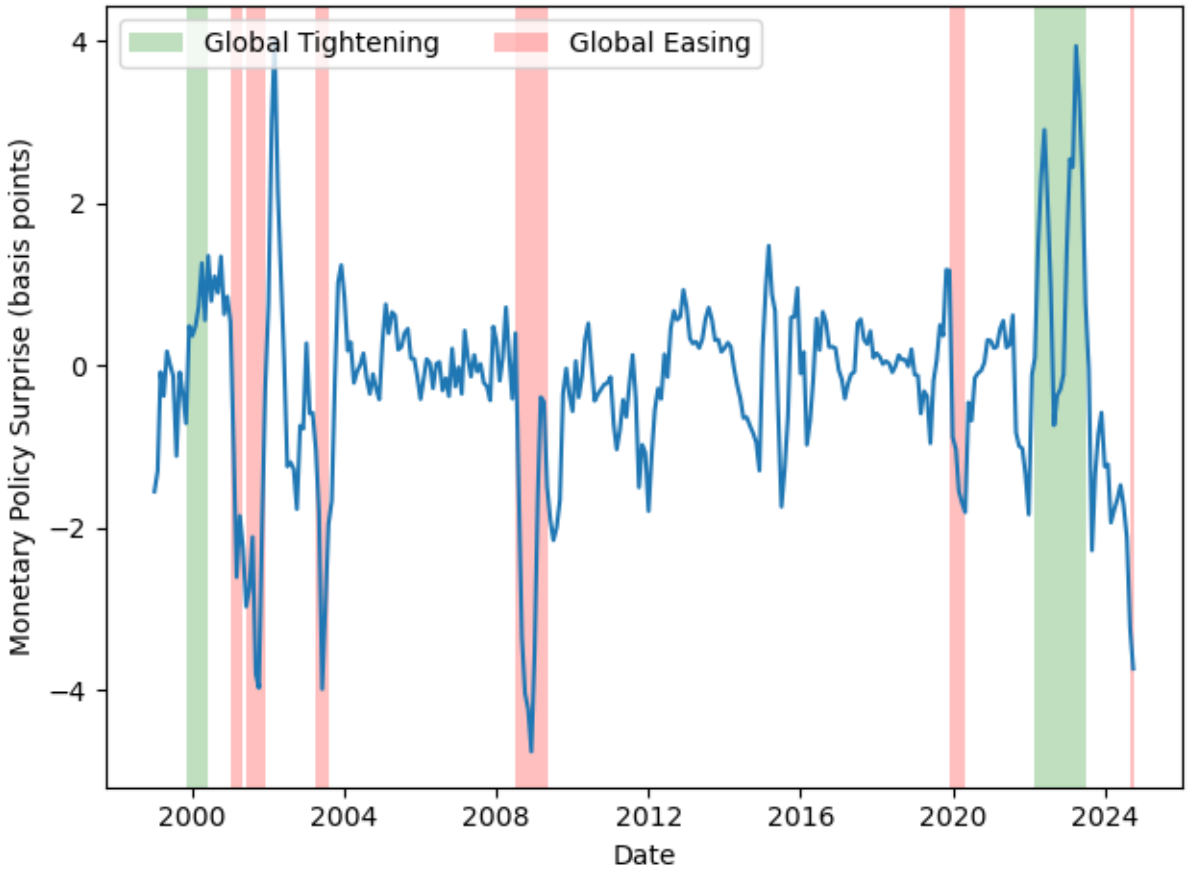
I start by looking at whether monetary policy surprises follow predictable patterns over time. In Figure 1, I plot the average six-month monetary policy surprise from a single central bank meeting. This is measured across all countries/zones in the sample in a five-month moving window, that is, for the prior two months, the current month, and the next two months. I also show how policy rates are changing on average across the countries/zones in my sample with shaded bars. I plot tightening periods (when policy rates are rising across developed countries/zones) in green and easing periods (when policy rates are falling across developed countries/zones) in red. I define a tightening (easing) month to be when policy rates in the countries/zones in my sample on average rose by more (less) than 50 basis points (two quarter-points) in a five-month moving window, that is, the change from three months before to two months after the current month.

Monetary policy surprises follow the global interest rate cycle. During the five periods in my sample when global rates were falling, monetary policy surprises were negative. And during the two periods in my sample when global rates were rising, monetary policy surprises were positive. Other periods generally show smaller monetary policy surprises. Indeed, the largest negative monetary policy surprises all took place during global easings and the largest positive monetary policy surprise took place during the recent global tightening. Figure B.1, Figure B.2, and Figure B.3 show the results are similar for two-year monetary policy shocks, when the monetary policy surprises are measured using a strict 30-minute window, and when the monetary policy surprises are measured using the Nelson-Siegel approach, respectively.

Most of the easings and tightenings are familiar. Central banks tightened during the Dot-Com bubble and eased during the Dot-Com bust. Central banks eased during the Great Recession and the onset of the COVID-19 pandemic. Central banks tightened during the burst of inflation following reopening after the pandemic and eased once inflation fell. The other period of easing was in 2003 when a number of central banks cut interest rates in anticipation of a recession that did not arise. I summarize the easing and tightening cycles in Table 4. The second and third columns show the dates associated with these cycles. The fourth column shows the average change in the policy rate of developed countries/zones from the beginning to the end of the cycle. In the fifth column, I compute the sum of the monetary policy surprises during that cycle averaged across each country/zone.

The degree to which monetary policy surprises vary with the global interest rate cycle is sizeable. During four of the five periods when central banks were tightening globally, the average monetary policy surprise from a single meeting (of a central bank in my sample) reached –4 basis points (Figure 1). Similarly, during the recent tightening phase, the average monetary policy surprise from a single meeting reached 4 basis points. Looking instead at the impact across full easing and tightening

Figure 1: Average Monetary Policy Surprises Over Time



Notes: The line represents the mean of six-month monetary policy surprises across all meetings in the countries/zones in the sample in a five-month moving window. The green (red) bars indicate that the average change in the policy rate across all countries/zones in the sample in a five-month moving window was more than 50 (less than -50) basis points. Sources: Bloomberg, CME, Refinitiv.

Table 4: Monetary Policy Surprises During Tightening and Easing Cycles

Description	Start Month	End Month	Δ Pol Rate	Ave Sum MPS
Dot-Com Bubble	1999.12	2000.06	1.17	0.04
Dot-Com Bust	2001.02	2001.12	-1.84	-0.22
Mid-2003 Easing	2003.05	2003.08	-0.56	-0.10
Great Recession	2008.09	2009.05	-3.31	-0.20
COVID-19 Easing	2020.01	2020.05	-0.61	-0.05
Post-COVID Tightening	2022.04	2023.07	3.55	0.18

Notes: The periods correspond to the tightening and easing cycles in Figure 1 (excluding the 2024 tightening which is still ongoing). The fourth column is the average change in the policy rate for the countries/zones in my sample from one month before the start month to the end month. To construct the fifth column, I take the sum of the monetary policy surprises between the start and end month for each country/zone in my sample. I then take the mean of this to get the average sum of the monetary policy surprises. Sources: Bloomberg, CME, Refinitiv.

cycles rather than for a single meeting (the fifth column of Table 4), the sum of the monetary policy surprises at each of the central banks in my sample was -0.22 and -0.20 percentage points across the Dot Com bust and the Great Recession, respectively. In other words, during those cycles, each developed central bank on average generated monetary policy surprises that equated approximately to a surprise quarter-point cut. Similarly, during the post-COVID tightening cycle, each developed central bank on average generated monetary policy surprises that equated approximately to a surprise quarter-point rise.

The results so far in this section have focused only on correlations. I now investigate more formally which variables predict global monetary policy surprises. In Table 5, I regress the six-month monetary policy surprises on six measures for the economic environment determined before the monetary policy event. The regression equation is shown in Equation (3).

$$\Delta I_{z,t} = \alpha + \beta EconEnvironment_{z,t} + u_{z,t} \tag{3}$$

I find that an improving economic environment before a monetary policy event predicts more positive surprises, especially when the economic environment is measured using variables relating to the interest rate cycle. In the first column, I control for the change in domestic interest rates from 30 days to one hour before the central bank meeting. A 1 percentage point rise in the domestic six-month interest rate before the meeting implies that the six-month monetary policy surprise will be 5.9 basis points higher and this is significant at the 10 percent level. Second, I look at the change in interest rates in other countries/zones in my sample but excluding the domestic country/zone from 30 days to one hour before. A 1 percentage point rise in the foreign six-month interest rate before the meeting implies that the six-month monetary policy surprise will be 8.8 basis points higher and this is significant at the 5 percent level. Third, I control for the change in policy rates in other countries/zones in my sample from 30 days to one day before the central bank meeting. A 1 percentage point rise in policy rates across developed countries/zones over the prior 30 days suggests that the six-month monetary policy surprise will be 4.4 basis points higher and this is significant at the 10 percent level.

Other domestic variables also predict monetary policy surprises but to a lesser degree. In the fourth specification, I control for domestic news shocks to CPI, GDP, and unemployment from releases that take place between 30 days and one day before the central bank meeting. I measure a news shock as the difference between the actual release value and a forecast of that value made a few days prior.[6] These shocks are not always available, especially in smaller countries/zones that issue releases less frequently. When releases are unavailable, I set the news shock to be zero. While some of the coefficients are significant, the adjusted R^2 for the news shocks is quite low. This makes sense because these variables are often zero, both because news shocks are unavailable or because the forecasts before the release were correct and the surprise was zero. Fifth, I control for revisions to domestic economic forecasts in the prior survey month, that is, the revision to domestic economic forecasts

[6]The forecasts and the associated releases are constructed using data from Informa Global Markets. For CPI, I consider the year-over-year change in CPI in percentages. For GDP, I consider the year-over-year change in GDP.

Table 5: Predicting Six-Month Monetary Policy Shocks by Recent Changes in the Economic Environment

$\Delta I_{6m,z,t}$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.059^{+}						0.039
	(0.032)						(0.043)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.028						-0.022
	(0.021)						(0.028)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$		0.088*					0.043^{+}
		(0.038)					(0.025)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$		-0.039					-0.021
		(0.029)					(0.029)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$			0.044^{+}				0.006
			(0.023)				(0.041)
$CPINewsShock_{z,t-30,t-1}$				0.013**			0.010
				(0.005)			(0.006)
$GDPNewsShock_{z,t-30,t-1}$				-0.001			-0.001
				(0.002)			(0.003)
$UnempNewsShock_{z,t-30,t-1}$				0.014^{+}			0.014
				(0.008)			(0.009)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$					0.021*		0.010
					(0.009)		(0.010)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$					0.022^{+}		0.010
					(0.012)		(0.010)
$\Delta_{t-30d,t-1h} Log(Stock_z)$						0.000	-0.000
						(0.000)	(0.000)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$						0.001	0.000
						(0.001)	(0.001)
N	1726	1680	1857	1857	1755	1740	1545
R^2	0.017	0.021	0.010	0.004	0.014	0.002	0.033
R^2_{adj}	0.016	0.020	0.010	0.003	0.013	0.001	0.026

Notes: $^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

from approximately 1.5 months to 0.5 months before a monetary policy meeting.[7] A 1 percentage point higher domestic inflation forecast predicts a 2.1 basis point monetary policy surprise at the subsequent central bank meeting. Sixth, I look at the change in domestic asset prices from 30 days before the central bank meeting to one hour before. I find that asset prices do not strongly predict monetary policy surprises, although the adjusted R^2 is positive.

Overall, I find that the recent change in foreign interest rates most strongly predicts global monetary policy surprises. This variable has the strongest adjusted R^2 in Table 5. And when I consider all the controls together in the seventh specification, I find that the six-month foreign interest rate is the only significant predictor. I find largely similar results for two-year monetary policy surprises in Table B.1. I also consider the economic environment using measures from the United States in Table B.2, but these offer lower predictive power (measured through lower R^2) than the global measures in Table 5.

I now test more formally whether the predictability of monetary policy surprises is likely to affect baseline regressions looking for information effects, such as those Section 3. These regressions are more likely to find information effects under two conditions: (1) a stronger economic environment is associated with positive monetary policy surprises, and (2) A stronger economic environment is associated with more positive economic forecasts. We already observed the first condition holds in Table 5. I investigate the second condition in Table 6. I regress the revision in domestic economic forecasts from the survey before the central bank meeting to the survey after on measures for the economic environment. The regression equation is shown in Equation (4).

$$\Delta_{s(t)-1m,s(t)} VarForecast_z = \alpha + \beta EconEnvironment_{z,t} + u_{z,t} \tag{4}$$

Table 6 demonstrates that past changes to the economic environment strongly predict revisions to GDP forecasts around monetary policy meetings. All the specifications have some variables that are significant and the adjusted R^2 values are all positive. The strongest predictors are the prior month's revision to the GDP forecast and recent changes to domestic and foreign interest rates. A 1 percentage point rise in the six-month foreign interest rate over the prior 30 days suggests that the GDP forecast revision will be 0.56 percentage points higher. These results are not surprising because when economic news and conditions improve, GDP forecasts are likely to rise. I find similar results for inflation and unemployment forecasts in Table B.3 and Table B.4.

Both conditions are satisfied for the regressions in Section 3 to be more likely to find that tightenings (easings) are associated with improving (worsening) forecasts because central banks respond more strongly than financial markets expect. These results bear similarity to the "Fed response to news" channel discussed in Bauer and Swanson (2023a). However, my results suggest that much of the predictability of monetary policy surprises takes a distinct form. Monetary policy surprises follow a global interest rate cycle. When central banks are tightening (easing), monetary policy surprises are

[7] I look at only the revision to inflation and GDP forecasts, because the change in unemployment forecasts is not available for all countries in my sample.

Table 6: Predicting GDP Forecast Revisions by Recent Changes in the Economic Environment

$\Delta_{s(t)-1m,s(t)}GDPForecast_z$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\Delta_{t-30d,t-1h}I_{6m,z}$	0.206***						0.023
	(0.061)						(0.091)
$\Delta_{t-30d,t-1h}I_{2y,z}$	0.163***						0.135***
	(0.028)						(0.035)
$\Delta_{t-30d,t-1h}I_{6m,Developed-z}$		0.561***					0.408***
		(0.106)					(0.089)
$\Delta_{t-30d,t-1h}I_{2y,Developed-z}$		0.007					-0.112*
		(0.059)					(0.046)
$\Delta_{t-30d,t-1d}PolicyRate_{Developed}$			0.433***				-0.051
			(0.107)				(0.116)
$CPINewsShock_{z,t-30,t-1}$				0.002			0.006
				(0.027)			(0.018)
$GDPNewsShock_{z,t-30,t-1}$				0.051***			0.027***
				(0.013)			(0.005)
$UnempNewsShock_{z,t-30,t-1}$				-0.041			-0.031
				(0.065)			(0.045)
$\Delta_{s(t)-2m,s(t)-1m}InflationForecast_z$					0.026		-0.101***
					(0.024)		(0.027)
$\Delta_{s(t)-2m,s(t)-1m}GDPForecast_z$					0.444***		0.348***
					(0.036)		(0.028)
$\Delta_{t-30d,t-1h}Log(Stock_z)$						0.008**	0.004**
						(0.003)	(0.001)
$\Delta_{t-30d,t-1h}Log(ExchangeRate_z)$						0.006	0.002
						(0.004)	(0.003)
N	1950	1994	2280	2280	2279	2033	1831
R^2	0.115	0.143	0.065	0.011	0.212	0.063	0.329
R^2_{adj}	0.114	0.142	0.064	0.010	0.211	0.062	0.324

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

likely to be positive (negative) potentially to a large degree. And in line with this, recent changes in global interest rates seem to play a key role in predicting monetary policy surprises. Therefore, in contrast to Bauer and Swanson (2023a), who show that markets underestimate how much the Federal Reserve responds to domestic news, I find that markets underestimate how much central banks change policy in line with the global interest rate cycle.

My results can also help resolve a puzzling feature of the results in Bauer and Swanson (2023a). A key feature of the "Fed response to news" channel is that markets persistently under-predict how much central banks will respond to news. Bauer and Swanson (2023b) suggest this is because the Fed's response to economic changes has been growing over time. My paper suggests a second explanation: that markets underestimate the impact of the global cycles driving and informing monetary policy. It is not surprising that markets have struggled to understand the implications of these cycles, since economists themselves have only recently begun to understand the importance and wide implications of global cycles (Miranda-Agrippino and Rey, 2020, 2022).

5 Measuring Central Bank Information Effects: Controlling for the Predictability of Monetary Policy Shocks

Section 4 demonstrated that the results in Section 3 are likely to find that surprise tightenings (easings) are associated with improving (worsening) economic forecasts because central banks react more strongly to the global economic environment than financial markets predict. In this section, I rerun the analysis in Section 3 while controlling for the predictability of monetary policy surprises.

I begin by controlling only for the change in interest rates in foreign countries/zones in the 30 days before the central bank meeting, which was the strongest predictor of monetary policy surprises in Section 4. Equation (5) summarizes the regression approach. Table 7 shows the results. The table is structured in the same manner as Table 2. The first two regressions show the impact on domestic CPI inflation forecasts, the next two show the impact on domestic GDP growth forecasts, and the last two show the impact on domestic unemployment forecasts. The odd regressions show the impact of the six-month monetary policy surprise, while the even ones show the impact of the two-year monetary policy surprise. Including only the change in foreign interest rates negates the significant results in favor of the information effect channel observed in Section 3. The coefficients for the GDP forecasts also reverse so that they are in line with standard monetary theory (though not significant).

$$\Delta_{s(t)-1m,s(t)} VarForecast_z = \alpha + \beta \Delta I_{z,t} + \Gamma EconControls_{z,t} + u_{z,t} \tag{5}$$

A concern is that results may vary depending on the selection and specification of controls. Indeed, Bauer and Swanson (2023b) suggest that the reason that financial markets persistently underestimate central banks' response to news is that central banks have been responding more aggressively to

Table 7: Fed Information Effect: Pooled, Controlling for Foreign Interest Rate Changes

$\Delta_{s(t)-1m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
$\Delta I_{6m,z,t}$	0.050		-0.052		-0.049	
	(0.092)		(0.084)		(0.065)	
$\Delta I_{2y,z,t}$		0.121		-0.022		-0.075
		(0.117)		(0.100)		(0.071)
$\Delta_{t-30d,t-1h}I_{6m,Developed-z}$	0.572***	0.571***	0.571***	0.558***	-0.270***	-0.274***
	(0.059)	(0.058)	(0.103)	(0.108)	(0.058)	(0.054)
$\Delta_{t-30d,t-1h}I_{2y,Developed-z}$	-0.018	-0.035	-0.002	0.004	-0.011	0.006
	(0.052)	(0.053)	(0.063)	(0.061)	(0.021)	(0.017)
N	1609	1782	1609	1782	1255	1420
R^2	0.186	0.178	0.157	0.145	0.130	0.118

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

news over time and markets have only learnt this slowly. This implies that the degree to which markets underestimate central banks' response to news varies over time, which in turn implies that the economic controls are likely to be time-varying. I consider an alternative approach using time fixed effects to overcome this concern. The forecasts produced by Consensus Economics are made on the same day for each country/zone in my panel. Therefore, I set monetary policy events that are issued between the same two forecast dates to have the same time fixed effect, since the global change in forecasts will be the same around these monetary policy events. I include these time fixed effects in place of specific controls for the economic environment, as seen in Equation (6). This approach controls for any common time variation in forecasts across the countries/zones in my sample and is only possible due to the international nature of the sample.

Table 8 shows the analysis with time fixed effects. In this case, a 1 basis point rise in the six-month monetary policy surprise is associated with a 0.15 basis point fall in GDP forecasts. This is significant at the 5 percent level, matches the direction predicted by standard monetary theory, and is the opposite of the direction predicted by central bank information effects. The coefficients for CPI and unemployment are close to zero and not significant. Therefore, with this alternative approach, the effects suggested by standard monetary theory appear to be at least as strong as those suggested by central bank information effects. It is important to note that including time fixed effects controls only for global and not domestic variation. Therefore, as in Table 7, I find that controlling only for the global predictability of monetary policy surprises nullifies the results favoring strong information effects.

$$\Delta_{s(t)-1m,s(t)}VarForecast_z = \delta_{s(t)} + \beta\Delta I_{z,t} + u_{z,t} \tag{6}$$

I consider a full "kitchen sink" specification where I include all the potential controls for the economic

Table 8: Fed Information Effect: Pooled, Survey Month Dummies

$\Delta_{s(t)-1m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
$\Delta I_{6m,z,t}$	0.033		-0.151*		0.039	
	(0.093)		(0.075)		(0.077)	
$\Delta I_{2y,z,t}$		0.036		-0.077		-0.009
		(0.115)		(0.100)		(0.076)
N	1781	1958	1756	1935	1412	1581
R^2	0.593	0.585	0.545	0.530	0.515	0.492
Survey Month Dummies	*	*	*	*	*	*

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

environment in Section 4 plus the time fixed effects. The results are shown in Table 9.[8] They are similar to Table 8. A 1 basis point rise in the six-month monetary policy surprise is associated with a 0.19 basis point fall in the GDP forecasts around the surprise and is significant at the 1 percent level. The coefficients for CPI and unemployment are close to zero and not significant. Again, this evidence suggests that central bank information effects may be overstated when the predictability of monetary policy surprises is not controlled for.

I find similar results for individual central banks. I repeat the analysis from Table 3 but including the controls of the full specification. Table B.6 shows the results. For three countries/zones, a positive monetary policy surprise predicts a negative revision to GDP forecasts in line with standard monetary theory. There are no significant coefficients favoring central bank information effects.[9] This is the reverse of what I found without controlling for the predictability of monetary policy surprises in Table 3, where seven significant forecasts out of eight total were in the direction predicted by central bank information effects. Therefore, controlling for the predictability of monetary policy surprises also reduces the evidence for strong central bank information effects in individual country/zone regressions.

6 Robustness Checks

I verify that the results are robust. Table 10 summarizes the robustness checks I conduct. The first three columns show the impact of the six-month monetary policy surprise on CPI inflation, GDP growth, and unemployment without any controls, and the second three columns show the same impact but with the full set of controls. This corresponds to regressions (1), (3), and (5) in Table 2 and Table 9, respectively.[10] Row (A) shows the baseline results. Row (B) shows the regressions where I

[8] I also consider a version where I control for all local controls (skipping the global controls, which are mostly captured by time fixed effects) plus time fixed effects in Table B.5, which yields very similar coefficients.

[9] The results for other forecasts are more mixed with one or two countries/zones showing significant coefficients favoring both standard monetary theory and central bank information effects in each.

[10] I show the full results tables for rows (B)–(K) in Appendix B.5.

Table 9: Fed Information Effect: Pooled, Full Specification

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
$\Delta I_{6m,z,t}$	-0.024		-0.194**		-0.001	
	(0.108)		(0.075)		(0.101)	
$\Delta I_{2y,z,t}$		0.036		-0.124		-0.028
		(0.124)		(0.105)		(0.098)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.229***	0.227***	-0.023	-0.027	0.020	0.019
	(0.044)	(0.043)	(0.043)	(0.038)	(0.021)	(0.020)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	0.028	0.020	0.208***	0.211***	-0.028	-0.035$^+$
	(0.030)	(0.029)	(0.041)	(0.037)	(0.027)	(0.019)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.001$^+$	-0.001**	0.001	0.000	-0.001*	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.004$^+$	-0.004$^+$	0.003	0.002	0.000	0.000
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
$CPINewsShock_{z,t-30,t-1}$	0.205***	0.202***	0.011	0.008	-0.026$^+$	-0.019
	(0.036)	(0.034)	(0.023)	(0.020)	(0.014)	(0.015)
$GDPNewsShock_{z,t-30,t-1}$	-0.007	-0.004	0.033*	0.039**	-0.012	-0.009
	(0.010)	(0.008)	(0.015)	(0.012)	(0.009)	(0.008)
$UnempNewsShock_{z,t-30,t-1}$	-0.006	-0.004	-0.018	-0.026	0.157***	0.159***
	(0.015)	(0.013)	(0.024)	(0.028)	(0.039)	(0.037)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.144	0.126	-0.018	-0.045	-0.086	-0.071
	(0.099)	(0.099)	(0.103)	(0.100)	(0.071)	(0.065)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.055	-0.035	0.131**	0.163***	-0.032	-0.045
	(0.099)	(0.097)	(0.051)	(0.048)	(0.047)	(0.044)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$	-0.020	-0.029	0.131	0.141	0.156	0.095
	(0.257)	(0.244)	(0.240)	(0.214)	(0.105)	(0.124)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$	0.001	0.002	-0.143	-0.139$^+$	-0.038	0.018
	(0.231)	(0.210)	(0.123)	(0.079)	(0.052)	(0.049)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$	0.155	0.131	0.234$^+$	0.143	0.004	0.020
	(0.185)	(0.176)	(0.140)	(0.100)	(0.040)	(0.043)
N	1545	1688	1545	1688	1206	1342
R^2	0.663	0.657	0.588	0.569	0.557	0.530
Survey Month Dummies	*	*	*	*	*	*

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

remove outliers, which I define as points where either the absolute size of the monetary policy shock is greater than 40 basis points or the revision to the forecast around the monetary policy surprise is greater than 1 percent. Row (C) includes monetary policy surprises that take place during 2020. Row (D) measures monetary policy surprises using a strict 30-minute window, that is, I take the earliest interest rate from 10 minutes before to just before the event and the latest interest rate from 10 minutes after to 20 minutes after the event. Row (E) allows more time for interest rates to evolve after the event but within a two-hour window.[11]

Row (F) applies a two-month forecast window around the monetary policy surprise rather than a one-month forecast window as in the baseline model. This ensures that I am not considering forecasts that change very close to the forecast survey date in case respondents fill out the survey on a different day. In the baseline results, I consider the change in the current year's forecast if it is the first half of the year and the change in the next year's forecast if it is the second half of the year. In Row (G), I instead use a weighted sum of the current and the next year forecast to approximate a year-ahead forecast.[12]

Row (H) measures the monetary policy surprise by fitting a yield curve before and after the event using the Nelson-Siegel method and setting the monetary policy surprises to be the change in the yield curves at a six-month and two-year maturity. Occasionally, central banks meet more than once during a survey month. In the baseline approach, I include each of these events in the sample. Row (I) instead includes only the first meeting for a central bank in each survey month. Row (J) excludes the United States to verify the results are not driven by its presence. Row (K) excludes Japan by the same reasoning, given that Japan's monetary policy has differed from other countries/zones in my sample.

I further verify that outliers are not a problem through scatterplots. Figure B.4, Figure B.5, and Figure B.6 show scatter plots of the relationship between six-month monetary policy shocks and the change in CPI, GDP, and unemployment forecasts for each country/zone excluding 2020, respectively. The slope of each country/zone graph corresponds to the coefficients in regression (1), (3), and (5) of Table 3.

[11] In this alternative measure, I use the latest rate available from 10 minutes to 1 hour after the event. In the baseline measure, I use the latest interest rates available in a window 10 minutes to 20 minutes after the event, and if that is not available then I take the earliest interest rate 20 minutes to 1 hour after the event.

[12] The formula for the year-ahead forecast is given by:

$$YearAheadForecast = \frac{(12 - month + 1)\Delta CurYearForecast + (month - 1)\Delta NextYearForecast}{12} \tag{7}$$

In January, it uses only the change in the current year forecast. In July, it is half the current year and half the next year. In December, it is mostly the change in the next year forecast.

Table 10: Robustness Checks Summary

	No Controls			With Economic Controls		
$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	GDP	Unemp.	CPI	GDP	Unemp.
A. Baseline	0.208*	0.202*	-0.110^{+}	-0.024	-0.194**	-0.001
B. Removing outliers	0.239**	0.101	-0.100	0.009	-0.231**	-0.055
C. Including COVID-19 Pandemic	0.255*	0.646^{+}	-0.333	-0.007	-0.173**	-0.060
D. 30-Minute Window	0.196^{+}	0.169	-0.095	-0.046	-0.191^{+}	0.019
E. Latest 2-Hour Window	0.192*	0.214**	-0.130	-0.032	-0.151*	-0.073
F. Wider Forecast Window	0.475***	0.478*	-0.208	0.011	-0.283*	0.088
G. Alternative Forecast Years	0.194*	0.188^{+}	-0.093	-0.033	-0.155*	0.004
H. MPS with Nelson-Siegel	0.264*	0.160	-0.065	-0.005	-0.202*	0.049
I. One Event Per Survey Month	0.203*	0.172^{+}	-0.096	-0.021	-0.193**	-0.014
J. Excluding USA	0.236^{+}	0.201^{+}	-0.114	-0.011	-0.146*	-0.011
K. Excluding Japan	0.208*	0.203^{+}	-0.111^{+}	-0.024	-0.185**	0.031

Notes: $^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

7 Measuring Central Bank Information Effects: Response to the Release of Minutes

This section examines the relationship between monetary policy surprises due to the release of central bank minutes and changes in economic forecasts. Minutes are more detailed than the short statements that are typically issued immediately following a meeting, and can include the perspectives, comments, and votes of individual members of the committee. I have dates and times of the release of minutes for six countries/zones in my sample: Australia, the Eurozone, Japan, Sweden, the United Kingdom, and the United States. The delay between a meeting and the release of minutes varies by country/zone and over time. Approximately, the central banks of Australia, Sweden, and the United Kingdom release minutes two weeks after a meeting, the Federal Reserve releases minutes three weeks after a meeting, the European Central Bank releases minutes four weeks after a meeting, and the Bank of Japan releases minutes around one-to-two months after a meeting.

In contrast to central bank meetings, monetary policy shocks from the release of central bank minutes are associated with changes in economic forecasts in the direction suggested by standard monetary theory without additional controls. Table 11 shows regressions of the changes in economic forecasts for CPI, GDP, and unemployment on the 6-month and 2-year monetary policy shocks around the release of central bank minutes. A positive shock to interest rates is associated with a fall in CPI and GDP and a rise in unemployment. None of the coefficients are significant, but they all are in the direction suggested by conventional economic theory and in the opposite direction to that suggested by central bank information effects.

An explanation for this result is that the monetary policy surprises from the release of minutes are less

Table 11: Fed Information Effect: Pooled, Minutes

$\Delta_{s(t)-1m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
$\Delta I_{6m,z,t}$	-0.546		-0.007		0.098	
	(0.549)		(0.427)		(0.484)	
$\Delta I_{2y,z,t}$		-0.251		-0.215		0.217
		(0.376)		(0.396)		(0.548)
N	708	813	708	813	663	743
R^2	0.002	0.001	0.000	0.000	0.000	0.002

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

predictable and so controlling for predictability is less needed. Minutes are released after the meeting they relate to. Therefore, markets have had more time to process economic changes that had taken place until that meeting by the time minutes are released a number of weeks later. Moreover, markets will also have observed the initial statement immediately following a meeting. Both the additional processing time and the statement may therefore also have helped to correct market misperceptions about the central bank's response to economic news and broader conditions. This suggests that when the predictability of monetary policy surprises is dampened, central bank information effects do not seem to have strong effects.

8 Evidence from Asset Price Movements

I also investigate whether the movement in asset prices around monetary policy events supports strong central bank information effects. The intuition here is that if a monetary policy event provides information that affects economic forecasts, then that information is also likely to affect asset prices. In standard monetary theory, a surprise monetary policy easing would be expected to raise stock prices because lower interest rates imply that the discounted future profits of firms are worth more. However, if the easing conveys negative information to financial markets about the economy, then this implies that stock prices are likely to rise less or even fall. This is the approach taken by Jarociński and Karadi (2020), who identify Fed monetary policy events that convey information effects as those where monetary policy surprises and stock prices move in the same direction (where an easing leads stock prices to fall). In standard monetary theory, a surprise monetary policy easing is also expected to lower exchange rates because lower interest rates will, all else being equal, encourage investors to move money out of the country that conducts the easing.

The impact of information effects is more difficult to parse with regards to exchange rates. Stavrakeva and Tang (2024) document that when the Fed cut interest rates in the Great Recession, the dollar rose against other developed currencies. They argue that this is because the cut in interest rates signaled weakness in the global economy, which meant investors were keener to hold dollar assets due to

exorbitant privilege.[13] This effect is less likely to apply to smaller developed countries that do not exert exorbitant privilege. Moreover, it is also possible that if a central bank cuts interest rates, then this could signal that only the domestic economy is weak, which could lead exchange rates to fall similar to the direction predicted by standard monetary theory.

To investigate asset price movements around monetary policy surprises, I follow a similar approach to Bauer and Swanson (2023a). In particular, I split my sample into the five percent of events that show the strongest central bank information effects and all other events, and then I compare the movement in asset prices around these two sets of events. I measure to what extent an event causes central bank information effects by looking at the t-statistic for the degree to which a monetary policy surprise affects the change in the GDP forecast around the event associated with that surprise, that is regression (3) in Table 2. The coefficient is positive when there are central bank information effects. Therefore, I measure the degree to which an event causes central bank information effects by how much the t-statistic falls when that event is excluded. I set the five percent of events that show the strongest central bank information effects to be the events for which the t-statistic decreases the most.[14]

Events I classify as information effects do not show asset price movements that fit this classification. 72 percent of the events that I classify as showing the strongest central bank information effects show stock price movements that correspond to the direction predicted by standard monetary theory, that is a stock price fall (rise) following a positive (negative) monetary policy surprise, which is higher than 57 percent for the rest of the sample. Therefore, the majority of the events that most suggest strong central bank information effects would be classified as events that satisfy standard monetary theory using the methodology of Jarociński and Karadi (2020). I also find that 76 percent of events show exchange rate movements that correspond to the direction predicted by standard monetary theory, that is exchange rates rise (fall) following a positive (negative) monetary policy surprise, which is also higher than 64 percent for the rest of the sample.

I verify these results through regression analysis. The first and second regressions of Table 12 show the percentage change in domestic stock prices in response to a 1 basis point rise in the six-month monetary policy surprise. The first regression shows the coefficient for the five percent of events that most suggest the presence of central bank information effects, while the second regression shows the coefficient for the other events. The coefficient for the five percent of events is more negative

[13] Gürkaynak et al. (2021) examine the impact of monetary policy surprises caused by Federal Reserve and European Central Bank events and show that it is difficult to reconcile theory with exchange rate movements that move in the opposite direction to that predicted by standard monetary theory.

[14] Table B.17 summarizes the five percent of events that cause the strongest information effects in my sample. The first column shows the country where the monetary policy surprise took place, the second column shows the date of the meeting associated with the surprise, the third column shows the six-month monetary policy surprise, the fourth column shows the change in the GDP forecast in the month around that meeting, and the fifth and sixth columns show the log change in the domestic stock index and the exchange rate in the same time window as the monetary policy surprise. Many of the events that show the strongest central bank information effects are associated with the Great Recession in 2008 and 2009 and the Dot Com recession in 2001 and are generally negative monetary policy surprises when central banks cut interest rates by more than markets expected. This makes sense because, as Section 4 showed, monetary policy surprises are negative during recessions at the same time as forecasts are likely to worsen.

Table 12: Comparison of Asset Price Movements around Monetary Policy Surprises

	$\Delta Log(Stock_{z,t})$	$\Delta Log(Stock_{z,t})$	$\Delta Log(Exchange_{z,t})$	$\Delta Log(Exchange_{z,t})$
Intercept	0.091	0.005	0.006	0.012
	(0.107)	(0.006)	(0.072)	(0.019)
$\Delta I_{6m,z,t}$	-3.026***	-2.675***	1.578**	4.398***
	(0.807)	(0.704)	(0.538)	(0.513)
N	68	1307	68	1307
R^2	0.176	0.102	0.115	0.232
Dataset	Info. Effect	Other	Info. Effect	Other

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors of the second and fourth regression are clustered by country/zone. Exchange rates are measured relative to the US dollar except the US dollar, which is measured relative to the Canadian dollar. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

than for the other events in my sample (although the difference is not significant). The central bank information effect would have suggested the opposite—a positive monetary policy surprise would imply that the economy is doing well and cause stocks to rise (at least relatively). The third and fourth coefficients show the percentage change in the exchange rate relative to the US dollar (Canadian dollar for the USA) in response to a 1 basis point rise in the six-month monetary policy surprise. The third regression shows the coefficient for the five percent of events, while the fourth regression shows the coefficient for the other events. The coefficient for the five percent of events is positive, which is in line with standard monetary theory, although the coefficient is smaller than the coefficient for the other events.

Overall, the evidence from the high-frequency movement in asset prices does not seem to support strong central bank information effects. Instead, the events that most suggest the presence of information effects show asset price movements that generally line up with standard monetary theory. I find similar results when I consider 2-year monetary policy surprises in Table B.18.

9 Conclusion

It is vital that central banks understand how monetary policy decisions affect expectations. Standard monetary theory suggests that a monetary policy tightening is likely to have contractionary effects, thereby worsening macroeconomic forecasts. By contrast, information effects suggest that monetary policy tightening can convey a positive signal about economic conditions, leading to an improvement in macroeconomic forecasts. Existing papers have found mixed results on whether central banks cause information effects. An important constraint in answering which effect predominates is the small number of Federal Reserve events, which have typically been used to assess information effects.

In this paper, I investigate the importance of information effects in an international context, bringing both new evidence and perspective. I compile a data set for ten developed country/zone central

banks. This substantially expands the sample that I am able to look at relative to other studies, allowing me to study the question with higher power while using a largely novel pool of events to provide new insights. In baseline regressions, I find that monetary policy tightening is associated with improvements to domestic economic forecasts that are significant both across my panel and for individual central banks, which is in line with the concept of central bank information effects.

However, I find that monetary policy surprises closely follow the global interest rate cycle. When global central banks are tightening (easing), monetary policy surprises are positive (negative). These changes are sizeable. During easings, monetary policy surprises often reach on average –4 basis points at each meeting that can equate to a one-quarter point cut on average across each central bank during easing cycles. The numbers are similar but in the opposite direction during tightening cycles. I find that the strongest predictor of a monetary policy surprise in a developed country/zone is the change in the six-month interest rate in other developed countries/zones over the past 30 days. In contrast, changes in domestic and US economic news and condition seem to have lower predictive power. This suggests that markets especially have difficulty in understanding how central banks respond to the global interest rate cycle.

Controlling for the predictability of monetary policy surprises nullifies the evidence favoring strong central bank information effects. This is true even when I control only for the change in interest rates in foreign countries/zones over the prior 30 days. I also control for the predictability using model-neutral time fixed effects, which only control for any common effects across countries/zones. Under both these approaches, I do not find evidence supporting strong information effects and instead observe some evidence in favor of standard monetary theory. Therefore, controlling only for global factors, such as the global interest rate cycle, nullifies the evidence favoring strong information effects. I find further supportive evidence in favor of this conclusion using monetary policy surprises from minutes and the change in asset prices around monetary policy announcements.

Overall, my results suggest that information effects do not outweigh the effects predicted by standard monetary theory. Therefore, when a central bank tightens policy, all else being equal, it should not expect domestic economic forecasts to improve.

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Appendices

A Empirical Approach Additional Details

A.1 Processing Central Bank Date/Times Data

I primarily obtain information on central bank data from the following sources:

- Bloomberg: I use data from the Bloomberg calendar. This gives dates and times beginning in 1997 for prominent developed countries and later for other countries. The calendar provides the dates and times of the statement release. For some countries, the calendar also provides the dates (and times) of minutes releases (more detailed summaries of monetary policy events after the initial release of the statement). For some releases, the date but not the time are available. The calendar sometimes also provides a measure of the policy rate before and after the event. This data is "Used with permission of Bloomberg Finance L.P.".
- Direct collection from central bank websites: I compiled (with the help of Maggie Smith) the dates and, where possible, the times of monetary policy statement releases for a range of global central banks. I focused on doing this when dates/times of statement releases were not available on Bloomberg.

Other data sources I've used to construct specific pieces of the dataset are:

- Gürkaynak, Sack, and Swanson (2005): This paper provides earlier dates/times of monetary policy events for the USA.

Other data sources that I've referred to in order to check dates but that are not included in the IMPS dataset are:

- `centralbanknews.info`: A website summarizing monetary policy events. This provides daily data and was used to verify the dates.
- `investing.com`: A website providing a wide array of financial data. This was used to verify the dates.
- BIS policy rate changes dataset: A dataset summarizing daily changes in policy rates of different countries. I used this to check the dates appeared correct (by verifying whether the dates lined up with changes in policy rates).

Key steps for processing all sources:

- Convert all the available times into coordinated universal time (UTC), which is also known as Greenwich Mean Time (GMT).
- For daily data, I ensured that the local day was the date that the event took place in local time. This was mainly an issue in Australia and New Zealand where the day in coordinated universal time can be one day later than the day in local time since UTC and local time are quite different in those countries/zones.

Steps for processing Bloomberg dates:

- Go through any event containing the word "Minutes" (or derivatives). Set relevant events as event type "minutes", that is, the release of central bank minutes.
- Drop any other events that are not "minutes" or tickers. Tickers are codes that seem to be assigned when Bloomberg can track a series associated with that event. Since policy rates are series that can be tracked over time, statement releases where policy rates may change seem to generally have tickers.
- Go through the tickers. Set relevant tickers to be "meeting" events, that is, events where the central bank meets and typically changes the policy rate. I ignore tickers that are unrelated to monetary policy statements, such as bond auctions.

Merging the events together:

- To remove duplicates with the same time: I keep only one event by zone/minute/event type. When there is more than one event, I keep Bloomberg over my directly compiled dates. When there are multiple Bloomberg events with different tickers available, I keep the most relevant ticker.
- To remove duplicates with the same day and no time: For events with no time, I also keep one event by zone/day/event type (using a similar approach as in the previous step).
- There are sometimes duplicates that take place on the same day but where one event has a time and one does not. Therefore, when there are events for the same zone/event type that take place on the same day, drop an event that has no time if there is an event that has a time.
- Additional checks: I flag any events that are the same zone and event type but different times that take place on the same day. I also flag any events that were from data that was directly collected from central bank websites that takes place within 7 days of another event of the same type in that zone (in case the date is wrong).
- I go through and resolve any flags manually by looking online at central bank records. This includes removing duplicates that are caused by times being recorded incorrectly but keeping any events that occurred quickly after each other.

Specific event changes:

- Switzerland 01/15/15: The Swiss National Bank announced that it was dropping its peg to the euro from that day onwards. Asset markets responded very strongly with the Swiss Franc immediately rising 20 percent in response (a large outlier compared to other events). I do not consider this in my sample, since the dynamics of asset prices and forecasts may be quite different following a peg change compared to a standard monetary policy change.

A.2 Processing Refinitiv Intraday Data

Before I describe the high-frequency data, I need to make a distinction clear between the two types of bond data that I use:

- Benchmark bonds: This is a measure of a specific maturity where the underlying bond varies. For example, this might measure the 10-year interest rate. In this case, the data provider would aim to select the underlying bond such that it has a maturity close to ten years. After a while, the underlying bond's maturity will be too short, so the underlying bond will switch.
- Non-benchmark bonds: This is where I follow a specific bond from its issuance to its maturity (or until its latest maturity if the bond has not yet matured). The maturity of the bond will vary from long to short throughout this period. Note that there is the possibility that some non-benchmark bonds may sometimes be used as the underlying bonds for benchmark bonds. I take steps to ensure I'm not introducing duplicates in this case.

I download intraday data through DataSource, which provides intraday data dating back to the beginning of 1996 (although not all instruments are available this far back). I downloaded data in 5-minute increments. I obtain data on the following measures:

- Interest rates on benchmark bonds: I generally select all available benchmark bonds for all the countries/zones that I compile high-frequency interest rate data for. This data often begins in 1996 though can begin later for some countries. There are access restrictions for the default, more comprehensive interest rate measures for US nominal bonds and for Japanese nominal bonds. I use non-default measures for US and Japan. I also use alternative sources for the USA, which are detailed below.
- Interest rates on non-benchmark bonds: This downloads data for a single bond and tracks all interest rates for that bond over time. For example, it might cover a 20-year bond that was issued on 1/15/1997 and expires on 1/15/2017. I add these bonds for countries/zones where the benchmark bonds offered sparse coverage. Note there is a possibility that these bonds could sometimes also be covered by the benchmark bonds, but I adjust for this later.

- Interest rate swaps/Overnight index swaps: I downloaded the 10-year interest rate swaps and 1-month/6-month/1-year overnight index swaps for my main countries/zones when they were available. I focused on short-term swaps because bond data was sometimes sparse at that frequency.
- Exchange rate data: I download the exchange rate for a range of countries/zones. For all countries/zones except the US, I obtain the exchange rate relative to the dollar. Most exchange rates are given in the form (USD/zone) but some countries are given in the form (zone/USD). I adjust for this to obtain exchange rates that are all in the form (zone/USD). For the US, I obtain the exchange rate relative to the Canadian Dollar (USD/CAD).
- Stock indices data: I download stock indices (such as the SP500, FTSE100) for a range of countries/zones. I selected stock indices based on the ones that were listed highest for that country/zone on Refinitiv Eikon. Stock index data for the US was partly restricted, so I use the Refinitiv stock-index measure for the US.

I always take the following steps to clean the high-frequency data:

- I convert intraday data to be measured at 5-minute intervals and ensure that I appropriately correct for timezones so that the data is measured in UTC time. I measure the open and close of each 5-minute interval.
- The high-frequency data often shows the same value repeated many times (particularly overnight when markets are closed). The values are quite precise. For example, intraday bond data is often given to 0.1 or even 0.01 basis points. Therefore, it is unlikely that the value actually continued to be the same from one period to the next (unless the relevant market was closed in which case this is also not a good measure of high-frequency changes). Therefore, whenever an index is the same in one 5-minute interval as the preceding 5-minute interval (or is the same as a preceding day for daily data), I set that value to be missing. Note that the assumption that the values will not remain the same is especially likely to be true around monetary policy announcements.
- When relevant, I also drop any values that are exactly zero, which appear to be stand-ins for missing data.

For the Eurozone:

- Exchange rate: I use the euro
- Stock exchange: I use the STOXX Euro measures
- Bond data: I use German bond data and Eurozone-level overnight interest swap/interest rate swap data. I verify these behave similarly.

A.3 Processing CME Intraday Data

I use CME data to obtain additional intraday data for the USA. In particular, I get Eurodollar futures data (beginning in December 1981), 2-year T-Note futures data (beginning in January 1991), 5-year T-Note futures data (beginning in July 1988), 10-year T-Note futures data (beginning in January 1983), and 30-year T-Bond futures data (beginning in October 1982).

I take the following preliminary steps before getting interest rates/maturities:

- I begin by converting the data into the open/close bids for 5-minute intervals.
- I adjust the data to be in UTC time.

CME Bond Futures For each of the T-bond types, there are bond futures offered every three months. Let's consider a 5-year T-Note future that expires on December 31, 2019. Someone who buys this note will receive the value of a 5-year bond on December 31. Someone who sells this future has to deliver this value on December 31.[15] The futures begin trading about one year in advance (the future expiring on December 31, 2019 begin trading at the start of 2019) so at any time there are typically four futures contracts trading (although they are traded more heavily closer to their expiry).

The seller may deliver any bond between a set of maturities. For the 2-year bond future, the bond delivered must be of maturity 1 year and 9 months to 2 years. For the 5-year bond future, the bond must be of maturity 4 years and 2 months to 5 years and 3 months. For the 10-year bond future, the bond must be of maturity 6.5 years to 10 years. For the 30-year bond future, the bond must be of maturity 15 to 25 years.

Since different bonds can be delivered with different coupons/maturities, the bond prices are converted into the price they would receive if the coupon was 6% (8% for expiry dates pre-2000). This rate is called the "pricing coupon". This means that if the interest rate on a bond is more/less/equal than the pricing coupon then it would make sense to deliver the longest/shortest/any maturity bond. To see this, consider a bond that actually has a coupon payment equal to the pricing coupon (for simplicity). If interest rates for that maturity bond are 6% then the bond should be worth exactly the principal you get back. If interest rates are less than 6% then the bond should be worth more than 100 and the longer the maturity of the bond, the more it is worth, so sellers will want to give buyers shorter maturity bonds.

In practice, interest rate have nearly always been lower than the pricing coupon since 1991. Therefore, I set the maturity of the bond that is effectively being traded on as the shortest maturity possible at the expiry date (so 1 year and 9 months for 2-year bond futures etc.) plus however many days remain until the expiry of the future. For example, if the 5-year bond future expiring on December 31 was traded on June 30 then I would set the maturity of that bond to be 4 years and 8 months.

[15] In practice, the buyer only has to pay some fraction of the amount and the seller only gives some relative amount.

I then back out interest rates from the underlying bond being traded using the pricing coupon and the maturity at expiry.

CME Eurodollar Futures Eurodollar futures contracts expire at the quarter-end months (March, June, September, and December) and extend out until 10 years[16]. The last trading day/expiration date of the contract is the second London business day before the third Wednesday of the delivery month. Price quotes for Eurodollars futures contracts are set using the International Monetary Market (IMM) Index. $IMM = 100 - R$, where, in this case, R is the 3-month annualized USD LIBOR on the 3rd Wednesday of the delivery month. For example, if a Eurodollar futures contract is trading at $97, then at that time, the implied 3-month annualized USD LIBOR on the 3rd Wednesday of the delivery month is 3%.[17] I set the expiration date to be the 3rd Wednesday of the maturity month.

The Eurodollar futures are not immediately comparable to bond interest rates because they capture the expected interest rate only at a period of time rather than capturing the expected interest rates throughout the duration of a bond. To make the Eurodollar futures comparable to the other bond data I use, I therefore set:

- 3-month interest rate: The 1-quarter ahead Eurodollar future
- 6-month interest rate: The mean of the 1-quarter ahead and 2-quarter ahead Eurodollar future
- 9-month interest rate: The mean of the 1-quarter ahead, the 2-quarter ahead, and the 3-quarter ahead Eurodollar future
- x-year interest rate: The mean of all Eurodollar futures between now and x years from now

I interpolate gaps but do not fill gaps outside the earliest and latest available quarters except that if the first quarter does not have a value I set it to be the value for the second quarter.

A.4 Processing Interest Rate Data

For interest rate data, I need to take additional steps to process the raw shocks (the raw measures of interest rates before/after monetary policy events) for a few reasons:

- I obtain many measures for the change in interest rates around monetary policy events. I need to select an appropriate interest rate from the measures.

[16] There are also contracts for other months extending out 1 year but I do not make use of these.

[17] Each Eurodollar futures contract represents a $1 million interest-yielding bank deposit (at a bank outside the U.S.) with a three-month maturity. Eurodollars are cash-settled, which means that at expiration/settlement of the contract, the seller must pay the buyer an amount that is equivalent to the value (including interest) of a three-month deposit made at the time of settlement.

- By combining the different measures, I can fill in gaps in individual measures (intraday interest rate data is quite spotty).
- While benchmark bonds may be listed as having a specific maturity, the underlying bonds will vary around this maturity. I try to more precisely measure the maturity.
- The interest rate data sometimes show outliers and I want to produce a measure where outliers are removed.

There are two steps I go through to process the raw shocks:

1. Initial processing: For each event/timeframe:
   - I keep only interest rates for which I have data both before/after the event.
   - I exclude benchmark bonds when the measured window around an event overlaps a day in which the underlying bond changed (which could lead to a large change in the measured interest rate for other reasons).
   - I produce measures including/excluding outliers. To exclude outliers, I take the following steps for each event/timeframe:
     (a) For each instrument, I construct a comparison window. This is 0–2 years for bonds with a maturity of less than 1.25 years. It is half of the maturity of the bond to two times the maturity of the bond for maturities of more than 1.25 years. I compute the median comparison level as the median interest rate of other bonds in the comparison window before the event. I compute the median comparison change as the median change in the interest rate of other bonds in the comparison window around the event. Note that I consider all sources when doing this.
     (b) If there are no other instruments in the comparison window, I set the instrument to be an outlier if its change in the window was more than 20 basis points.
     (c) If there are other instruments in the comparison window, I set the instrument to be an outlier if:
       – The rate of the instrument before the event differs from the comparison level by more than 5 percentage points.[18]
       – The change in the instrument around the event is more than 20 basis points and has the opposite sign to the comparison change
       – The change in the instrument around the event is more than 20 basis points and is three times larger than the comparison change in absolute terms
     (d) I repeat this process until no further instruments are marked as outliers.

[18] More precisely, I set this condition to be $|1/(1+comparison/100) - 1/(1+instrument/100)| > 0.05$ to avoid making it more likely that the outlier condition will be met when interest rates are large.

2. Constructing yield curve measures: For each yield curve measure I want to create, I go through each event one at a time and construct the yield curve measure.
    - Sometimes a bond can appear twice for the same event because it can appear as a non-benchmark bond and as a benchmark bond (see details Appendix A.2). I can typically observe this by seeing if a specific ID appears more than once for an event. I drop duplicate occurrences of the same ID.

I use different measures for the yield curve to allow for different scenarios:

- With the window approach, I compute the average change in the interest between a lower maturity bound and an upper maturity bound. This is a non-parametric approach (relative to the Nelson-Siegel parametric approach).
- The Nelson-Siegel approach allows me to use all points available to construct the yield curve before/after and then compute the difference between the two at specific maturities.

Notes for the Nelson-Siegel approach:

- I only construct Nelson-Siegel estimates when an event has at least four instruments that have data both before and after the monetary policy event.
- Occasionally, the Nelson-Siegel estimation fails to run either before or after the event. In that case, I restrict the value of τ to be 1 and rerun the estimation both before and after the event. $\tau = 1$ is a standard value in Nelson-Siegel estimation.
- I only compute the interest rate for a specific maturity from a Nelson-Siegel estimated yield curve if that maturity is within the maturities of instruments that were used to estimate the Nelson-Siegel yield curves before/after the event.

In practice, these approaches tend to yield quite similar results as I demonstrate in Appendix A.5.

I obtain the maturities for benchmark bonds from Refinitiv Eikon. For benchmark bonds, I set the maturity to be the maturity of the underlying bond. If the data is not available, I just set the maturity to be the benchmark maturity. Note that a 10-year benchmark bond will only very rarely have a maturity of exactly 10 years. Instead, the appropriate maturity will be whatever the underlying bond is.

A.5 Data Checks

The first panel compares the shocks I construct (measured in a 30-minute window using the window approach) with other measures of monetary policy shocks. Note that these other measures were only

constructed for single countries/zones so I only compare the shocks I have available for the relevant country/zone with the other measure. A1 compares the US monetary policy shocks constructed in Nakamura and Steinsson (2018) (and updated in Acosta (2023)) with the US shocks in my dataset. Nakamura and Steinsson (2018) use futures with a maturity of up to one year. Therefore, I compare their measure to a monetary policy shock for all instruments with a maturity between 0 and 1 years. The correlation of 0.84 is very strong. I also compare to UK monetary policy shocks from Cesa-Bianchi, Thwaites, and Vicondoa (2020) (A2), which yields a correlation of 0.66. Finally, I find very strong correlation of 0.92 between my Eurozone shocks and the surprises in the Euro Area Monetary Policy Event-Study Database (EA-MPD), which relates to Altavilla et al. (2019) (A3).

Table A.1: Robustness Checks for Monetary Policy Shocks

Comparison	Correlation	Num. Obs.
A: Comparison with Other Monetary Policy Shock Measures		
A1: USA NS (2018) Shock v Window y00-y01	0.84	214
A2: GBR CTV Target Shock v Window y00-y01	0.66	145
A3: EA-MPD OIS 6m v Window y00-y01	0.92	284
B: Comparison of Alternative Sources		
B1: Refinitiv OIS y00-y01 v Refinitiv bond y00-y01	0.72	463
B2: ECB OIS y00-y01 v DEU bond y00-y01	0.72	234
B3: CME y00-y01 v Refinitiv bond y00-y01	0.63	152
B4: CME y01-y03 v Refinitiv bond y01-y03	0.92	261
C: Comparison of Window v NS Approach		
C1: NS m06 v Window y00-y01	0.93	1464
C2: NS y02 v Window y01-y03	0.96	2160
D: Comparison when Outliers are Included		
D1: Window y00-y01: with v without outliers	0.84	2010
D2: Window y01-y03: with v without outliers	1.00	2461
D3: NS m06: with v without outliers	0.86	1464
D4: NS y02: with v without outliers	0.95	2223

Sources: Bloomberg, CME, Refinitiv.

Most of the underlying data used to construct my shocks comes from Refinitiv data on the change in interest rates for bonds (both benchmark and non-benchmark) from that country. However, I also use swap data from Refinitiv because bond data does not always offer proficient coverage, particularly for shorter maturities. For the US, where I face restrictions on Refinitiv intraday bond data, I also include data from CME to improve the coverage of my shocks. In Panel B, I verify that these alternative sources have a strong correlation with the Refinitiv intraday bond data. In B1, I compare the correlation of shocks constructed using only Refinitiv overnight interest rate swaps (OIS) with shocks constructed using only Refinitiv bond data. I do not use interest rate data for bonds for the European Central Bank (ECB). I instead proxy for this using bond data from Germany. On the other hand, I do have intraday swap data for the ECB. In B2, I compare the correlation of ECB OIS data with German bond data. I find strong correlation. In B3 and B4, I compare the correlation of US

shocks constructed using CME swap data relative to shocks constructed using Refinitiv data. Note that I use CME data for the USA because Refinitiv bond data is not available in earlier periods. I find a strong correlation between the two data sources.

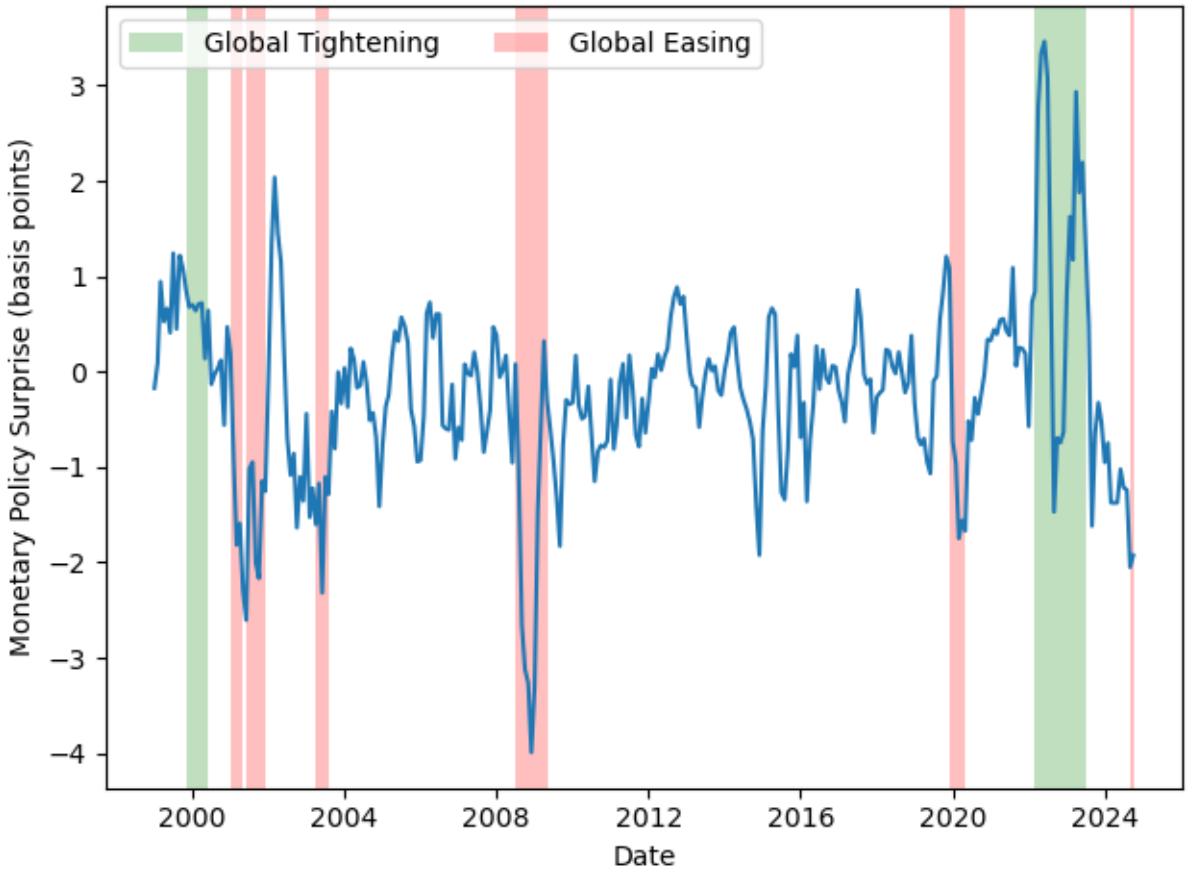
In Panel C, I compare the correlation of shocks constructed using the Nelson-Siegel approach and shocks constructed using the window approach. The correlation is high.

I exclude outliers by default in the shocks. In Panel D, I consider how including outliers affects the shocks. The shocks are highly correlated, which suggests outliers are generally not a major problem.

B Additional Empirical Results

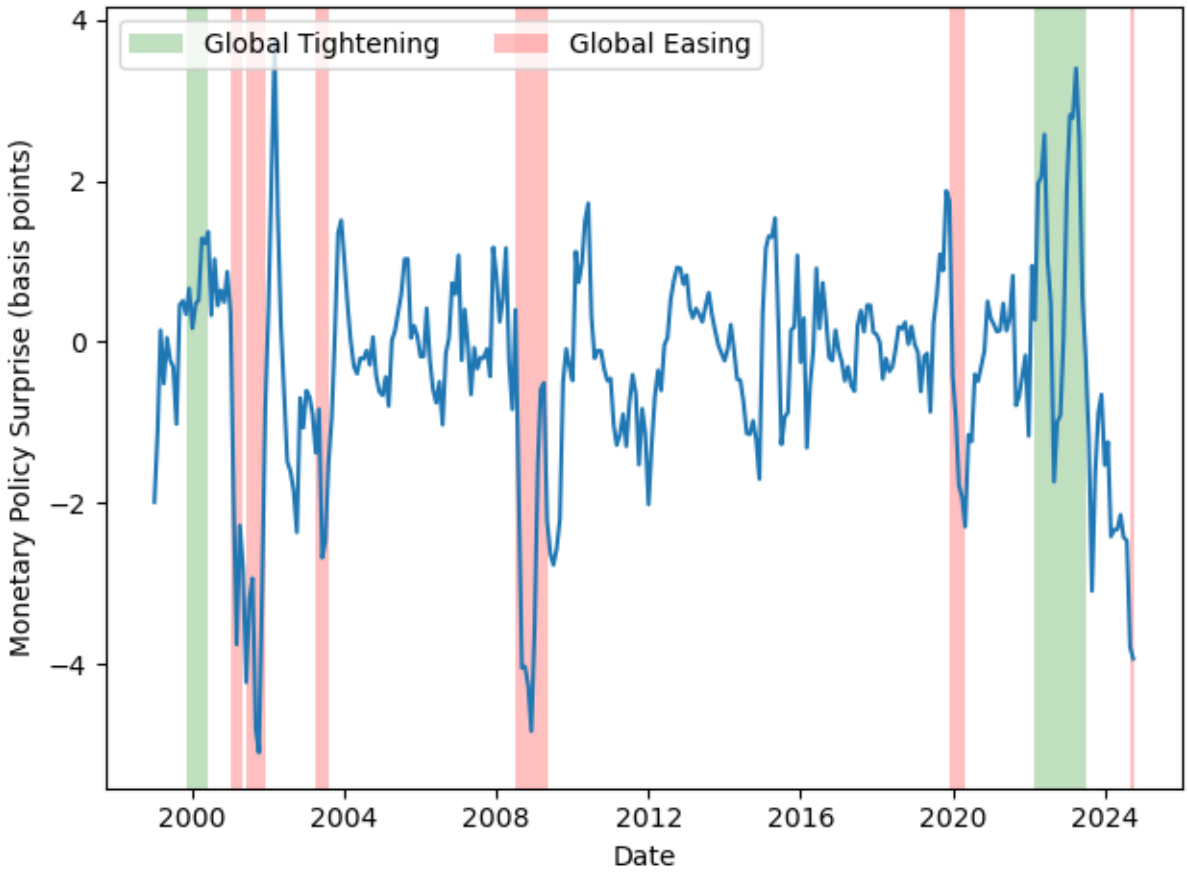
B.1 Average Monetary Policy Surprise Time Series

Figure B.1: Average Monetary Policy Surprises Over Time: Two-Year



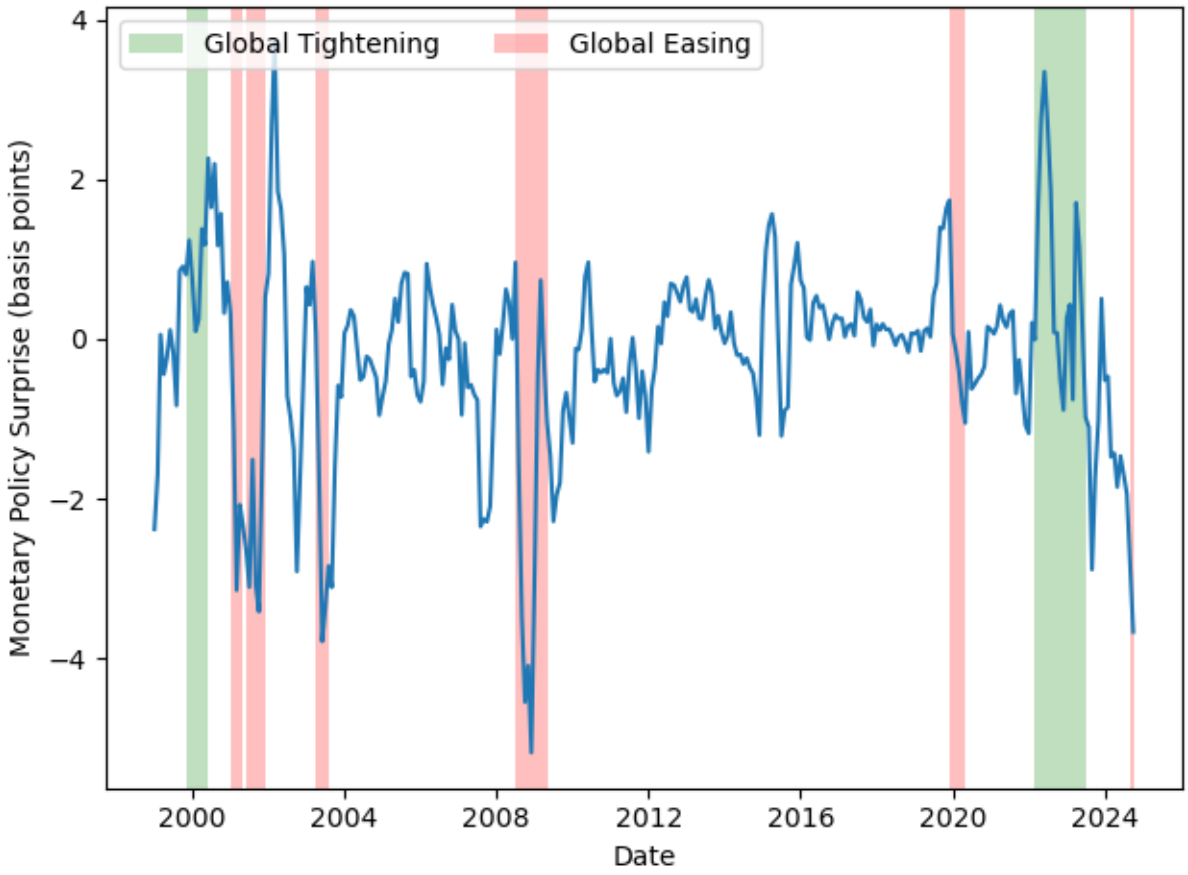
Notes: The line represents the mean of two-year monetary policy surprises across all meetings in the countries/zones in the sample in a five-month moving window. The green (red) bars represent that the average change in the policy rate across all countries/zones in the sample in a five-month moving window was more than 50 (less than -50) basis points. Sources: Bloomberg, CME, Refinitiv.

Figure B.2: Average Monetary Policy Surprises Over Time: Strict 30-Minute Window



Notes: The line represents the mean of six-month monetary policy surprises across all meetings in the countries/zones in the sample in a five-month moving window measured in a strict 30-minute window. The green (red) bars represent that the average change in the policy rate across all countries/zones in the sample in a five-month moving window was more than 50 (less than -50) basis points. Sources: Bloomberg, CME, Refinitiv.

Figure B.3: Average Monetary Policy Surprises Over Time: Nelson-Siegel



Notes: The line represents the mean of six-month monetary policy surprises across all meetings in the countries/zones in the sample in a five-month moving window measured using the Nelson-Siegel approach. The green (red) bars represent that the average change in the policy rate across all countries/zones in the sample in a five-month moving window was more than 50 (less than -50) basis points. Sources: Bloomberg, CME, Refinitiv.

B.2 Regression Tables Looking at the Impact of Potential Controls

Table B.1: Predictability of Two-Year Monetary Policy Shocks

$\Delta I_{2y,z,t}$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.032						0.009
	(0.022)						(0.026)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.010						0.000
	(0.016)						(0.019)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$		0.058^{+}					0.031^{+}
		(0.031)					(0.017)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$		-0.024					-0.023
		(0.026)					(0.022)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$			0.032^{+}				0.010
			(0.018)				(0.035)
$CPINewsShock_{z,t-30,t-1}$				0.009*			0.005
				(0.004)			(0.006)
$GDPNewsShock_{z,t-30,t-1}$				-0.003			-0.004
				(0.003)			(0.003)
$UnempNewsShock_{z,t-30,t-1}$				0.014*			0.012^{+}
				(0.006)			(0.007)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$					0.023^{+}		0.015
					(0.012)		(0.012)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$					0.019^{+}		0.011
					(0.011)		(0.011)
$\Delta_{t-30d,t-1h} Log(Stock_z)$						-0.000	-0.000^{+}
						(0.000)	(0.000)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$						0.001	0.000
						(0.000)	(0.001)
N	1867	1853	2034	2034	1934	1915	1688
R^2	0.008	0.010	0.006	0.004	0.014	0.002	0.022
R^2_{adj}	0.007	0.009	0.006	0.003	0.013	0.001	0.015

Notes: $^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.2: Predicting Six-Month Monetary Policy Shocks: US Variables

$\Delta I_{6m,z,t}$	(1)	(2)	(3)	(4)	(5)
$\Delta_{t-30d,t-1h} I_{6m,US}$	0.035*				
	(0.015)				
$\Delta_{t-30d,t-1h} I_{2y,US}$	-0.022				
	(0.013)				
$\Delta_{t-30d,t-1d} PolicyRate_{USA}$		0.028*			
		(0.014)			
$CPINewsShock_{US,t-30,t-1}$			0.006		
			(0.009)		
$GDPNewsShock_{US,t-30,t-1}$			-0.017		
			(0.027)		
$UnempNewsShock_{US,t-30,t-1}$			-0.001		
			(0.011)		
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_{US}$				0.007	
				(0.010)	
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_{US}$				0.000	
				(0.005)	
$\Delta_{s(t)-2m,s(t)-1m} UnempForecast_{US}$				-0.041*	
				(0.020)	
$\Delta_{t-30d,t-1h} Log(Stock_{US})$					0.000
					(0.000)
N	1734	1857	1857	1832	1625
R^2	0.005	0.008	0.000	0.013	0.000
R^2_{adj}	0.004	0.008	-0.001	0.011	-0.000

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.3: Predicting CPI Forecast Revisions by Recent Changes in the Economic Environment

$\Delta_{s(t)-1m,s(t)} InflationForecast_z$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.363***						0.188^{+}
	(0.104)						(0.110)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.025						-0.070
	(0.070)						(0.111)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$		0.538***					0.164
		(0.046)					(0.160)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$		-0.031					0.073
		(0.043)					(0.123)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$			0.434***				0.032
			(0.069)				(0.082)
$CPINewsShock_{z,t-30,t-1}$				0.278***			0.219***
				(0.042)			(0.041)
$GDPNewsShock_{z,t-30,t-1}$				0.005			0.005
				(0.007)			(0.005)
$UnempNewsShock_{z,t-30,t-1}$				-0.004			-0.005
				(0.014)			(0.008)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$					0.531***		0.456***
					(0.058)		(0.062)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$					0.062*		-0.000
					(0.026)		(0.022)
$\Delta_{t-30d,t-1h} Log(Stock_z)$						0.001	-0.001
						(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$						0.001	-0.001
						(0.002)	(0.002)
N	1976	1994	2308	2308	2279	2033	1831
R^2	0.129	0.164	0.098	0.089	0.287	0.002	0.423
R^2_{adj}	0.128	0.163	0.097	0.087	0.286	0.001	0.419

Notes: $^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.4: Predicting Unemployment Forecast Revisions by Recent Changes in the Economic Environment

$\Delta_{s(t)-1m,s(t)} UnempForecast_z$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\Delta_{t-30d,t-1h} I_{6m,z}$	-0.181***						-0.120*
	(0.022)						(0.059)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.023						-0.008
	(0.015)						(0.027)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$		-0.276***					-0.155**
		(0.052)					(0.052)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$		0.005					0.031
		(0.022)					(0.031)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$			-0.207***				0.042
			(0.045)				(0.032)
$CPINewsShock_{z,t-30,t-1}$				-0.023*			-0.017*
				(0.009)			(0.008)
$GDPNewsShock_{z,t-30,t-1}$				-0.010			-0.005
				(0.008)			(0.006)
$UnempNewsShock_{z,t-30,t-1}$				0.211***			0.184***
				(0.057)			(0.043)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$					-0.077***		-0.005
					(0.020)		(0.018)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$					-0.163**		-0.106**
					(0.052)		(0.035)
$\Delta_{t-30d,t-1h} Log(Stock_z)$						-0.005***	-0.002**
						(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$						-0.003*	-0.001
						(0.002)	(0.002)
N	1559	1575	1813	1813	1784	1640	1456
R^2	0.120	0.114	0.054	0.069	0.132	0.051	0.278
R^2_{adj}	0.119	0.113	0.053	0.067	0.131	0.050	0.272

Notes: $^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

B.3 Alternative Control Specifications

Table B.5: Fed Information Effect: Pooled, Local Controls Plus Time Fixed Effects

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
$\Delta I_{6m,z,t}$	-0.024		-0.194**		-0.006	
	(0.105)		(0.073)		(0.099)	
$\Delta I_{2y,z,t}$		0.035		-0.122		-0.039
		(0.122)		(0.102)		(0.101)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.228***	0.226***	-0.023	-0.026	0.020	0.016
	(0.043)	(0.043)	(0.043)	(0.038)	(0.022)	(0.021)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	0.029	0.021	0.211***	0.214***	-0.028	-0.035^{+}
	(0.030)	(0.029)	(0.044)	(0.039)	(0.027)	(0.019)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.001^{+}	-0.001**	0.000	-0.000	-0.001^{+}	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.005^{+}	-0.004^{+}	0.003	0.002	-0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$CPINewsShock_{z,t-30,t-1}$	0.205***	0.202***	0.013	0.010	-0.025^{+}	-0.019
	(0.035)	(0.034)	(0.023)	(0.021)	(0.015)	(0.015)
$GDPNewsShock_{z,t-30,t-1}$	-0.007	-0.004	0.033*	0.039**	-0.012	-0.009
	(0.010)	(0.008)	(0.015)	(0.012)	(0.009)	(0.008)
$UnempNewsShock_{z,t-30,t-1}$	-0.005	-0.004	-0.018	-0.027	0.158***	0.160***
	(0.017)	(0.015)	(0.024)	(0.028)	(0.040)	(0.036)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.149	0.130	-0.011	-0.041	-0.091	-0.078
	(0.100)	(0.097)	(0.107)	(0.106)	(0.071)	(0.063)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.060	-0.039	0.113*	0.149**	-0.028	-0.036
	(0.084)	(0.080)	(0.050)	(0.051)	(0.049)	(0.045)
N	1545	1688	1545	1688	1206	1342
R^2	0.663	0.656	0.586	0.567	0.555	0.528
Survey Month Dummies	*	*	*	*	*	*

Notes: $^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

B.4 By Country/Zone Additional Tables

Table B.6: Fed Information Effect: By Country/Zone, Full Specification

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
ΔI Maturity	ΔI_{6m}	ΔI_{2y}	ΔI_{6m}	ΔI_{2y}	ΔI_{6m}	ΔI_{2y}
$\Delta I_z * \mathbb{1}_{AUS}$	-0.129	-0.161	-0.198	-0.256*	0.211*	0.222*
	(0.156)	(0.194)	(0.130)	(0.129)	(0.094)	(0.104)
$\Delta I_z * \mathbb{1}_{CAN}$	-0.088	0.147	0.238	0.193	0.020	-0.001
	(0.164)	(0.172)	(0.175)	(0.161)	(0.158)	(0.120)
$\Delta I_z * \mathbb{1}_{CHE}$	-0.301	-0.379	-0.359	-0.434		
	(0.268)	(0.317)	(0.230)	(0.270)		
$\Delta I_z * \mathbb{1}_{ECB}$	0.505	1.281*	-0.682^{+}	-0.768	-0.267	-0.071
	(0.542)	(0.632)	(0.363)	(0.491)	(0.211)	(0.245)
$\Delta I_z * \mathbb{1}_{GBR}$	-0.324	-0.260	-0.253	-0.059	-0.107	-0.193
	(0.363)	(0.335)	(0.238)	(0.225)	(0.121)	(0.130)
$\Delta I_z * \mathbb{1}_{JPN}$	1.649	0.379	-0.331	-1.336	0.318	0.384
	(1.218)	(1.021)	(2.011)	(2.184)	(0.808)	(0.742)
$\Delta I_z * \mathbb{1}_{NOR}$	-0.144	-0.288^{+}	-0.293	0.208		
	(0.158)	(0.162)	(0.267)	(0.245)		
$\Delta I_z * \mathbb{1}_{NZL}$	0.032	0.073	-0.039	-0.059	-0.268*	-0.277^{+}
	(0.134)	(0.136)	(0.288)	(0.255)	(0.131)	(0.144)
$\Delta I_z * \mathbb{1}_{SWE}$	0.720*	0.966*	0.031	-0.099		
	(0.280)	(0.437)	(0.300)	(0.352)		
$\Delta I_z * \mathbb{1}_{USA}$	0.313	0.301	-0.650^{+}	-0.735*	-0.030	0.028
	(0.249)	(0.201)	(0.338)	(0.312)	(0.179)	(0.161)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.218***	0.216***	-0.020	-0.024	0.032	0.024
	(0.040)	(0.038)	(0.041)	(0.040)	(0.025)	(0.025)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	0.028	0.028	0.207***	0.213***	-0.031^{+}	-0.039*
	(0.019)	(0.017)	(0.037)	(0.035)	(0.018)	(0.016)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.001*	-0.001*	0.001	0.000	-0.002*	-0.001
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.005**	-0.004**	0.003	0.002	0.000	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
$CPINewsShock_{z,t-30,t-1}$	0.208***	0.200***	0.015	0.011	-0.024	-0.018
	(0.025)	(0.024)	(0.020)	(0.019)	(0.017)	(0.017)
$GDPNewsShock_{z,t-30,t-1}$	-0.004	-0.003	0.038**	0.041***	-0.012	-0.009
	(0.009)	(0.007)	(0.012)	(0.010)	(0.008)	(0.006)
$UnempNewsShock_{z,t-30,t-1}$	-0.010	-0.009	-0.017	-0.025	0.165***	0.168***
	(0.022)	(0.021)	(0.024)	(0.025)	(0.026)	(0.024)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.151*	0.131^{+}	-0.019	-0.049	-0.077^{+}	-0.060
	(0.069)	(0.068)	(0.068)	(0.070)	(0.044)	(0.042)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.051	-0.030	0.131**	0.162***	-0.049^{+}	-0.062*
	(0.061)	(0.058)	(0.044)	(0.042)	(0.030)	(0.028)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$	-0.056	-0.062	0.090	0.138	0.161	0.087
	(0.157)	(0.151)	(0.246)	(0.234)	(0.198)	(0.187)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$	0.007	0.003	-0.135	-0.135	-0.036	0.017
	(0.117)	(0.105)	(0.108)	(0.104)	(0.079)	(0.077)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$	0.166	0.155	0.238^{+}	0.146	0.001	0.032
	(0.156)	(0.135)	(0.134)	(0.140)	(0.072)	(0.068)
N	1545	1688	1545	1688	1206	1342
R^2	0.673	0.669	0.598	0.577	0.579	0.551
Survey Month Dummies	*	*	*	*	*	*
Zone Dummies	*	*	*	*	*	*

Notes: $^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors are clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

B.5 Full Robustness Check Tables

Table B.7: Robustness Check: B. Removing outliers

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta I_{6m,z,t}$	0.239**		0.101		-0.100	
	(0.088)		(0.132)		(0.077)	
$\Delta I_{2y,z,t}$		0.270*		0.145^{+}		-0.135^{+}
		(0.125)		(0.086)		(0.071)
N	1773	1951	1746	1925	1411	1581
R^2	0.006	0.007	0.001	0.002	0.002	0.004
Panel B: With Economic Controls						
$\Delta I_{6m,z,t}$	0.009		-0.231**		-0.055	
	(0.065)		(0.081)		(0.069)	
$\Delta I_{2y,z,t}$		0.035		-0.145		-0.028
		(0.094)		(0.099)		(0.098)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.201***	0.199***	-0.062*	-0.062*	0.022	0.019
	(0.046)	(0.045)	(0.032)	(0.027)	(0.022)	(0.020)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	0.038*	0.030	0.169***	0.176***	-0.026	-0.035^{+}
	(0.018)	(0.019)	(0.032)	(0.030)	(0.027)	(0.019)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.001	-0.001^{+}	0.000	-0.000	-0.001*	-0.000
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.004^{+}	-0.004^{+}	0.004*	0.002	-0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$CPINewsShock_{z,t-30,t-1}$	0.198***	0.195***	-0.001	-0.004	-0.026^{+}	-0.019
	(0.029)	(0.029)	(0.024)	(0.021)	(0.015)	(0.015)
$GDPNewsShock_{z,t-30,t-1}$	-0.005	-0.003	0.032*	0.039***	-0.012	-0.009
	(0.013)	(0.010)	(0.015)	(0.011)	(0.008)	(0.008)
$UnempNewsShock_{z,t-30,t-1}$	0.013	0.013	-0.003	-0.010	0.152***	0.159***
	(0.012)	(0.011)	(0.012)	(0.018)	(0.036)	(0.036)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.081^{+}	0.063	-0.103^{+}	-0.128*	-0.088	-0.071
	(0.045)	(0.049)	(0.062)	(0.065)	(0.072)	(0.065)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.037	-0.017	0.157***	0.189***	-0.031	-0.045
	(0.070)	(0.071)	(0.046)	(0.035)	(0.048)	(0.044)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$	-0.026	-0.037	0.116	0.103	0.182	0.095
	(0.179)	(0.177)	(0.208)	(0.194)	(0.112)	(0.124)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$	-0.033	-0.030	-0.113	-0.103	-0.054	0.018
	(0.176)	(0.163)	(0.124)	(0.094)	(0.049)	(0.048)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$	0.225	0.193	0.135	0.049	0.001	0.020
	(0.163)	(0.156)	(0.114)	(0.098)	(0.039)	(0.043)
N	1537	1681	1536	1680	1205	1342
R^2	0.648	0.640	0.608	0.586	0.560	0.530
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.8: Robustness Check: C. Including COVID-19 Pandemic

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta I_{6m,z,t}$	0.255*		0.646^{+}		-0.333	
	(0.104)		(0.354)		(0.214)	
$\Delta I_{2y,z,t}$		0.318*		0.675*		-0.447*
		(0.139)		(0.317)		(0.178)
N	1852	2038	1827	2015	1469	1643
R^2	0.005	0.007	0.004	0.004	0.005	0.008
Panel B: With Economic Controls						
$\Delta I_{6m,z,t}$	-0.007		-0.173**		-0.060	
	(0.100)		(0.057)		(0.168)	
$\Delta I_{2y,z,t}$		0.044		-0.130^{+}		-0.125
		(0.121)		(0.073)		(0.156)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.208***	0.204***	-0.113*	-0.118*	-0.008	-0.008
	(0.049)	(0.048)	(0.052)	(0.048)	(0.046)	(0.035)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	-0.034	-0.034	0.011	0.029	-0.043	-0.051
	(0.033)	(0.031)	(0.111)	(0.113)	(0.072)	(0.065)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.001*	-0.001**	-0.001	-0.001	0.001	0.001
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.005^{+}	-0.005^{+}	0.007	0.007	-0.003	-0.002
	(0.003)	(0.003)	(0.006)	(0.006)	(0.004)	(0.003)
$CPINewsShock_{z,t-30,t-1}$	0.190***	0.178***	0.010	0.051^{+}	-0.027	-0.046^{+}
	(0.030)	(0.022)	(0.030)	(0.029)	(0.028)	(0.025)
$GDPNewsShock_{z,t-30,t-1}$	0.001	0.001	-0.039	-0.033	0.042	0.038
	(0.005)	(0.005)	(0.050)	(0.043)	(0.042)	(0.035)
$UnempNewsShock_{z,t-30,t-1}$	-0.002	0.001	-0.035^{+}	-0.038*	0.095***	0.098***
	(0.009)	(0.009)	(0.021)	(0.018)	(0.025)	(0.024)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.151	0.125	0.003	-0.075	-0.118	-0.108
	(0.097)	(0.098)	(0.147)	(0.113)	(0.080)	(0.075)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.042	-0.015	0.164*	0.222***	-0.037	-0.040
	(0.100)	(0.098)	(0.083)	(0.059)	(0.044)	(0.041)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$	0.000	-0.015	-0.124	-0.206	0.244	0.203
	(0.283)	(0.271)	(0.357)	(0.300)	(0.169)	(0.160)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$	-0.021	-0.019	-0.057	0.001	-0.086	-0.051
	(0.249)	(0.229)	(0.195)	(0.131)	(0.075)	(0.050)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$	0.157	0.124	0.357	0.170	0.005	0.003
	(0.152)	(0.143)	(0.339)	(0.266)	(0.177)	(0.154)
N	1610	1762	1610	1762	1258	1399
R^2	0.681	0.676	0.872	0.872	0.831	0.821
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.9: Robustness Check: D. 30-Minute Window

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta_{t-10m,t+20m} I_{6m,z}$	0.196^{+}		0.169		-0.095	
	(0.105)		(0.116)		(0.059)	
$\Delta_{t-10m,t+20m} I_{2y,z}$		0.252		0.164		-0.090
		(0.156)		(0.104)		(0.061)
N	1319	1584	1297	1571	1058	1293
R^2	0.004	0.005	0.002	0.002	0.002	0.002
Panel B: With Economic Controls						
$\Delta_{t-10m,t+20m} I_{6m,z}$	-0.046		-0.191^{+}		0.019	
	(0.159)		(0.112)		(0.123)	
$\Delta_{t-10m,t+20m} I_{2y,z}$		-0.012		-0.200^{+}		0.057
		(0.141)		(0.104)		(0.090)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.229***	0.220***	0.041	-0.027	-0.008	-0.009
	(0.056)	(0.041)	(0.061)	(0.042)	(0.025)	(0.032)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	0.029	0.016	0.211**	0.215***	-0.055	-0.046^{+}
	(0.042)	(0.039)	(0.069)	(0.040)	(0.034)	(0.026)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.002	-0.001	0.001	0.002	-0.001	-0.002*
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.006^{+}	-0.005	0.004	0.004	0.001	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
$CPINewsShock_{z,t-30,t-1}$	0.238***	0.223***	0.015	-0.000	-0.030	-0.016
	(0.043)	(0.041)	(0.022)	(0.021)	(0.026)	(0.017)
$GDPNewsShock_{z,t-30,t-1}$	-0.021**	-0.009	0.020	0.031	-0.002	-0.005
	(0.008)	(0.010)	(0.025)	(0.019)	(0.013)	(0.008)
$UnempNewsShock_{z,t-30,t-1}$	-0.000	-0.005	-0.012	-0.028	0.211***	0.192***
	(0.017)	(0.019)	(0.034)	(0.040)	(0.034)	(0.039)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.167	0.133	0.006	0.009	-0.084	-0.094
	(0.150)	(0.137)	(0.100)	(0.119)	(0.099)	(0.078)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.077	-0.051	0.110*	0.154**	-0.031	-0.022
	(0.130)	(0.116)	(0.055)	(0.051)	(0.071)	(0.053)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$	0.130	0.045	0.200	0.151	0.051	0.067
	(0.262)	(0.294)	(0.295)	(0.209)	(0.177)	(0.173)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$	-0.058	0.008	-0.226^{+}	-0.206*	-0.011	0.035
	(0.262)	(0.247)	(0.130)	(0.084)	(0.121)	(0.089)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$	0.188	0.154	0.157	0.303^{+}	-0.050	0.025
	(0.261)	(0.239)	(0.192)	(0.169)	(0.118)	(0.054)
N	1160	1393	1160	1393	914	1118
R^2	0.681	0.673	0.622	0.607	0.636	0.573
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.10: Robustness Check: E. Latest 2-Hour Window

$\Delta_{s(t)-1m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta_{t-1h,t+1h}I_{6m,z}$	0.192*		0.214**		-0.130	
	(0.096)		(0.082)		(0.082)	
$\Delta_{t-1h,t+1h}I_{2y,z}$		0.213^{+}		0.131		-0.109
		(0.126)		(0.080)		(0.081)
N	1779	1957	1754	1934	1411	1580
R^2	0.004	0.005	0.004	0.001	0.004	0.003
Panel B: With Economic Controls						
$\Delta_{t-1h,t+1h}I_{6m,z}$	-0.032		-0.151*		-0.073	
	(0.107)		(0.062)		(0.130)	
$\Delta_{t-1h,t+1h}I_{2y,z}$		0.037		-0.139^{+}		-0.048
		(0.136)		(0.075)		(0.108)
$\Delta_{s(t)-2m,s(t)-1m}InflationForecast_z$	0.228***	0.225***	-0.023	-0.025	0.020	0.019
	(0.044)	(0.043)	(0.044)	(0.039)	(0.021)	(0.020)
$\Delta_{s(t)-2m,s(t)-1m}GDPForecast_z$	0.028	0.021	0.208***	0.211***	-0.028	-0.034^{+}
	(0.031)	(0.029)	(0.042)	(0.037)	(0.027)	(0.019)
$\Delta_{t-30d,t-1h}Log(Stock_z)$	-0.001^{+}	-0.001**	0.001	0.000	-0.001^{+}	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h}Log(ExchangeRate_z)$	-0.004	-0.004^{+}	0.003	0.002	0.000	0.001
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
$CPINewsShock_{z,t-30,t-1}$	0.206***	0.202***	0.012	0.008	-0.026^{+}	-0.019
	(0.036)	(0.034)	(0.022)	(0.020)	(0.015)	(0.016)
$GDPNewsShock_{z,t-30,t-1}$	-0.007	-0.004	0.033*	0.039**	-0.012	-0.009
	(0.010)	(0.008)	(0.015)	(0.012)	(0.008)	(0.008)
$UnempNewsShock_{z,t-30,t-1}$	-0.007	-0.004	-0.019	-0.026	0.159***	0.160***
	(0.016)	(0.014)	(0.024)	(0.028)	(0.038)	(0.037)
$\Delta_{t-30d,t-1h}I_{6m,z}$	0.145	0.127	-0.021	-0.048	-0.086	-0.072
	(0.098)	(0.098)	(0.104)	(0.100)	(0.072)	(0.067)
$\Delta_{t-30d,t-1h}I_{2y,z}$	-0.057	-0.036	0.134**	0.165***	-0.032	-0.045
	(0.098)	(0.096)	(0.049)	(0.049)	(0.047)	(0.045)
$\Delta_{t-30d,t-1h}I_{6m,Developed-z}$	-0.019	-0.027	0.138	0.131	0.154	0.092
	(0.257)	(0.252)	(0.235)	(0.213)	(0.102)	(0.122)
$\Delta_{t-30d,t-1h}I_{2y,Developed-z}$	0.002	0.002	-0.146	-0.137^{+}	-0.040	0.019
	(0.231)	(0.212)	(0.120)	(0.077)	(0.051)	(0.048)
$\Delta_{t-30d,t-1d}PolicyRate_{Developed}$	0.157	0.132	0.230	0.143	0.002	0.021
	(0.185)	(0.177)	(0.141)	(0.098)	(0.039)	(0.042)
N	1543	1687	1543	1687	1205	1341
R^2	0.664	0.657	0.588	0.569	0.558	0.530
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.11: Robustness Check: F. Wider Forecast Window

$\Delta_{s(t)-2m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta I_{6m,z,t}$	0.475***		0.478*		-0.208	
	(0.141)		(0.238)		(0.134)	
$\Delta I_{2y,z,t}$		0.621**		0.449*		-0.236^{+}
		(0.240)		(0.224)		(0.138)
N	1781	1958	1756	1935	1411	1580
R^2	0.007	0.010	0.005	0.004	0.003	0.004
Panel B: With Economic Controls						
$\Delta I_{6m,z,t}$	0.011		-0.283*		0.088	
	(0.074)		(0.120)		(0.134)	
$\Delta I_{2y,z,t}$		0.102		-0.202		0.033
		(0.142)		(0.162)		(0.145)
$\Delta_{s(t)-2m,s(t)-1m}InflationForecast_z$	0.927***	0.928***	-0.012	-0.027	-0.034	-0.018
	(0.063)	(0.062)	(0.048)	(0.044)	(0.056)	(0.052)
$\Delta_{s(t)-2m,s(t)-1m}GDPForecast_z$	0.032	0.025	0.872***	0.853***	-0.169**	-0.163**
	(0.039)	(0.039)	(0.101)	(0.078)	(0.055)	(0.053)
$\Delta_{t-30d,t-1h}Log(Stock_z)$	-0.002**	-0.002**	0.001	0.000	-0.002	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
$\Delta_{t-30d,t-1h}Log(ExchangeRate_z)$	-0.007**	-0.006*	0.005	0.004	0.001	0.001
	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)
$CPINewsShock_{z,t-30,t-1}$	0.213***	0.211***	0.021	0.023	-0.042*	-0.030^{+}
	(0.036)	(0.032)	(0.030)	(0.026)	(0.018)	(0.018)
$GDPNewsShock_{z,t-30,t-1}$	-0.003	0.000	0.047*	0.044*	-0.016	-0.011
	(0.015)	(0.011)	(0.021)	(0.018)	(0.012)	(0.011)
$UnempNewsShock_{z,t-30,t-1}$	0.006	0.007	0.018	0.001	0.244***	0.264***
	(0.019)	(0.016)	(0.033)	(0.044)	(0.050)	(0.057)
$\Delta_{t-30d,t-1h}I_{6m,z}$	0.136	0.119	-0.090	-0.126	-0.108	-0.089
	(0.112)	(0.112)	(0.123)	(0.128)	(0.106)	(0.100)
$\Delta_{t-30d,t-1h}I_{2y,z}$	-0.047	-0.024	0.161***	0.212***	-0.051	-0.073
	(0.095)	(0.093)	(0.041)	(0.052)	(0.082)	(0.079)
$\Delta_{t-30d,t-1h}I_{6m,Developed-z}$	0.325	0.281	0.165	0.151	0.182^{+}	0.092
	(0.294)	(0.279)	(0.299)	(0.266)	(0.100)	(0.104)
$\Delta_{t-30d,t-1h}I_{2y,Developed-z}$	-0.197	-0.157	-0.163	-0.115	-0.008	0.052
	(0.229)	(0.220)	(0.159)	(0.089)	(0.085)	(0.072)
$\Delta_{t-30d,t-1d}PolicyRate_{Developed}$	0.375	0.314	0.145	0.065	0.082	0.098
	(0.338)	(0.323)	(0.228)	(0.166)	(0.099)	(0.085)
N	1545	1688	1545	1688	1205	1341
R^2	0.796	0.793	0.761	0.743	0.646	0.625
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.12: Robustness Check: G. Alternative Forecast Years

$\Delta_{s(t)-1m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta I_{6m,z,t}$	0.194*		0.188^{+}		-0.093	
	(0.090)		(0.103)		(0.074)	
$\Delta I_{2y,z,t}$		0.256^{+}		0.151*		-0.124
		(0.132)		(0.076)		(0.080)
N	1781	1958	1756	1935	1412	1581
R^2	0.004	0.006	0.003	0.002	0.002	0.004
Panel B: With Economic Controls						
$\Delta I_{6m,z,t}$	-0.033		-0.155*		0.004	
	(0.086)		(0.066)		(0.093)	
$\Delta I_{2y,z,t}$		0.037		-0.101		-0.030
		(0.096)		(0.077)		(0.094)
$\Delta_{s(t)-2m,s(t)-1m}InflationForecast_z$	0.221***	0.219***	-0.010	-0.015	0.024	0.023^{+}
	(0.039)	(0.038)	(0.029)	(0.028)	(0.016)	(0.014)
$\Delta_{s(t)-2m,s(t)-1m}GDPForecast_z$	0.029	0.021	0.174***	0.170***	-0.026	-0.031^{+}
	(0.023)	(0.022)	(0.030)	(0.026)	(0.025)	(0.017)
$\Delta_{t-30d,t-1h}Log(Stock_z)$	-0.001	-0.001*	0.000	0.000	-0.001	-0.000
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h}Log(ExchangeRate_z)$	-0.003	-0.003^{+}	0.002	0.001	0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$CPINewsShock_{z,t-30,t-1}$	0.190***	0.186***	0.010	0.008	-0.021^{+}	-0.015
	(0.032)	(0.031)	(0.016)	(0.014)	(0.011)	(0.012)
$GDPNewsShock_{z,t-30,t-1}$	-0.004	-0.003	0.039**	0.041***	-0.011	-0.008
	(0.009)	(0.007)	(0.013)	(0.010)	(0.009)	(0.008)
$UnempNewsShock_{z,t-30,t-1}$	-0.004	-0.005	-0.008	-0.016	0.140***	0.145***
	(0.011)	(0.010)	(0.016)	(0.018)	(0.034)	(0.033)
$\Delta_{t-30d,t-1h}I_{6m,z}$	0.136	0.121	-0.019	-0.041	-0.067	-0.052
	(0.089)	(0.087)	(0.087)	(0.083)	(0.058)	(0.055)
$\Delta_{t-30d,t-1h}I_{2y,z}$	-0.047	-0.028	0.118*	0.144***	-0.036	-0.049
	(0.087)	(0.084)	(0.047)	(0.041)	(0.038)	(0.037)
$\Delta_{t-30d,t-1h}I_{6m,Developed-z}$	-0.008	-0.003	0.105	0.090	0.132	0.077
	(0.228)	(0.215)	(0.179)	(0.152)	(0.085)	(0.103)
$\Delta_{t-30d,t-1h}I_{2y,Developed-z}$	-0.014	-0.021	-0.112	-0.095^{+}	-0.030	0.018
	(0.190)	(0.175)	(0.078)	(0.054)	(0.040)	(0.039)
$\Delta_{t-30d,t-1d}PolicyRate_{Developed}$	0.161	0.144	0.194	0.097	0.010	0.021
	(0.156)	(0.147)	(0.120)	(0.069)	(0.035)	(0.040)
N	1545	1688	1545	1688	1206	1342
R^2	0.688	0.682	0.605	0.589	0.555	0.528
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.13: Robustness Check: H. MPS with Nelson-Siegel

$\Delta_{s(t)-1m,s(t)}VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
yc_2hn_ea_ns_d_y01	0.264*		0.160		-0.065	
	(0.110)		(0.101)		(0.046)	
yc_2hn_ea_ns_d_y02		0.286*		0.214*		-0.114
		(0.145)		(0.107)		(0.072)
N	1733	1864	1708	1839	1379	1495
R^2	0.006	0.006	0.002	0.003	0.001	0.002
Panel B: With Economic Controls						
yc_2hn_ea_ns_d_y01	-0.005		-0.202*		0.049	
	(0.127)		(0.089)		(0.094)	
yc_2hn_ea_ns_d_y02		0.014		-0.104		0.024
		(0.133)		(0.107)		(0.085)
$\Delta_{s(t)-2m,s(t)-1m}InflationForecast_z$	0.225***	0.226***	-0.024	-0.030	-0.005	-0.005
	(0.045)	(0.044)	(0.052)	(0.048)	(0.032)	(0.032)
$\Delta_{s(t)-2m,s(t)-1m}GDPForecast_z$	0.031	0.029	0.198***	0.200***	-0.039	-0.037
	(0.031)	(0.029)	(0.042)	(0.035)	(0.026)	(0.023)
$\Delta_{t-30d,t-1h}Log(Stock_z)$	-0.001$^+$	-0.001*	0.001	0.000	-0.001$^+$	-0.001$^+$
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h}Log(ExchangeRate_z)$	-0.005$^+$	-0.005$^+$	0.004	0.003	0.000	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
$CPINewsShock_{z,t-30,t-1}$	0.213***	0.213***	0.013	0.016	-0.019	-0.019
	(0.037)	(0.035)	(0.022)	(0.022)	(0.013)	(0.016)
$GDPNewsShock_{z,t-30,t-1}$	-0.006	-0.005	0.031*	0.036*	-0.011	-0.010
	(0.009)	(0.009)	(0.015)	(0.014)	(0.009)	(0.009)
$UnempNewsShock_{z,t-30,t-1}$	-0.005	-0.003	-0.017	-0.027	0.155***	0.154***
	(0.013)	(0.014)	(0.025)	(0.027)	(0.039)	(0.036)
$\Delta_{t-30d,t-1h}I_{6m,z}$	0.145	0.142	-0.003	-0.001	-0.099	-0.096
	(0.100)	(0.094)	(0.109)	(0.105)	(0.074)	(0.069)
$\Delta_{t-30d,t-1h}I_{2y,z}$	-0.063	-0.059	0.125**	0.122**	-0.026	-0.024
	(0.103)	(0.096)	(0.048)	(0.045)	(0.047)	(0.045)
$\Delta_{t-30d,t-1h}I_{6m,Developed-z}$	-0.008	-0.017	0.109	0.149	0.146	0.090
	(0.247)	(0.236)	(0.236)	(0.218)	(0.117)	(0.115)
$\Delta_{t-30d,t-1h}I_{2y,Developed-z}$	0.009	0.008	-0.136	-0.141	-0.034	-0.004
	(0.218)	(0.204)	(0.120)	(0.092)	(0.067)	(0.060)
$\Delta_{t-30d,t-1d}PolicyRate_{Developed}$	0.149	0.134	0.228$^+$	0.155	0.028	0.033
	(0.189)	(0.180)	(0.128)	(0.102)	(0.048)	(0.040)
N	1508	1601	1508	1601	1175	1256
R^2	0.668	0.663	0.591	0.570	0.563	0.548
Survey Month Dummies	*	*	*	*	*	*

$^+$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.14: Robustness Check: I. One Event Per Survey Month

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta I_{6m,z,t}$	0.203*		0.172^{+}		-0.096	
	(0.101)		(0.104)		(0.069)	
$\Delta I_{2y,z,t}$		0.272^{+}		0.165*		-0.131^{+}
		(0.147)		(0.080)		(0.073)
N	1727	1888	1708	1871	1361	1512
R^2	0.004	0.006	0.002	0.002	0.002	0.004
Panel B: With Economic Controls						
$\Delta I_{6m,z,t}$	-0.021		-0.193**		-0.014	
	(0.113)		(0.071)		(0.094)	
$\Delta I_{2y,z,t}$		0.028		-0.113		-0.030
		(0.127)		(0.107)		(0.094)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.232***	0.233***	-0.029	-0.033	0.024	0.022
	(0.045)	(0.045)	(0.044)	(0.039)	(0.019)	(0.017)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	0.026	0.016	0.221***	0.223***	-0.044	-0.047*
	(0.030)	(0.030)	(0.044)	(0.041)	(0.028)	(0.022)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.001*	-0.001**	0.001	-0.000	-0.001	0.000
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.004^{+}	-0.003	0.005*	0.001	-0.001	-0.000
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
$CPINewsShock_{z,t-30,t-1}$	0.204***	0.203***	0.001	0.006	-0.026	-0.019
	(0.039)	(0.036)	(0.022)	(0.020)	(0.017)	(0.017)
$GDPNewsShock_{z,t-30,t-1}$	-0.008	-0.006	0.034*	0.039**	-0.012	-0.007
	(0.012)	(0.009)	(0.016)	(0.014)	(0.010)	(0.009)
$UnempNewsShock_{z,t-30,t-1}$	-0.007	-0.004	-0.023	-0.031	0.159***	0.163***
	(0.015)	(0.014)	(0.028)	(0.033)	(0.043)	(0.042)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.130	0.112	-0.074	-0.082	-0.034	-0.018
	(0.110)	(0.105)	(0.074)	(0.067)	(0.045)	(0.043)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.045	-0.039	0.161***	0.179***	-0.044	-0.057
	(0.105)	(0.098)	(0.045)	(0.048)	(0.047)	(0.044)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$	-0.107	-0.110	-0.152	-0.129	0.462^{+}	0.413^{+}
	(0.298)	(0.275)	(0.441)	(0.445)	(0.240)	(0.227)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$	0.032	0.032	-0.037	-0.026	-0.156^{+}	-0.099
	(0.241)	(0.215)	(0.178)	(0.154)	(0.089)	(0.077)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$	0.157	0.131	0.185	0.055	0.040	0.053
	(0.212)	(0.198)	(0.176)	(0.120)	(0.055)	(0.048)
N	1516	1647	1516	1647	1180	1302
R^2	0.659	0.652	0.583	0.556	0.559	0.530
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

Table B.15: Robustness Check: J. Excluding USA

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta I_{6m,z,t}$	0.236^{+}		0.201^{+}		-0.114	
	(0.124)		(0.121)		(0.090)	
$\Delta I_{2y,z,t}$		0.278		0.185*		-0.135
		(0.173)		(0.090)		(0.092)
N	1499	1678	1499	1678	1130	1301
R^2	0.005	0.006	0.003	0.002	0.003	0.004
Panel B: With Economic Controls						
$\Delta I_{6m,z,t}$	-0.011		-0.146*		-0.011	
	(0.112)		(0.069)		(0.088)	
$\Delta I_{2y,z,t}$		0.054		-0.090		-0.018
		(0.139)		(0.086)		(0.094)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.195***	0.193***	-0.046	-0.042	0.035**	0.029*
	(0.034)	(0.036)	(0.045)	(0.039)	(0.013)	(0.011)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	0.015	0.008	0.200***	0.204***	-0.029	-0.036
	(0.030)	(0.028)	(0.046)	(0.044)	(0.033)	(0.023)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.001^{+}	-0.001**	0.001	0.000	-0.002*	-0.000
	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.002	-0.002	0.006**	0.004*	-0.003	-0.002
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$CPINewsShock_{z,t-30,t-1}$	0.208***	0.204***	0.004	-0.000	-0.019	-0.013
	(0.040)	(0.038)	(0.024)	(0.022)	(0.014)	(0.017)
$GDPNewsShock_{z,t-30,t-1}$	-0.005	-0.002	0.038**	0.043***	-0.013	-0.010
	(0.010)	(0.008)	(0.014)	(0.011)	(0.009)	(0.008)
$UnempNewsShock_{z,t-30,t-1}$	-0.006	-0.004	-0.001	-0.012	0.126***	0.131***
	(0.016)	(0.014)	(0.015)	(0.026)	(0.033)	(0.034)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.145	0.122	-0.108	-0.129^{+}	-0.023	-0.014
	(0.109)	(0.107)	(0.074)	(0.071)	(0.035)	(0.031)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.065	-0.042	0.163***	0.193***	-0.049	-0.057
	(0.113)	(0.109)	(0.046)	(0.040)	(0.045)	(0.041)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$	0.007	-0.015	0.157	0.157	0.213**	0.155^{+}
	(0.266)	(0.257)	(0.233)	(0.223)	(0.076)	(0.085)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$	-0.003	0.007	-0.131	-0.118	-0.072*	-0.017
	(0.224)	(0.204)	(0.134)	(0.093)	(0.035)	(0.033)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$	0.210	0.183	0.268*	0.175	0.019	0.050
	(0.212)	(0.205)	(0.124)	(0.110)	(0.045)	(0.041)
N	1360	1503	1360	1503	1021	1157
R^2	0.663	0.654	0.597	0.578	0.569	0.535
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, Consensus Economics, Informa Global Markets, Refinitiv.

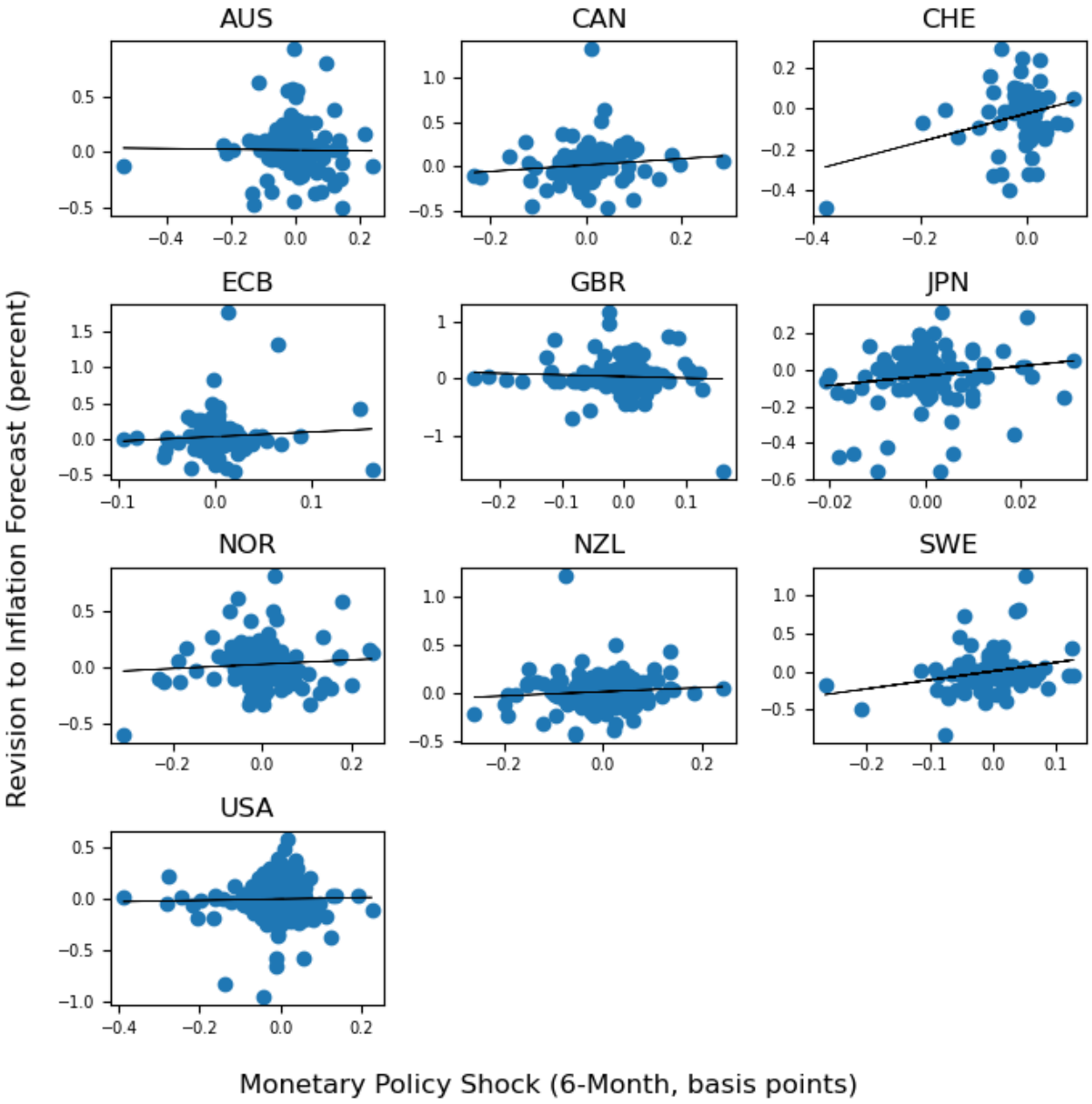
Table B.16: Robustness Check: K. Excluding Japan

$\Delta_{s(t)-1m,s(t)} VarForecast_z$	CPI	CPI	GDP	GDP	Unemp.	Unemp.
Panel A: No Economic Controls						
$\Delta I_{6m,z,t}$	0.208*		0.203^{+}		-0.111^{+}	
	(0.100)		(0.104)		(0.066)	
$\Delta I_{2y,z,t}$		0.270^{+}		0.169*		-0.136^{+}
		(0.145)		(0.079)		(0.072)
N	1664	1759	1639	1736	1295	1382
R^2	0.004	0.006	0.003	0.002	0.003	0.004
Panel B: With Economic Controls						
$\Delta I_{6m,z,t}$	-0.024		-0.185**		0.031	
	(0.125)		(0.067)		(0.104)	
$\Delta I_{2y,z,t}$		0.050		-0.115		0.003
		(0.139)		(0.101)		(0.105)
$\Delta_{s(t)-2m,s(t)-1m} InflationForecast_z$	0.224***	0.221***	-0.022	-0.024	0.028^{+}	0.030*
	(0.046)	(0.045)	(0.051)	(0.045)	(0.015)	(0.013)
$\Delta_{s(t)-2m,s(t)-1m} GDPForecast_z$	0.025	0.015	0.169***	0.173***	-0.052	-0.053
	(0.041)	(0.040)	(0.040)	(0.037)	(0.038)	(0.033)
$\Delta_{t-30d,t-1h} Log(Stock_z)$	-0.001^{+}	-0.001*	0.000	-0.000	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\Delta_{t-30d,t-1h} Log(ExchangeRate_z)$	-0.005^{+}	-0.005^{+}	0.003	0.002	0.000	0.001
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
$CPINewsShock_{z,t-30,t-1}$	0.218***	0.216***	0.020	0.014	-0.024	-0.019
	(0.036)	(0.035)	(0.023)	(0.021)	(0.017)	(0.018)
$GDPNewsShock_{z,t-30,t-1}$	0.001	0.001	0.049**	0.046*	-0.021	-0.023^{+}
	(0.015)	(0.015)	(0.018)	(0.019)	(0.014)	(0.013)
$UnempNewsShock_{z,t-30,t-1}$	-0.006	-0.006	-0.017	-0.021	0.147**	0.139***
	(0.017)	(0.016)	(0.026)	(0.029)	(0.045)	(0.042)
$\Delta_{t-30d,t-1h} I_{6m,z}$	0.136	0.122	0.044	0.007	-0.071	-0.053
	(0.094)	(0.094)	(0.098)	(0.104)	(0.070)	(0.066)
$\Delta_{t-30d,t-1h} I_{2y,z}$	-0.061	-0.044	0.128*	0.173**	-0.030	-0.044
	(0.100)	(0.099)	(0.057)	(0.054)	(0.060)	(0.058)
$\Delta_{t-30d,t-1h} I_{6m,Developed-z}$	-0.059	-0.075	-0.117	-0.080	0.212^{+}	0.198
	(0.304)	(0.297)	(0.163)	(0.142)	(0.127)	(0.132)
$\Delta_{t-30d,t-1h} I_{2y,Developed-z}$	0.048	0.051	-0.048	-0.101	-0.053	-0.007
	(0.250)	(0.238)	(0.121)	(0.094)	(0.087)	(0.078)
$\Delta_{t-30d,t-1d} PolicyRate_{Developed}$	0.169	0.159	0.039	0.035	0.009	0.014
	(0.253)	(0.244)	(0.125)	(0.116)	(0.088)	(0.087)
N	1438	1506	1438	1506	1099	1160
R^2	0.669	0.666	0.591	0.581	0.576	0.560
Survey Month Dummies	*	*	*	*	*	*

$^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors clustered by country/zone. Sources: Bloomberg, CME, Consensus Economics, Informa Global Markets, Refinitiv.

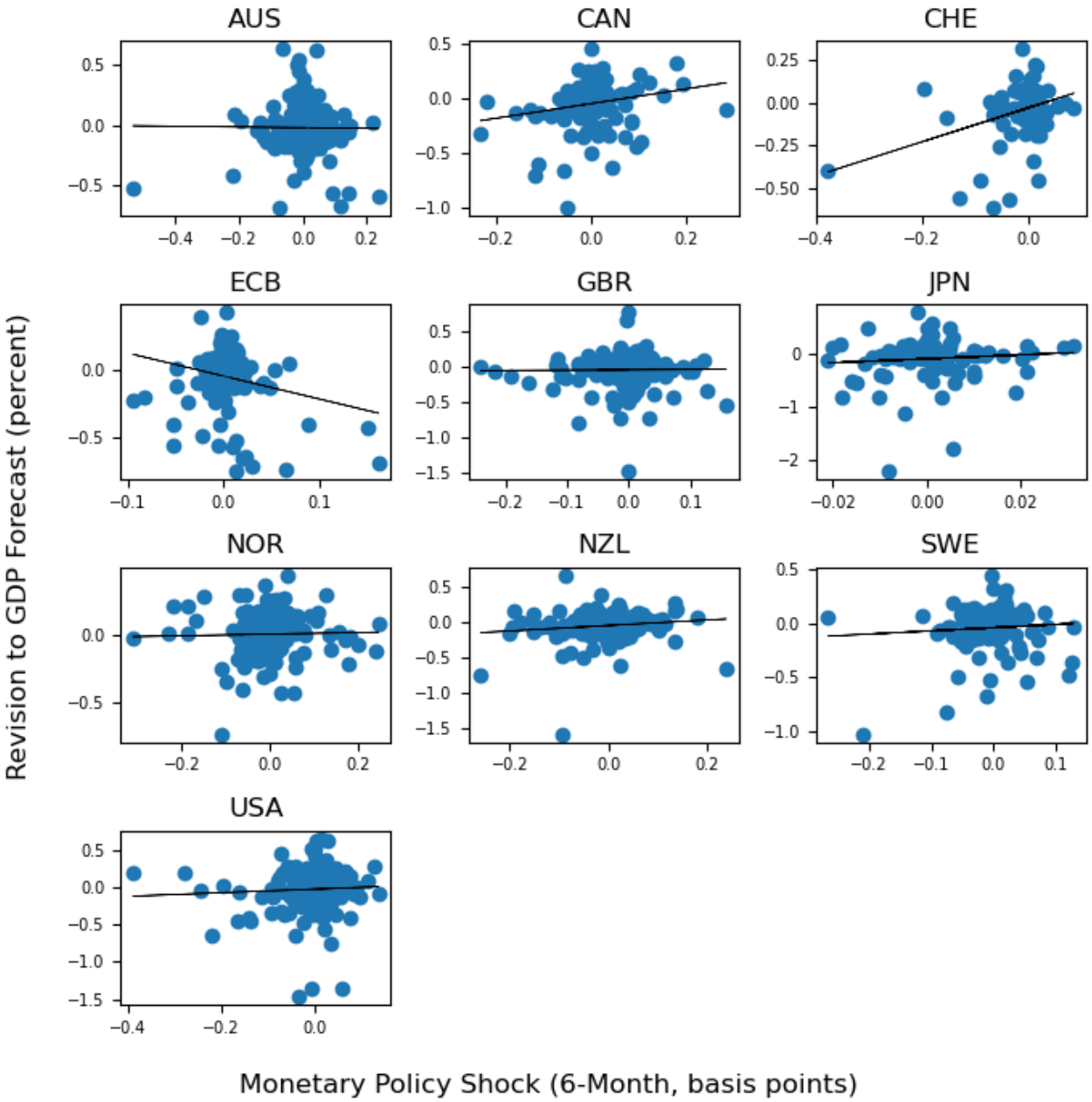
B.6 Scatter Plots for Monetary Policy Surprises and the Change in Forecasts by Country/Zone

Figure B.4: Scatter Plot of Short-term Monetary Policy Shocks and Change in CPI Forecasts by Zone



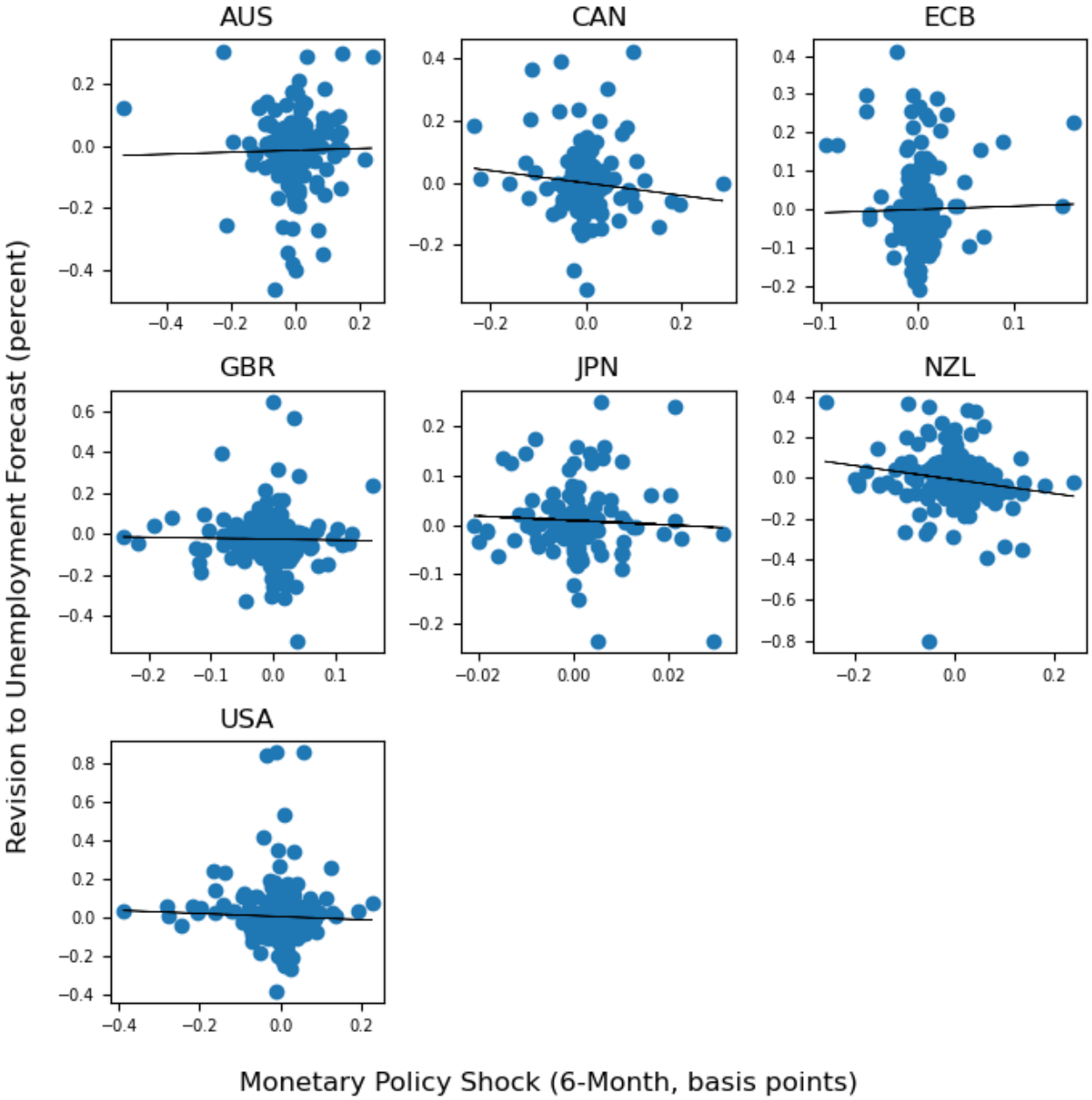
Notes: The graphs here correspond to the analysis in the first results column of Table 3. The x-axis shows $\Delta I_{6m,z}$, and the y-axis shows $\Delta_{s(t)-1m,s(t)} GDPForecast_z$. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

Figure B.5: Scatter Plot of Short-term Monetary Policy Shocks and Change in GDP Forecasts by Zone



Notes: The graphs here correspond to the analysis in the third results column of Table 3. The x-axis shows $\Delta I_{6m,z}$, and the y-axis shows $\Delta_{s(t)-1m,s(t)} GDPForecast_z$. Data for 2020 is excluded. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

Figure B.6: Scatter Plot of Short-term Monetary Policy Shocks and Change in Unemployment Forecasts by Zone



Notes: The graphs here correspond to the analysis in the fifth results column of Table 3. The x-axis shows $\Delta I_{6m,z}$ and the y-axis shows $\Delta_{s(t)-1m,s(t)} GDPForecast_z$. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.

B.7 Asset Prices and Information Effects

Table B.17: Summary of Events That Most Suggest Information Effects

Country	Date	$\Delta I_{6m,z,t}$	$\Delta_{s(t)-1m,s(t)} GDPForecast_z$	$\Delta Log(Stock_{z,t})$	$\Delta Log(Exchange_{z,t})$
AUS	10/07/2008	-0.53	-0.52	1.54	0.42
SWE	02/11/2009	-0.21	-1.03	0.50	-1.02
USA	01/31/1996	-0.22	-0.65	0.02	0.00
CHE	11/20/2008	-0.38	-0.40	1.35	-0.44
AUS	11/04/2008	-0.22	-0.41	0.15	-0.28
NOR	09/24/2008	-0.11	-0.74	-0.14	-0.25
USA	11/06/2001	-0.17	-0.45	0.45	-0.17
CHE	11/06/2008	-0.13	-0.55	1.26	-0.58
CAN	06/07/2023	0.18	0.32	-0.23	0.33
GBR	11/06/2008	-0.08	-0.79	0.93	-0.01
SWE	12/04/2008	-0.08	-0.82	1.53	-0.68
USA	12/16/2008	-0.14	-0.45	1.60	-1.09
USA	01/03/2001	-0.14	-0.40	5.32	-0.18
AUS	06/07/2011	-0.07	-0.68	0.35	-0.43
NOR	03/11/2004	0.13	0.30	-0.45	1.41
USA	10/02/2001	-0.03	-1.47	-0.29	-0.06
CHE	10/08/2008	-0.09	-0.45	0.17	0.32
CHE	12/11/2008	-0.07	-0.61	-0.93	-0.21
GBR	11/04/2021	-0.12	-0.31	0.38	-0.59
GBR	11/05/1998	-0.16	-0.23	-0.08	-0.31
NOR	08/10/2011	-0.10	-0.35	-0.24	-0.01
USA	01/30/2008	-0.09	-0.35	0.74	-0.27
NZL	02/23/2022	-0.08	-0.43	-0.22	0.30
NOR	01/23/2002	0.25	0.08	-0.07	0.04
ECB	01/15/2009	-0.05	-0.56	-0.53	-0.49
SWE	10/08/2008	-0.06	-0.49	1.10	0.72
USA	10/29/2008	-0.04	-0.65	-1.86	0.64
NOR	11/03/2022	-0.11	-0.25	0.46	-0.56
GBR	10/04/2001	-0.06	-0.44	-0.06	0.07
NOR	09/22/2022	-0.06	-0.40	-0.03	-0.01
NOR	01/24/2007	0.11	0.16	0.02	0.70
USA	11/06/2002	-0.07	-0.35	0.26	-0.12
NOR	08/12/2009	0.04	0.44	0.46	1.06
NZL	11/13/2019	0.18	0.08	-0.62	1.16
ECB	10/08/2008	-0.05	-0.40	1.59	0.55
USA	01/22/2008	-0.06	-0.35	1.50	-0.01
USA	01/30/2002	0.02	0.63	-0.04	0.03
NZL	07/10/2024	-0.11	-0.20	0.26	-0.59
ECB	11/03/2011	-0.10	-0.22	0.77	-0.35
USA	11/16/1999	0.06	0.22	-0.33	-0.13
GBR	11/08/2001	-0.19	-0.13	0.14	0.12
CHE	03/12/2009	-0.03	-0.57	0.88	-2.96
NOR	04/23/2008	0.09	0.13	-0.13	-0.11
USA	08/19/1997	0.08	0.16	-0.61	0.02
GBR	01/11/2007	0.12	0.09	-0.62	0.78
NOR	03/23/2023	0.10	0.11	-0.31	-0.11
USA	06/25/2003	0.11	0.09	-0.25	0.18
USA	03/25/1997	0.04	0.27	-0.67	0.07
ECB	07/05/2012	-0.08	-0.20	-0.31	-0.52
AUS	06/05/2012	0.04	0.24	0.07	0.17
AUS	08/02/2011	-0.09	-0.18	0.03	-0.42
GBR	12/10/1998	-0.10	-0.16	-0.02	0.15
AUS	03/02/2010	0.07	0.13	-0.28	-0.11
GBR	08/06/1998	-0.08	-0.19	-0.05	0.02
NOR	10/15/2008	-0.06	-0.24	-0.42	-0.36
USA	10/05/1999	0.06	0.15	-1.06	0.18
AUS	07/04/2023	-0.09	-0.16	0.56	-0.45
NOR	07/03/2002	0.06	0.14	-0.09	0.30
GBR	09/21/2023	-0.11	-0.14	0.52	-0.30
GBR	11/03/2022	-0.03	-0.53	0.18	-0.18
JPN	12/19/2008	-0.02	-0.84	0.36	-0.30
GBR	03/23/2023	0.03	0.30	-0.02	0.30
CAN	12/07/2022	0.15	0.04	0.16	0.21
AUS	11/01/2022	-0.11	-0.13	0.09	-0.12
USA	05/15/2001	-0.12	-0.13	0.46	-0.09
NOR	12/11/2002	-0.07	-0.18	0.56	-0.21
NOR	03/16/2005	0.03	0.27	0.16	-0.33
AUS	10/06/2009	0.08	0.08	-0.22	0.64

Sources: Bloomberg, CME, Consensus Economics, Refinitiv. Ordered from the largest impact on the t-statistic to the smallest impact (among the top five percent of events).

Table B.18: Comparison of Asset Price Movements around 2-Year Monetary Policy Surprises

	$\Delta Log(Stock_{z,t})$	$\Delta Log(Stock_{z,t})$	$\Delta Log(Exchange_{z,t})$	$\Delta Log(Exchange_{z,t})$
Intercept	0.099	0.004	0.008	0.013
	(0.096)	(0.008)	(0.067)	(0.014)
$\Delta I_{2y,z,t}$	-3.544***	-2.989***	3.057***	5.364***
	(0.847)	(0.502)	(0.597)	(0.461)
N	75	1430	75	1430
R^2	0.193	0.118	0.264	0.340
Dataset	Info. Effect	Other	Info. Effect	Other

Notes: $^{+}$, *, **, and *** represent a significance of less than 10%, 5%, 1%, and 0.1%, respectively. Standard errors of the second and fourth regression are clustered by country/zone. Exchange rate measured relative to the US dollar except the US dollar, which is measured relative to the Canadian dollar. Sources: Bloomberg, CME, Consensus Economics, Refinitiv.