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Still Packing a Punch: Monetary Policy Transmission in a New Cross-Country High-Frequency Dataset

Ece Ozge Emeksiz, Gunes Kamber, Julia Otten, and Gurnain K. Pasricha

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ABSTRACT: This paper assesses the transmission of monetary policy using a new state-of-the-art intra-day dataset of monetary policy shocks for 16 advanced economies and emerging markets, the most comprehensive cross-country coverage to date. Using 30-minute windows around policy announcements, we construct target and path factor shocks for a broad sample of countries and assess their transmission to government bond yields, stock prices, and exchange rates. High-frequency identification improves the significance of estimated responses relative to lower-frequency intraday or daily data. Both target and path surprises generate large and consistent effects across asset classes. We find limited evidence of central bank information effects, confirming the validity of high-frequency methods. Post-COVID-19, transmission to yields and equity prices remains stable, but exchange rate responses weaken—likely due to synchronized monetary tightening across countries. The findings underscore the value of high-frequency data for robust identification and cross-country analysis of monetary policy transmission.

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Author's E-Mail Address:	EEmeksiz@imf.org, GKamber@imf.org, JOtten@imf.org, GPasricha@imf.org

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WORKING PAPERS

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Contents

Acronyms

AE	Advanced Economy
ELB	Effective Lower Bound
EM	Emerging Market
FX	Foreign Exchange
HFI	High-frequency identification
OIS	Overnight Indexed Swaps
PM	Poor Man's
QE	Quantitative easing
UK	United Kingdom
U.S.	United States
USD	United States dollar
VAR	Vector Autoregression

Executive Summary

The recent surge in global inflation post-COVID-19 pandemic has renewed interest in the transmission and effectiveness of monetary policy. Central to this discussion is the accurate measurement of monetary policy shocks. This paper introduces a new cross-country dataset of high-frequency monetary policy surprises and uses it to assess the transmission of monetary policy to financial markets. The dataset captures asset price movements in 30-minute windows around central bank announcements, allowing for more precise identification of exogenous monetary policy shocks than traditional daily or lower-frequency measures. Monetary policy surprises are decomposed into target and path factors, following established methodologies, and constructed using consistent financial instruments across a broad sample of advanced and emerging market (EM) economies.

We validate our shock dataset by showing high correlations with benchmark series for the United States (U.S.) and Euro Area, and by documenting significantly higher yield volatility during policy announcements than on non-announcement days—indicating that our surprises capture genuine policy signals. The dataset also reveals three stylized facts: target surprises are small on average; predictability deteriorates during crises, especially for path shocks; and EMs exhibit fatter tails, reflecting greater volatility, shallower markets, and communication challenges.

Using this dataset, we analyze the transmission of monetary policy to government bond yields, stock prices, and exchange rates. We find that target surprises—unexpected changes to the current policy rate—lead to statistically significant increases in medium- and long-term bond yields, declines in equity prices, and appreciation of the domestic currency. These results are consistent with the standard monetary policy transmission mechanism and suggest limited directional influence of central bank information effects, as evidenced by the strongly negative stock market reactions to tightening shocks. Path surprises—capturing changes in the expected future policy path—also affect long-term bond yields and exchange rates, and the transmission to long-term yields is stronger for advanced than for emerging economies. This is consistent with deeper financial markets and the greater use of forward guidance in the former and interest rates not being at the effective lower bound (ELB) for an extended period of time in the latter.

To address concerns that our shock series may still be affected by information effects—where financial markets interpret a monetary policy action as revealing the central bank's private information about the economic outlook rather than a pure change in policy stance—we apply the "Poor Man's" (PM) restriction (Jarociński and Karadi, 2021). We find that this restriction improves identification in daily data but has limited additional value in the high-frequency setting. This suggests that high-frequency identification (HFI) achieves a more precise identification.

The paper further evaluates the precision and statistical significance gains afforded by HFI relative to lower-frequency identification approaches. Results show that as the shock and response windows widen, the estimated effects become less precise and statistically weaker, as the number of countries with significant responses declines. This underscores the value of high-frequency data in cross-country settings, with daily measures more likely to be confounded by other macroeconomic developments.

Finally, we assess whether monetary transmission has changed in the post-COVID-19 period. We find no systematic change in the transmission of monetary policy shocks to bond yields and equity prices. However, exchange rate responses to monetary policy shocks weaken notably after May 2021. This is likely due to the high degree of monetary policy synchronization across countries during the pandemic and subsequent tightening cycles, which compressed interest rate differentials and muted relative currency movements.

These findings demonstrate the global relevance of target and path factors in driving asset prices. At the same time, the newly assembled dataset opens the door to a wide range of further research. It provides a foundation to explore international monetary spillovers, the impact of unconventional policies on long-term yields, exchange rate dynamics, and financial integration. The dataset also enables deeper analysis of how institutional frameworks, central bank credibility, and market depth influence the transmission of monetary policy, as well as how monetary and fiscal policies interact during periods of systemic stress.

Introduction

In the wake of an episode of the largest runup in global inflation in decades, there has been renewed interest in assessing the transmission and effectiveness of monetary policy. Accurate identification of monetary policy shocks is central to this discussion. A large and growing literature emphasizes the use of HFI strategies to isolate exogenous monetary policy shocks from movements driven by broader macroeconomic news or expectations (e.g., Gürkaynak et al., 2005; Bauer and Swanson, 2023b). HFI techniques rely on asset price changes in narrowly defined windows around monetary policy announcements, thereby minimizing contamination from other news and avoiding strong parametric assumptions. In contrast, alternative methods—such as Taylor-rule residuals, vector autoregression (VAR) innovations, or survey-based surprises—often suffer from limited time resolution, endogeneity, or difficulties in capturing unconventional policy actions. HFI has thus become the benchmark approach for identifying monetary shocks, particularly during periods of heightened policy uncertainty or market volatility.

To date, most applications of HFI have focused on single-country settings, predominantly the U.S. and other major economies (Kearns et al., 2023). As shock series constructed from different data sources and methods are often not directly comparable (Brennan et al., 2024), cross-country databases should be constructed using a common approach. Bolhuis et al. (2024), to our knowledge, provide the only cross-country database of this kind. However, it is based on daily data and does not differentiate between different components of monetary policy shocks. As such, questions of cross-country comparability in transmission—particularly between advanced economies (AEs) and EMs—remain underexplored.

This paper fills this gap by constructing a comprehensive cross-country database of high-frequency monetary policy shocks, covering 16 AEs and EMs. The dataset includes intra-day surprise measures derived from interest rate instruments in a 30-minute window around monetary policy announcements. To enhance comparability and consistency across countries, we rely on a standardized set of financial instruments—short-term Overnight Indexed Swaps (OIS), government bonds, and long-term yields—adjusted to reflect differences in market structure where necessary. Consistent with the literature, we decompose monetary policy shocks into distinct components. This paper focuses on *target surprises*—unexpected changes in the current policy rate—and *path surprises*, which capture revisions to the expected trajectory of future rates. Following the methodology of Rogers et al. (2018) and Braun et al. (2025), we measure the target factor using changes in the OIS-implied short-term rate, and the path factor as changes in short- to medium-term bond yields, orthogonalized with respect to the target factor.[1]

We validate our shock dataset by comparing U.S. and Euro Area estimates to those of Swanson (2021) and Altavilla et al. (2019), finding correlation coefficients near or above 0.9. This strengthens confidence in our estimates for countries where benchmark series are non-existent. To further confirm the relevance of our shocks, we show that yield volatility during policy announcements is significantly higher than during the same

[1] Another important dimension of monetary policy, particularly following the widespread adoption of unconventional measures, is the impact on the long end of the yield curve, often referred to as the quantitative easing (*QE) factor* or *risk premium factor*, typically measured by unexpected changes in long-term yields. While our monetary policy shock database includes this component, the present paper focuses on the target and path factors, leaving a cross-country analysis of the QE factor for future research. This is due to the considerable heterogeneity in the use of unconventional monetary policy across countries, including differences in timing, scale, and type of unconventional monetary policy.

window on non-announcement days in nearly all countries—suggesting that our surprises capture genuine policy-induced movements rather than routine market noise.

The dataset reveals three key stylized facts. First, target surprises are generally small across both advanced and emerging economies. Second, the time-series evolution of surprises shows that predictability deteriorates sharply during crises or regime shifts: The widening of the interquartile range during the Great Financial Crisis, the pandemic, and the recent inflation surge reflects repeated market misjudgments of policy persistence, particularly in path factors. Third, the cross-sectional distribution of surprises differs systematically between advanced and emerging economies: while both are centered near zero, EMs display fatter tails—especially for path shocks—suggesting less predictable policy paths amid greater macroeconomic volatility, shallower markets, and communication challenges.

In addition to constructing the high-frequency monetary policy shock dataset, the paper explores several key questions regarding monetary policy transmission. First, it quantifies the impact of both target and path factor surprises on government bond yields, equity prices, and exchange rates, providing new evidence on the strength and consistency of monetary transmission to these financial variables. Second, it examines whether central bank information effects contribute to asset price movement around monetary policy announcements—reflecting not only unanticipated monetary policy movements, but also new information conveyed by the central bank about the economic outlook. Third, it evaluates the precision and significance gains from HFI relative to daily data across countries. Finally, the paper investigates whether the transmission of monetary policy to financial markets has changed in the post-COVID-19 period, in light of globally synchronized policy cycles and evolving macro-financial conditions. Each of these questions contributes to a deeper understanding of the mechanisms and robustness of monetary policy transmission in a cross-country context.

Our results suggest strong and consistent monetary transmission across asset classes and countries. Our baseline empirical framework regresses 30-minute changes in financial variables—bond yields, equity prices, and exchange rates—on the identified target and path surprises, allowing us to capture the immediate market response to unexpected monetary policy actions. Target surprises are associated with significant increases in short- and medium-term yields, reductions in equity prices, and appreciations of exchange rates. Similarly, path surprises significantly affect yields and asset prices, and in particular in AEs—a finding that may reflect the prevalence of deeper financial markets and greater reliance on forward guidance in these countries but also the fact that interest rates in EMs were not at the ELB for an extended period of time. These effects are robust, statistically significant, and directionally consistent with the predictions of standard asset pricing models.

With the effects of monetary policy directionally consistent with theory, any potential information effects—where markets interpret policy actions as signals about the central bank's private information—appear to be modest and do not alter the qualitative response. Nonetheless, we explicitly control for such effects to further assess their relevance. In the high-frequency data, we find little evidence of such effects. However, controlling for them in daily data strengthens the estimated transmission of monetary policy shocks, particularly for equity prices. This suggests that HFI, by relying on narrow windows, already achieves a more precise identification across a wide range of countries.

We further assess the value of HFI relative to daily data by varying the width of the shock and response windows. Our results show that broader windows significantly reduce the precision and statistical significance of estimated transmission effects. As a result, such estimates may fail to capture the full extent of asset price sensitivity to policy shocks or may attribute observed movements in asset prices to monetary policy when they are in fact driven by other factors. Importantly, the findings highlight the need for caution when interpreting estimates of monetary policy transmission based solely on daily data, which are often used in EM contexts.

Finally, we find no systematic change in the transmission of monetary shocks to bond yields or equity prices. However, exchange rate responses in AEs weaken significantly after May 2021, which coincided with the globally synchronized tightening phase. This attenuation is likely due to smaller interest rate differentials across countries and increased policy coordination, which reduced the relative impact of individual central bank actions on currency markets.

Taken together, these findings offer new cross-country evidence on the structure and stability of monetary transmission. They underscore the value of high-frequency data in isolating monetary policy shocks, demonstrate the global relevance of target and path factors in influencing asset prices, and provide a foundation for future research on monetary policy. This paper presents some early results that highlight the usefulness of the newly assembled dataset in advancing our understanding of monetary transmission. Beyond the questions explored here, the dataset can support future research on international monetary spillovers, unconventional measures targeting the long end of the yield curve, exchange rate dynamics, and financial market integration. It also opens the door to investigating how institutional characteristics, central bank credibility, and market depth influence the strength and speed of transmission, as well as how monetary and fiscal policies interact—particularly in the context of large, systemic shocks.

The paper is organized as follows: Section II discusses recent literature. Section III introduces the underlying data, methodology, and the resulting shocks database. Section IV analyzes transmission of the shocks to select financial variables. Section V concludes.

I. Related Literature

HFI of monetary policy shocks provides a robust and precise method for isolating the unanticipated component of monetary policy announcements. By focusing on changes in yields within narrow windows surrounding policy announcements (typically 30 minutes), HFI minimizes the influence of confounding macroeconomic developments and market noise. This approach mitigates concerns of reverse causality, where observed policy actions may reflect policymakers' responses to economic news rather than exogenous shifts in the policy stance.

The literature on HFI was pioneered by Cook and Hahn (1989), who analyzed market reactions surrounding Federal Open Market Committee (FOMC) announcements using an event study approach.[2] Kuttner (2001) advanced this approach by using Fed funds futures to isolate the unexpected component of policy changes. In their seminal work, Gürkaynak et al. (2005) demonstrated that utilizing narrow time windows around monetary policy events—rather than relying on daily data—is crucial for minimizing noise from other events that

[2] Other early applications of the event-study approach can be found, e.g., in Rigobon and Sack (2003) and Bernanke and Kuttner (2004).

may occur throughout the day. Furthermore, they argued that monetary policy shocks are more accurately represented by two distinct components, referred to as the “target factor” and the “path factor.” Swanson (2021) expanded this analysis by distinguishing between surprises in the policy rate, forward guidance, and QE. While Gürkaynak et al. (2005) and Swanson (2021) use principal component analysis based on a large number of interest rates and asset prices, Rogers et al. (2018) proposed a simpler orthogonalization method, which we adopt due to data limitations in EMs. This method has been shown to produce shock series that are closely aligned with principal components-based estimates on U.S. data (Swanson, 2021).[3] We confirm this result for the U.S. using our identified shocks, as well as for the Euro Area by comparing our shocks with those constructed by Altavilla et al. (2019).

OIS spreads are widely regarded as reliable indicators for identifying monetary policy shocks, particularly in high-frequency event-study settings. Unlike interbank rates such as LIBOR, which embed significant credit and liquidity risk, OIS rates reflect near risk-free expectations of the policy rate, making them better suited for isolating central bank signals (Cui and Maharaj, 2016; Schrimpf and Shushko, 2019). Furthermore, the OIS curve serves as a particularly useful indicator of forward guidance effects, as it incorporates market expectations of future short-term rates along with associated term premia (Hubert and Labondance, 2018). Therefore, we follow recent studies—such as Altavilla et al. (2019) for the Euro Area and Braun et al. (2025) for the United Kingdom (UK)—in using OIS spreads to derive our monetary policy shock measure. In markets lacking OIS data, we substitute sovereign bond yields, which also reflect surprises about current and future policy, benefit from deeper, more liquid markets, and are less affected by credit risk than interbank rates.

HFI of monetary policy shocks has recently come under scrutiny, following evidence that such shocks may be partly predictable using information available at the time of the policy announcement (e.g., Cieslak and Schrimpf, 2019).[4] Moreover, identified shocks may embed so-called information effects—market reactions not only to policy changes but also to newly revealed information—which can bias empirical estimates (Andrade and Ferroni, 2021). Jarociński and Karadi (2020) suggest distinguishing pure monetary policy shocks from information effects based on their divergent impacts on stock prices. To ensure our identified shock measures are not unduly influenced by information effects, we implement the PM restrictions proposed by Jarociński and Karadi (2020) as a robustness check.

While most HFI studies focus on the U.S. and select AEs, applications to EMs remain limited.[5] The few papers using event studies to identify monetary policy shocks in emerging economies work with daily data. Solís (2023) is a notable exception, using intra-day data for Mexico. Also, there is no paper that relies on HFI to analyze monetary transmission in a broad cross-section of economies, both advanced and emerging. Closest to

3 Based on U.S. data, Brennan et al. (2024) show that shock series that are identified based on instruments with maturities up to a year generally have a high correlation. Those series are however less correlated with shock series computed on instruments with longer maturities.

4 In response, recent studies have sought to “clean” monetary policy shocks by removing their predictable components, thereby addressing some of the puzzling responses of financial and real variables to these shocks. Bauer and Swanson (2023b) propose a method that isolates the unpredictable component by regressing conventional monetary policy shocks on a comprehensive set of macroeconomic and financial indicators and using the residuals as the cleaned shock measure.

5 See Bauer and Swanson (2023b) and references therein for the U.S., see Altavilla et al. (2019) and references therein for the Euro Area, see Braun et al. (2024) and references therein for the UK, Soosalu (2024) for Canada, Hambur and Haque (2023) and references therein for Australia, Nakamura et al. (2021) and Kubuta and Shintani (2022) for Japan, Almerud et al. (2024) for Sweden, Brubakk et al. (2017) and references therein for Norway, and Borner (2025) for Switzerland.

our paper in that regard are Ferrari et al. (2021) and Kearns et al. (2023) that identify monetary policy shocks through high-frequency methods for multiple countries, but their sample is limited to six, respectively seven, AE central banks. Choi et al. (2024) compile a cross-country dataset using a mix of intra-day and daily data. Bolhuis et al. (2024) apply a consistent methodology across countries but rely on daily data and capture only one dimension of monetary policy. Our study fills the gap by constructing a comprehensive cross-country HFI dataset for both AEs and EMs.

II. Monetary Policy Shocks: Underlying Data and Methodology

This section describes the construction of monetary policy shocks using intra-day financial market data. We detail the data sources, identification methods and steps taken to ensure cross-country comparability.

A. Monetary Policy Announcements

Our sample comprises 16 countries—11 AEs and 5 EMs. Sample start dates vary depending on data availability, generally beginning in the early 2000s (Table 1). An exception is India, where data coverage begins in 2016 following the adoption of the inflation targeting framework. The sample ends in May 2025, the latest available data at the time of writing.

We focus on scheduled monetary policy announcements. Announcement dates and times are sourced from Bloomberg and cross-verified with central bank websites.[6] We exclude announcements coinciding with the Global Financial Crisis (September 2008–March 2009) and the COVID-19 outbreak (February–April 2020), as these episodes were marked by extreme market volatility and often involved multiple policy actions beyond conventional monetary policy.

Table 1 provides an overview of the dataset used in our analysis, which encompasses a total of 2,528 monetary policy events. This broad coverage allows for meaningful cross-country comparisons, using a consistent methodology.

[6] We exclude unscheduled announcements due to unavailability of information on the precise timing of these announcements.

Table 1. Sample Coverage

Country	Data start dates	Data end dates	Number of events
Australia	12/2/2008	5/20/2025	178
Canada	7/10/2007	4/16/2025	146
Czech Republic	3/25/2004	5/7/2025	186
Euro Area	5/4/2006	4/17/2025	188
Japan	12/1/2009	5/1/2025	163
New Zealand	1/24/2001	5/28/2025	187
Norway	1/22/2003	5/8/2025	174
Sweden	7/6/2001	5/8/2025	149
Switzerland	12/16/2010	3/20/2025	61
UK	9/6/2007	5/8/2025	180
U.S.	6/30/2004	5/7/2025	171
Total AEs			**1783**
Brazil	10/21/2009	5/7/2025	118
Chile	5/10/2007	4/29/2025	149
India	2/2/2016	4/9/2025	57
Mexico	10/14/2005	5/15/2025	179
Poland	1/21/2004	5/7/2025	242
Total EMs			**745**
Total (all countries)			**2528**

Source: Authors' calculations.

Notes: The final column shows the total number of events with underlying series available for shock construction.

B. Underlying Financial Market Data

To identify monetary policy shocks, we use high frequency changes in OIS rates and government bond yields.[7] OIS contracts, being collateralized and involving no upfront cash flows, are relatively insulated from credit and liquidity risk, making them well-suited for capturing changes in short-term rate expectations. They are particularly useful in EMs where the policy instrument may vary over time. Changes in government bond yields across maturities help capture the surprises along the yield curve. Measuring the surprises at the longer end of the yield curve is particularly important during periods of unconventional policies, such as forward guidance and QE, as these policies were aimed at influencing term premia or expectations about future monetary policy, as short-term rates remained at the effective lower bound for extended periods.

We sourced minute-by-minute data on OIS rates (1- and 3-month), government bond yields (1-, 2-, and 10-year), equity indices, and exchange rates against the United States dollar (USD) from London Stock

[7] The OIS rate is the fixed rate of a contract where counterparties agree to exchange the fixed rate for a floating reference rate, usually the prevailing money market rate (e.g. federal funds rate in the U.S., Sterling Overnight Index Average (SONIA), Euro Overnight Index Average (EONIA) or other interbank rate in other jurisdictions). The fixed rate incorporates market expectations of future short-term interest rates and has in practice been shown to be a reliable measure of market expectations up to the 2-year tenor (Llyod, 2021).

Exchange Group (LSEG).[8] The data is as of close of the minute and corresponds to the last traded price in the minute. Where OIS markets are thin or undeveloped, we substitute alternative instruments:

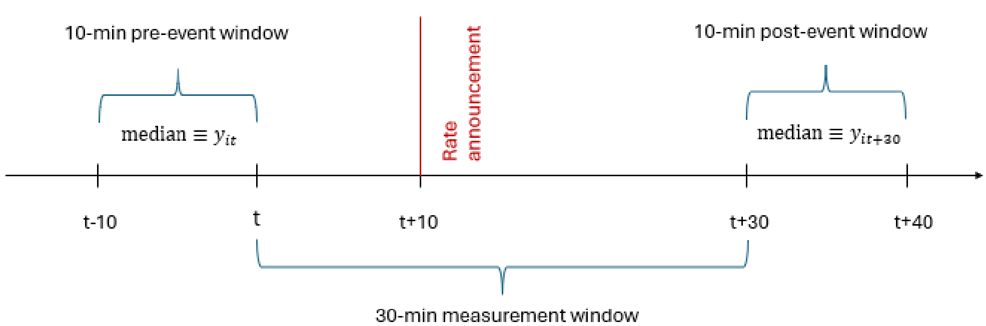
- interest rate swaps (Brazil, Chile, and Mexico);
- forward rate agreements (Poland and Czech Republic);
- foreign exchange (FX) forward-implied rates (Norway).

For Brazil and Chile, where most monetary policy announcements happen outside of trading hours, we use daily opening and closing prices.[9] Following the discontinuation of EONIA on January 3, 2022, we use Euro Short-Term Rate (€STR)-based OIS contracts for Euro Area countries. For Mexico, the 3-year bond yield is used in place of the 2-year yield. For OIS and interest rate swaps, the prices are quoted as the fixed leg rate, and forward rate agreements are also quoted as annualized interest rates, which are used directly in our computations. Because the OIS market in Norway is still relatively underdeveloped, we follow Brubakk et al. (2017) in constructing a synthetic 1-month Norwegian interest rate from the USD/NOK 1-month FX forward swap using the covered interest rate parity (CIP) condition. Specifically, we use the closing price of the U.S. 1-month OIS as the corresponding US interest rate on the same date. A complete list of instruments and tickers is provided in Annex I.

C. Identification of Monetary Policy Surprises

Monetary policy surprises are defined as changes in interest rates within a narrow window around monetary policy announcements. In the baseline specification, following Braun et al. (2025), we use a 30-minute window: from 10 minutes before to 20 minutes after the scheduled announcement (Figure 1). In order to smooth price volatility due to isolated trades, the pre-announcement rate is defined as the median price during the 20-to-10-minute window before the event, and the post-announcement rate as the median price during the 20-to-30-minute window after.

Figure 1. Monetary Policy Announcements: the Event Window



Source: Authors' visualization.

Notes: The figure illustrates the measurement windows used to construct the monetary policy surprises. The pre-announcement rate is calculated as the median price observed 20 to 10 minutes before the event, and the post-announcement rate as the median price from 20 to 30 minutes after.

[8] Monetary policy surprises for bond instruments are calculated as 100 times the change in yields over the announcement window. For stock prices and exchange rates, surprises are measured as percentage changes over the same window.

[9] In Brazil, 198 out of 216 announcements are outside of trading hours and in Chile, 256 out of 257 announcements are outside of trading hours.

When the monetary policy announcement is outside of trading hours, we modify the methodology while remaining as close as possible to the principle of HFI. In these cases, the pre- and post-announcement windows are defined using the last and first 10 minutes of trading on the relevant days. Where the open-close method yields excessive zero changes (Chile), we use close-to-close price differences instead.

We follow Rogers et al. (2018) to decompose monetary policy surprises into two components:

1. **Target factor:** Change in short-term interest rate (y_{jt}^{3m} , 3-month OIS or equivalent) during the announcement window:

$$Target_{jt+\theta} = \Delta y_{jt+\theta}^{3m}. \quad (1)$$

   We focus on the 3-month maturity, where available, as volumes in this market were generally higher than in the 1-month OIS market in our sample of countries (Table 2).[10]

2. **Path factor:** Residual from a regression of the 2-year bond yield change on the target factor:

$$Path_{jt+\theta} = \varepsilon_{jt+\theta}^{2y}\ from\!:\ \ \Delta y_{jt+\theta}^{2y} = \beta\Delta y_{jt+\theta}^{3m} + \varepsilon_{jt+\theta}^{2y}, \quad (2)$$

   where y_{jt}^{2y} is the 2-year Treasury yield. If the 2-year yield is unavailable, we use the 1-year or 3-year yield.[11]

To facilitate interpretation, we scale the factors so that the target, and path components correspond to a 100-basis point change in the respective yield (short-term, 2-year, and 10-year) for each country. All series are winsorized at the first and ninety-ninth percentiles to mitigate the influence of outliers prior to shock construction and regression analysis.

Table 2. Total Trading Volume in May 2025, Billions of Local Currency Units

LCU	1-month OIS	3-month OIS
AUD	0.1	85
BRL	6.3	-
CAD	10.1	20.5
CHF	0.2	-
EUR	32	66.4
GBP	46.1	165
JPY	49.6	765
MXN	3.9	631.5
NZD	-	13.1
USD	136.9	518

Source: Bloomberg.

Notes: This table summarizes the trading volume of OIS instruments across sample countries in May 2025. The trading volumes for 1-month and 3-month OIS are measured as the sum of the trading volumes of OIS instruments with maturities of approximately 30 days and 90 days, respectively.

10 The data are not available for all countries in our sample. Table 2 provides illustrative evidence that trading volume in the 3-month OIS market is generally higher than in the 1-month market, which motivates our use of the 3-month OIS rate for all countries.

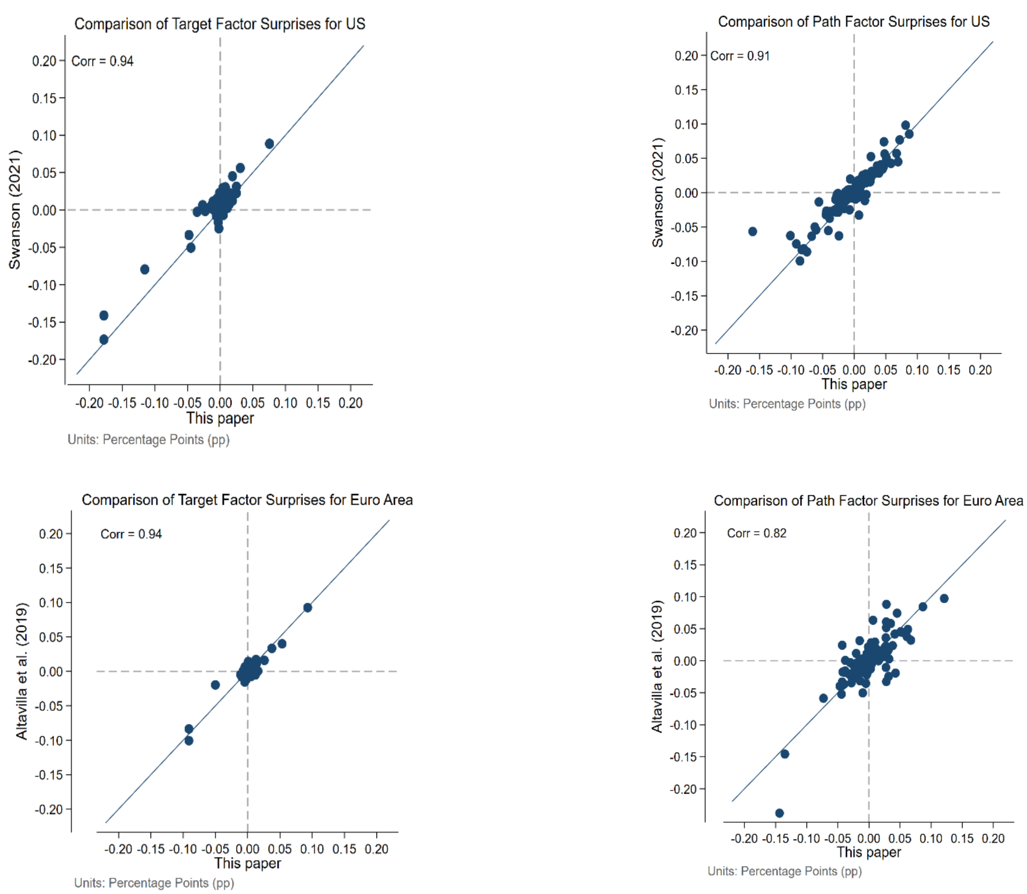
11 Swanson (2021) shows that path shocks derived from the 2-year bond yield using the Rodgers method are more highly correlated with those obtained through PCA approaches than shocks based on other medium-term maturities. However, for some countries in our sample, 2-year bond yields are unavailable; in such cases, we use 1- or 3-year yields, depending on data availability.

Comparison with Existing Shock Series

Our choice of the Rogers et al. (2018) method is motivated by its feasibility and demonstrated robustness. Alternative identification methods (e.g., principal component analysis across a large set of yields) are often not implementable in EMs due to limited high-frequency data availability. Our chosen approach has been shown in individual countries—most notably by Altavilla and others (2025), Swanson (2021), Rogers et al. (2018), and Ferrari et al. (2021)—to produce shock series that closely resemble those derived from alternative approaches involving large number of series.

We validate our methodology by comparing our US and Euro Area shocks with those from Swanson (2021) and Altavilla et al. (2019), respectively, finding correlation coefficients near or above 0.9 (Figure 2). This finding confirms the accuracy and consistency of our shock estimates for these countries, while also strengthening our confidence in the reliability of our estimates for other countries where comparable series currently do not exist.

Figure 2. Comparison of the Monetary Policy Shock Series with Literature



Source: Authors' calculations, Swanson (2021), and Altavilla et al. (2019).

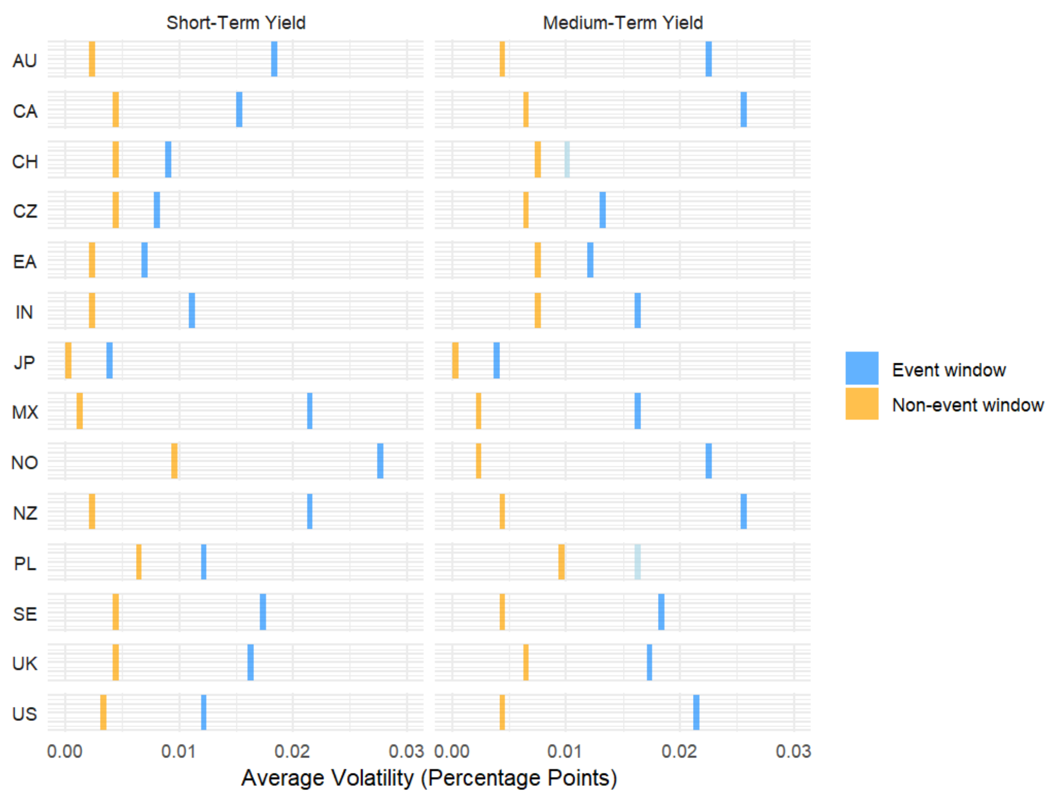
Notes: The figure plots the target and path factor surprises from Swanson (2021) and Altavilla et al. (2019) relative to our own target and path factor surprises. The target factor shocks are normalized to have a 100-basis-point effect on the 3-month OIS rate, whereas the path factor shocks are normalized to have a 100-basis-point effect on 2-year government yields. When comparing our path factor with that of Altavilla et al. (2019), we use shocks computed over a 2-hour window, consistent with their definition. For all other figures, our factors are computed using a 30-minute window.

Volatility in Event vs. Non-Event Windows

To validate the empirical relevance of the monetary policy announcements and to distinguish genuine policy-induced asset price movements from routine intraday volatility, we compare the average volatility of yields and asset prices during the policy event window to the same time window on non-announcement days. Specifically, we assess the standard deviation of yields and asset prices within the 30-minute window surrounding monetary policy announcements and compare it to the corresponding window on the following trading day.

Figure 3 shows the average volatility for short- and medium-term yields. The results indicate that yield volatility is consistently and significantly higher on announcement days in almost all countries, with the volatility of 3-month yields on announcement days 3.96 times the volatility on non-announcement days on average (median) and that of 2-year yields 4.1 times that on non-announcement days.

Figure 3. Average Volatility of Underlying Data Series in the Event vs Non-Event Windows

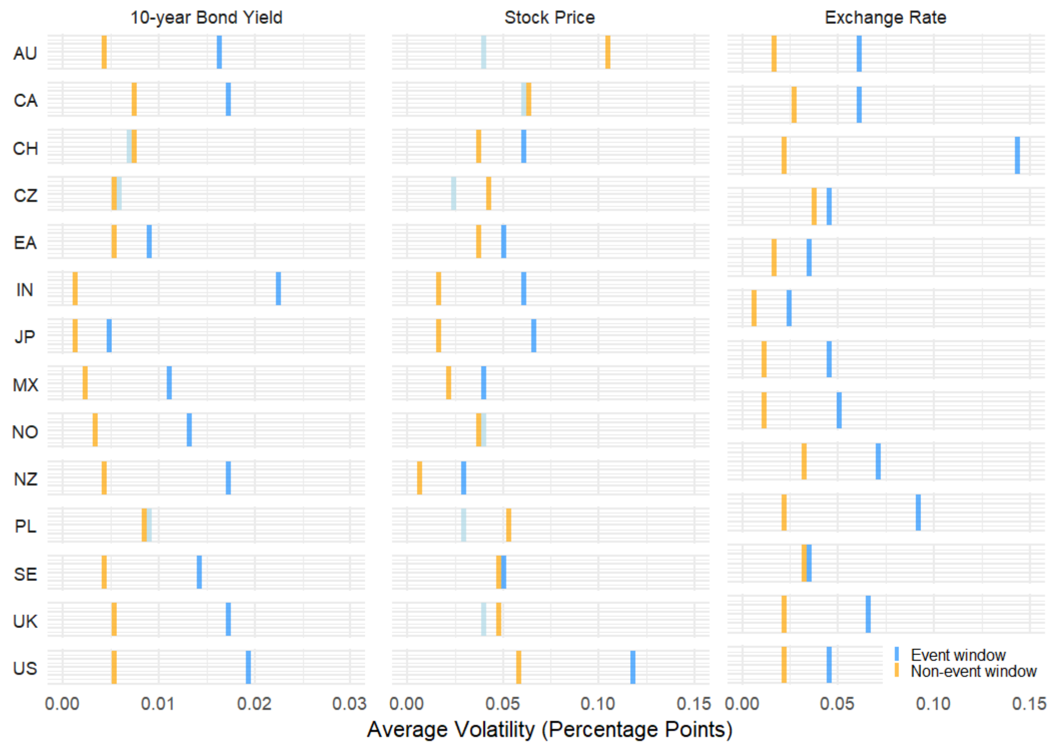


Source: Authors' calculations.

Notes: This figure compares the average volatility of short-term (3-month or alternative) and medium term (2-year or alternative) yields used to compute the target and path factors respectively, within the 30-minute monetary policy windows to the corresponding window on the following day, across countries in the sample. Volatility in the medium-term yield is measured as the standard deviation of the yield (times 100), while volatility in exchange rates and stock prices is measured as the standard deviation of the log differences (times 100). The event window, which has statistically significantly higher average volatility than the non-event window at the 90 percent significance level, is filled with a darker blue color; otherwise, it is filled with a lighter blue color.

Figure 4 displays the results for 10-year government bond yield, exchange rate, and stock market index. Across countries, we find that volatility is markedly higher on announcement days, and the correlations are statistically significantly different for the majority of cases. This pattern supports the notion that financial markets respond actively to monetary policy announcements, and that our identified surprises capture genuine policy-induced variation rather than random market noise or time-of-day effects. These findings reinforce the validity of using high-frequency changes in yields as a measure of monetary policy shocks.

Figure 4. Average volatility of response series in the event vs. non-event windows



Source: Authors' calculations.

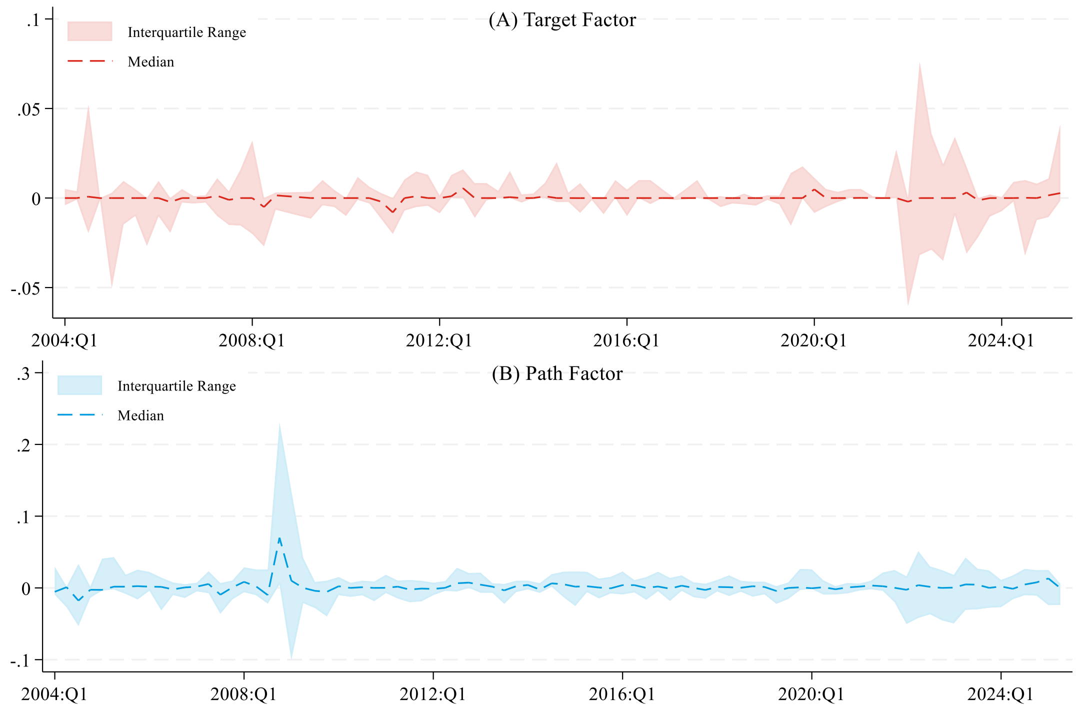
Notes: This figure compares the average volatility of the 10-year bond yield, exchange rate, and stock prices within 30-minute monetary policy windows to the corresponding window on the following day, across countries in the sample. Volatility in the 2-year bond yield is measured as the standard deviation of 100 times the yield, while volatility in exchange rates and stock prices is measured as the standard deviation of 100 times the log differences. The event window, which has statistically significantly higher average volatility than the non-event window at the 90-percent significance level, is filled with a darker blue color; otherwise, it is filled with a lighter blue color.

D. Monetary Policy Shocks: Some Stylized Facts

The dataset allows us to derive three notable stylized facts:

- First, target surprises are on average small across both AEs and EMs, with means close to zero (Table 3, Figure 5).
- Second, the time-series evolution of surprises shows that predictability deteriorates sharply in periods of crisis or regime change, as expected (Figure 5). The relatively muted variance of target shocks during 2012–19 is consistent with the unusual level of predictability associated with the period of prolonged low rates and QE in AEs. While the median target shock remains close to zero in tranquil times, the interquartile range widens substantially during the global financial crisis, the COVID-19 pandemic, and the recent high-inflation episode. This widening illustrates repeated market misjudgments of the persistence of policy tightening, despite central banks' forward guidance (Gopinath 2023; Powell 2022). Path factor surprises show even greater swings, consistent with the uncertainty that prevails in turbulent periods.

Figure 5. Monetary Policy Surprises Over Time



Source: Authors' calculations.

Notes: The figure shows the evolution of the interquartile range and median of target and path factor shocks across countries over time. Panel (A) presents the target factor shocks, and Panel (B) presents the path factor shocks. The shaded areas represent the interquartile range, and the dashed lines indicate the median values for each quarter.

- Third, the cross-sectional distribution of surprises differs notably between AEs and EMs (Table 3, Figure 6). While both groups exhibit distributions centered near zero, EMs display fatter tails, particularly for path shocks. This suggests that the future path of monetary policy is less predictable in EMs, possibly reflecting the more volatile macroeconomic environment, shallower financial markets, and greater communication challenges facing EM central banks (Rey 2015; Mishkin 2004).

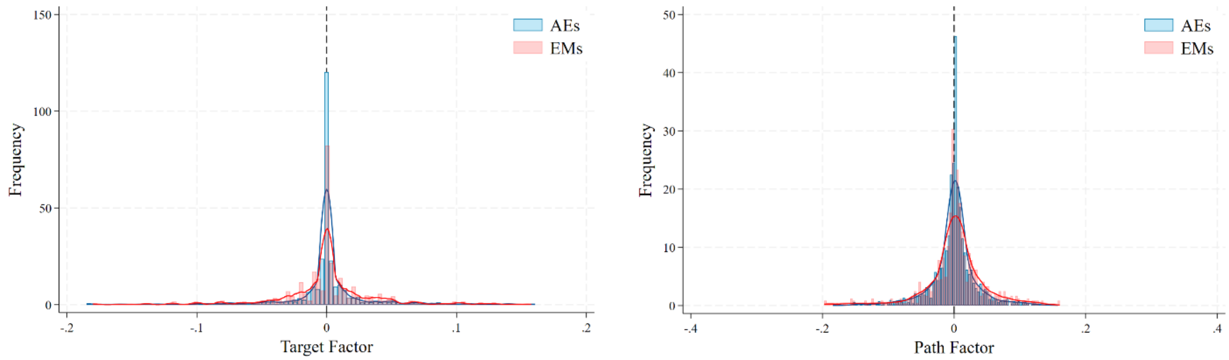
Table 3. Summary Statistics of High-Frequency Monetary Policy Shocks

		N	Mean	SD	Min	Median	Max
Advanced economies							
	Target	1584	0.00	0.05	-0.46	0.00	0.32
	Path	1748	0.00	0.05	-0.36	0.00	0.99
Emerging markets							
	Target	717	0.00	0.08	-0.55	0.00	0.49
	Path	717	0.00	0.09	-0.82	0.00	0.58

Source: IMF staff calculations.

Notes: This table reports summary statistics of target and path factor shocks in AEs and EMs.

Figure 6. Distribution of Monetary Policy Surprises: AEs vs. EMs



Source: Authors' calculations.

Notes: The figure illustrates the distributions of target and path factor shocks, winsorized at the first and Ninety-ninth percentiles, separately for AEs and EMs.

III. Monetary Policy Transmission

A. Baseline Results

To quantify the transmission of monetary policy to asset prices, we estimate the following baseline specification at the country level:

$$\Delta y_{jt+30} = \alpha_j + \beta_j * Target_{jt+30} + \gamma_j * Path_{jt+30} + \varepsilon_{jt+30},$$

where Δy_{jt+30} denotes the change in yields (medium-term: 1-3 years; long-term: 5-10 years), stock prices, or the bilateral exchange rate against the USD over a 30-minute window around a monetary policy announcement in country j. $Target_{jt+30}$ and $Path_{jt+30}$ capture the unexpected changes in the current policy rate and future policy path, respectively, identified through high-frequency financial market data. A positive shock to either component reflects a monetary tightening. Following the literature (e.g., Gürkaynak et al., 2005; Kuttner, 2001), we test whether such surprises are transmitted to financial markets in expected directions: higher bond yields, lower equity prices, and an appreciation of the domestic currency.[12]

Our baseline estimates point to robust and economically meaningful transmission of monetary policy surprises to financial markets. To ease the comparison of coefficient estimates across countries, throughout the rest of the paper, for each country we scale the target factor surprise to a shock that generates a 100-basis point increase in the 3-month OIS rate and the path factor surprise to a shock that generates a 100-basis point increase in the 2-year yield. First, bond yields respond strongly to monetary policy shocks. A 100-basis-point surprise in the target factor leads to a median increase of 43 basis points in medium-term yields, and 20 basis points in long-term yields (Figure 7).[13] These effects are statistically significant in the majority of country-yield

[12] The exchange rate is measured as USD per local currency unit, so an increase is an appreciation of the local currency. While the path factor is normalized so that it is measured as equivalent to a 100 bps increase in 2-year yields, we assess its impact on 1-, 2- and 3-year yields separately.

[13] The averages everywhere include only those countries for which the transmission is significantly different from 0.

pairs (13 out of 16 at the medium-term horizon; 12 out of 16 at the long end), underscoring the consistency of the transmission mechanism across diverse economies. [14] A panel regression with country fixed effects (Annex II) confirms these findings, suggesting that they are not driven by outliers or a small set of countries. The magnitude of these effects is comparable to, and in some cases larger than, those found in recent studies using HFI in AEs (e.g., Gürkaynak, Sack, and Swanson 2005; Jarociński and Karadi 2020, Nakamura and Steinson, 2018), indicating that high-frequency shocks carry considerable explanatory power across both AEs and EMs.

Both target and path factors exert significant effects at medium to long-term maturities. Target shocks have sizeable impacts at the medium segment of the curve and remain important even at the long end, though their impact declines sharply at the longer end. Path factor shocks' impact on medium and long-term yields is more comparable in magnitude, consistent with the idea that they capture revisions to expectations about the future policy stance and therefore influence forward rates. The impact of path factor shocks is larger in AEs. This likely reflects that interest rates in EMs were not constrained by the ELB for an extended period, and that AEs have deeper financial markets and central banks that rely more heavily on forward guidance. Importantly, the magnitude of the target and path factor shocks differ (100-basis-point surprise in the 3-month OIS rate versus a 100-basis-point move in the 2-year yield), so visual inspection should not be taken as evidence that the impact of path factor shocks are larger in magnitude than that of target factors; rather, the evidence points to complementary roles, with path factors shaping persistence along the curve and target shocks anchoring the immediate policy stance. This interpretation aligns with the view in Altavilla et al. (2025) and Gürkaynak, Sack, and Swanson (2005) that both factors matter for the yield curve, albeit through distinct channels.

Monetary policy shocks have significant spillovers to risk-sensitive asset classes. A 100-basis-point target factor shock leads to a median equity price decline of 1.83 percent and a 2.45-percent appreciation of the exchange rate against the USD. The effects of the path factor are even more pronounced, with median declines in equity prices of 1.34 percent and appreciations of 5.06 percent, respectively. These findings are highly robust: they are statistically significant for the majority of the countries in our sample (13 out of 16 for equities; 13 out of 15 for exchange rates) and also hold in the panel regression. The cross-asset consistency of the results points to a clear tightening signal embedded in both target and path surprises.

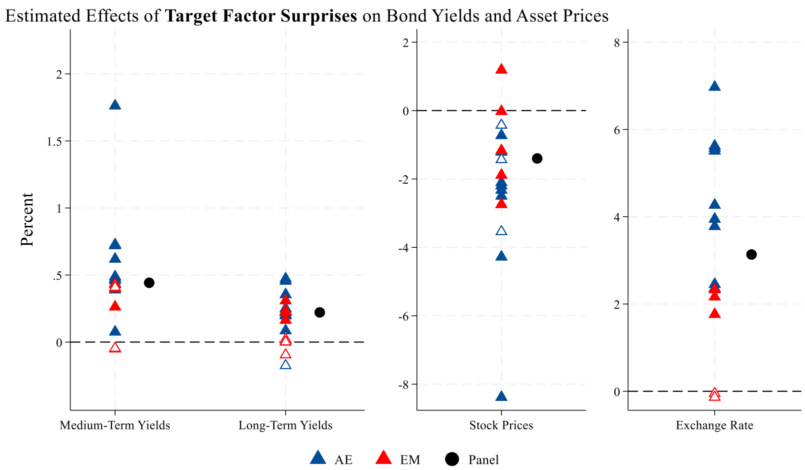
The direction of the responses indicates that our shocks are dominated by "pure" monetary policy surprises; any potential information effects appear limited and do not alter the overall pattern. If central banks were primarily revealing private information about the economic outlook—as suggested by the information effect hypothesis (Nakamura and Steinsson 2018)—one would expect equity prices to *rise* following a tightening shock. Instead, we find the opposite: equity markets fall, consistent with the interpretation that the shocks represent genuine policy tightening rather than news about stronger future growth. This result provides new cross-country evidence and consistent with the interpretation advanced by Jarociński and Karadi (2020) for the

[14] The coefficients for Japan have been scaled down by a factor of 10 to facilitate cross-country visual comparability, as the responses to both target and path shocks are an order of magnitude larger than those in other countries. This likely reflects Japan's prolonged period at the effective lower bound (ELB), which may introduce noise into the target factor. Similar large effects of the path factor, however, have also been documented by Nakamura et al. (2024) and Carrière-Swallow et al. (forthcoming) who also analyze high-frequency monetary policy shocks in Japan.

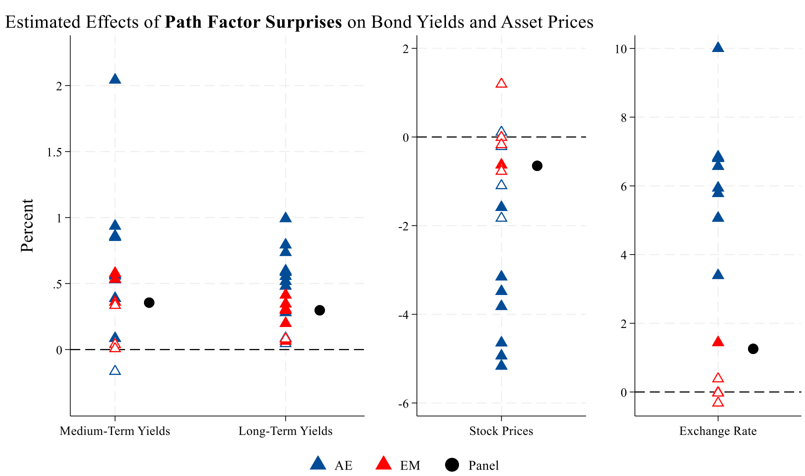
Euro Area and U.S., indicating that information effects are less pronounced when identification relies on high-frequency windows.[15]

Figure 7. Baseline Results: Monetary Policy Transmission in the 30-minute Window

(a) Target Factor



(b) Path Factor



Source: Authors' calculations.

Notes: Monetary policy surprises and changes in bond yields and asset prices computed over a 30-minute window. Exchange rates are defined as USD per local currency, that is, an increase is an appreciation of the local currency. Solid triangles indicate a significant effect at 90 percent level, empty triangles a non-significant effect; red denotes EMs, blue denotes AEs. The sample includes the countries listed in Table 1. Medium-term yield coefficients are estimated from separate regressions for 1-, 2-, and 3-year yields (but excluding the medium-term yield used to construct the path factor for each country), hence multiple triangles may appear per country. The same applies to long-term yields (5- and 10-year) yields. For individual country estimates, see Table 2 in the Annex. The coefficients for Japan have been scaled down by a factor of 10 to facilitate cross-country visual comparability. Black solid dots refer effects as estimated in a panel regression with fixed effects, a solid black dot indicates a significant effect at the 90-percent level, an empty black dot indicates a non-significant effect. For the specification of the panel regression, please see the Annex. The scales of the target factor and path factor panels differ, so magnitudes should not be compared directly across factors.

[15] Jarociński and Karadi (2020) show that responses to "non-cleaned" monetary policy shocks tend to be attenuated relative to those to "pure" shocks, as the embedded information effects work in the opposite direction.

Finally, these results are robust to several alternative specifications. Controlling for contemporaneous U.S. monetary policy announcements yields similar estimates (Annex I), underscoring that our findings are not confounded by global policy shocks. Moreover, the panel fixed-effects specification confirms the country-level estimates while providing greater precision. Taken together, the evidence strongly supports the view that high-frequency monetary policy shocks exert economically and statistically significant effects on domestic financial markets, providing a solid foundation for the more granular analyses that follow.

B. Assessing information effects

We further analyze the role of central bank information effects in shaping asset price responses to monetary policy surprises. Jarociński and Karadi (2021) show that monetary policy surprises can affect asset prices, such as rising stock prices following a rate hike, not only because of the policy stance itself, but because markets infer that the central bank has positive private information about the economic outlook. Here, we apply the PM restriction introduced in their paper.

The PM restriction classifies policy shocks based on the sign of the co-movement between interest rate surprises and equity prices:

$$\text{Target Factor}_{MP} = \begin{cases} \text{Target Factor}, & \text{if Target Factor} > 0 \text{ and } \Delta\text{Stock Price} < 0 \\ 0, & \text{if Target Factor} > 0 \text{ and } \Delta\text{Stock Price} > 0 \end{cases}.$$

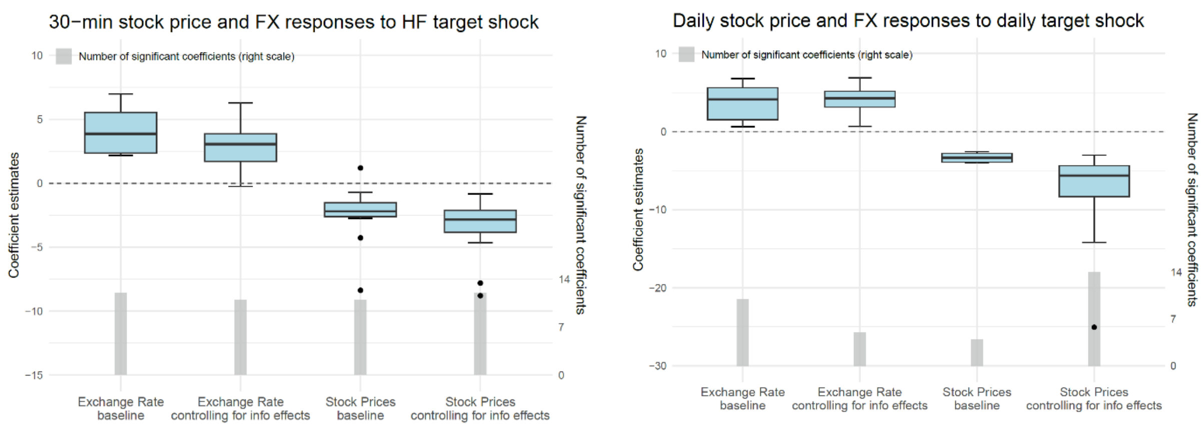
Intuitively, when a monetary policy tightening leads to higher equity prices, this is interpreted as reflecting an information shock—i.e., positive economic news revealed by the central bank that offsets the mechanical contractionary impact of a rate hike. Conversely, a decline in equity prices following a tightening is consistent with a “pure” monetary policy shock. This restriction has been shown to yield results that are closely aligned with a fully specified structural sign-restricted VARs (Jarociński and Karadi, 2020, 2021) used to identify pure monetary policy shocks, making it a practical tool for comparative empirical analysis.

For the target factor, applying the PM restriction has limited impact on the high-frequency specification (i.e., 30-minute shock and response windows), where the baseline estimates already indicate strong and consistent pass-through to bond yields, equity prices, and exchange rates (Figure 8). However, in the daily–daily specification, which is more prone to contamination from concurrent news, the PM adjustment significantly improves the clarity and precision of the stock price response. Specifically, the magnitude of the estimated response becomes larger, and the number of countries for which the effect is statistically significant increases. This is consistent with the hypothesis that high-frequency data naturally filters out much of the central bank information effect, whereas daily data requires additional conditioning to reveal the underlying monetary transmission channel. By contrast, the same restriction appears counterproductive for exchange rate responses in the daily specification, reducing both statistical significance and economic magnitude. This may reflect the more complex and multifactorial drivers of exchange rate dynamics, where policy and information effects often interact in non-linear or offsetting ways (Rogoff, 2002; Glick and Leduc, 2015).

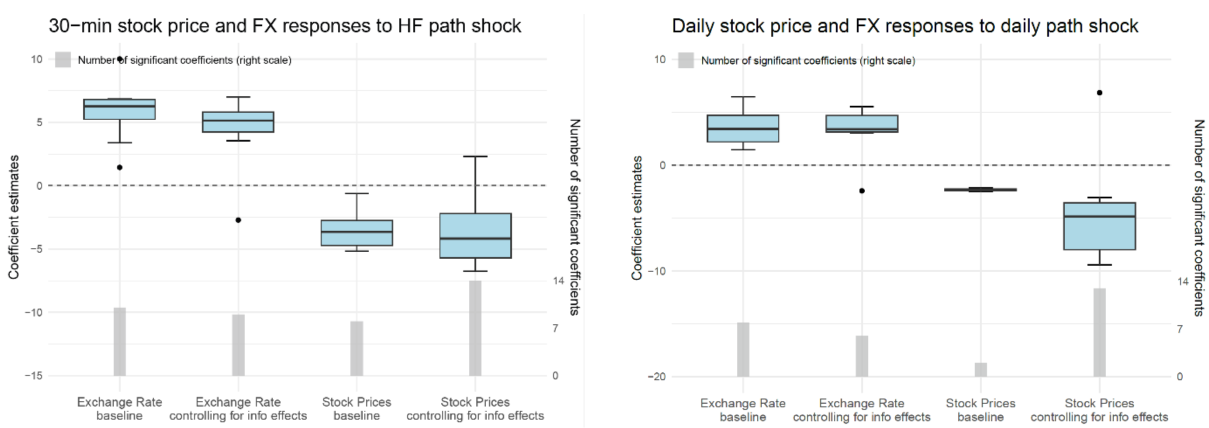
For the path factor, we observe broadly similar patterns. The PM restriction leaves results for the 30-minute window largely unchanged but improves the identification of stock price responses in the daily specification. Notably, unlike with the target factor, applying the PM restriction does not diminish the exchange rate responses, suggesting that information effects are less prevalent—or at least less distorting—for forward guidance-type announcements. This aligns with prior research showing that forward guidance affects expectations more directly and may be perceived as a cleaner monetary signal both during periods of effective lower bound and in EMs (Ho and Hsu, 2022; Ehrmann and Fratzscher, 2007).

Figure 8. Assessing Information Effects: High Frequency vs. Daily Data

(a) Target Shock



(b) Path Shock



Source: Authors' calculations.

Notes: The box plots compare 30-minute and daily responses of stock prices and exchange rates to high-frequency monetary policy shocks, using both the baseline method and the PM sign restrictions. They show the distribution of statistically significant responses across countries, with each box representing the interquartile range (twenty-fifth to seventy-fifth percentile) and whiskers extending up to 1.5 times that range. Dots indicate statistical outliers. Brazil and Chile are excluded from the analysis, as we rely on daily data for these countries due to policy announcements typically occurring outside regular trading hours, which could otherwise bias the results. The coefficients for Japan have been scaled down by a factor of 10 to facilitate cross-country visual comparability.

Overall, our results are consistent with Bauer and Swanson (2023a and 2023b) who find little evidence of information effects and that conventional monetary policy surprises can be used without correction for estimating asset price responses to monetary policy in high-frequency regressions. Importantly, our results extend these findings across a wide variety of institutional and market environments, encompassing both developed and emerging economies.

C. Contribution of High Frequency Data

The identification of monetary policy shocks hinges critically on the ability to isolate the unanticipated component of policy announcements from other contemporaneous macroeconomic developments. HFI strategies are widely viewed as a gold standard in this regard (Kuttner, 2001; Gürkaynak et al., 2005). However, several recent studies suggest that daily data may offer a viable alternative, not only when high-frequency data are unavailable or unreliable, but also for AEs like the U.S. (An et al., 2025; Bolhuis and others, 2024). We contribute to this debate by systematically assessing the information content of HFI relative to lower-frequency approaches across a broad set of countries and asset classes. We explore this issue along three empirical dimensions.

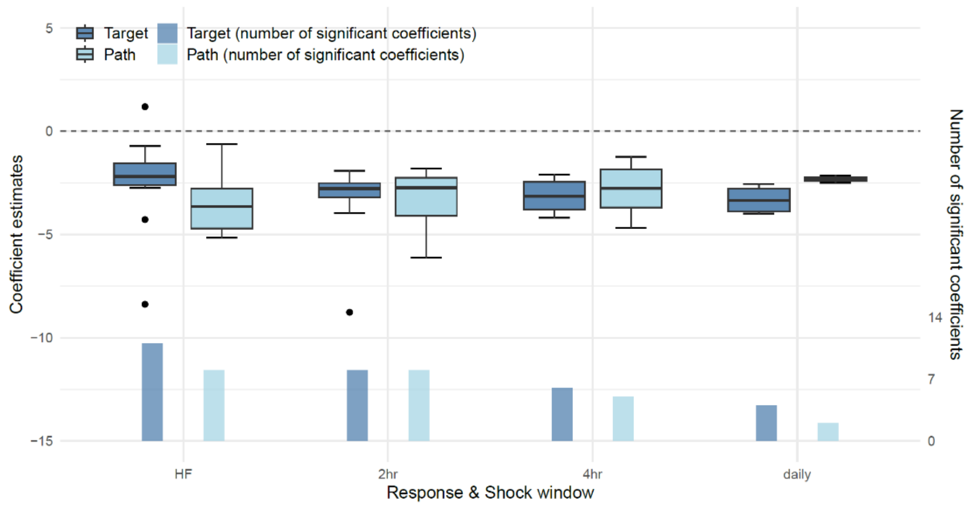
First, we vary the identification (shock) window successively wider, moving from 30-minute intervals to wider windows spanning 2 hours, 4 hours, and a full trading day, to assess whether monetary policy shocks identified using narrower windows are equivalent to those identified using wider windows. The windows of 2 to 4 hours may capture press conferences after the monetary policy announcement. As the response window cannot be narrower than the shock window, in this exercise we also vary the estimation (response) window to equal the size of the shock window. While the point estimates of median responses (e.g., the decline in stock prices or appreciation of exchange rates following tightening surprises) remain broadly similar across window widths, the number of countries with statistically significant responses declines markedly as the windows widen (Figure 9). This is consistent with the view that wider windows increase the likelihood of contamination from other news, leading to attenuated or less precise estimates.

Second, we vary only the size of the shock window while keeping the response window constant at daily frequency. Here again, HFI (30-minute shocks) outperforms lower-frequency alternatives. We find that high-frequency shocks measured using 30-minute windows yield stronger and more consistent relationships with daily asset price changes than shocks constructed using 2-hour, 4-hour or daily windows (Figure 10). For stock prices, we find that the target factor is not significantly associated with daily price changes in the majority of countries, irrespective of the shock window used. This result suggests that conventional rate surprises may have short-lived effects that are quickly incorporated into prices, consistent with fast adjustment in equity markets and the potential dilution of signal over the course of the day due to other confounding events. In contrast, path factor shocks—which reflect changes in forward guidance or market expectations of future policy rates—exhibit larger and more statistically significant effects, particularly when identified using the 30-minute window. This is in line with Swanson (2021) who finds that asset prices respond more persistently to shifts in future rate expectations than to surprises in the current policy stance.

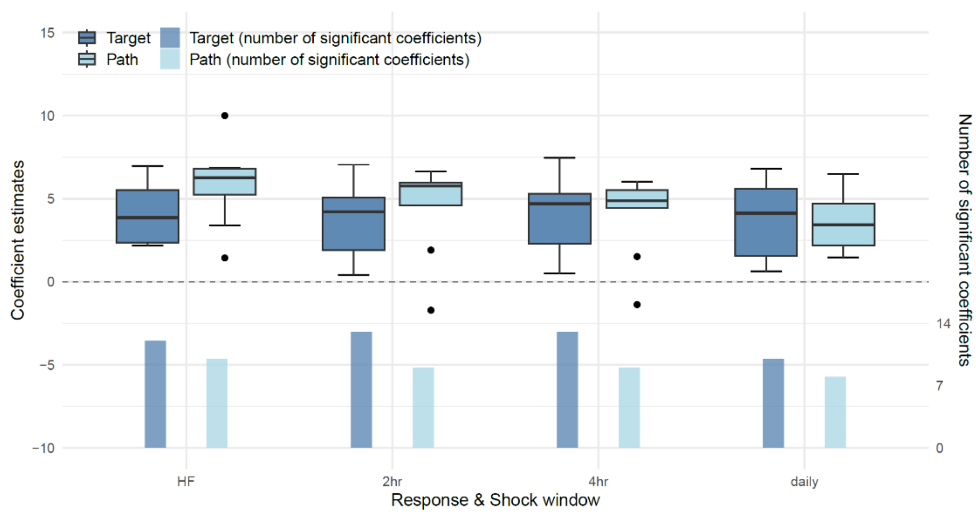
For exchange rates, the patterns documented earlier remain broadly intact. The median exchange rate response to both target and path surprises remains relatively stable across different shock windows. However, the number of countries with statistically significant exchange rate responses is substantially higher when the monetary policy shocks are identified using high-frequency (30-minute) data. This underscores the benefit of using narrow windows in isolating exogenous monetary shocks, particularly in open economies where exchange rates are sensitive to a broad array of domestic and global news (Glick and Leduc, 2015; Obstfeld and Rogoff, 1995).

Figure 9. Monetary Policy Transmission: High vs. Lower Frequency Data

(a) Stock Prices



(b) Exchange rates



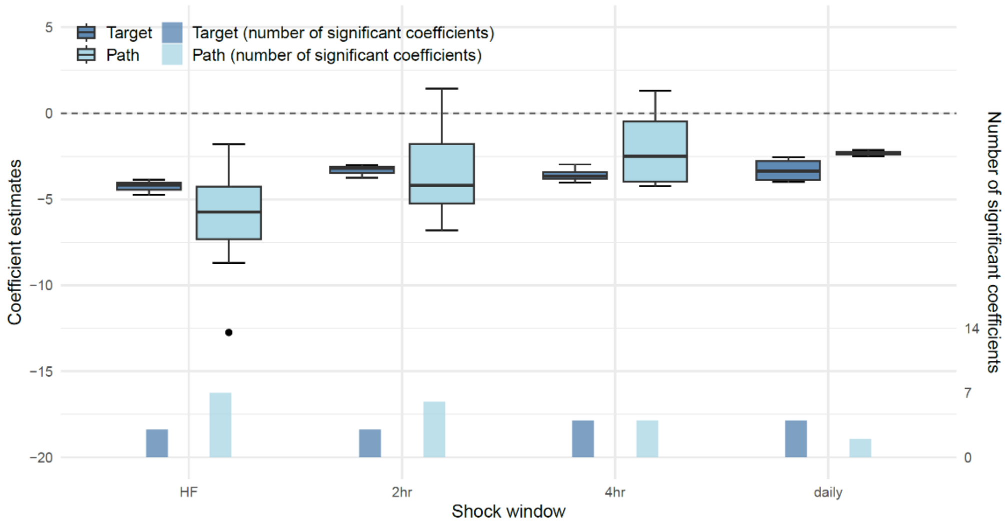
Source: Authors' calculations.

Notes: The boxplots display the distribution of statistically significant stock price or exchange rate responses across countries, grouped by shock window (HF, 2hr, 4hr, daily). Each box represents the interquartile range (twenty-fifth to seventy-fifth percentile) with the horizontal line indicating the median. Whiskers extend up to 1.5 times the interquartile range. Dots indicate a statistical outlier for that shock window and region group. Brazil and Chile are excluded from the analysis, as we rely on daily data for these countries because their policy announcements typically take place outside regular trading hours, which could otherwise bias the representation. The coefficients and confidence bands for Japan have been scaled down by a factor of 10 to facilitate cross-country visual comparability.

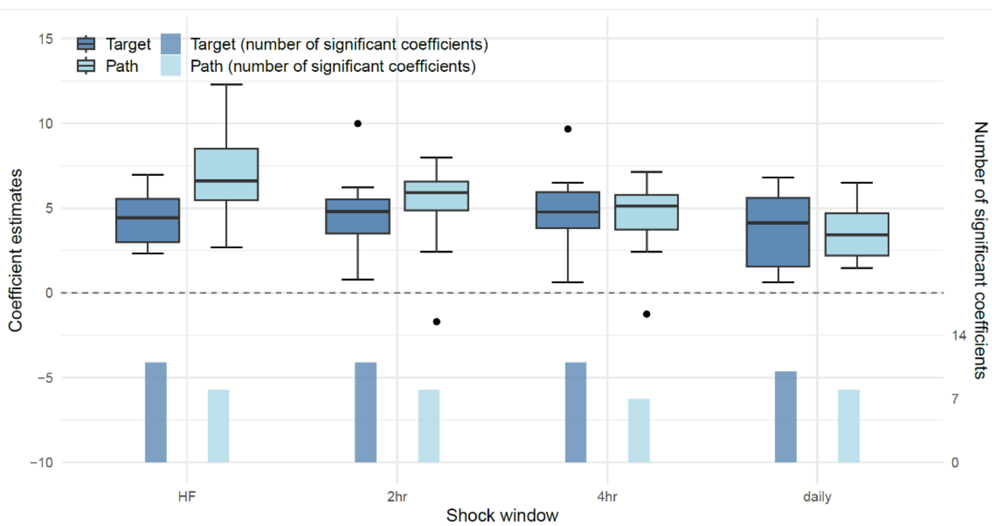
Third, we examine the persistence of responses by fixing the shock window at 30 minutes and varying the response window from 30 minutes to the end of the trading day. For equity prices, we observe that the effect of target surprises fades with longer windows, becoming statistically insignificant for most countries at daily frequency (Figure 11). As with the previous exercise, this result likely reflects the short-term nature of conventional interest rate shocks and their rapid absorption by equity markets. By contrast, the effects of path surprises remain significant for about the same number of countries as the response window increase, suggesting that forward guidance influences market expectations more gradually. Exchange rate responses to both factors are robust across response horizons, consistent with their rapid adjustment to monetary policy news and the absence of strong reversal patterns.

Figure 10. Monetary Policy Transmission: Daily Responses to High vs. Lower Frequency Shock Window

(a) Stock Prices



(b) Exchange Rates

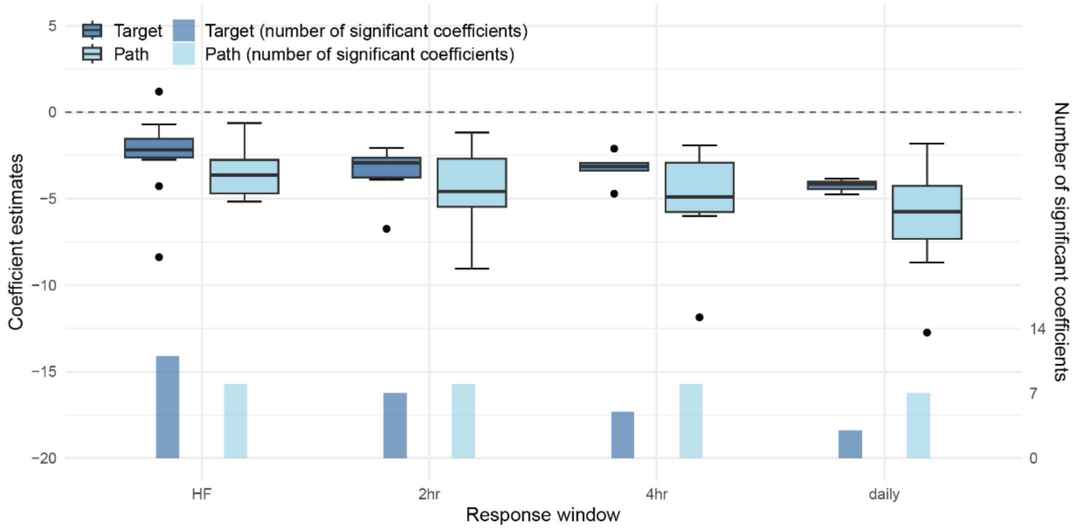


Source: Authors' calculations.

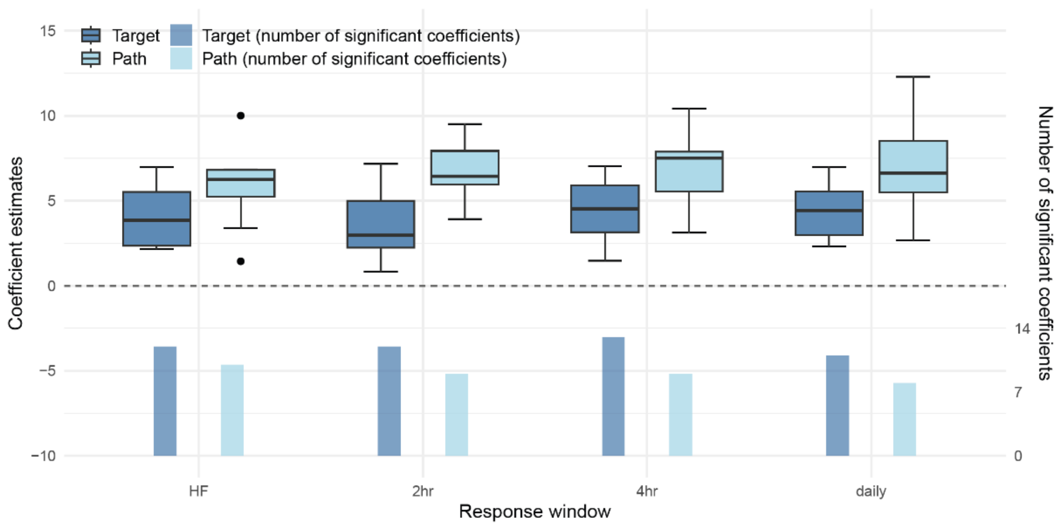
Notes: The boxplots display the distribution of statistically significant exchange rate responses across countries, grouped by shock window (HF, 2hr, 4hr, daily). Each box represents the interquartile range (twenty-fifth to seventy-fifth percentile) with the horizontal line indicating the median. Whiskers extend up to 1.5 times the interquartile range. Dots indicate a statistical outlier for that shock window and region group. Brazil and Chile are excluded from the analysis, as we rely on daily data for these countries because their policy announcements typically take place outside regular trading hours, which could otherwise bias the representation. The coefficients and confidence bands for Japan have been scaled down by a factor of 10 to facilitate cross-country visual comparability.

Figure 11. Monetary Policy Transmission: Varying the Response Window for High Frequency Shocks

(a) Stock Prices



(b) Exchange Rates



Source: Authors' calculations.

Notes: The boxplots display the distribution of statistically significant exchange rate responses across countries, grouped by response window (HF, 2hr, 4hr, daily). Each box represents the interquartile range (twenty-fifth to seventy-fifth percentile) with the horizontal line indicating the median. Whiskers extend up to 1.5 times the interquartile range. Dots indicate a statistical outlier for that shock window and region group. Brazil and Chile are excluded from the analysis, as we rely on daily data for these countries because their policy announcements typically take place outside regular trading hours, which could otherwise bias the representation. The coefficients and confidence bands for Japan have been scaled down by a factor of 10 to facilitate cross-country visual comparability.

Our results align with earlier findings for AEs (Gürkaynak et al., 2005; Swanson, 2021) and support the growing application of HFI in EM contexts (see Albagli et al., 2019; Ichiue and Ueno, 2016). Importantly, they also suggest caution in interpreting monetary policy transmission estimated from daily data alone, as such estimates may understate the true sensitivity of asset prices to policy shocks or misattribute the effects of non-monetary news.

Finally, our results highlight that even for researchers considering using daily data to assess monetary policy transmission due to lack of access to high frequency data, it is preferable to use a high-frequency measure of the monetary policy surprise from available sources - for example this paper or those made available by other researchers - than construct the surprise using daily data.

D. Did Monetary Policy Transmission Change Post-COVID-19?

The post-COVID-19 macroeconomic environment has prompted renewed scrutiny of the effectiveness of monetary policy transmission. Following the sharp contraction in 2020, the global economy experienced an unusually strong and persistent surge in inflation—driven by a combination of robust demand, pandemic-induced supply constraints, and a sharp rise in global commodity prices, particularly energy and food. In response, central banks across advanced and emerging economies embarked on one of the most synchronized and rapid tightening cycles in recent history. Yet, in many cases, inflation proved more persistent than initially anticipated, raising concerns that the transmission of monetary policy to financial conditions and, ultimately, to inflation may have weakened.

We examine the question whether the ability of central banks to influence asset prices and financial conditions through interest rate surprises has changed in the post-COVID-19 era. To do so, we augment our baseline high-frequency specification by introducing interaction terms between monetary policy surprises and a post-COVID-19 dummy variable, defined as equal to 1 for observations after May 2021 and 0 otherwise. This cutoff date is selected based on a marked decline in U.S. stock market volatility observed around that time. This allows us to test for changes in the magnitude of asset price responses to policy surprises in the post-pandemic period.

The modified regression takes the form

$$\Delta y_{jt+30} = \alpha_j + \beta_j * Target_{jt+30} + \gamma_j * Path_{jt+30} + \theta_{jT} * Target_{jt+30} * \text{PostCovid} + \theta_{jP} * Path_{jt+30} * \text{PostCovid} + \varepsilon_{jt+30},$$

where β_j and γ_j represent the baseline transmission coefficients, and θ_{jT} and θ_{jP} capture any differential post-COVID-19 effects for the target and path components, respectively.

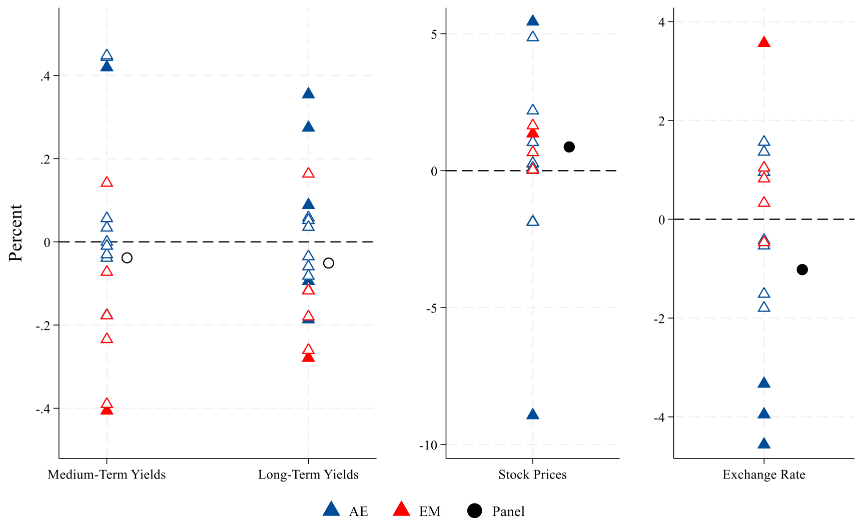
Across most countries and asset classes, we find that these interaction terms are statistically insignificant, indicating that the underlying monetary transmission mechanisms remained broadly unchanged in the aftermath of the pandemic (Figure 12). This stability holds for both medium- and long-term government bond yields and equity prices, suggesting that financial markets continued to respond to policy surprises in ways consistent with pre-COVID-19 dynamics.

The one notable exception is the exchange rate response in AEs, where the interaction terms—particularly for the path factor—are negative and significant. This suggests a weaker transmission of policy surprises to exchange rates post-2020. The estimated exchange rate appreciation in response to a tightening shock is both economically smaller and statistically weaker in the post-COVID-19 period, pointing to a meaningful attenuation of monetary spillovers through the exchange rate channel.

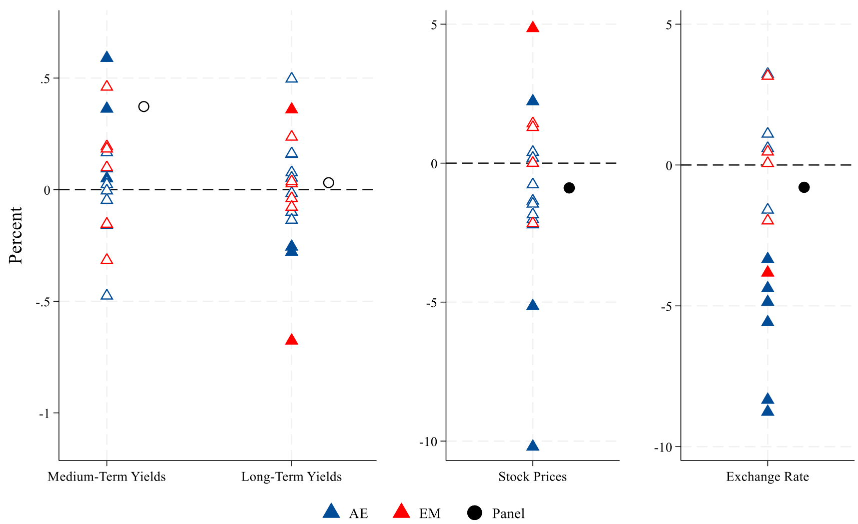
This pattern likely reflects the unusual synchronization of monetary policy across AEs during this period. With interest rate differentials largely compressed, and with central banks often delivering similar guidance and pace of tightening, the relative surprises that typically drive exchange rate adjustments under uncovered interest parity (UIP) may have been muted (Obstfeld, 2020; Glick and Leduc, 2015; Kearns et al., 2023). In addition, the prevalence of risk-management forward guidance during the pandemic may have led market participants to discount rate changes as conditional on uncertain future developments, weakening the perceived signal content of announcements.

Figure 12. Assessing a Possible Change in Transmission Post-COVID-19

(a) Interaction: Target Factor and Post-COVID-19 Dummy



(b) Interaction: Path Factor and Post-COVID-19 Dummy



Source: Authors' calculations.

Notes: The figure illustrates the coefficients on the interaction term between the post-COVID-19 dummy and the target and path factors in the regression analysis. Monetary policy surprises and changes in bond yields and asset prices computed over a 30-minute window. Exchange rates are defined as USD per local currency, that is, an increase is an appreciation of the local currency. Solid triangles indicate a significant effect at 90 percent level, empty triangles a non-significant effect; red denotes EMs, blue denotes AEs. The medium-term yields coefficients plot the coefficients for separate regressions for 1-, 2-year and 3-year yields where available (which means that there may be more than one triangle per country). The same applies to long-term yields (5- and 10-year) yields. The coefficients for Japan have been scaled down by a factor of 10 to facilitate cross-country visual comparability.

In contrast, the continued responsiveness of bond yields and equity prices suggests that domestic asset markets remained sensitive to both short-term rate surprises and forward guidance, even amid elevated uncertainty and unconventional policy settings. This resilience of core transmission channels reinforces the central bank's ability to influence domestic financial conditions, even when global monetary cycles are tightly aligned.

IV. Conclusions

This paper introduces the first cross-country database of high-frequency monetary policy surprises and uses it to assess the transmission of monetary policy to financial markets across advanced and emerging economies. By constructing a consistent set of target and path factor shocks for a broad set of countries, this dataset enables a unified, comparative analysis of monetary transmission using intra-day asset price movements.

Our findings highlight several important insights: First, monetary policy target surprises—capturing unexpected changes in the short-term policy rate—have strong and directionally consistent effects. A 100-basis-point target surprise leads, on average, to a 43 basis-point increase in medium-term bond yields, a 1.83 percent decline in stock prices, and a 2.45 percent appreciation of the exchange rate. Path surprises—reflecting shifts in expected future policy rates—also have sizable effects on all asset classes. However, their importance is more limited in EMs, where interest rates were not at the ELB for an extended duration in our sample period and forward guidance may be less credible or less salient to market participants.

Second, while we find little evidence of a central bank information effect in the baseline specification—where the reaction of equity prices is negative and large, consistent with the effects of a pure tightening shock—controlling for information effects provides further insights into their role. In high-frequency specifications, applying the PM restriction yields results very similar to the baseline, suggesting that our baseline HFI already captures pure monetary policy shocks. However, in daily-daily specifications—where contamination from other news is more likely—the PM restriction improves the significance and clarity of stock price responses, particularly for the target factor. Its effect is more muted for exchange rates and even yields counterintuitive results when applied in AEs.

Third, we show that HFI substantially improves the precision and significance of estimated monetary policy effects relative to daily data. Using 30-minute windows around central bank announcements, we detect statistically significant and economically meaningful responses in yields, stock prices, and exchange rates across a large number of countries. In contrast, as the shock and response windows widen—from hours to daily intervals—the estimated responses attenuate, and the number of countries showing significant transmission falls sharply. This confirms that HFI is particularly valuable in cross-country settings where market noise and data heterogeneity can otherwise obscure the underlying signal, as is often the case in EM contexts.

Fourth, we examine whether the transmission of monetary policy changed in the post-COVID-19 period, by interacting policy surprises with a post-May 2021 dummy. We find no systematic change in the transmission to government bond yields or stock prices. However, in AEs, exchange rate responses to monetary shocks in AEs weaken significantly after May 2021. This attenuation likely reflects the globally synchronized nature of monetary easing and tightening cycles during and after the pandemic, which reduced cross-country interest rate differentials—limiting the exchange rate channel of monetary policy.

Together, these findings provide new empirical evidence on the mechanics and robustness of monetary policy transmission to financial markets across a diverse set of countries. They highlight the value of high-frequency data in isolating exogenous policy shocks and identifying asset price responses cleanly—particularly in multi-country settings where daily data often understate the strength and consistency of transmission. Moreover, they point to meaningful cross-country heterogeneity, with forward guidance (the path factor) playing a larger role in AEs, and the exchange rate channel proving sensitive to global policy synchronization.

The high-frequency cross-country shock dataset developed in this paper can serve as a valuable resource for further research on international monetary spillovers, unconventional measures targeting the long end of the yield curve, exchange rate dynamics, and financial market integration. Future work could explore the role of institutional characteristics, central bank credibility, or market depth in shaping the strength and speed of transmission, in the spirit of Deb et al. (2023) and Brandao-Marques et al. (2020), as well as how monetary policy interacts with fiscal policy and global financial conditions during large-scale shocks.

Annex I. Individual Country Results

Table A.1. Summary Statistics of Underlying Series by Country

Country		N	Daily Mean	SD	Min	P25	P75	Max	N	Intradaily Mean	SD	Min	P25	P75	Max
Australia	3M OIS	178	0.03	0.07	-0.27	0.01	0.03	0.47	178	0.00	0.05	-0.26	0.00	0.01	0.25
	2Y	178	-0.01	0.05	-0.21	-0.03	0.01	0.20	178	0.00	0.06	-0.26	-0.02	0.02	0.21
	10Y	178	-0.01	0.04	-0.15	-0.03	0.01	0.28	178	0.00	0.03	-0.11	-0.02	0.02	0.12
	Stock	178	0.09	0.34	-1.86	-0.06	0.24	1.35	178	0.00	0.29	-1.17	-0.14	0.14	0.91
	FX	178	0.04	0.88	-2.38	-0.52	0.62	3.36	178	0.03	0.42	-1.90	-0.19	0.28	1.14
Canada	3M OIS	135	0.00	0.06	-0.34	0.00	0.01	0.26	146	0.00	0.05	-0.19	0.00	0.01	0.22
	2Y	146	0.00	0.08	-0.29	-0.04	0.02	0.32	146	0.00	0.06	-0.19	-0.03	0.02	0.25
	10Y	146	0.00	0.06	-0.21	-0.04	0.03	0.25	146	0.00	0.03	-0.10	-0.02	0.02	0.13
	Stock	146	-0.01	0.52	-2.43	-0.28	0.30	1.57	146	0.00	0.29	-1.07	-0.12	0.14	0.88
	FX	146	-0.03	0.74	-2.15	-0.46	0.50	1.64	146	0.01	0.48	-1.92	-0.32	0.30	1.70
Czech Republic	6X9 FAR	186	0.00	0.10	-0.39	-0.03	0.01	0.44	186	0.00	0.04	-0.19	0.00	0.00	0.12
	2Y	179	-0.11	0.13	-0.89	-0.16	-0.03	0.23	186	0.00	0.07	-0.35	0.00	0.00	0.52
	10Y	173	-0.05	0.09	-0.48	-0.08	-0.02	0.68	183	0.00	0.02	-0.13	0.00	0.00	0.06
	Stock	179	0.33	0.74	-6.34	0.05	0.63	2.41	183	0.02	0.18	-0.64	0.00	0.01	1.00
	FX	186	-0.04	0.86	-5.06	-0.48	0.52	2.40	186	0.00	0.34	-3.70	-0.07	0.08	1.05
Euro Area	3M OIS	188	0.01	0.04	-0.28	0.00	0.03	0.20	188	0.00	0.03	-0.10	0.00	0.00	0.16
	2Y	188	-0.01	0.07	-0.27	-0.05	0.01	0.28	188	0.00	0.03	-0.12	-0.01	0.01	0.10
	10Y	188	-0.01	0.06	-0.20	-0.04	0.03	0.18	188	0.00	0.02	-0.09	-0.01	0.00	0.08
	Stock	188	0.05	0.54	-1.72	-0.27	0.37	1.77	188	0.01	0.20	-0.72	-0.04	0.06	0.79
	FX	188	-0.08	0.79	-2.10	-0.54	0.43	3.08	188	-0.02	0.27	-1.07	-0.09	0.07	1.40
India	3M OIS	57	0.05	0.10	-0.29	0.00	0.08	0.46	57	0.01	0.04	-0.03	0.00	0.01	0.24
	2Y	57	-0.07	0.09	-0.42	-0.12	-0.02	0.11	57	-0.01	0.05	-0.14	0.00	0.00	0.16
	10Y	57	0.00	0.09	-0.19	-0.06	0.05	0.32	57	0.00	0.06	-0.13	-0.02	0.04	0.19
	Stock	57	-0.04	0.63	-2.28	-0.30	0.38	1.26	57	-0.02	0.38	-1.28	-0.25	0.12	0.92
	FX	57	0.01	0.36	-1.25	-0.14	0.22	0.77	57	-0.02	0.11	-0.55	-0.06	0.06	0.17
Japan	3M OIS	148	0.01	0.01	0.00	0.01	0.02	0.09	162	0.00	0.00	-0.02	0.00	0.00	0.03
	2Y	163	0.00	0.01	-0.05	-0.01	0.00	0.09	163	0.00	0.01	-0.04	0.00	0.00	0.05
	10Y	163	-0.01	0.03	-0.12	-0.01	0.00	0.15	163	0.00	0.02	-0.06	0.00	0.00	0.19
	Stock	163	0.08	0.25	-1.36	-0.01	0.14	1.15	163	-0.01	0.19	-1.74	-0.01	0.00	0.60
	FX	163	0.04	0.93	-3.43	-0.34	0.41	3.95	163	0.01	0.42	-1.65	-0.06	0.11	2.74
Mexico	3M OIS	178	0.02	0.11	-0.56	0.00	0.05	0.45	179	0.00	0.08	-0.48	-0.02	0.02	0.49
	3Y	178	-0.02	0.10	-0.60	-0.05	0.02	0.47	179	-0.01	0.10	-0.86	-0.01	0.00	0.35
	10Y	178	-0.03	0.11	-0.62	-0.05	0.01	0.38	179	0.00	0.05	-0.21	-0.01	0.01	0.28
	Stock	178	0.23	0.77	-2.63	-0.09	0.32	4.20	179	-0.02	0.32	-1.93	-0.07	0.07	1.47
	FX	179	0.11	0.72	-1.83	-0.32	0.52	2.83	179	0.06	0.32	-0.86	-0.09	0.20	1.80
New Zealand	3M OIS	109	0.00	0.07	-0.29	-0.02	0.02	0.31	120	-0.01	0.07	-0.46	0.00	0.00	0.18
	2Y	135	0.00	0.13	-1.10	0.00	0.04	0.27	169	-0.01	0.10	-1.01	-0.02	0.02	0.24
	10Y	157	0.01	0.05	-0.17	0.00	0.04	0.18	187	0.00	0.04	-0.18	-0.02	0.02	0.17
	Stock	186	-0.15	0.52	-4.31	-0.29	-0.10	1.65	187	0.04	0.35	-1.37	-0.14	0.19	1.31
	FX	187	-0.02	0.54	-2.25	-0.09	0.09	2.17	187	0.03	0.66	-1.85	-0.37	0.46	1.52
Norway	1M FX Swap	160	0.04	0.13	-0.27	-0.02	0.07	0.74	173	0.00	0.08	-0.30	-0.01	0.01	0.32
	1Y	153	-0.07	0.25	-2.18	-0.07	-0.01	0.48	174	0.00	0.07	-0.65	-0.01	0.01	0.19
	10Y	124	-0.03	0.05	-0.15	-0.06	0.00	0.12	172	0.00	0.03	-0.13	-0.01	0.01	0.07
	Stock	168	0.27	0.43	-0.87	0.02	0.45	2.12	172	0.02	0.24	-0.55	-0.10	0.10	0.98
	FX	174	0.05	1.07	-3.76	-0.42	0.71	3.68	174	0.12	0.58	-2.04	-0.14	0.42	2.80
Poland	1X4 FAR	242	-0.01	0.09	-0.52	-0.01	0.01	0.36	242	0.00	0.06	-0.47	0.00	0.00	0.32
	2Y	234	-0.04	0.09	-0.49	-0.07	0.00	0.33	242	0.00	0.03	-0.25	0.00	0.01	0.15
	10Y	234	-0.02	0.07	-0.47	-0.04	0.01	0.23	242	0.00	0.02	-0.11	-0.01	0.00	0.16
	stock	242	0.17	0.55	-1.84	-0.11	0.34	4.22	242	0.00	0.18	-1.02	-0.02	0.05	0.99
	FX	242	0.07	0.91	-3.17	-0.38	0.60	5.10	242	0.01	0.25	-1.41	-0.08	0.12	0.73

Table A.1. Summary Statistics of Underlying Series by Country (concluded)

Country		N	Daily Mean	SD	Min	P25	P75	Max	N	Intradaily Mean	SD	Min	P25	P75	Max
Sweden	3M OIS	142	0.01	0.07	-0.41	0.01	0.03	0.19	149	-0.01	0.06	-0.36	-0.01	0.01	0.18
	2Y	133	-0.10	0.49	-3.22	-0.05	0.01	0.96	116	-0.01	0.05	-0.17	-0.03	0.01	0.22
	10Y	133	-0.02	0.09	-0.71	-0.05	0.02	0.24	115	-0.01	0.03	-0.13	-0.02	0.01	0.12
	Stock	149	0.09	0.50	-1.95	-0.14	0.38	1.85	149	0.06	0.27	-1.16	-0.09	0.18	1.30
	FX	149	0.08	0.93	-2.97	-0.41	0.56	2.99	149	-0.04	0.51	-1.91	-0.27	0.20	1.28
Switzerland	3M OIS	61	0.01	0.07	-0.20	0.01	0.03	0.32	61	0.00	0.03	-0.16	0.00	0.01	0.07
	2Y	61	-0.05	0.08	-0.26	-0.07	-0.02	0.23	61	0.00	0.04	-0.17	-0.01	0.01	0.11
	10Y	61	-0.02	0.04	-0.13	-0.04	0.01	0.13	61	0.00	0.01	-0.05	-0.01	0.00	0.06
	Stock	61	0.21	0.44	-1.41	-0.05	0.47	1.43	61	0.01	0.15	-0.59	-0.04	0.09	0.55
	FX	61	0.33	2.51	-1.83	-0.43	0.48	18.74	61	0.57	4.76	-1.28	-0.10	0.14	37.01
UK	3M OIS	180	0.00	0.08	-0.94	0.00	0.02	0.18	180	0.00	0.05	-0.55	0.00	0.01	0.18
	2Y	180	-0.02	0.06	-0.25	-0.05	0.01	0.17	180	0.00	0.04	-0.15	-0.01	0.02	0.12
	10Y	180	-0.01	0.06	-0.35	-0.04	0.03	0.20	180	0.00	0.04	-0.19	-0.01	0.02	0.12
	Stock	180	0.04	0.55	-1.59	-0.27	0.32	2.63	180	0.00	0.37	-1.00	-0.14	0.09	1.90
	FX	180	-0.06	0.73	-2.04	-0.42	0.27	2.76	180	0.01	0.35	-1.24	-0.14	0.18	1.06
US	3M OIS	168	0.01	0.04	-0.29	0.01	0.02	0.20	171	-0.01	0.03	-0.23	-0.01	0.00	0.09
	2Y	171	-0.02	0.07	-0.30	-0.05	0.02	0.26	171	0.00	0.05	-0.16	-0.02	0.02	0.13
	10Y	171	-0.02	0.08	-0.48	-0.05	0.03	0.20	171	0.00	0.05	-0.39	-0.02	0.02	0.12
	Stock	171	0.15	0.70	-1.56	-0.25	0.46	4.06	171	0.02	0.39	-0.93	-0.17	0.16	3.34
Brazil	21D IRS	125	0.00	0.07	-0.39	-0.02	0.01	0.25							
	2Y	145	0.01	0.15	-0.62	-0.03	0.08	0.43							
	10Y	186	0.04	0.17	-0.49	-0.02	0.10	0.84							
	Stock	187	92.08	272.99	-884.02	-1.93	1.88	923.04							
	FX	214	0.01	0.48	-3.18	-0.02	0.05	4.37							
Chile	3M IRS	199	-0.01	0.14	-1.02	-0.01	0.02	0.46							
	2Y	169	-0.02	0.11	-0.46	-0.04	0.02	0.48							
	10Y	160	-0.01	0.07	-0.31	-0.03	0.02	0.24							
	Stock	160	0.12	0.59	-2.24	-0.12	0.29	2.87							
	FX	257	-0.02	0.83	-3.86	-0.48	0.43	2.83							

Source: Authors' calculations.

Notes: This table displays the summary statistics of the various underlying series that contribute to the construction of monetary policy shocks, alongside the statistics for relevant asset prices.

Table A.2. Baseline Regression Results by Country

Country	Instrument	Target (SE)	Path (SE)	N Obs.	R-squared
Australia	1YT	0.73*** (0.03)	0.85*** (0.04)	171	0.92
Australia	10YT	0.35*** (0.04)	0.59*** (0.03)	171	0.80
Australia	Stock Price	-2.20*** (0.47)	-3.82*** (0.51)	171	0.42
Australia	Exchange Rate	4.27*** (0.63)	6.85*** (0.64)	171	0.69
Brazil	1YT	0.41 (0.27)	0.36*** (0.08)	121	0.27
Brazil	3YT	-0.05 (0.19)	0.53*** (0.09)	119	0.34
Brazil	5YT	-0.09 (0.15)	0.35*** (0.09)	104	0.24
Brazil	10YT	0.02 (0.16)	0.30*** (0.07)	116	0.19
Brazil	Stock Price	-0.02* (0.01)	-0.01 (0.01)	121	0.02
Brazil	Exchange Rate	-0.05 (0.08)	-0.01 (0.08)	120	0.00
Canada	1YT	0.62*** (0.09)	0.53*** (0.06)	136	0.69
Canada	10YT	0.46*** (0.04)	0.52*** (0.04)	136	0.75
Canada	Stock Price	-4.28*** (0.89)	-0.21 (0.94)	136	0.16
Canada	Exchange Rate	5.62*** (0.95)	6.57*** (0.76)	136	0.60
Chile	1YT	0.43*** (0.14)	0.58*** (0.16)	157	0.31
Chile	5YT	0.31*** (0.07)	0.31*** (0.07)	154	0.33
Chile	10YT	0.22*** (0.04)	0.20*** (0.05)	145	0.32
Chile	Stock Price	-1.17** (0.56)	1.19 (0.84)	165	0.04
Chile	Exchange Rate	1.76*** (0.53)	0.39 (0.84)	165	0.06
Czech Republic	1YT	0.49*** (0.14)	-0.16 (0.12)	177	0.22
Czech Republic	10YT	0.20*** (0.06)	0.05 (0.05)	175	0.17
Czech Republic	Stock Price	-1.21*** (0.46)	0.11 (0.28)	154	0.05
Czech Republic	Exchange Rate	2.45*** (0.55)	-0.03 (0.40)	178	0.18
Euro Area	1YT	0.47*** (0.08)	0.39*** (0.06)	178	0.69
Euro Area	10YT	-0.00 (0.07)	0.74*** (0.04)	178	0.69
Euro Area	Stock Price	-0.42 (1.99)	-4.64*** (1.09)	178	0.14
Euro Area	Exchange Rate	2.34** (0.91)	5.06*** (0.80)	178	0.30
India	1YT	-0.05 (0.05)	0.34 (0.27)	55	0.06
India	10YT	0.00 (0.06)	0.41** (0.17)	55	0.11
India	Stock Price	-2.74*** (1.05)	-0.77 (0.91)	55	0.16
India	Exchange Rate	-0.14 (0.15)	-0.03 (0.34)	55	0.00
Japan	1YT	0.08*** (0.01)	0.08*** (0.02)	160	0.76
Japan	10YT	0.09*** (0.03)	0.28*** (0.04)	160	0.69
Japan	Stock Price	-2.32* (1.23)	-4.94*** (1.12)	160	0.2
Japan	Exchange Rate	2.36*** (0.50)	3.39*** (1.08)	160	0.21
Mexico	1YT	0.26*** (0.07)	0.04 (0.04)	167	0.21
Mexico	10YT	0.23*** (0.05)	0.06** (0.03)	170	0.17
Mexico	Stock Price	-1.89*** (0.55)	-0.63*** (0.23)	170	0.10

Table A.2. Baseline Regression Results by Country (concluded)

Country	Instrument	Target (SE)	Path (SE)	N Obs.	R-squared
Mexico	Exchange Rate	2.33*** (0.47)	-0.32 (0.25)	170	0.23
New Zealand	1YT	0.46*** (0.09)	0.56*** (0.11)	95	0.66
New Zealand	10YT	0.47*** (0.04)	0.60*** (0.05)	103	0.84
New Zealand	Stock Price	-2.50*** (0.47)	-1.59*** (0.37)	103	0.31
New Zealand	Exchange Rate	5.57*** (1.19)	6.81*** (1.23)	103	0.48
Norway	10YT	0.20*** (0.03)	0.79*** (0.14)	163	0.42
Norway	Stock Price	-0.73** (0.31)	-1.83 (1.20)	165	0.05
Norway	Exchange Rate	3.95*** (0.47)	10.00*** (2.20)	165	0.36
Poland	1YT	0.40*** (0.07)	0.01 (0.13)	231	0.34
Poland	10YT	0.16*** (0.04)	0.08 (0.08)	231	0.17
Poland	Stock Price	1.19*** (0.37)	-0.17 (0.68)	231	0.08
Poland	Exchange Rate	2.17*** (0.36)	1.44** (0.64)	231	0.26
Sweden	OIS6M	0.27** (0.12)	0.26*** (0.10)	91	0.31
Sweden	10YT	0.25*** (0.06)	0.48*** (0.07)	108	0.59
Sweden	Stock Price	-1.43 (1.07)	-1.10 (1.29)	103	0.05
Sweden	Exchange Rate	6.97*** (0.86)	5.78*** (1.30)	109	0.53
Switzerland	1YT	1.76*** (0.65)	0.86*** (0.18)	50	0.31
Switzerland	10YT	-0.17 (0.15)	0.09* (0.05)	58	0.11
Switzerland	Stock Price	-3.54 (2.59)	-5.17** (2.18)	58	0.23
Switzerland	Exchange Rate	5.51** (2.55)	5.94*** (1.77)	58	0.42
UK	1YT	0.44*** (0.03)	0.94*** (0.05)	170	0.76
UK	10YT	0.22*** (0.05)	0.99*** (0.06)	170	0.79
UK	Stock Price	-2.10*** (0.53)	-3.48*** (0.72)	170	0.21
UK	Exchange Rate	3.78*** (0.71)	6.80*** (0.80)	170	0.53
U.S.	1YT	0.72*** (0.11)	0.57*** (0.05)	95	0.86
U.S.	10YT	0.01 (0.05)	0.56*** (0.04)	162	0.50
U.S.	Stock Price	-8.38*** (1.08)	-3.16* (1.74)	162	0.28

Source: Authors' calculations.

Notes: This table reports the regression results of various asset prices on monetary policy shocks across the sample countries. Robust standard errors are reported in parentheses. Coefficient estimates are marked with *, **, and *** to denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Coefficients for medium-term yields used to construct the monetary policy surprises are not shown, as X and Y are nearly the same for the 30-minute window.

Table A.3. List of Tickers

	1-mo OIS or alternative ST instrument	3-mo OIS or alternative ST instrument	1-year gov't bond yields	2-year or 3-year gov't bond yields	10-year gov't bond yields	Stock price index	Spot exchange rate (vs. USD)
U.S.	USD1MOIS=	USD3MOIS=	US1YT=RR	US2YT=RR	US10YT=RR	SPY	
Euro Area	EUREST1M=	EUREST3M=	EU1YT=RR	EU2YT=RR	EU10YT=RR	.GDAXI	EUR=
	EUREON1M=	EUREON3M=					
UK	GBP1MOIS=	GBP3MOIS=	GB1YT=RR	GB2YT=RR	GB10YT=RR	.FTSE	GBP=
JP	JPY1MOIS=	JPY3MOIS=	JP1YT=RR	JP2YT=RR	JP10YT=RR	1321.T	JPY=
CA	CAD1MOIS=	CAD3MOIS=	CA1YT=RR	CA2YT=RR	CA10YT=RR	.GSPTSE*	CAD=
AU	AUD1MOIS=	AUD3MOIS=	AU1YT=RR	AU2YT=RR	AU10YT=RR	.AXJO	AUD=
NZ	NZD1MOIS=	NZD3MOIS=	NZ1YT=RR	NZ2YT=RR	NZ10YT=RR	.NZ50	NZD=
SE	SEKAMTNS1M=	SEKAMTNS3M=	SE1YT=RR	SE2YT=RR	SE10YT=RR	.OMXSBGI*	SEK=
CH	CHF1MOIS=	CHF3MOIS=	CH1YT=RR	CH2YT=RR	CH10YT=RR	.SSMI	CHF=
CZ		CZK1X4F= CZK3X6F= CZK6X9F=	CZ1YT=RR	CZ2YT=RR	CZ10YT=RR	.PX	CZK=
KR		KRW3MOIS=KMBC*	KR1YT=RR**	KR3YT=RR**	KR10YT=RR**	.KS11	KRW=
IN	INRAMONMI1M=	INRAMONMI3M=	IN1YT=RR	IN2YT=RR	IN10YT=RR	.NSEI*	INR=
MX		MXNMB1T3M=	MX1YT=RR	MX3YT=RR	MX10YT=RR	.MXX	MXN=
NO	NOK1M=		NO1YT=RR	NO3YT=RR	NO10YT=RR	.OSEBX*	NOK=
PL		PLN1X4F= PLN3X6F= PLN6X9F=	PL1YT=RR	PL2YT=RR	PL10YT=RR	.WIG	PLN=
IL	ILSSH1MOIS=	ILSSH3MOIS=	IL1YT=RR	IL2YT=RR	IL10YT=RR	.TA35	ILS=

Source: London Stock Exchange Group.

Notes: For India, we use tickers from 2016 onwards, when India adopted inflation targeting.

Annex II. Alternative Regression Models

Specification of the Panel Regression

We add results from a panel regression with fixed effects to the country-by-country results of the baseline specification (Figure 7). The specification takes the following form:

$$\Delta y_{jt+30} = \alpha_j + \beta * Target_{jt+30} + \gamma * Path_{jt+30} + \delta_t + \varepsilon_{jt+30}.$$

Here, Δy_{jt+30} denotes again the change in yields (medium-term: 1-3 years; long-term: 5-10 years), stock prices, or the bilateral exchange rate against the USD over a 30-minute window around a monetary policy announcement in country j. $Target_{jt+30}$ and $Path_{jt+30}$ capture the unexpected changes in the current policy rate and future policy path, respectively, identified through high-frequency financial market data. α_j is a country-specific fixed effect and δ_t is a fixed effect for the year-month of the surprise. Standard errors are clustered at the country level.

Controlling for Contemporaneous U.S. Monetary Policy Announcements

To test whether our estimates of monetary policy transmission are confounding the impact of U.S. monetary policy announcements that happen contemporaneously, we re-run our baseline regressions after including a dummy variable which takes the value 1 if a U.S. monetary policy announcement occurred within 24 hours before the domestic monetary policy announcement. Controlling for contemporaneous U.S. monetary policy announcements, the estimated effects of target and path factor surprises on domestic bond yields, stock prices, and exchange rates remain pronounced. As in the baseline results, with a target factor tightening shock (Panel a), medium- and long-term yields in both advanced (blue) and EMs (red) rise, while stock prices fall, and exchange rates depreciate notably—especially in AEs. For the path factor (Panel b), bond yields again increase, while stock prices decline and exchange rates appreciate, with a stronger sensitivity in AEs. Panel estimates (black dots) confirm these broad patterns, suggesting that the international transmission of U.S. monetary policy surprises is not simply a reflection of coincident U.S. announcements but reflects a robust spillover effect.

Figure A.1. Regressions Controlling for Contemporaneous U.S. Monetary Policy Announcements

(a) Target Factor

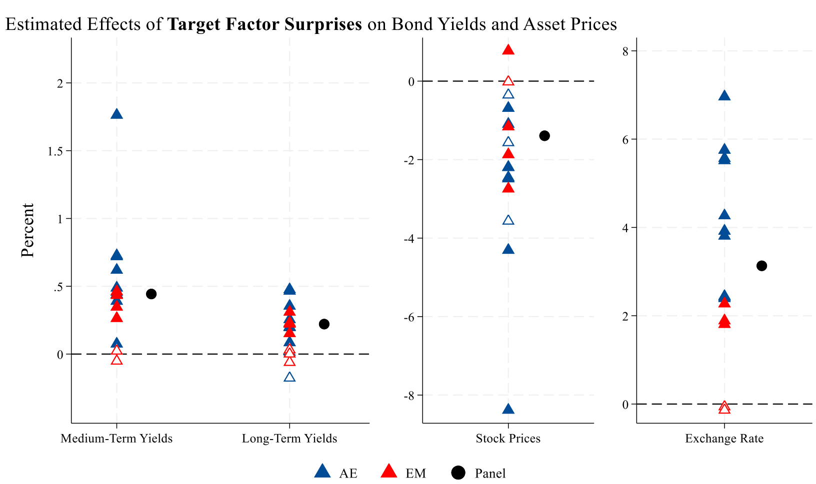
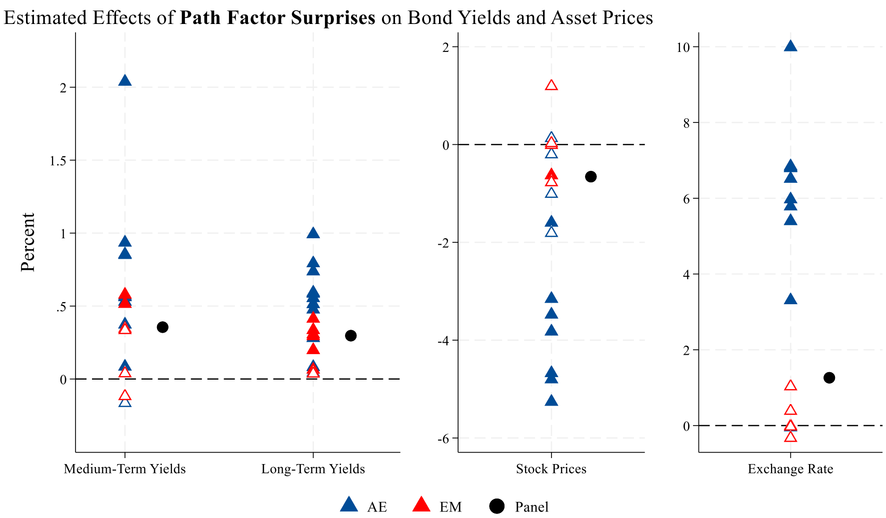


Figure A.1: Regressions Controlling for Contemporaneous U.S. Monetary Policy Announcements (concluded)

(b) Path Factor



Source: Authors' calculations.

Notes: Regressions include a dummy variable to account for events occurring within 24 hours following a US monetary policy announcement. For countries without overlapping events, baseline results are shown. Monetary policy surprises and changes in bond yields and asset prices computed over a 30-minute window. Exchange rates are defined as USD per local currency, that is, an increase is an appreciation of the local currency. Solid triangles indicate a significant effect at 90 percent level, empty triangles a non-significant effect; red denotes EMs, blue denotes AEs. The medium-term yields coefficients plot the coefficients for separate regressions for 1-, 2-year and 3-year yields where available (which means that there may be more than one triangle per country). The same applies to long-term yields (5- and 10-year) yields.

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