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When Foreign Rates Matter More: Domestic Investor Responses in a Small Open Economy

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When Foreign Rates Matter More: Domestic Investor Responses in a Small Open Economy

Martin Hodula and Simona Malovaná *

Abstract

Do domestic or foreign interest rates matter more for investor behavior in a small open economy? This paper examines how domestic investors adjust mutual fund allocations in response to monetary policy shocks, using granular Czech mutual fund data from 2009 to 2023. Employing a local projection framework with an instrumental variables strategy, we show that fund flows react strongly to exogenous changes in interest rate differentials. Foreign monetary policy shocks are found to have a more pronounced effect than domestic ones. These responses occur almost exclusively through adjustments in inflows, with outflows remaining largely stable, indicating that monetary policy influences new allocations rather than causing redemptions. Exchange rate movements, economic sentiment, and fund liquidity further modulate these effects, making them stronger when the currency depreciates, sentiment is negative, or funds are less liquid.

JEL Codes: E44, E52, F32, G11.
Keywords: Domestic investors, foreign monetary policy, interest rate differentials, liquidity, mutual fund flows, small open economy.

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1. Introduction

Do domestic or foreign interest rate moves matter more for investors in a small open economy? Monetary policy–through changes in policy rates and guidance–shapes risk appetite and portfolio allocation across asset classes, including mutual funds. In a portfolio-rebalancing framework, investors compare expected returns at home and abroad, discount them for perceived risk and liquidity, and adjust positions accordingly. Exchange rate expectations can amplify or offset these incentives. This logic is consistent with the portfolio balance and global financial cycle literature (e.g., Bruno and Shin, 2015a; Rey, 2015), which emphasizes how external monetary conditions transmit across borders. The constraints they imply are particularly stark for small open economies (SOEs), where foreign policy shifts can overshadow domestic settings.

Empirically, monetary policy is known to drive cross-border portfolio flows by affecting global risk-taking, financial conditions, and relative yields (Miranda-Agrippino and Rey, 2020; Bruno and Shin, 2015b; Kaufmann, 2023). Yet most work centers on large economies or on banks and other intermediaries as the main transmission channels.[1] Far less is known about how *resident* investors–who dominate fund ownership in many SOEs–reallocate in response to monetary shocks, or how these reactions vary across funds and investor types.

This paper fills that gap by studying how Czech mutual fund flows respond to domestic and euro area monetary policy shocks. Using granular supervisory data for 261 funds over 2009–2023 and a two-stage local projection framework, we show that euro area policy shifts have a stronger and more persistent impact on flows than Czech National Bank (CNB) moves. The response operates primarily through *inflows* rather than redemptions, and it is state dependent: exchange rate movements, investor sentiment, and the prolonged low-interest-rate environment (LIRE) before the pandemic all modulate the sign and size of the effect. We further document substantial heterogeneity: more liquid funds and institutional investors react more sharply to policy shocks, while illiquid funds and retail-heavy sectors adjust less.

Our dataset combines monthly net inflows and outflows, detailed fund characteristics (including liquidity measures), and a sectoral breakdown of holdings (households, firms, banks, other institutions). The investor base is overwhelmingly domestic (95–98%), allowing us to isolate resident behavior rather than cross-border reallocations. This granularity eliminates survivorship bias and lets us parse mechanisms (exchange rate, sentiment) from heterogeneity (fund liquidity, investor sector), providing a richer map of how monetary policy transmits through non-bank finance.

Overall, we provide new evidence that foreign monetary policy can meaningfully steer domestic portfolio allocation even when foreign investors are scarce. The results highlight a non-bank transmission channel that merits attention in macroprudential policy. While Czech mutual funds remain small relative to the banking sector, their sensitivity to external conditions suggests a growing role in propagating shocks as market-based finance expands.

The remainder of the paper proceeds as follows. Section 2 outlines the institutional setting of the Czech mutual fund sector. Sections 3 and 4 describe the data and empirical strategy. Section 5 reports the baseline effects of monetary policy on fund flows, and Section 6 examines transmission

[1] Villamizar-Villegas et al. (2024) review this literature and conclude that both domestic and foreign monetary stances shape cross-border investment in emerging and smaller markets, but the focus remains predominantly on banks.

channels (exchange rate, sentiment) and heterogeneity across funds and investor sectors. Section 7 concludes.

2. Czech Investment Funds: Institutional Background

The Czech investment fund sector has experienced vibrant growth over the last ten years, expanding its total assets by nearly 400% and becoming the second-largest component of the financial sector after banks during this decade.[2] By the end of 2023, the value of assets managed by the investment fund sector reached approximately 1.3 trillion CZK (about 55 billion EUR). In relation to the size of the economy, the investment fund sector's assets reached nearly 15% of the country's GDP (see Figure 1).

Czech legislation classifies investment funds into three primary categories: retail UCITS, retail alternative investment funds (AIFs), and funds designated for qualified investors. We specifically examine retail bond funds, equity funds, and real estate funds within the retail UCITS and retail AIF categories, which adhere to stringent regulatory standards closely aligned with UCITS guidelines.

The Czech investment fund sector is institutionally diverse, with assets concentrated in a few key fund types. Among Czech-domiciled funds, bond and mixed funds account for the largest share of total assets, followed by real estate and equity funds (Figure 1). These segments reflect the preferences of a wide range of investors, including households, banks, pension funds, insurers, and other investment vehicles. Real estate funds have seen especially rapid growth in recent years, benefiting from persistent investor interest in income-generating property assets and a regulatory framework that permits open-ended structures despite underlying asset illiquidity. Although equity funds remain smaller in size, they contribute to capital market development and investor diversification.

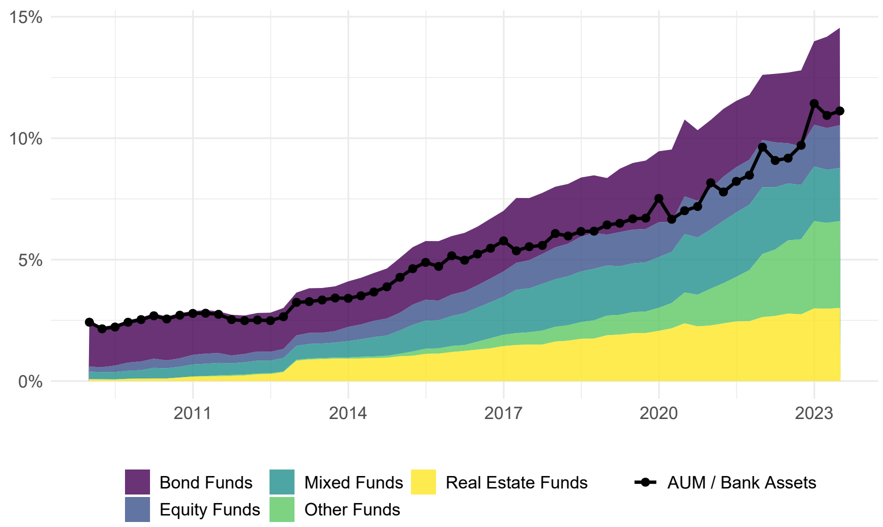
The investment fund sector is also increasingly interconnected with the broader financial system, particularly the banking sector, through distribution and ownership linkages as well as overlapping exposures to similar asset classes, such as government bonds. These interconnections – especially between real estate funds and bank credit – are regularly monitored in the CNB's financial stability framework, which highlights the importance of evaluating investment funds as part of the broader ecosystem rather than in isolation (CNB, 2023).

Although the Czech investment fund sector is smaller compared to major European hubs, it presents an informative case for studying investment flow dynamics in a small open economy. As shown in Figure A1, the Czech Republic (solid black line) exhibits markedly higher volatility in net flows across equity, bond, and real estate funds, particularly during episodes of market stress or macro-financial adjustment. Several factors may account for this elevated volatility. First, the investor base is more heavily weighted toward retail households, who tend to be more sensitive to short-term performance and changes in market sentiment. Second, the relatively small size of the sector amplifies the impact of individual investor decisions on aggregate flows. Finally, part of the observed volatility may be associated with differences in the timing and intensity of domestic monetary policy actions relative to the foreign monetary policy setup. For example, the Czech National Bank began tightening monetary policy considerably earlier than the European Central Bank, which may have influenced cross-border portfolio allocation and rebalancing decisions.

[2] The investment funds sector accounts for nearly 10% of the financial sector's assets, with banks holding approximately 68%.

These structural and macro-financial features underscore the importance of closely monitoring flow dynamics and liquidity risk in the Czech fund sector.

Figure 1: Total AUM of the Czech Investment Fund Sector (% of GDP)



Source: Czech National Bank and Eurostat.

The vast majority of investors (95–98%) in funds domiciled in the Czech Republic are domestic, as shown in Figure A2 in the appendix. The figure illustrates that foreign investors consistently account for only a small proportion of total holdings in the Czech mutual fund market over the sample period. This predominance of domestic investors is important for interpreting our results, as it indicates that the observed flows primarily reflect the behavior of resident investors responding to domestic and external monetary policy, rather than large cross-border reallocations. Consequently, the findings should be viewed mainly as evidence of domestic portfolio adjustment rather than international capital flows.

3. Data

In our analysis, we focus on a subset of mutual funds: equity, bond, and real estate funds, which together account for about 9% of Czech GDP and more than half of the assets of the mutual fund sector. Our dataset comprises 261 Czech mutual funds observed monthly from 2009 to 2023. Our sample of funds is categorized as 31% equity funds, 26% bond funds, and 43% real estate funds, representing a total of 21,102 fund-month observations. The dataset is free from survivorship bias.[3]

Funds targeting qualified investors, commonly referred to as non-retail AIFs, are excluded from this analysis.[4] Similarly, while mixed funds constitute a substantial portion of the investment fund sector's assets, we exclude them as well due to their diversified investment strategies across both

[3] We include both active and closed funds, ensuring that the analysis is not skewed by only considering funds that have survived.

[4] Qualified investor funds, due to their higher risk, are intended solely for experienced investors, with a minimum investment of EUR 125,000 or CZK 1,000,000, provided that the investment aligns with the investor's financial background and expertise.

bonds and equities. This diversification complicates the analysis of monetary policy effects, as such policies can have varying impacts on different asset classes. Focusing on mixed funds would obscure the distinct channels through which monetary policy influences specific asset types. For instance, research indicates that monetary policy shocks have direct effects on fund performance and flow dynamics, differing by investment strategy (Banegas et al., 2022; Kuong et al., 2024).

Figure A3 documents the evolution of the number of funds and their concentration, as well as the relationship between return and risk across fund types. While the total number of funds has increased over time, asset concentration among the top funds remains high, with the top 10 funds holding around 30% of AUM in 2023. The risk–return profiles align with expectations: equity funds offer higher returns and higher risk, bond funds are lower on both dimensions, and real estate funds lie in between.

3.1 Measurement of Fund Flows

In our analysis, the main variable of interest is mutual fund flows. A common approach in the literature (in EPFR/Morningstar-based studies) is to approximate net flows as the change in total net assets between two periods (in our case, months), adjusted for interim fund returns. While this method provides a useful proxy in the absence of granular data, it does not allow for a decomposition of gross inflows and outflows, limiting insights into the underlying investor behavior (e.g., whether net changes are driven by coordinated redemptions or muted subscriptions).

We leverage unique supervisory data, which include actual investor-level transactions reported by mutual funds, enabling us to observe gross inflows and outflows separately. Fund inflows and outflows are defined as investor purchases and redemptions, respectively, scaled by the fund's assets under management (AUM) at the beginning of the month. This normalization ensures comparability across funds of different sizes and aligns with the standard assumption that flow activity tends to scale with the size of the fund. The ability to distinguish between inflows and outflows provides a significantly richer understanding of investor reactions to macro-financial conditions, such as monetary policy shocks, compared to standard net-flow approximations.

Formally, flow for fund i in month t is defined as:

$$Flows_{it} = \frac{Inflows_{it} - Outflows_{it}}{AUM_{t-1}} \tag{1}$$

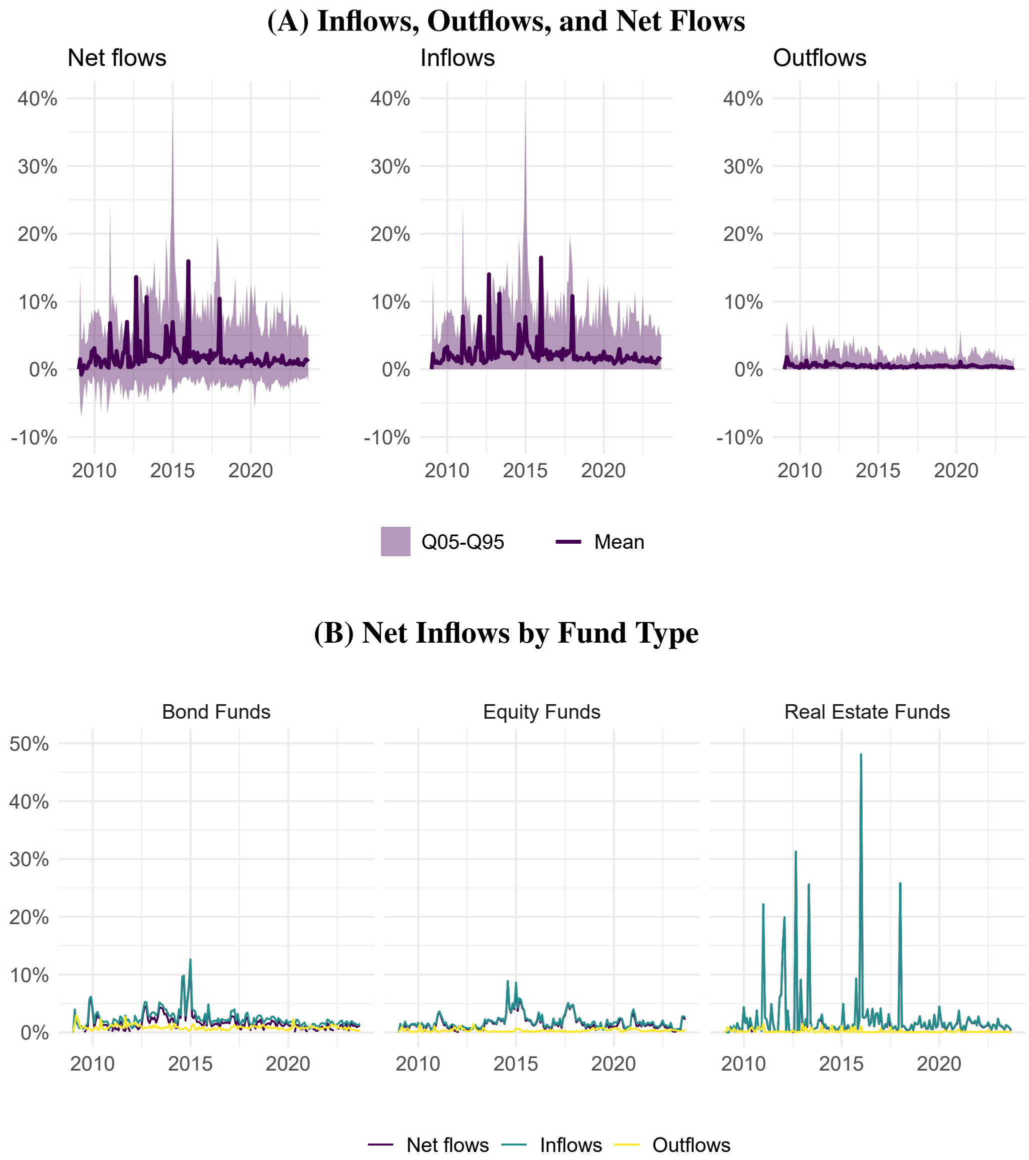
Inflows and outflows are computed from monthly changes in the number of outstanding fund units, multiplied by the previous month's net asset value (NAV). The NAV is defined as $\text{NAV}it = \text{AUM}it/\text{NoShares}_{it}$ and represents the price at which investors transact.[5] This construction yields the value of gross investor purchases and redemptions as a share of lagged assets.[6] Flows equal to zero are retained in the analysis to preserve the distribution and avoid losing a substantial share of observations.

[5] Although net flows can be mechanically related to changes in fund shares, we express them as a share of lagged AUM, reflecting monetary investor flows relative to fund size. This aligns with the empirical literature and improves comparability across funds (Chen et al., 2010; Goldstein et al., 2017).

[6] This construction allows us to approximate gross investor purchases and redemptions using high-frequency supervisory data, under the assumption that unit changes reflect net subscription and redemption activity. While not based on directly reported gross transaction volumes, this method enables the identification of periods with simultaneous inflows and outflows – offering a more nuanced perspective than aggregate net flow measures.

Our sample consists exclusively of open-end mutual funds (UCITS and retail AIFs), which regularly issue and redeem fund units. As a result, flows defined from unit changes represent actual investor purchases and redemptions. Closed-end funds, whose unit count remains fixed over time, are not included in the analysis. Issuance and redemption practices are subject to regulatory constraints under the Czech Act No. 240/2013 Coll.

Figure 2: Fund Flows



Note: The flows are calculated for a subset of retail, bond and real estate funds.

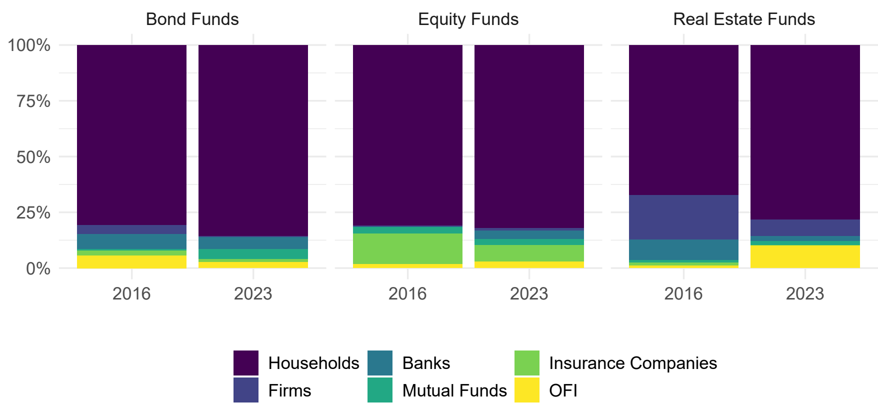
Figure 2 shows the evolution of inflows, outflows, and net flows for all funds and across different fund types. First, inflows exhibit much more volatility compared to outflows across most funds. The average monthly change in inflows can reach up to 15% of AUM, whereas the change in outflows tends to hover around 1%. The 95th percentile of inflows reaches as high as 40% of AUM, emphasizing the pronounced variability in new investments compared to redemptions. Second, among fund types, real estate funds exhibit the highest volatility in inflows. This likely reflects their structural features – such as an open-ended fund design despite illiquid underlying assets – as well as heightened investor interest during periods of strong real estate market performance and low interest rates. These factors make real estate funds particularly sensitive to changes in macro-financial conditions and investor sentiment, more so than bond or equity funds.

3.2 Sector Holdings of Fund Shares

In addition to enabling a detailed decomposition of net flows into gross inflows and outflows, our supervisory dataset also provides a breakdown of mutual fund shareholdings by investor sector. This level of granularity is typically unavailable in commercial fund databases and allows us to observe how different types of investors – households, firms, banks, insurance companies, other mutual funds, and financial intermediaries – allocate capital across fund types over time. Since these investor groups are likely to differ in their responses to monetary policy due to variation in risk tolerance, investment horizons, and regulatory constraints, sector-level holdings offer a more precise view of how monetary policy transmits through the investment fund sector. This additional layer of information complements the flow-based results and helps disentangle shifts in aggregate demand for fund shares driven by distinct economic agents.

Figure 3 shows the sectoral distribution of mutual fund shareholdings across different investors, both retail (households and firms) and institutional (banks, insurance companies, mutual funds, and other financial intermediaries). Households consistently hold the largest proportion of shares across all fund types. Households' holdings comprise not only individual households' investments in mutual funds but also their pension investments through pension funds. Firms and banks maintain a relatively smaller but stable presence, with firms showing modest participation in bond and equity funds. The share of mutual funds is also stable across fund types, particularly in bond funds, while insurance companies and other financial intermediaries hold mainly shares of equity and real estate funds.

Figure 3: Sector Holding of Mutual Fund Shares



Note: The shares are calculated for a subset of retail, bond, and real estate funds. The data are available since 2016.

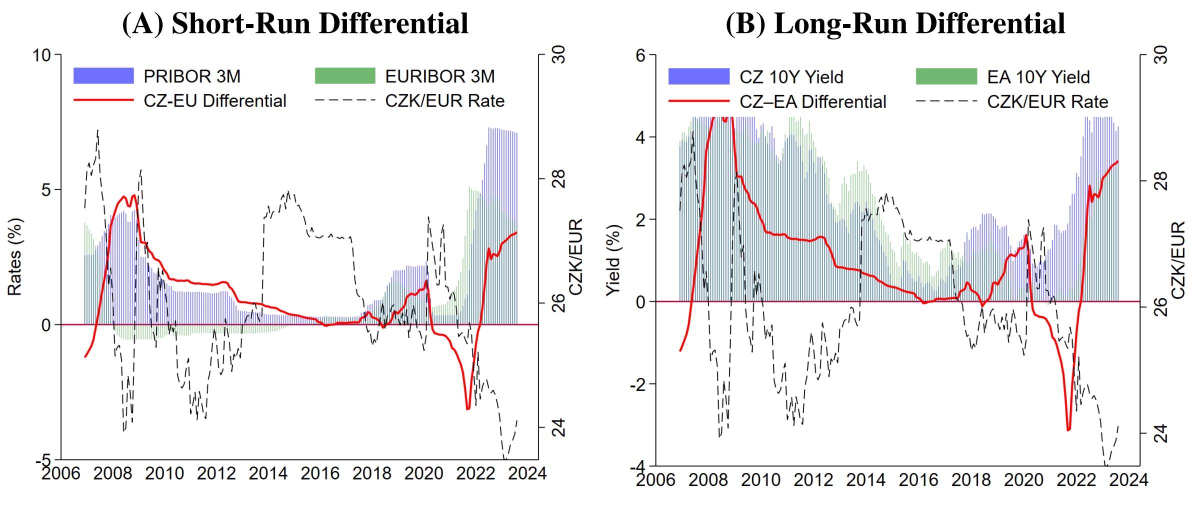
3.3 Capturing the Monetary Policy Changes

To capture the relative stance of monetary policy between the Czech Republic and the euro area, we consider both short-run and long-run interest rate differentials. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M minus EURIBOR 3M), while the long-run differential is based on the spread between Czech and euro area 10-year government bond yields. These indicators reflect different dimensions of the monetary policy environment: short-term rates capture the current policy stance, while long-term yields incorporate market expectations about future rates, inflation, and risk premia.

Focusing on interest rate differentials, rather than including domestic and foreign rates separately, provides a more compact and interpretable measure of relative monetary conditions. It also avoids multicollinearity and helps isolate the effect of bilateral policy gaps. From a theoretical perspective, open-economy models and portfolio balance frameworks suggest that investors respond primarily to relative returns when allocating capital across borders (Caballero and Simsek, 2020). Empirically, interest rate differentials are among the most robust predictors of capital flows, particularly in financially integrated economies (Fratzscher, 2012; Koepke, 2019).

In our context, these differentials allow us to explore how monetary policy asymmetries influence fund flows in a small open economy with substantial foreign asset exposure and strong euro area linkages. Notably, approximately 80% of Czech exports are directed to EU countries, with Germany alone accounting for about 30% of total exports, underscoring the Czech economy's deep integration with the euro area.

Figure 4: Interest Rate Differentials Between the Czech Republic and the Euro Area



Note: The figure shows the short-term and long-term interest rate differentials between the Czech Republic and the euro area. The short-term differential is defined as PRIBOR 3M minus EURIBOR 3M, while the long-term differential is calculated as the difference between the 10-year government bond yields of the Czech Republic and the euro area. The CZK/EUR exchange rate is shown on the secondary axis.

4. Methodology

We motivate the empirical analysis with a simple portfolio-rebalancing framework for a small open economy. Resident investors choose how much wealth to allocate to domestic mutual funds versus foreign assets by comparing (i) relative expected returns and (ii) perceived risk/liquidity conditions at home. This echoes the portfolio balance and global financial cycle perspectives (e.g., Bruno and Shin, 2015a; Rey, 2015): even when cross-border positions are small, external monetary policy can shift domestic financial conditions and thus domestic portfolio choices.

Formally, let $\omega_{d,t}$ denote the share of wealth allocated to domestic funds at time t:

$$\omega_{d,t} \;=\; \alpha_0 \;+\; \alpha_1\big(r_{d,t}-r_{f,t}\big) \;-\; \alpha_2\,\mathrm{Risk}_t \;+\; \varepsilon_t, \tag{2}$$

Where $r_{d,t}$ and $r_{f,t}$ are expected returns on domestic and foreign assets, and $Risk_t$ summarizes time-varying macro-financial risks (e.g., liquidity conditions, exchange-rate uncertainty, sentiment). A rise in the return differential $(r_{d,t}-r_{f,t})$ tends to increase domestic allocations (,$\alpha_1 > 0$,), but this effect can be attenuated–or even reversed–when investors interpret higher domestic yields as signalling tighter policy or elevated risk premia (,$\alpha_2 > 0$,).

Empirically, we proxy $(r_{d,t}-r_{f,t})$ with the CZ–EA interest rate differential and use net flows (in % of NAV) as the observable counterpart of changes in $\omega_{d,t}$. The subsequent specification allows α_1 to vary with macro-financial conditions by interacting the differential with exchange rate moves, sentiment, and fund liquidity measures. This mapping lets us test whether the flow response strengthens, weakens, or flips sign across different environments.

4.1 Empirical Model

This study employs a lag-augmented panel data local projection model to estimate the response of mutual fund flows to monetary policy shocks. The model is designed to account for the potential endogeneity of the interest rate differential between the Czech Republic and the euro area. To address this, we use a two-stage least squares (2SLS) instrumental variables (IV) approach. The first stage isolates the exogenous component of the interest rate differential, while the second stage estimates the dynamic response of fund-level net flows to changes in the differential across different forecast horizons.

The first-stage equation is specified as follows:

$$IRdiff_t = \alpha_0 + \sum_{j=1}^{3} \alpha_j DE3M_{t-j} + \sum_{j=1}^{3} \beta_j DE10Y_{t-j} + \gamma^h Z_{t-1} + \varepsilon_t \tag{3}$$

Where $DE3M_{t-j}$ and $DE10Y_{t-j}$ represent the lagged 3-month and 10-year German bund yield changes in the relevant monetary event window, constructed by Altavilla et al. (2019).[7] Z_{t-1} includes macro-level controls: the CZK/EUR FX rate (expressed as the percent change over the previous period) and the differential between the inflation and industrial production growth in the Czech Republic and the auro area (see Figure A4). We also include global financial conditions

[7] This is a broader window that spans both the ECB press release and the press conference, usually capturing market reactions over several hours. It combines both the initial policy announcement and any additional information conveyed during the press conference, providing a comprehensive view of the monetary policy event.

measure –the VIX index– to account for global market risk sentiment and its potential influence on fund flows.

Instrumental variables. The instrumental variables–German 3-month and 10-year bund yield changes–are chosen for their ability to capture exogenous euro area monetary policy shocks, which influence the EUR side of the CZK-EUR differential but are not correlated with Czech-specific factors. This satisfies the key requirements for instrumental variables: relevance (due to Germany's significant role in the euro area and for the Czech economy) and exogeneity (since German rates are independent of Czech-specific influences). The inclusion of three lags ensures that any delayed market reactions to euro area monetary policy shocks are properly accounted for.

It is important to note that the interest rate differential is a country-level variable, while net flows are measured at the fund level. Therefore, the first stage only includes country-level instruments and macroeconomic controls. Fund-level characteristics (such as size, age, or returns) are not included in the first stage because they do not vary across funds in relation to the country-level interest rate differential.

To ensure the validity of the instruments, we conduct several diagnostic tests. The F-statistic from the first-stage regression is checked to confirm the strength of the instruments, with a rule of thumb being that the F-statistic should exceed 10 for the instruments to be considered strong. Additionally, the Sargan test is employed to verify the validity of the instruments, with a non-significant result indicating that the instruments are valid. Finally, the Durbin-Wu-Hausman test confirms the presence of endogeneity in the interest rate differential, justifying the use of the IV approach.

Beyond these standard diagnostics, we further assess the exogeneity of our explanatory variables using a procedure suggested by Stock and Watson (2018) for local projection equations. Specifically, we examine the correlation between leads and lags of the short-term and long-term interest rate differentials and the residuals from the local projection regressions. The results, reported in Appendix Tables B1 and B2, indicate that the differentials are largely exogenous with respect to future structural shocks, supporting the validity of our identification strategy.

In the second stage, the following equation estimates the effect of the exogenous component of the interest rate differential on net fund flows:

$$Flows_{i,t+h} = \alpha^h Flows_{i,t-1} + \beta^h IRdiff_{t-1} + \gamma_1^h X_{i,t-1} + \gamma_2^h Z_{t-1} + \delta_i^h + \varepsilon_{i,t}^h \quad (4)$$

Where $Flows_{i,t+h}$ represents the net flows into fund i at time $t+h$, defined in eq. 1. The variable $IRdiff_{i,t-1}$ captures the interest rate differential between the Czech Republic and the euro area. The fund-specific characteristics ($X_{i,t-1}$) include fund size and fund age (expressed in logarithms), fund return (in percentages), while macro-level controls (Z_{t-1}) are the same as in the first stage regression. Fund-level fixed effects (δ_i) are included to account for unobservable characteristics of funds.[8] The inclusion of fund-level fixed effects controls for time-invariant characteristics, helping to isolate the effect of interest rate differentials on fund flows. Standard errors are clustered at the fund level to account for heteroskedasticity and serial correlation within funds. Impulse responses are derived from separate regressions at different forecast horizons $h = 1, \ldots, H$, where each

[8] For instance, some Czech investment funds, especially real estate and certain bond funds, apply exit barriers such as notice periods or redemption limits to manage liquidity risk. While we do not observe redemption fees or restrictions directly in the data, we account for their potential effect through fund fixed effects.

regression conditions on lagged variables. Table A1 in the Appendix shows summary statistics of fund-level variables included in the analysis.

The coefficient β^h represents the causal effect of the exogenous variation in the interest rate differential on net fund flows, as the IV approach removes the endogenous component. A 1 percentage point increase in the predicted IR differential leads to a β^h percentage point change in net flows, all else being equal. This interpretation holds after controlling for macroeconomic factors and fund-specific characteristics, with fund-level fixed effects accounting for any time-invariant characteristics.[9]

5. Baseline Effects of Monetary Policy Shocks on Net Fund Flows

We show that in a small open economy with predominantly domestic ownership of mutual funds, foreign monetary policy shocks still exert a substantial influence over domestic capital allocation. Our baseline results in Figure 5 focus on how net flows into Czech mutual funds respond to changes in interest rate differentials between Czech and euro area markets, capturing both domestic and foreign monetary policy actions. We use short-run differentials (based on 3-month interbank rates) to reflect immediate liquidity and policy stance, and long-run differentials (based on 10-year government bond yields) to capture expectations about inflation, growth, and duration risk.[10]

The estimates reveal that increases in the short-term interest rate differential lead to immediate and persistent reductions in net flows into domestic mutual funds. Net flows decrease by approximately 0.4 percentage points in the first month after the differential rises, with the effect lasting up to six months before gradually dissipating. This suggests that higher short-run differentials discourage new capital allocation into Czech mutual funds, likely due to increased perceived risk or concerns about future currency depreciation.

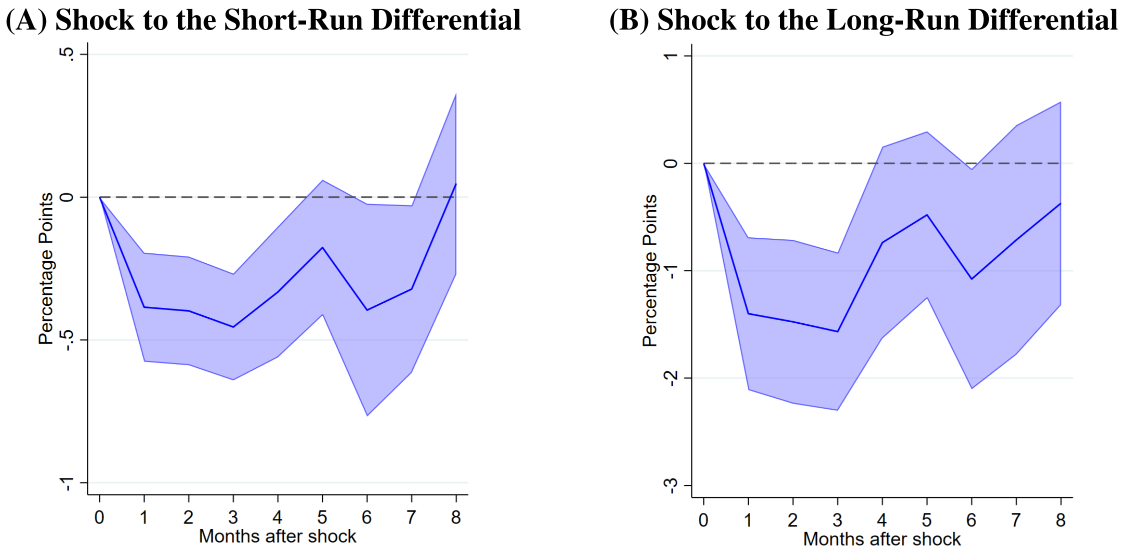
In contrast, changes in the long-term interest rate differential have an effect on net flows roughly four times larger than that of short-term differentials. The statistical significance is comparable, with most impacts concentrated in the first four months and increasing again around the sixth month. This indicates that higher long-term differentials can also meaningfully encourage reallocations toward Czech mutual funds.

This pattern is consistent with the interpretation that higher domestic yields relative to euro area rates are perceived by investors as signals of tighter monetary conditions and elevated risk premia, reducing the attractiveness of allocating new capital to domestic mutual funds. These findings align with the global financial cycle framework (Rey, 2015), which emphasizes how external monetary policy shapes domestic financial conditions and constrains monetary autonomy in small open economies. They also resonate with evidence that relative policy stances can dampen risk-taking and discourage portfolio reallocation toward riskier domestic assets when funding conditions tighten (Bruno and Shin, 2015a).

[9] β^h reflects the impact of euro area–driven monetary policy changes on Czech fund flows, captured through the instrument – German rates. While this isolates the euro area side of the differential and may not capture Czech-specific shocks, the close economic integration between the Czech Republic and the euro area, particularly with Germany, makes these rates a relevant and economically meaningful proxy for external monetary conditions that influence domestic investor behavior.

[10] The accompanying regression Tables B5–B10 are included in the appendix.

Figure 5: Response of Net Fund Flows to a Monetary Policy Shock



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is defined as the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

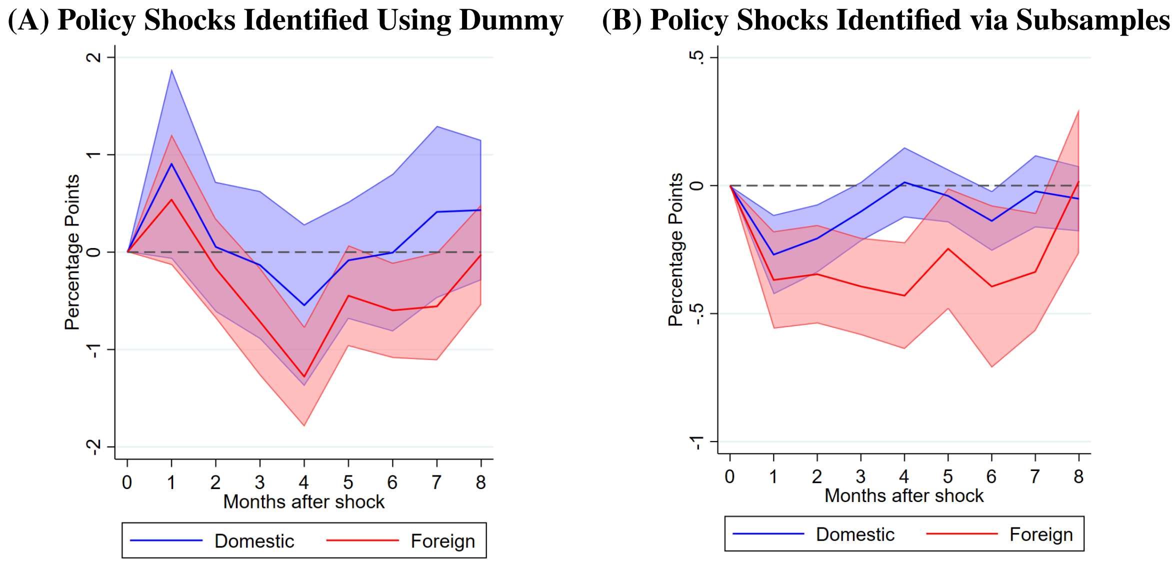
Importantly, when we decompose these effects to distinguish between domestic and foreign monetary policy shocks, we find that net fund flows react more strongly to changes originating abroad. We conduct two exercises to explore this. First, we define a dummy variable that equals one during periods when the CNB adjusted its policy rate while the ECB remained inactive (capturing domestic shocks), and vice versa, when the ECB changed rates and the CNB did not (capturing foreign shocks).[11] We then interact these dummies with the interest rate differential to isolate the differential's impact under each regime.

Second, we split the sample into two distinct periods of pronounced monetary policy activity: June 2021 to May 2022, when only the CNB was hiking rates, and July 2022 to September 2023, when the ECB initiated its tightening cycle while the CNB remained inactive. We estimate the baseline model separately for these subsamples.

Both approaches, shown in Figure 6, confirm that ECB policy changes have a stronger and more persistent effect on net flows into Czech mutual funds than CNB actions. Periods characterized by ECB rate hikes – which effectively narrow the interest rate differential – are associated with sustained net inflows. This likely reflects expectations of currency appreciation, improved sentiment toward the Czech economy relative to the euro area, and the broader influence of euro area monetary policy on investment decisions in small open economies. By contrast, CNB tightening episodes that widen the differential tend to trigger only temporary net outflows, suggesting that domestic policy shifts alone may not be sufficient to drive longer-lasting reallocations of capital.

[11] Figure A5 in the appendix illustrates these periods.

Figure 6: Response of Net Fund Flows to Domestic vs. Foreign Monetary Policy Shocks



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level. **Panel A:** dummy variable equal to one during periods when the CNB changed its monetary policy rate while the ECB remained inactive (domestic shock), and vice versa, during periods when the ECB changed its monetary policy rate while the CNB remained inactive (foreign shock). **Panel B:** two separate subsamples of data: one covering the period of CNB rate hikes with the ECB inactive (June 2021–May 2022), and the other covering the period of ECB rate hikes with the CNB inactive (July 2022–September 2023).

These conclusions are further supported when we replace the interest rate differential with direct measures of domestic and foreign rates – either the 3-month interbank rate or the 10-year government bond yield. As shown in Figure B1, increases in foreign rates elicit a more pronounced reaction in Czech net fund flows than comparable changes in domestic rates, reinforcing the dominant role of foreign monetary policy in shaping local capital allocation.

5.1 Economic Significance of the Baseline Effects

Table 1 converts the impulse responses from percentage points of NAV into economically interpretable magnitudes. For each horizon h, we report the effects of two benchmark shock sizes: a 1 pp increase in the CZ–EA 3M rate differential and a one–standard–deviation move of that differential.

The conversion proceeds as follows: (i) take the estimated IRF in pp of NAV, (ii) multiply by the chosen shock size, (iii) translate into CZK using both the mean and the median lagged NAV across funds (to reflect the skewed size distribution), and (iv) express the result as a share of typical monthly gross inflows and of the mean absolute net flow. Cumulative effects over $h = 0$–6 are summed and then divided by the corresponding cumulated flow benchmarks.

On impact ($h = 1$), a 1 pp widening of the short-rate differential lowers net flows by about -0.39 pp of NAV. This corresponds to a reduction of roughly CZK 7.9 million for the average fund and CZK 3.0 million for the median fund, equal to 14.6% of a typical month's gross inflow and 12.5%

of the average absolute net flow. The negative effect persists through $h = 6$. Cumulatively, the 1 pp shock implies -2.14 pp of NAV over seven months, or about CZK 44 million (mean NAV) or CZK 16.9 million (median NAV), equivalent to 11.6% of cumulated inflows and 9.9% of cumulated absolute net flows.

Scaling by a one–standard–deviation shock increases these figures proportionally (by roughly a factor of 1.5 in our sample), with median–based CZK amounts at 40–45% of the mean–based values, underscoring the concentration of assets in a few very large funds.

Table 1: Economic Significance of Baseline IRFs

	h=1	h=2	h=3	h=4	h=5	h=6	Cum. 0–6
Panel A. 1 pp increase in CZ–EA 3M differential							
IRF (pp of NAV)	-0.385	-0.398	-0.455	-0.332	-0.177	-0.396	-2.142
CZK change (mean NAV, mil.)	-7.9	-8.2	-9.3	-6.8	-3.6	-8.1	-44.0
CZK change (median NAV, mil.)	-3.0	-3.1	-3.6	-2.6	-1.4	-3.1	-16.9
% of avg. gross inflow	14.6	15.1	17.2	12.6	6.7	15.0	11.6
% of avg. abs. net flow	12.5	12.9	14.8	10.8	5.7	12.8	9.9
Panel B. 1 s.d. increase in CZ–EA 3M differential							
IRF (pp of NAV)	-0.570	-0.589	-0.672	-0.491	-0.261	-0.585	-3.168
CZK change (mean NAV, mil.)	-11.7	-12.1	-13.8	-10.1	-5.4	-12.0	-65.0
CZK change (median NAV, mil.)	-4.5	-4.6	-5.3	-3.9	-2.1	-4.6	-24.9
% of avg. gross inflow	21.6	22.3	25.5	18.6	9.9	22.2	17.1
% of avg. abs. net flow	18.5	19.1	21.8	15.9	8.5	19.0	14.7

Note: IRFs are point estimates from the baseline local–projection model with net flows (% of NAV) as the outcome. A "1 pp shock" is a 1 percentage-point rise in the CZ–EA 3M rate differential; a "1 s.d. shock" scales the IRF by the sample standard deviation of that differential. CZK amounts convert pp to millions of CZK using the mean or median lagged NAV across funds. Percentage rows scale the pp change by the sample mean of monthly gross inflows and by the mean absolute net flow. The cumulative column sums horizons $h = 0$–6 and divides by the corresponding cumulated denominators.

Overall, the responses are not only statistically significant but also economically sizeable: a single policy-induced widening of the CZ–EA short-rate differential can translate into tens of millions of CZK in forgone net inflows for an average fund within half a year.

5.2 Sensitivity Checks

Given potential limitations of the baseline instrument, we conduct several sensitivity checks, reported in Appendix B.2. First, we compare the baseline 2SLS-IV model with simple OLS estimates (no IV) and with System-GMM estimates instrumenting the interest rate differential with its own lags instead of the Altavilla et al. (2019) shocks (Figure B2). The 2SLS-IV and System-GMM results are nearly identical, suggesting that German rates are appropriate instruments and that concerns about capturing only the euro area side of the differential are not material. Compared to OLS, both IV methods yield stronger but similarly persistent responses.

Second, we use an alternative instrument: the Central Bank Communication Index of Picault and Renault (2017), which quantifies the impact of ECB communication on financial markets by analysing the sentiment and tone of speeches, press conferences, and publications. This index influences short-term rates by shaping expectations about future monetary conditions, even without immediate policy changes. Results in Figure B3 show very similar dynamics to the baseline, further supporting our identification strategy.

Third, we increase the number of lags of the independent variables (Figure B4) and add a time dummy for the CNB's exchange rate commitment period (Figure B5). Neither modification pushes the impulse responses beyond the baseline confidence bands.

Finally, Appendix B.3 examines the extended low-interest-rate period in Europe preceding the pandemic. In this environment, higher differentials were associated with increased net inflows into Czech mutual funds, consistent with stronger search-for-yield behaviour. This contrasts with the baseline results and aligns with evidence that expansionary monetary policy can induce risk-taking among investors (Maddaloni and Peydró, 2011; Acharya and Naqvi, 2019) and asset managers (Giuzio et al., 2021), extending these insights to resident investors in a small open economy.

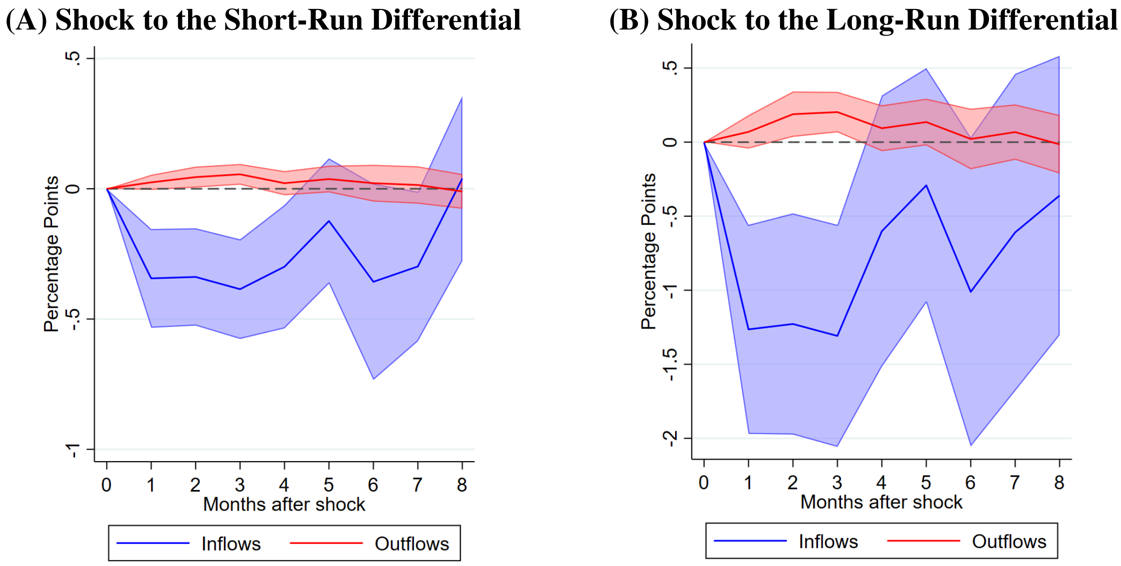
5.3 Fund Inflows vs. Outflows

Next, we decompose the aggregate effects into their two underlying components – gross inflows and outflows – to better understand the mechanisms driving net flow dynamics. Our results indicate that the responses of mutual fund flows to monetary policy shocks are almost entirely driven by changes in inflows, with outflows remaining largely unaffected. As shown in Figure 7, higher short-term interest rate differentials lead to an immediate and persistent decline in inflows into Czech mutual funds, while outflows show minimal reaction. This asymmetry suggests that investors primarily adjust their new allocations in response to shifts in monetary conditions, rather than withdrawing existing investments. The reduction in inflows is evident already in the first month following a policy-induced change in the differential and continues for several months before gradually dissipating.

For long-term interest rate differentials, the pattern is similar but with even stronger point estimates for inflows. Although the statistical significance across the impulse response horizon is somewhat less consistent, the results imply that expectations about longer-term yields encourage investors to scale up or down new investments in Czech funds, reinforcing the dominant role of inflows in driving overall fund dynamics.

Together, these findings highlight that monetary policy influences capital allocation primarily by shaping investors' willingness to commit new resources, rather than triggering large-scale redemptions. We explore the underlying channels behind these responses in the following section.

Figure 7: Response of Fund Inflows and Outflows to a Monetary Policy Shock



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

6. Transmission Channels and Heterogeneous Responses

To examine whether the effect of interest rate differentials on fund flows varies with the macro–financial environment, we extend the stylized portfolio-balance relation in eq. (2) to allow for state dependence. Let Z_t be a time-varying indicator of conditions (e.g., exchange rate movements, sentiment, or market liquidity). We write

$$\omega_{d,t} = \alpha_0 + \left[\alpha_1 + \alpha_1^Z Z_t\right](r_{d,t} - r_{f,t}) - \alpha_2 \,\mathrm{Risk}_t + \varepsilon_t, \tag{5}$$

Where $(r_{d,t} - r_{f,t})$ is the return (rate) differential faced by domestic investors and Risk_t is a parsimonious proxy for perceived macro/liquidity risk. The interaction term $\alpha_1^Z Z_t$ captures how the sensitivity of flows to the differential shifts across states. A positive (negative) α_1^Z implies that the differential matters more (less)–or even flips sign–when Z_t is high. This formulation maps directly into our empirical specifications, where we interact the interest-rate differential with measures of the exchange rate, sentiment, and fund liquidity to explain why higher differentials can be associated with lower net inflows in the baseline.

6.1 Macro-Financial Environment

First, we explore the mechanisms through which monetary policy affects mutual fund flows. We focus on two key transmission channels: the exchange rate and investor sentiment.

6.1.1 Exchange Rate Movements

While the baseline results reveal how monetary policy affects mutual fund flows on average, they leave open the question of why investors react the way they do. A key mechanism in a small open economy like the Czech Republic is the interaction between interest rate differentials and exchange rate dynamics.

When the koruna appreciates, a widening interest rate differential tends to attract capital. Investors expect further currency gains, which amplify returns on Czech assets and encourage net inflows. In contrast, when the koruna depreciates, even a higher differential can trigger outflows. Anticipated currency losses erode potential returns, prompting investors to shift capital into safer or more stable markets, often within the euro area.

We test this channel by extending our baseline model to include a dummy variable for periods of currency appreciation or depreciation, I_t^{ER}, and interacting it with the interest rate differential:

$$\begin{aligned} Flows_{i,t+h} = \alpha^h Flows_{i,t-1} + \beta_1^h (IRdiff_{t-1} \cdot I_{t-1}^{ER}) + \beta_2^h IRdiff_{t-1} + \beta_3^h I_{t-1}^{ER} \\ + \gamma_1^h X_{i,t-1} + \gamma_2^h Z_{t-1} + \delta_i^h + \varepsilon_{i,t}^h \end{aligned} \tag{6}$$

Figure 8 illustrates these effects. A higher short-rate differential paired with currency depreciation results in net outflows, highlighting how exchange rate concerns can overshadow higher yields. Conversely, when the differential widens alongside appreciation, we observe stronger net inflows, particularly at longer horizons, as investors appear more confident to commit new capital.

For long-term differentials, we see a similar pattern. Depreciation amplifies outflows, while appreciation dampens but does not fully reverse them, suggesting persistent caution toward long-duration assets even under favorable currency movements.

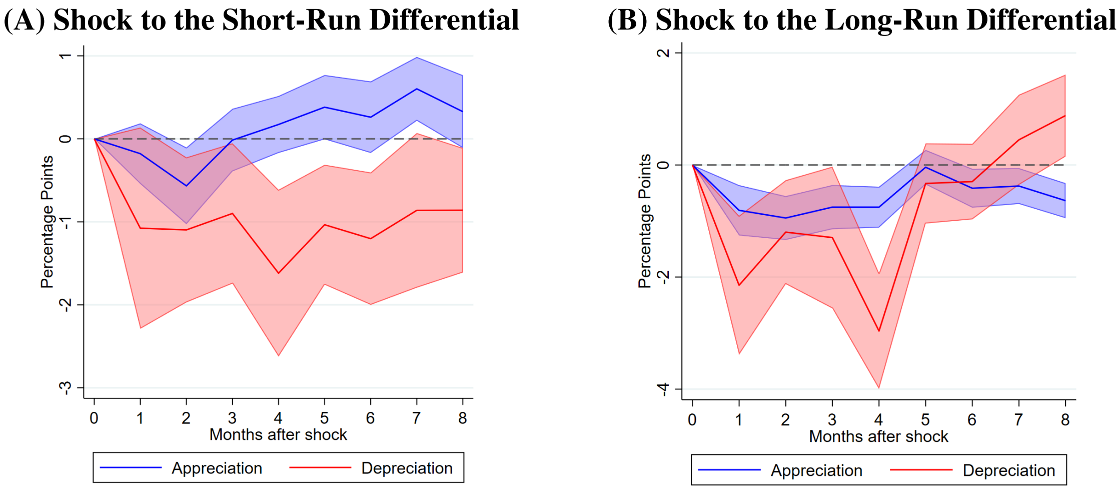
Overall, Figure B8 shows that sustained inflows primarily occur when both interest rate differentials widen and the koruna appreciates. This underlines how monetary policy and exchange rate expectations jointly shape investment decisions, creating a reinforcing cycle that channels capital into Czech assets only when both signals align.

6.1.2 Economic Sentiment

We next examine how macroeconomic sentiment shapes investor responses to monetary policy shocks. Specifically, we assess whether the impact of interest rate differentials on fund flows differs during periods of positive versus negative sentiment. As our primary measure, we use the Economic Sentiment Indicator (ESI), averaged across the Czech Republic and the euro area to capture the broader macroeconomic environment. We classify good-sentiment periods as those in the top quartile and bad-sentiment periods as those in the bottom quartile of this combined distribution, and interact these sentiment dummies with the interest rate differentials. Figure A6 in the appendix highlights the resulting classification, showing that bad-sentiment phases (red) typically coincide with crisis periods, while good-sentiment phases (green) align with recoveries or more optimistic outlooks.[12]

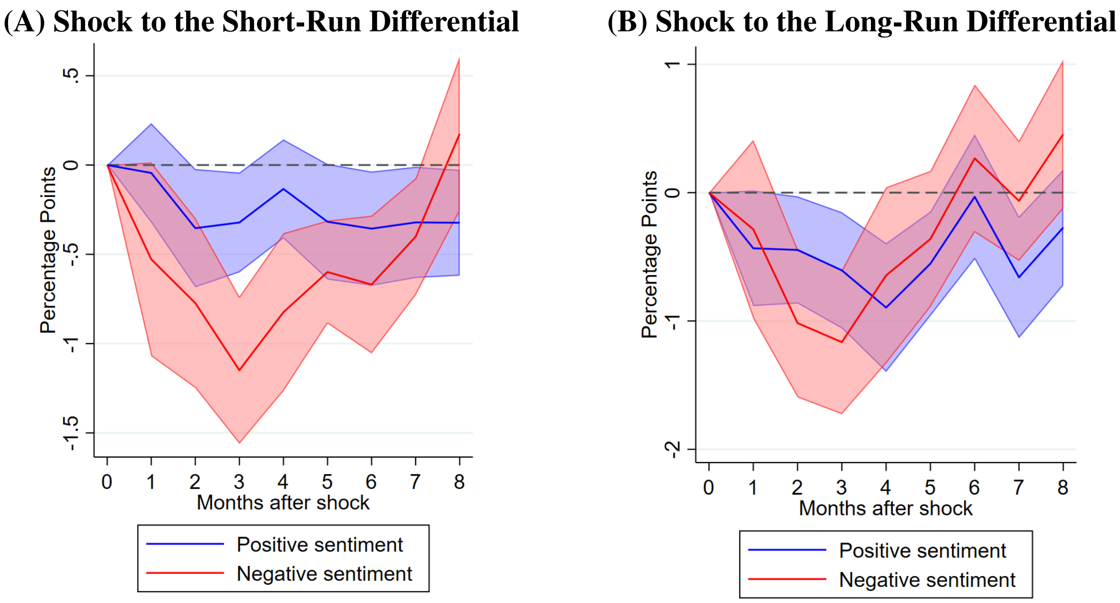
[12] We tested several alternative definitions, including decomposing the ESI into sectoral components, using country-specific indices, or requiring sentiment regimes to persist for at least three months. None of these yielded more stable or interpretable patterns. The approach based on averaging Czech and euro area ESI and using quartiles proved the most consistent.

Figure 8: Monetary Policy Shocks and Currency Movements



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of the (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is defined as the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure 9: Monetary Policy Shocks and Economic Sentiment



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of the (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure 9 demonstrates that sentiment meaningfully conditions the reaction of fund flows, especially to short-term interest rate differentials. During periods of negative sentiment, a higher short-rate differential leads to pronounced net outflows from Czech mutual funds, suggesting that heightened risk aversion amplifies the adverse effects of tighter monetary conditions. In contrast, during periods of positive sentiment, this sensitivity largely disappears: higher short-term differentials have little impact on net flows, indicating that investors are less inclined to withhold capital when the broader outlook is favorable.

For long-term interest rate differentials, the distinction between good and bad sentiment periods is less marked. This muted difference may reflect the relative stability of long-term rates and their linkage to broader economic fundamentals, which investors perceive as less immediately sensitive to shifts in sentiment. As a result, reactions to long-term differentials appear more stable across varying macroeconomic environments.

6.2 Fund-Level Characteristics

Second, we examine how the effects of monetary policy vary across mutual funds and investor groups. We study both fund-level heterogeneity, focusing on liquidity characteristics, and investor-level heterogeneity, exploring differences across sectors. These analyses complement the previous section by identifying which segments of the financial system are most sensitive to policy changes.

6.2.1 Fund Liquidity

A key source of heterogeneity in how mutual funds respond to monetary policy shocks is their liquidity. Funds with ample liquid assets are better positioned to meet redemptions under tighter monetary conditions, avoiding forced sales and sustaining investor confidence. In contrast, less liquid funds face heightened liquidity risk, which can trigger asset fire sales and amplify outflows when monetary policy tightens (Goldstein et al., 2017).

To capture these differences, we construct three liquidity measures. First, we use the cash holdings ratio – cash as a percentage of total assets – lagged by one month to ensure it is exogenous to current investor decisions.[13] Second, we extend this by adding money market fund shares and short-term repo positions, yielding a broader liquidity ratio. Third, we compute a portfolio-weighted Amihud ratio (Amihud, 2002):

$$Amihud\ Ratio_{it} = \frac{1}{N_{it}} \sum_{d=1}^{N_{it}} \frac{|R_{itd}|}{V_{itd}} \tag{7}$$

where R_{itd} is the return of fund i on day d of month t, V_{itd} is the trading volume of fund i on day d of month t, and N_{it} is the total number of trading days in month t for fund i.

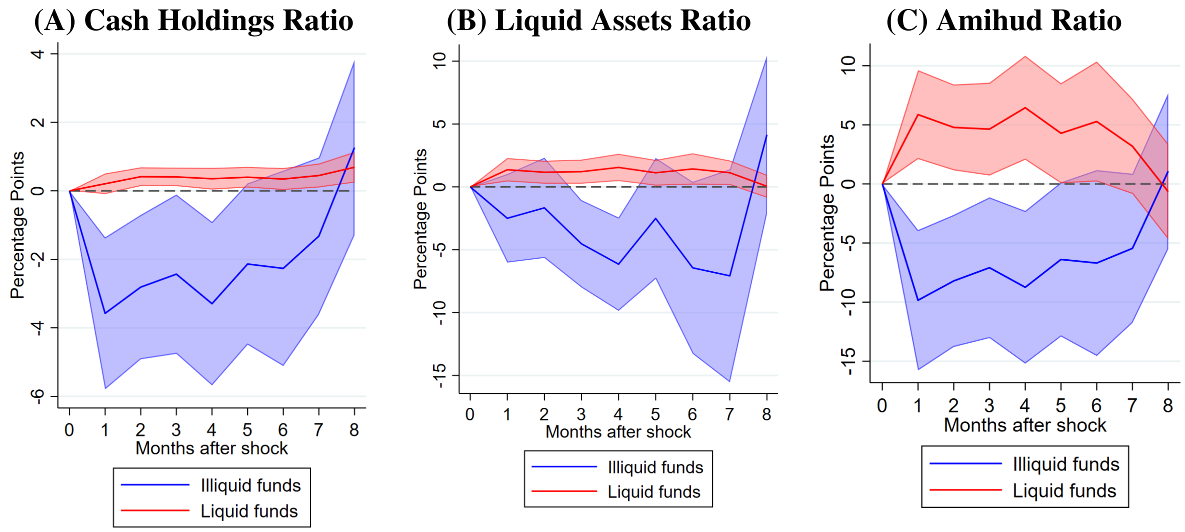
The Amihud ratio is particularly useful because it captures illiquidity by measuring how much prices move in response to trading volume. Higher values indicate that a fund holds less liquid assets, making it more vulnerable to price drops during large redemptions or monetary tightening. Unlike simple cash measures, the Amihud ratio reflects overall liquidity risk by accounting for potential price impacts when selling assets under stress.

Funds are classified as liquid or illiquid based on quartiles of these distributions: for cash and broader liquidity ratios, the top and bottom quartiles define illiquid and liquid funds respectively; for the Amihud ratio, the logic is reversed, with the highest quartile indicating illiquid portfolios. Table A2 in the appendix highlights these differences. Across all metrics, liquid funds report higher

[13] Chen et al. (2010) note that higher cash buffers can either reassure or concern investors, depending on whether they signal prudent management or excessive caution.

average returns and net inflows, while illiquid funds face larger outflows, consistent with greater redemption pressures and challenges in meeting withdrawals without asset sales.

Figure 10: Monetary Policy Shocks and Fund Liquidity



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of the (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), and shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure 10 shows how these dynamics evolve with monetary policy shocks. A widening short-term differential drives net outflows from illiquid funds but net inflows into more liquid funds. Breaking this down, the response for liquid funds is largely driven by sustained inflows, whereas illiquid funds experience both sharply reduced inflows and increased outflows (Figure B9).

This pattern underscores a classic flight to liquidity: under tighter monetary conditions, investors favor funds that can more easily meet redemptions without incurring fire-sale losses. Heightened risk aversion drives them to prioritize liquidity when interest rates rise, especially with a widening differential between Czech and euro area rates. Investors also hold more liquid assets to stay flexible amid monetary policy uncertainty, positioning their portfolios to respond swiftly to future interest rate changes and market volatility.

6.2.2 Investor Type and Liquidity Preferences

Finally, we explore how different types of investors adjust their mutual fund holdings in response to shifts in interest rate differentials. Figure 11 illustrates that the magnitude and timing of responses vary substantially across sectors and depend on whether short- or long-term rates are driving the differential.[14]

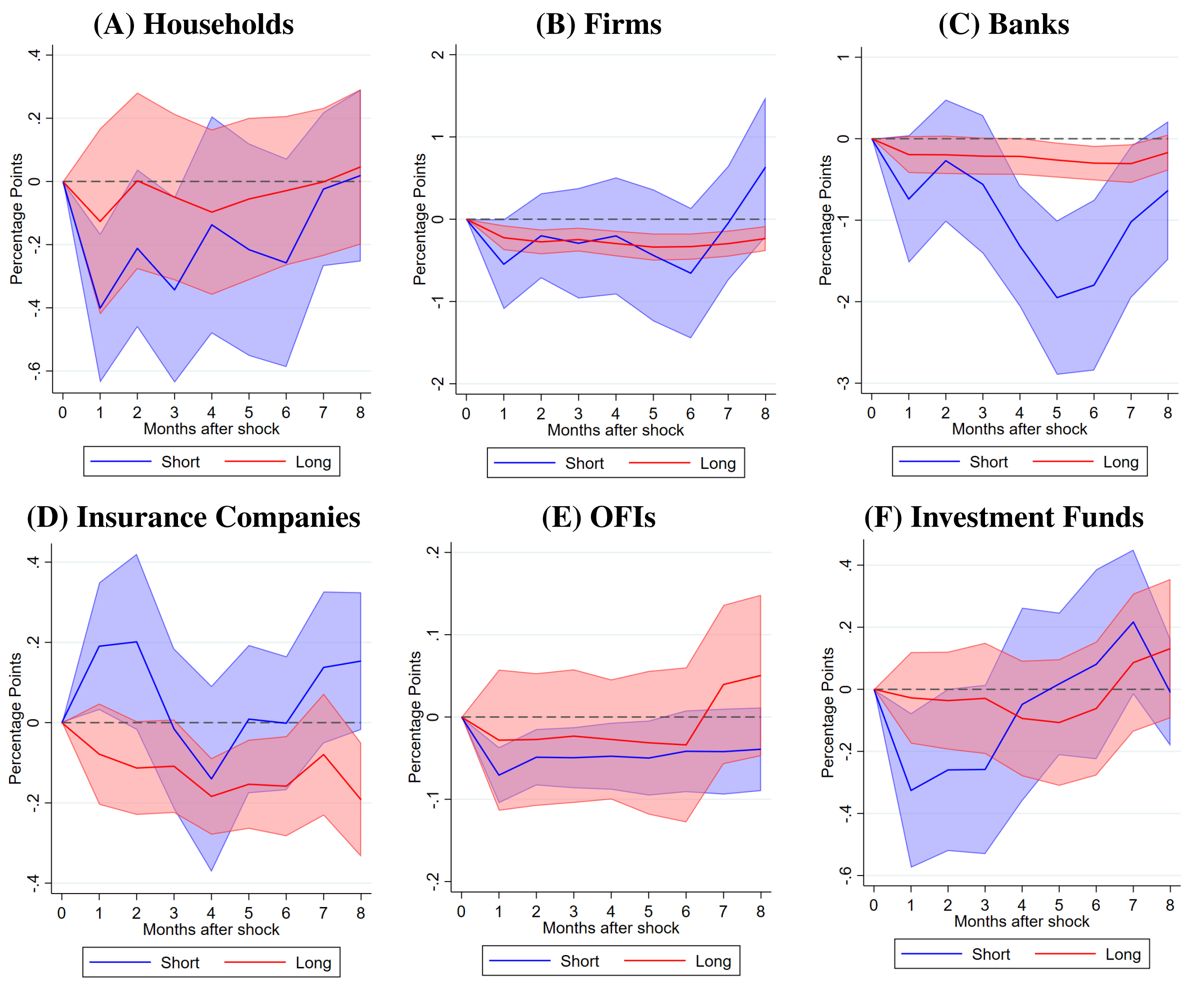
Banks and investment funds display the most pronounced sensitivity to short-term interest rate differentials. When short-term rates in the Czech Republic rise relative to the euro area, these sectors experience significant net outflows from mutual funds, reflecting a reallocation of liquidity as the cost of funding increases. In contrast, households and other financial institutions exhibit more muted reactions to short-term rate changes.

[14] Note that sector holdings data are available since 2018.

Responses to long-term interest rate differentials are more evenly distributed across sectors but are particularly pronounced for firms and insurance companies. Rising long-term rates are associated with net outflows among these investors, likely due to the impact on the valuation of their fixed-income portfolios and the cost of long-term liabilities.

Appendix Figure B10 complements these findings by disentangling responses to domestic versus foreign monetary policy shocks. While banks and households react primarily to domestic policy changes, firms and investment funds are more responsive to shifts in euro area policy rates, underscoring the importance of external monetary policy spillovers even in a market dominated by resident investors.

Figure 11: Monetary Policy Shocks and Sector Holder of Fund Shares



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Our sectoral results can be understood by examining the liquidity preferences of different investor groups. Banks and financial institutions prioritize liquidity to manage daily operations, meet short-term liabilities, and handle withdrawals. Similarly, many investment funds, particularly open-ended mutual funds, are designed to provide liquidity, accommodating redemption requests promptly without significantly affecting fund value. As a result, these liquidity-oriented investors respond strongly to short-term rate differentials, experiencing net outflows when short-term interest rates rise. They quickly shift investments to more liquid assets or withdraw capital to manage liquidity risk in response to monetary tightening.

In contrast, firms and households typically have longer investment horizons and can hold less liquid, higher-yielding assets. Firms focus on strategic goals and long-term growth rather than immediate liquidity needs, while many households with long-term objectives, such as retirement savings, are less concerned with liquidity. For these investors, long-term rate changes have a greater impact, leading to significant adjustments in their longer-duration asset holdings.

Since household holdings in our sample include also pension funds holdings, we observe mixed results for this sector. Like insurance companies, pension funds balance liquidity needs with investments in longer-duration assets, maintaining portfolios that include both liquid and long-term investments. Therefore, these investors respond significantly to both short- and long-term differentials.

Additionally, more liquidity-oriented investors (banks and financial institutions) are more responsive to domestic shocks, while less liquidity-oriented investors, particularly firms and partly investment funds and insurance companies, are more influenced by foreign shocks.

The role of liquidity preference in the response of fund flows to domestic and foreign monetary policy shocks is also evident in Figures B11 and B12. In this context, we classify liquidity-oriented investors as banks, OFIs, and investment funds, while households, firms, and insurance companies are considered less liquidity-oriented investors.

6.2.3 Fund Type

Finally, we explore whether the response differs across equity, bond, and real estate funds. Different fund types hold distinct asset portfolios and cater to different investor bases, so their sensitivity to monetary policy shocks may not be uniform. Appendix Figure B13 shows that while all fund types exhibit some sensitivity to monetary policy shocks, the patterns differ in line with their asset composition. Bond funds react most strongly to long-term differentials, reflecting their exposure to duration risk as many Czech bond funds hold medium- to long-maturity securities whose valuation is sensitive to shifts in sovereign yields. Equity funds are more responsive to changes to short-term differentials, consistent with the fact that equity investors react quickly to near-term policy signals and changes in funding conditions. Real estate funds show some reaction to short-term differentials as well, but the estimates are generally noisier and lagged, which is in line with their illiquid structure and slower adjustment of flows.

7. Conclusions

This paper investigates whether domestic or foreign monetary policy shocks have a greater impact on investor behavior in a small open economy where mutual funds are almost entirely domestically held. Drawing on granular supervisory data for Czech mutual funds over the period 2009–2023 and employing a two-stage local projection framework, we find that foreign monetary policy – captured by the euro area component of the interest rate differential – exerts a stronger and more persistent influence on domestic fund flows than domestic policy.

The empirical results yield five key findings. First, changes in interest rate differentials are associated with economically significant shifts in mutual fund flows. An increase in the short-term differential (PRIBOR 3M minus EURIBOR 3M) leads to an immediate decline in net flows, while shocks to long-term differentials (10-year sovereign spreads) produce even larger responses. These effects are driven almost entirely by adjustments in inflows, with outflows remaining stable – suggesting that investors respond by withholding new capital rather than redeeming existing holdings.

Second, decomposing these movements shows that the source of the shock matters. Periods when the ECB tightens and the CNB stands pat are associated with sustained inflows, whereas purely domestic tightening elicits only transitory outflows. This asymmetry emphasizes how external policy can tilt domestic portfolio decisions even when foreign participation in the market is minimal.

Third, the strength and sign of these effects depend on the prevailing macro-financial environment. Exchange rate movements and economic sentiment act as key amplifiers. A widening differential accompanied by koruna depreciation or weak sentiment triggers larger outflows (or smaller inflows), whereas appreciations and optimistic sentiment neutralize or even reverse the response.

Fourth, fund and investor heterogeneity shape transmission. Investors exhibit a classic "flight to liquidity": illiquid funds (low cash buffers/high Amihud ratios) experience reduced inflows and higher outflows after tightening, while liquid funds attract capital. On the demand side, liquidity-oriented sectors (banks, OFIs, investment funds) react strongly to short-rate gaps, whereas firms and insurers – burdened by long-duration liabilities – are more sensitive to long-term differentials and foreign shocks.

Fifth, during the prolonged low-interest-rate environment before the pandemic, the sign flips: higher Czech yields relative to the euro area drew in funds, consistent with search-for-yield behavior documented elsewhere.

These findings contribute to several strands of literature. We extend the monetary policy–capital flow nexus beyond banks to an underexplored non-bank segment, showing that *resident* investors in mutual funds transmit foreign policy shocks domestically. We document a state-dependent portfolio rebalancing mechanism in which exchange rates and sentiment condition the pass-through of rate differentials. We highlight liquidity as a key cross-sectional margin in mutual funds' response to policy and connect investor-type heterogeneity to differences in horizon, regulation, and liability structure. Finally, by isolating the low-interest-rate environment period, we reconcile our baseline "risk-premium" interpretation with canonical search-for-yield results: the same differential can prompt opposite flow reactions depending on the level of global rates.

Policy implications follow on two fronts. For *monetary policy*, our results reaffirm the "dilemma, not trilemma" view: even with an independent policy rate, external monetary conditions shape domestic financial allocation. Communication strategies and FX interventions that stabilize expectations may thus dampen unwanted spillovers. For *macroprudential policy*, the small size of the Czech mutual fund sector (roughly 9–15% of GDP over our sample) may suggest limited systemic risk today, but the sensitivity we document implies that this channel could amplify shocks as market-based finance grows. Monitoring liquidity management tools, redemption terms, and cross-sector linkages – especially between real estate funds and banks – should remain part of the financial stability toolkit, with activation thresholds calibrated to sector size and interconnectedness rather than banking dominance alone.

Our analysis has limitations that also open avenues for future work. We focus on one small open economy; cross-country replications could test how institutional features (e.g., redemption gates, distribution networks) modulate spillovers. Also, linking our flow data with security-level positions would allow a deeper look at within-fund rebalancing and liquidity management during stress.

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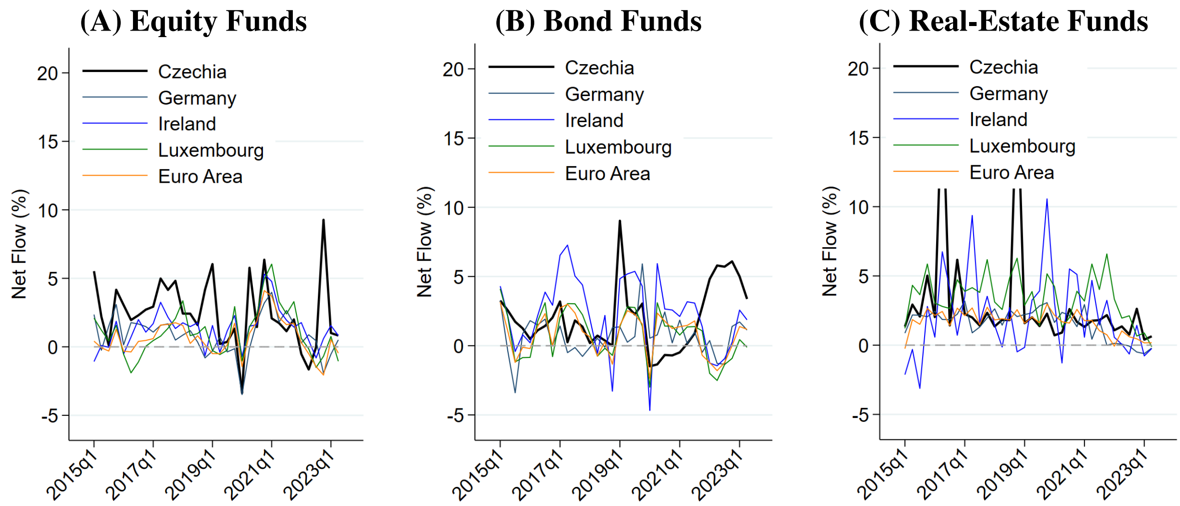
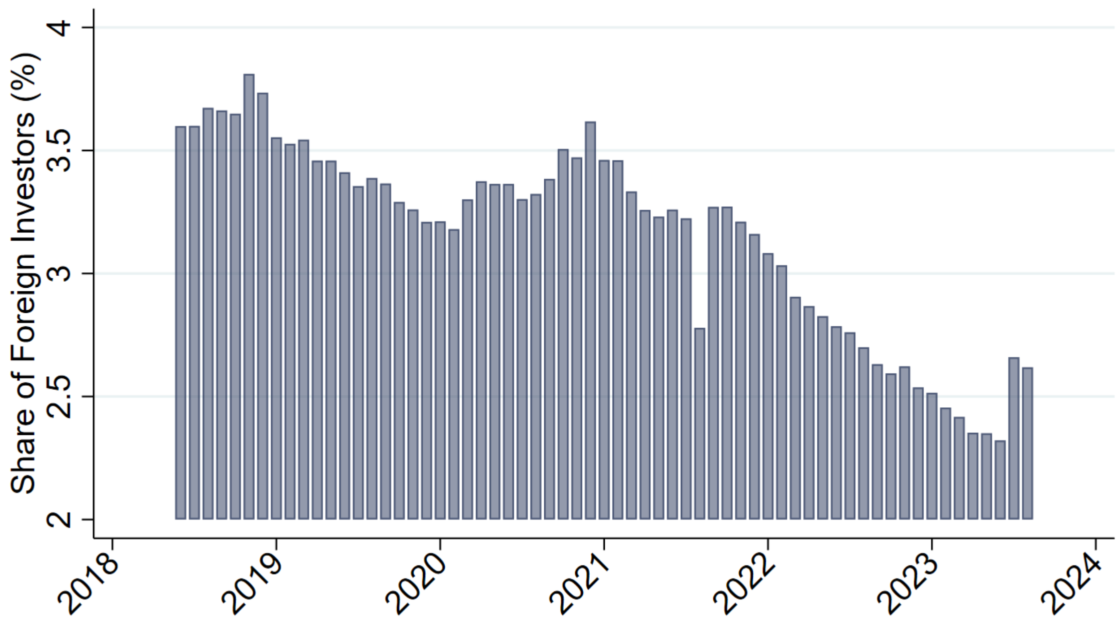
Appendix A: Additional Information on Data

Figure A1: Aggregated Net Fund Flows in Selected Countries (% of Lagged Assets)



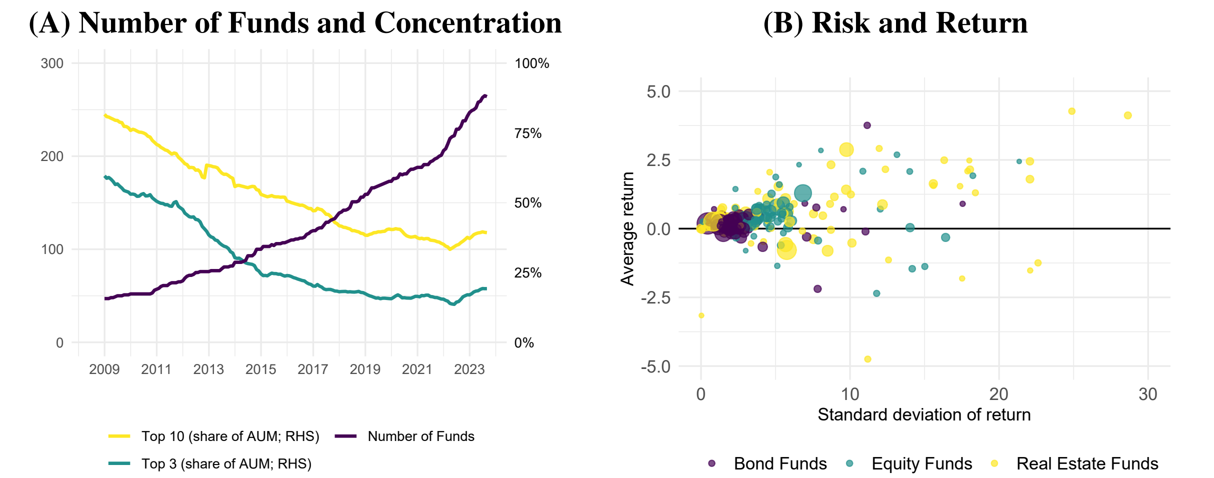
Note: The figure displays aggregated net flows into equity, bond, and real estate funds as a percentage of lagged total assets. Data for euro area countries were retrieved from the ECB Statistical Data Warehouse, specifically the Investment Funds Balance Sheet Statistics, using quarterly series on net issues (flows) and total assets by investment policy type. Net flows were computed as the ratio of net issues to lagged total assets to ensure comparability with fund flow metrics commonly used in the empirical literature. For the Czech Republic, analogous fund-level data from the CNB were aggregated and transformed using the same methodology.

Figure A2: Share of Foreign Investors in the Sample Funds



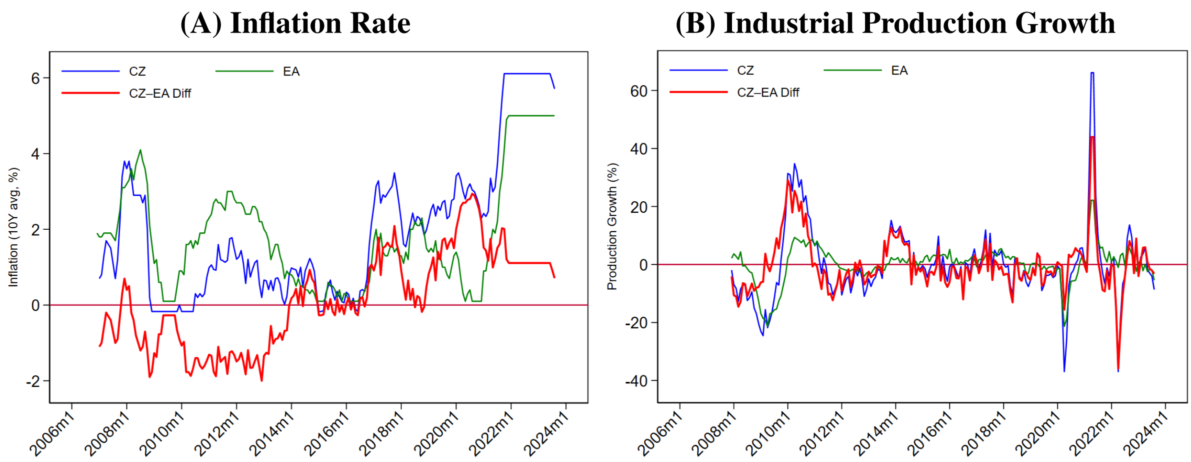
Note: Monthly estimates of the share of foreign investors relative to total investors in the Czech mutual fund market, based on the funds included in our analysis.

Figure A3: Funds Characteristics



Note: The characteristics are calculated for a subset of retail, bond and real estate funds. Return is calculated as percentage change in fund's net asset value.

Figure A4: Inflation and Production Growth Differentials Between the Czech Republic and the Euro Area



Note: The figure displays the differences in year-on-year inflation and industrial production growth between the Czech Republic and the euro area. Inflation is measured by the Harmonised Index of Consumer Prices (HICP), and production growth is based on seasonally adjusted industrial output indices.

Table A1: Summary Statistics of Variables Included in the Analysis

Variable	All	Equity	Bond	Real Estate
Inflows (%)	2.64	2.49	2.77	2.65
	(11.14)	(10.03)	(9.64)	(13.19)
Outflows (%)	0.44	0.37	0.81	0.16
	(1.28)	(1.13)	(1.61)	(0.92)
Net flows (%)	1.87	1.86	1.77	1.97
	(8.61)	(7.84)	(8.26)	(9.51)
Return (%)	0.43	0.40	0.12	0.75
	(6.64)	(6.06)	(3.53)	(8.96)
Log(Assets)	20.36	20.16	20.93	19.98
	(1.72)	(1.48)	(1.47)	(1.96)
Fund Age (Years)	11.46	11.99	12.89	9.73
	(6.61)	(7.65)	(7.47)	(3.88)
Liquid Ratio (%)	13.45	11.52	15.81	12.96
	(20.01)	(18.02)	(18.75)	(22.36)

Note: The table shows mean values with standard deviations in brackets. Liquid ratio is calculated as savings (deposits) over total assets.

Figure A5: Short-Run Differential: Periods of Domestic and Foreign Active Monetary Policy

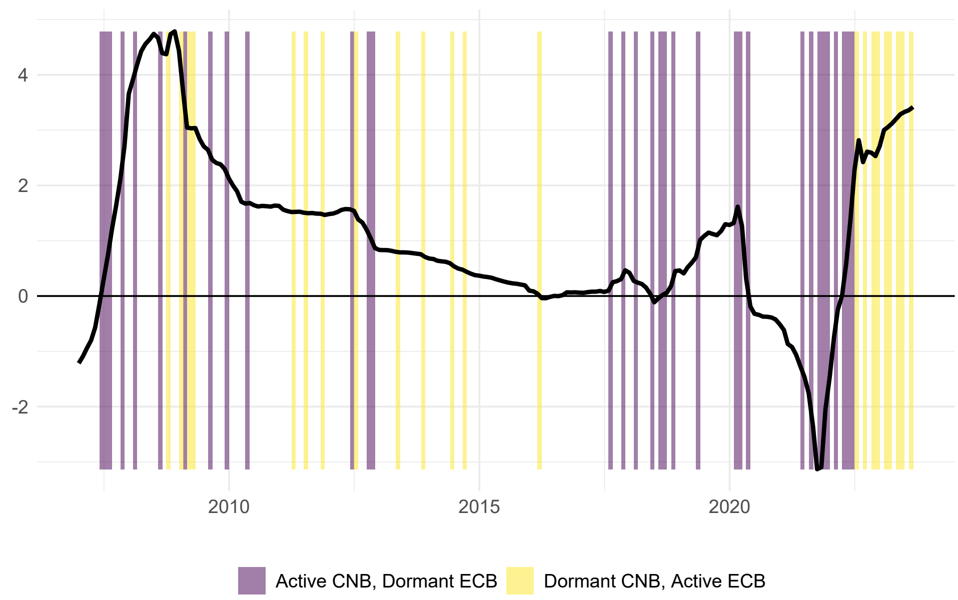
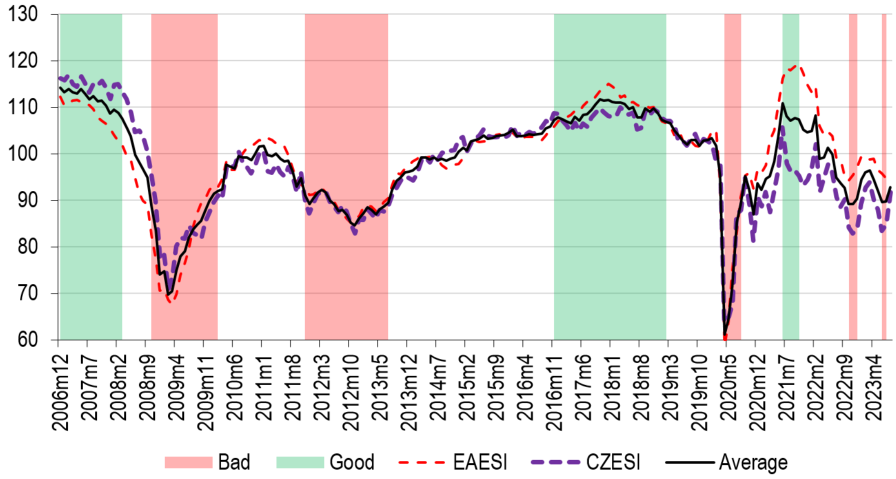


Figure A6: Sentiment Indicator and Identified Good and Bad Periods



Note: Good and bad sentiment periods are identified using the Economic Sentiment Indicator (ESI) for both the Czech Republic and the Euro Area. The average of the two indicators is calculated, and good sentiment periods correspond to values in the third quartile of the distribution, while bad sentiment periods correspond to values in the first quartile.

Table A2: Summary Statistics of Liquid and Illiquid Funds by Different Liquidity Measures

	Cash Holdings Ratio											
	Fund Return		Net Flows		Inflows		Outflows		Log(Size)		Log(Age)	
	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid
N	6197	13308	6197	13308	6197	13308	6197	13308	6197	13308	6197	13308
Mean	0.54%	0.40%	3.51%	1.41%	4.03%	1.82%	0.52%	0.41%	19.92	20.54	10.51	12.74
SD	0.08	0.06	0.15	0.09	0.14	0.09	0.01	0.01	2.15	1.43	6.39	6.69
p10	-3.40%	-3.04%	-1.57%	-1.24%	0.00%	0.00%	0.00%	0.00%	17.74	18.77	4.75	5.74
p25	-0.72%	-0.62%	-0.12%	-0.05%	0.00%	0.00%	0.00%	0.00%	19.05	19.62	5.81	7.67
p75	1.35%	1.20%	1.96%	0.77%	1.96%	0.77%	0.12%	0.05%	21.21	21.50	12.95	16.02
p90	4.22%	3.70%	7.41%	3.27%	7.41%	3.27%	1.57%	1.24%	22.27	22.22	18.34	23.10
	Liquid Assets Ratio											
	Fund Return		Net Flows		Inflows		Outflows		Log(Size)		Log(Age)	
	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid
N	5305	8449	5305	8449	5305	8449	5305	8449	5305	8449	5305	8449
Mean	0.65%	0.20%	4.16%	1.68%	4.58%	2.12%	0.42%	0.44%	20.26	20.23	9.49	15.04
SD	0.07	6.88%	14.98%	0.11	14.80%	0.11	1.27%	0.01	2.15	1.63	5.56	6.75
p10	-3.26%	-2.92%	-1.30%	-1.27%	0.00%	0.00%	0.00%	0.00%	17.62	18.43	4.70	6.69
p25	-0.53%	-0.58%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	19.33	19.33	5.72	11.04
p75	1.25%	1.02%	2.78%	0.33%	2.78%	0.33%	0.01%	0.00%	21.58	21.27	11.49	17.17
p90	4.17%	3.56%	8.68%	3.11%	8.68%	3.11%	1.30%	1.27%	22.69	22.08	16.59	25.75
	Amihud Ratio											
	Fund Return		Net Flows		Inflows		Outflows		Log(Size)		Log(Age)	
	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid	Liquid	Illiquid
N	11175	3827	11175	3827	11175	3827	11175	3827	11175	3827	11175	3827
Mean	1.06%	-0.64%	1.66%	2.72%	1.82%	3.54%	0.16%	0.82%	19.69	22.00	10.24	15.20
SD	0.08	0.05	0.11	0.12	0.11	0.12	0.01	0.02	1.83	1.10	5.92	7.40
p10	-3.18%	-2.68%	-0.13%	-2.54%	0.00%	0.00%	0.00%	0.00%	17.71	20.60	4.89	6.30
p25	-0.27%	-0.84%	0.00%	-1.01%	0.00%	0.00%	0.00%	0.00%	18.83	21.30	5.95	9.30
p75	1.48%	0.78%	0.00%	2.67%	0.00%	2.67%	0.00%	1.01%	20.88	22.70	12.59	19.60
p90	5.19%	1.75%	1.46%	6.66%	1.46%	6.66%	0.13%	2.54%	21.69	23.40	16.63	26.10

Note: This table presents summary statistics for liquid and illiquid funds based on three different liquidity measures: cash holdings ratio, liquid assets ratio, and Amihud ratio. The cash holdings ratio is calculated as the ratio of a fund's cash holdings to its total assets in the previous month. The liquid assets ratio is computed by taking the ratio of a fund's liquid assets (including money market instruments and short-term securities) to total assets in the previous month. The Amihud ratio, which measures the price impact of trades, is calculated as: Amihud $\text{Ratio}_{it} = \frac{1}{N_{it}} \sum_{d=1}^{N_{it}} \frac{|R_{itd}|}{V_{itd}}$, where R_{itd} is the return of fund i on day d of month t, and V_{itd} is the trading volume for that fund on the same day. A higher Amihud ratio suggests lower liquidity, indicating that a larger price movement occurs for a given trading volume. We classify funds as liquid or illiquid based on their cash holdings or liquid assets ratios, with liquid funds in the first quartile and illiquid funds in the third quartile. For the Amihud ratio, liquid funds are those in the first quartile, while illiquid funds fall in the third quartile.

Appendix B: Additional Results

Table B1: Correlation Between Local Projection Residuals and Lags/Leads of Short-Run Interest Rate Differential

	Correlation with Residuals at Different Horizons h							
Lags/leads	$h = 1$	$h = 2$	$h = 3$	$h = 4$	$h = 5$	$h = 6$	$h = 7$	$h = 8$
-1	0.0158	0.0153	0.0155	0.0163	0.0137	0.0105	0.0075	0.0069
-2	0.0197	0.0192	0.0196	0.0192	0.0158	0.0122	0.0099	0.0109
-3	0.0234	0.0228	0.0221	0.0209	0.0171	0.0153	0.0132	0.0122
-4	0.0257	0.0240	0.0232	0.0214	0.0194	0.0184	0.0131	0.0125
-5	0.0270	0.0249	0.0233	0.0226	0.0220	0.0183	0.0132	0.0145
-6	0.0281	0.0251	0.0255	0.0254	0.0225	0.0190	0.0151	0.0154
-7	0.0270	0.0258	0.0273	0.0252	0.0221	0.0206	0.0146	0.0188
-8	0.0267	0.0263	0.0259	0.0235	0.0222	0.0198	0.0173	0.0220
$+1$	0.0111	0.0083	0.0052	0.0055	0.0052	0.0047	0.0063	0.0018
$+2$	0.0092	0.0056	0.0027	0.0005	0.0003	0.0003	0.0048	-0.0004
$+3$	0.0062	0.0035	-0.0002	-0.0016	-0.0047	-0.0042	0.0014	-0.0028
$+4$	0.0013	0.0003	-0.0027	-0.0045	-0.0071	-0.0090	-0.0027	-0.0074
$+5$	-0.0012	-0.0037	-0.0054	-0.0072	-0.0098	-0.0115	-0.0082	-0.0126
$+6$	-0.0021	-0.0063	-0.0095	-0.0101	-0.0120	-0.0146	-0.0120	-0.0179
$+7$	-0.0044	-0.0066	-0.0119	-0.0138	-0.0146	-0.0171	-0.0156	-0.0198
$+8$	-0.0079	-0.0083	-0.0122	-0.0159	-0.0177	-0.0202	-0.0184	-0.0220

Table B2: Correlation Between Local Projection Residuals and Lags/Leads of Long-Run Interest Rate Differential

Correlation with Residuals at Different Horizons h							
Lags/leads	$h = 1$	$h = 2$	$h = 3$	$h = 4$	$h = 5$	$h = 6$	$h = 7$
Lag 1 ($L1$)	-0.0056	-0.0076	-0.0087	-0.0078	-0.0080	-0.0101	-0.0091
Lag 2 ($L2$)	-0.0079	-0.0067	-0.0060	-0.0068	-0.0088	-0.0091	-0.0098
Lag 3 ($L3$)	-0.0063	-0.0035	-0.0059	-0.0077	-0.0079	-0.0089	-0.0124
Lag 4 ($L4$)	-0.0037	-0.0037	-0.0071	-0.0064	-0.0079	-0.0115	-0.0106
Lag 5 ($L5$)	-0.0038	-0.0047	-0.0058	-0.0068	-0.0103	-0.0096	-0.0121
Lag 6 ($L6$)	-0.0044	-0.0032	-0.0061	-0.0094	-0.0078	-0.0104	-0.0120
Lag 7 ($L7$)	-0.0028	-0.0033	-0.0092	-0.0064	-0.0083	-0.0105	-0.0121
Lag 8 ($L8$)	-0.0021	-0.0062	-0.0060	-0.0072	-0.0087	-0.0103	-0.0134
Lead 1 ($F1$)	-0.0077	-0.0078	-0.0096	-0.0128	-0.0120	-0.0098	-0.0085
Lead 2 ($F2$)	-0.0073	-0.0091	-0.0107	-0.0113	-0.0134	-0.0129	-0.0098
Lead 3 ($F3$)	-0.0098	-0.0071	-0.0111	-0.0111	-0.0113	-0.0140	-0.0130
Lead 4 ($F4$)	-0.0083	-0.0096	-0.0094	-0.0117	-0.0112	-0.0118	-0.0148
Lead 5 ($F5$)	-0.0096	-0.0079	-0.0115	-0.0096	-0.0116	-0.0116	-0.0134
Lead 6 ($F6$)	-0.0092	-0.0084	-0.0092	-0.0113	-0.0095	-0.0119	-0.0134
Lead 7 ($F7$)	-0.0089	-0.0078	-0.0091	-0.0093	-0.0107	-0.0095	-0.0144
Lead 8 ($F8$)	-0.0114	-0.0075	-0.0086	-0.0089	-0.0083	-0.0110	-0.0123

B.1 Full Baseline Regression Results – First Stage and Second Stage

Table B3: First-Stage Estimates

	Baseline IV		Alternative IV	
	Short-run	Long-run	Short-run	Long-run
Altavilla_3M$_{t-1}$	0.0820**	0.0288***		
	(0.0259)	(0.0064)		
Altavilla_3M$_{t-2}$	0.0777**	0.0353**		
	(0.0267)	(0.0129)		
Altavilla_3M$_{t-3}$	0.0727**	0.0357**		
	(0.0267)	(0.0129)		
Altavilla_10Y$_{t-1}$	0.0189**	0.00806***		
	(0.0078)	(0.0017)		
Altavilla_10Y$_{t-2}$	0.0189**	0.00800**		
	(0.0075)	(0.0038)		
Altavilla_10Y$_{t-3}$	0.00453	0.0138*		
	(0.0270)	(0.0071)		
ECB_Tone$_{t-1}$			1.129**	0.892**
			(0.379)	(0.248)
ECB_Tone$_{t-2}$			0.679**	0.272*
			(0.297)	(0.157)
Inflation_Diff$_{t-1}$	-0.440***	0.419***	-0.405***	0.182***
	(0.0741)	(0.0470)	(0.102)	(0.0523)
Prod_Diff$_{t-1}$	-0.0180*	0.000293	-0.0398**	-0.000140
	(0.00817)	(0.00518)	(0.0121)	(0.00619)
Log_FX$_{t-1}$	0.116	0.0819*	0.0551	0.0545
	(0.0624)	(0.0396)	(0.0645)	(0.0331)
Log_VIX$_{t-1}$	1.116***	0.516*	0.642***	0.282
	(0.254)	(0.289)	(0.172)	(0.285)
N	187	187	109	109

Note: The statistical significance is denoted as * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B4: First-Stage: Test Statistics

	h=1	h=2	h=3	h=4	h=5	h=6	h=7	h=8
	Short-run Differential Model, Baseline IV							
R2	0.235	0.235	0.257	0.254	0.234	0.233	0.221	0.220
R2 adj	0.235	0.235	0.254	0.251	0.233	0.231	0.219	0.220
F-stat	455.948	455.112	482.979	459.224	376.984	343.081	340.180	332.598
Sargan test	0.737	0.528	0.652	0.455	0.295	0.589	0.624	0.148
Durbin-Wu-Hausman	0.024	0.052	0.035	0.059	0.195	0.593	0.184	0.084
N	187	187	187	187	187	187	187	187
	Long-run Differential Model, Baseline IV							
R2	0.354	0.353	0.340	0.356	0.353	0.341	0.339	0.327
R2 adj	0.353	0.353	0.340	0.354	0.351	0.340	0.335	0.325
F-stat	233.414	231.895	329.852	328.595	314.852	309.952	258.095	167.374
Sargan test	0.579	0.185	0.247	0.254	0.558	0.492	0.082	0.099
Durbin-Wu-Hausman	0.012	0.024	0.035	0.628	0.084	0.084	0.662	0.781
N	187	187	187	187	187	187	187	187
	Short-run Differential Model, Alternative IV							
R2	0.557	0.556	0.542	0.535	0.529	0.521	0.513	0.509
R2 adj	0.556	0.555	0.540	0.533	0.529	0.520	0.509	0.507
F-stat	435.353	435.863	436.895	436.224	436.925	435.724	433.852	432.852
Sargan test	0.244	0.495	0.189	0.495	0.395	0.632	0.248	0.495
Durbin-Wu-Hausman	0.019	0.092	0.082	0.409	0.025	0.642	0.295	0.200
N	109	109	109	109	109	109	109	109
	Long-run Differential Model, Alternative IV							
R2	0.316	0.315	0.310	0.313	0.318	0.317	0.309	0.316
R2 adj	0.316	0.314	0.310	0.311	0.315	0.314	0.308	0.316
F-stat	392.154	397.892	396.610	395.092	398.211	391.285	390.982	388.715
Sargan test	0.110	0.182	0.090	0.195	0.428	0.239	0.822	0.628
Durbin-Wu-Hausman	0.228	0.019	0.129	0.024	0.092	0.293	0.294	0.954
N	109	109	109	109	109	109	109	109

Note: F-test tests the joint significance of the instruments in the first stage (test statistics shown). Sargan test (or Hansen J-test) checks for the validity of the instruments under the null hypothesis that the instruments are valid and uncorrelated with the error term (p-values shown). Durbin-Wu-Hausman test (DWH test) compares the IV and OLS estimators to determine whether the regressors are endogenous. The null hypothesis is that the OLS estimator is consistent (p-values shown).

Table B5: Second-Stage Estimates for Net Flows (Short-run Differential)

	h=1	h=2	h=3	h=4	h=5	h=6	h=7	h=8
IR Differential$_{t-1}$	-0.385***	-0.399***	-0.454***	-0.332*	-0.176	-0.396*	-0.322*	0.047
	(0.116)	(0.116)	(0.114)	(0.139)	(0.144)	(0.226)	(0.178)	(0.193)
Log_VIX$_{t-1}$	-0.331	-0.275	-0.128	-0.311	-0.363	-0.073	-0.016	-0.376
	(0.193)	(0.205)	(0.195)	(0.229)	(0.224)	(0.310)	(0.270)	(0.227)
Log_FX$_{t-1}$	-0.057	-0.126***	-0.102*	-0.065*	0.044	-0.017	0.027	-0.054
	(0.038)	(0.036)	(0.041)	(0.030)	(0.031)	(0.038)	(0.032)	(0.032)
Log_Size$_{t-1}$	-0.397***	-0.422***	-0.405***	-0.435***	-0.372***	-0.386***	-0.398***	-0.367***
	(0.093)	(0.093)	(0.091)	(0.091)	(0.089)	(0.089)	(0.090)	(0.092)
Log_Age$_{t-1}$	-0.057*	-0.048*	-0.042	-0.043	-0.041	-0.035	-0.039	-0.040
	(0.024)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Net Flows$_{t-1}$	0.173***	0.133***	0.124***	0.088***	0.062***	0.065***	0.027***	0.029***
	(0.025)	(0.020)	(0.018)	(0.016)	(0.013)	(0.012)	(0.007)	(0.009)
Fund Return$_{t-1}$	0.125***	0.053*	0.040*	0.027	0.016	0.035*	0.001	-0.007
	(0.027)	(0.022)	(0.018)	(0.018)	(0.013)	(0.016)	(0.011)	(0.012)
Inflation_Diff$_{t-1}$	-0.370***	-0.334***	-0.352***	-0.331**	-0.285**	-0.348**	-0.355**	-0.202
	(0.089)	(0.086)	(0.084)	(0.102)	(0.097)	(0.115)	(0.109)	(0.105)
Prod_Diff$_{t-1}$	-0.002	-0.001	-0.002	-0.001	0.002	-0.000	0.005	0.015*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.006)
N	19,512	19,502	19,328	19,154	18,980	18,806	18,632	18,458
R^2	0.053	0.037	0.033	0.025	0.019	0.017	0.013	0.014
adj. R^2	0.053	0.036	0.032	0.024	0.018	0.016	0.012	0.014

Note: The statistical significance is denoted as * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the fund level.

Table B6: Second-Stage Estimates for Inflows (Short-run Differential)

	h=1	h=2	h=3	h=4	h=5	h=6	h=7	h=8
IR Differential$_{t-1}$	-0.344**	-0.338**	-0.385***	-0.299*	-0.123	-0.358	-0.298	0.039
	(0.115)	(0.114)	(0.116)	(0.144)	(0.146)	(0.229)	(0.174)	(0.193)
Log_VIX$_{t-1}$	-0.508**	-0.425*	-0.299	-0.425	-0.498*	-0.174	-0.092	-0.393
	(0.186)	(0.202)	(0.186)	(0.220)	(0.219)	(0.305)	(0.268)	(0.226)
Log_FX$_{t-1}$	-0.050	-0.136***	-0.106**	-0.067*	0.041	-0.013	0.031	-0.055
	(0.037)	(0.036)	(0.041)	(0.030)	(0.032)	(0.037)	(0.031)	(0.032)
Log_Size$_{t-1}$	-0.410***	-0.436***	-0.423***	-0.458***	-0.397***	-0.414***	-0.428***	-0.399***
	(0.083)	(0.083)	(0.081)	(0.082)	(0.080)	(0.081)	(0.082)	(0.084)
Log_Age$_{t-1}$	-0.072***	-0.060***	-0.055**	-0.055**	-0.052**	-0.045**	-0.049**	-0.049**
	(0.018)	(0.017)	(0.017)	(0.018)	(0.017)	(0.017)	(0.018)	(0.018)
Inflows$_{t-1}$	0.187***	0.146***	0.136***	0.097***	0.071***	0.074***	0.036***	0.038***
	(0.027)	(0.022)	(0.020)	(0.018)	(0.014)	(0.013)	(0.008)	(0.010)
Fund Return$_{t-1}$	0.128***	0.057**	0.045*	0.032	0.022	0.035*	0.007	0.000
	(0.028)	(0.021)	(0.019)	(0.018)	(0.013)	(0.016)	(0.011)	(0.012)
Inflation_Diff$_{t-1}$	-0.348***	-0.309***	-0.324***	-0.314**	-0.258**	-0.324**	-0.338**	-0.198*
	(0.080)	(0.078)	(0.079)	(0.099)	(0.094)	(0.112)	(0.103)	(0.099)
Prod_Diff$_{t-1}$	-0.001	0.000	-0.000	0.000	0.003	-0.000	0.004	0.014*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.007)
N	19,512	19,502	19,328	19,154	18,980	18,806	18,632	18,458
R^2	0.061	0.044	0.040	0.029	0.023	0.021	0.016	0.017
adj. R^2	0.060	0.043	0.039	0.028	0.022	0.021	0.016	0.017

Note: The statistical significance is denoted as * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B7: Second-Stage Estimates for Outflows (Short-run Differential)

	h=1	h=2	h=3	h=4	h=5	h=6	h=7	h=8
IR Differential$_{t-1}$	0.025	0.045*	0.055**	0.021	0.037	0.021	0.015	-0.010
	(0.018)	(0.022)	(0.020)	(0.028)	(0.031)	(0.043)	(0.044)	(0.041)
Log_VIX$_{t-1}$	-0.051	-0.049	-0.076	-0.032	-0.060	-0.024	-0.027	0.025
	(0.035)	(0.040)	(0.041)	(0.043)	(0.046)	(0.062)	(0.063)	(0.061)
Log_FX$_{t-1}$	-0.003	-0.018*	-0.012	-0.009	-0.008	-0.002	0.000	-0.006
	(0.005)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)
Log_Size$_{t-1}$	-0.013	-0.015	-0.018	-0.022	-0.024	-0.027	-0.029	-0.031
	(0.015)	(0.017)	(0.017)	(0.018)	(0.019)	(0.019)	(0.021)	(0.021)
Log_Age$_{t-1}$	-0.008	-0.008	-0.008	-0.008	-0.008	-0.007	-0.008	-0.007
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
Outflows$_{t-1}$	-0.361***	-0.306***	-0.288***	-0.261***	-0.243***	-0.250***	-0.198***	-0.189***
	(0.035)	(0.033)	(0.029)	(0.030)	(0.026)	(0.027)	(0.028)	(0.024)
Fund Return$_{t-1}$	0.008**	0.007***	0.007***	0.008***	0.009***	0.003	0.007***	0.008***
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.001)
Inflation_Diff$_{t-1}$	0.007	0.012	0.016	0.007	0.016	0.012	0.008	-0.002
	(0.017)	(0.019)	(0.020)	(0.022)	(0.022)	(0.023)	(0.027)	(0.028)
Prod_Diff$_{t-1}$	0.001	0.001	0.001	0.001	0.001	0.000	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
N	19,512	19,502	19,328	19,154	18,980	18,806	18,632	18,458
R^2	0.135	0.097	0.087	0.074	0.064	0.067	0.045	0.041
adj. R^2	0.135	0.097	0.087	0.074	0.064	0.067	0.044	0.040

Note: The statistical significance is denoted as * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B8: Second-Stage Estimates for Net Flows (Long-run Differential)

	h=1	h=2	h=3	h=4	h=5	h=6	h=7	h=8
IR Differential$_{t-1}$	-1.407**	-1.466**	-1.563***	-0.738	-0.469	-1.085	-0.740	-0.357
	(0.431)	(0.467)	(0.449)	(0.543)	(0.472)	(0.624)	(0.646)	(0.577)
Log_VIX$_{t-1}$	1.029*	1.143*	1.358**	0.290	0.049	0.893	0.605	0.083
	(0.503)	(0.572)	(0.526)	(0.680)	(0.584)	(0.808)	(0.829)	(0.685)
Log_FX$_{t-1}$	0.111	0.049	0.085	0.022	0.098	0.110	0.115	-0.012
	(0.059)	(0.069)	(0.066)	(0.076)	(0.067)	(0.087)	(0.091)	(0.076)
Log_Size$_{t-1}$	-0.323***	-0.344***	-0.321***	-0.393***	-0.345***	-0.322***	-0.352***	-0.350***
	(0.096)	(0.098)	(0.092)	(0.092)	(0.093)	(0.093)	(0.096)	(0.097)
Log_Age$_{t-1}$	-0.086**	-0.077**	-0.074**	-0.059*	-0.051	-0.059*	-0.056*	-0.047
	(0.027)	(0.027)	(0.026)	(0.027)	(0.026)	(0.027)	(0.029)	(0.027)
Net Flows$_{t-1}$	0.166***	0.125***	0.116***	0.085***	0.060***	0.059***	0.023**	0.028**
	(0.025)	(0.020)	(0.018)	(0.017)	(0.013)	(0.013)	(0.008)	(0.009)
Fund Return$_{t-1}$	0.122***	0.050*	0.037*	0.025	0.014	0.032*	-0.001	-0.007
	(0.027)	(0.022)	(0.018)	(0.018)	(0.013)	(0.016)	(0.011)	(0.012)
Inflation_Diff$_{t-1}$	0.284	0.346	0.383*	0.057	-0.051	0.190	0.031	-0.090
	(0.168)	(0.187)	(0.182)	(0.201)	(0.178)	(0.233)	(0.233)	(0.218)
Prod_Diff$_{t-1}$	-0.002	-0.001	-0.001	-0.001	0.002	0.001	0.006	0.014*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.007)
N	19,512	19,502	19,328	19,154	18,980	18,806	18,632	18,458
R^2	0.046	0.026	0.020	0.024	0.018	0.010	0.011	0.014
adj. R^2	0.045	0.026	0.019	0.023	0.018	0.009	0.010	0.014

Note: The statistical significance is denoted as * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B9: Second-Stage Estimates for Inflows (Long-run Differential)

	h=1	h=2	h=3	h=4	h=5	h=6	h=7	h=8
IR Differential$_{t-1}$	-1.288**	-1.229**	-1.313**	-0.608	-0.287	-1.025	-0.644	-0.351
	(0.427)	(0.457)	(0.456)	(0.556)	(0.480)	(0.634)	(0.647)	(0.573)
Log_VIX$_{t-1}$	0.788	0.794	0.978	0.072	-0.240	0.767	0.439	0.058
	(0.492)	(0.555)	(0.526)	(0.686)	(0.583)	(0.806)	(0.826)	(0.676)
Log_FX$_{t-1}$	0.100	0.008	0.048	0.002	0.073	0.106	0.107	-0.015
	(0.059)	(0.068)	(0.066)	(0.077)	(0.068)	(0.086)	(0.091)	(0.074)
Log_Size$_{t-1}$	-0.341***	-0.371***	-0.352***	-0.422***	-0.380***	-0.354***	-0.387***	-0.382***
	(0.085)	(0.087)	(0.081)	(0.084)	(0.084)	(0.084)	(0.087)	(0.089)
Log_Age$_{t-1}$	-0.095***	-0.084***	-0.080***	-0.067**	-0.057**	-0.067**	-0.064**	-0.056*
	(0.023)	(0.022)	(0.021)	(0.023)	(0.022)	(0.023)	(0.024)	(0.022)
Net Flows$_{t-1}$	0.180***	0.138***	0.129***	0.094***	0.071***	0.067***	0.030**	0.034***
	(0.026)	(0.021)	(0.019)	(0.018)	(0.014)	(0.013)	(0.009)	(0.010)
Fund Return$_{t-1}$	0.128***	0.056*	0.043*	0.032	0.023	0.033*	0.004	-0.000
	(0.027)	(0.022)	(0.019)	(0.018)	(0.013)	(0.016)	(0.011)	(0.012)
Inflation_Diff$_{t-1}$	0.246	0.262	0.294	0.014	-0.109	0.177	0.003	-0.086
	(0.167)	(0.184)	(0.182)	(0.203)	(0.181)	(0.235)	(0.237)	(0.218)
Prod_Diff$_{t-1}$	-0.001	0.000	-0.000	0.001	0.003	0.001	0.005	0.013*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.007)
N	19,512	19,502	19,328	19,154	18,980	18,806	18,632	18,458
R^2	0.057	0.039	0.033	0.030	0.024	0.016	0.016	0.017
adj. R^2	0.056	0.038	0.032	0.029	0.023	0.015	0.015	0.017

Note: The statistical significance is denoted as * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

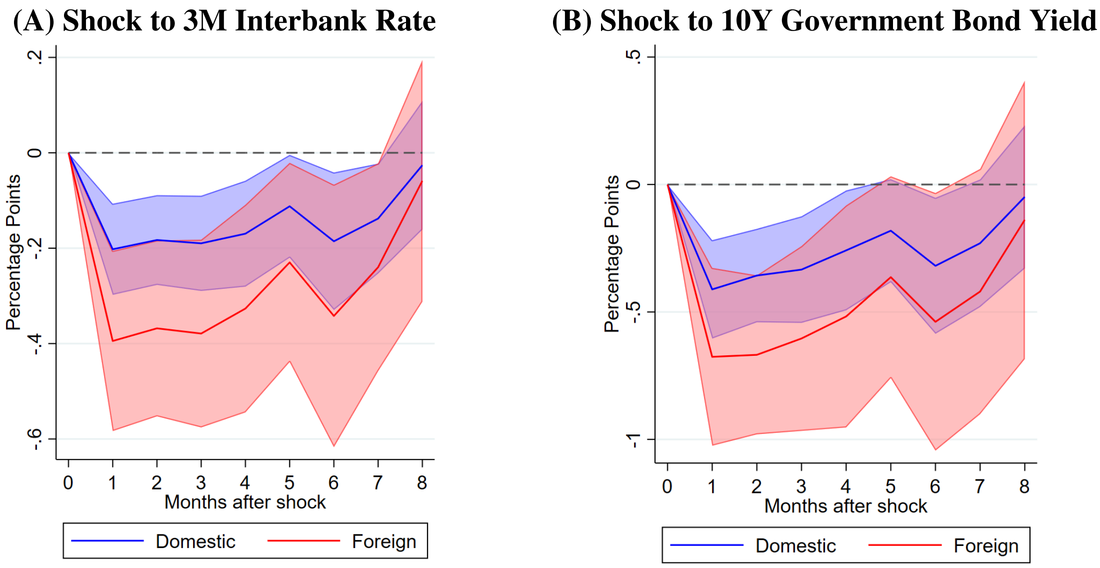
Table B10: Second-Stage Estimates for Outflows (Long-run Differential)

	h=1	h=2	h=3	h=4	h=5	h=6	h=7	h=8
IR Differential$_{t-1}$	0.119	0.237*	0.250**	0.130	0.182	0.060	0.095	0.006
	(0.096)	(0.106)	(0.094)	(0.101)	(0.100)	(0.127)	(0.116)	(0.119)
Log_VIX$_{t-1}$	-0.241*	-0.349**	-0.380***	-0.218	-0.288*	-0.126	-0.166	-0.025
	(0.119)	(0.124)	(0.111)	(0.118)	(0.121)	(0.166)	(0.155)	(0.159)
Log_FX$_{t-1}$	-0.011	-0.041**	-0.037**	-0.020	-0.025*	-0.004	-0.008	-0.003
	(0.012)	(0.013)	(0.011)	(0.012)	(0.012)	(0.018)	(0.016)	(0.018)
Log_Size$_{t-1}$	-0.018	-0.027	-0.031	-0.030	-0.035	-0.032	-0.035	-0.032
	(0.026)	(0.026)	(0.026)	(0.027)	(0.027)	(0.026)	(0.027)	(0.028)
Log_Age$_{t-1}$	-0.009	-0.006	-0.006	-0.008	-0.006	-0.008	-0.007	-0.009
	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)
Net Flows$_{t-1}$	0.013***	0.013***	0.012***	0.009***	0.011***	0.008***	0.007**	0.007**
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Fund Return$_{t-1}$	0.006**	0.006**	0.007***	0.007***	0.008***	0.001	0.006***	0.007***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.004)	(0.002)	(0.001)
Fund Return$_{t-2}$	0.001	0.002	0.003**	0.004***	-0.002	0.002*	0.004***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.001)	(0.001)	(0.001)
Inflation_Diff$_{t-1}$	-0.038	-0.084	-0.089*	-0.043	-0.058	-0.013	-0.028	0.004
	(0.038)	(0.043)	(0.040)	(0.041)	(0.043)	(0.058)	(0.046)	(0.046)
Prod_Diff$_{t-1}$	0.001	0.001	0.001	0.001	0.001	0.000	-0.000	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
N	19,512	19,502	19,328	19,154	18,980	18,806	18,632	18,458
R^2	0.135	0.097	0.087	0.074	0.064	0.067	0.045	0.041
adj. R^2	0.135	0.097	0.087	0.074	0.064	0.067	0.044	0.040

Note: The statistical significance is denoted as * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

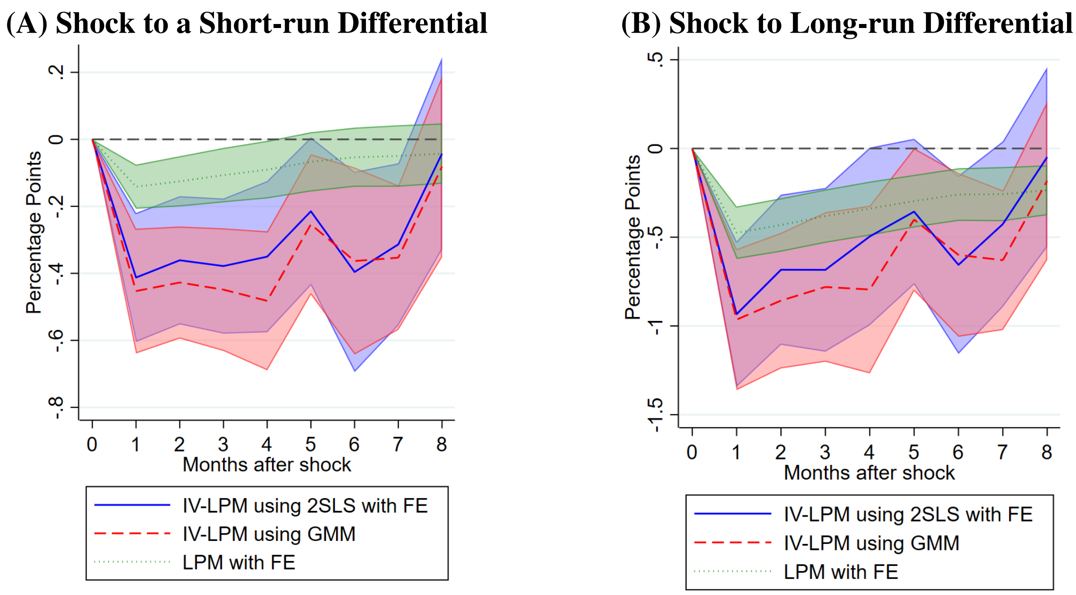
B.2 Sensitivity Checks

Figure B1: Fund Flows Response to Domestic vs. Foreign Monetary Policy Shocks



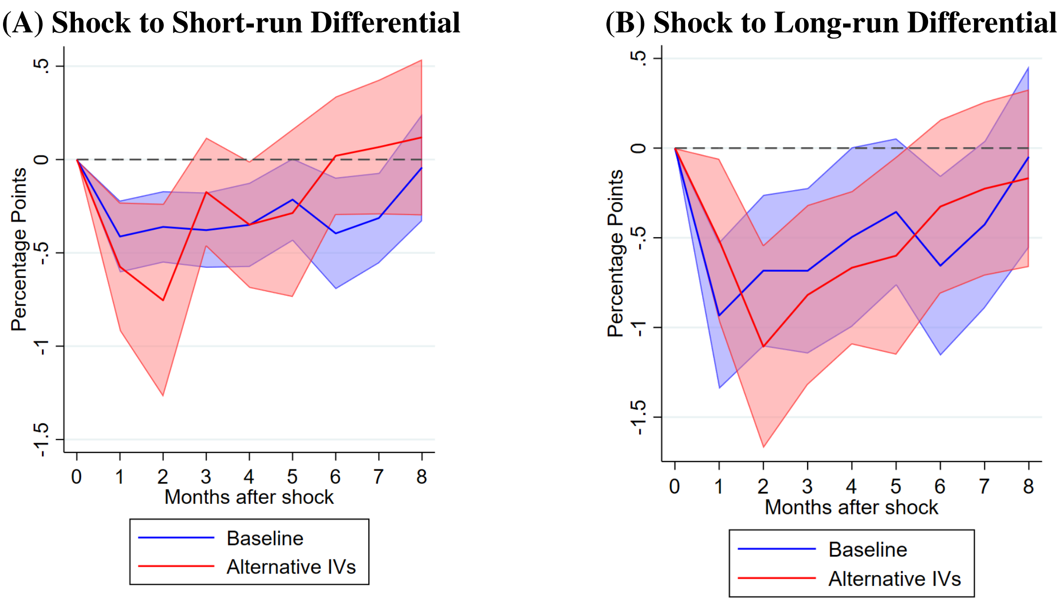
Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is defined as the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure B2: Robustness Check: Baseline Impulse Response Fuctions Estimated via Different Methods



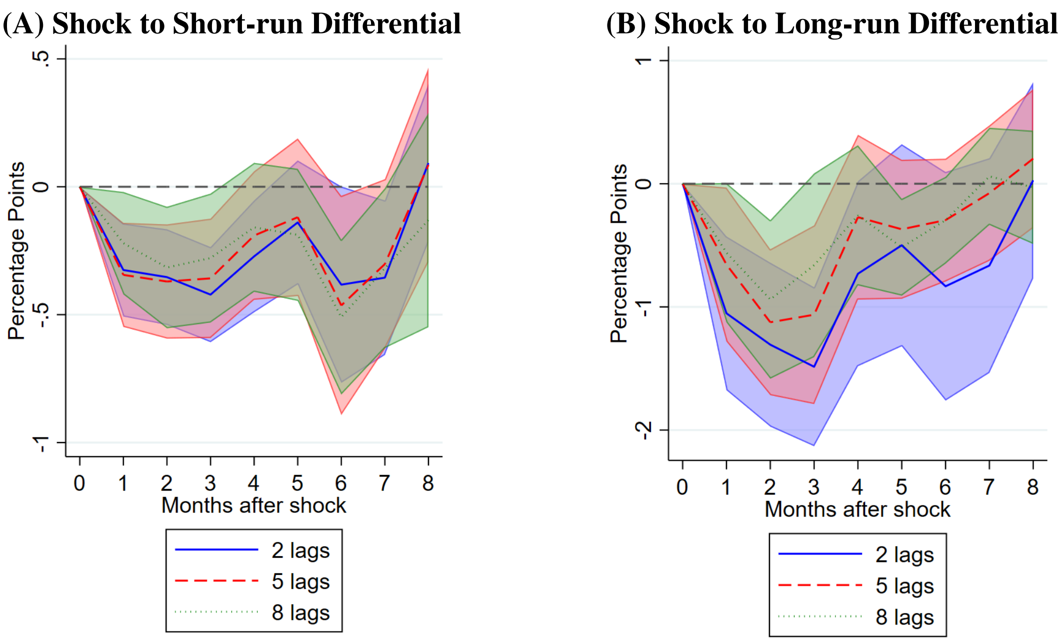
Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Individual lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is defined as the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure B3: Robustness Check: Using the Central Bank Communication Index as Instrumental Variable



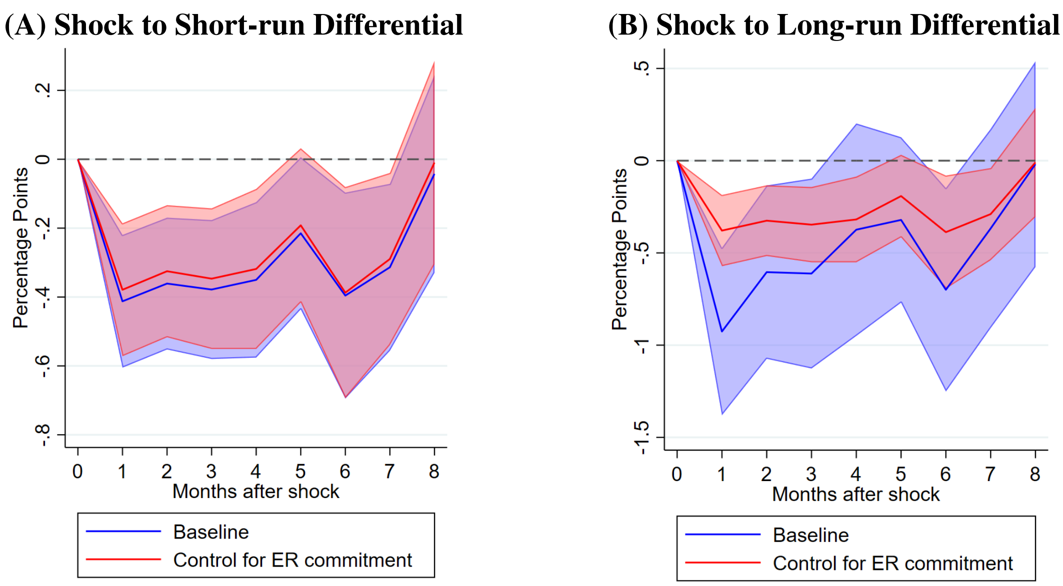
Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is defined as the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level. The Central Bank Communication Index was taken from Picault and Renault (2017).

Figure B4: Robustness Check: Adding More Lags of the Independent Variables



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Individual lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is defined as the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure B5: Robustness Check: Controlling for the 2013 Exchange Rate Commitment



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is defined as the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

B.3 Low Interest Rate Environment and Search for Yield

As a complementary analysis, we explore how the effects of monetary policy shocks on mutual fund flows evolved during the prolonged period of low interest rates in Europe following the global financial crisis. We define this low interest rate environment (LIRE) as January 2016 to December 2019, a period when the ECB maintained key policy rates at historical lows, euro area interbank rates turned negative, and long-term bond yields reached record minima. We deliberately end the period before the onset of the COVID-19 pandemic to avoid confounding effects.

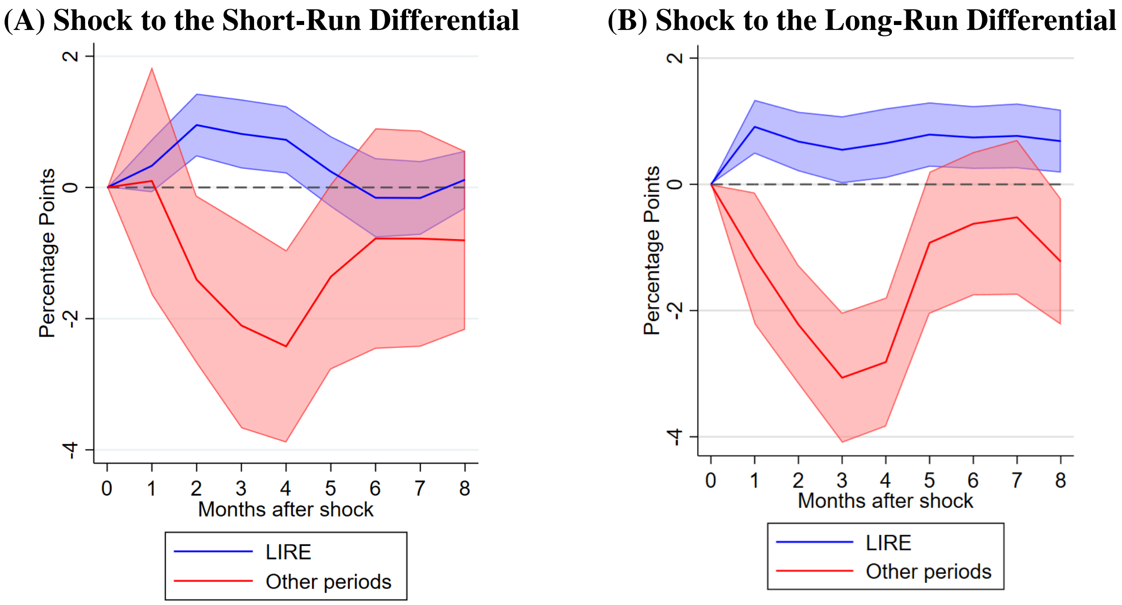
To examine whether investor responses differed under these conditions, we interact the interest rate differential with a dummy variable for the LIRE period.[15]

Figure B6 presents the results for the full sample, while Figure B7 provides a breakdown by fund type. Compared to other periods, we find that increases in both short- and long-term differentials during LIRE were associated with net inflows into Czech mutual funds, in contrast to the typical outflows documented elsewhere in the sample. This indicates that under persistently low euro area rates, higher Czech yields became relatively more attractive, prompting stronger investor allocations.

The differences are most pronounced for equity funds, where inflows responded more strongly to both short- and long-term differentials during LIRE. For real estate funds, the key contrast arises with long-term differentials, which led to more persistent inflows in this period. Bond funds also exhibit some divergence in response to long-term rates, though these effects are less precisely estimated.

[15] During this interval, we observe 39 (28) monthly increases and 9 (20) decreases in the short- (long-) term interest rate differential.

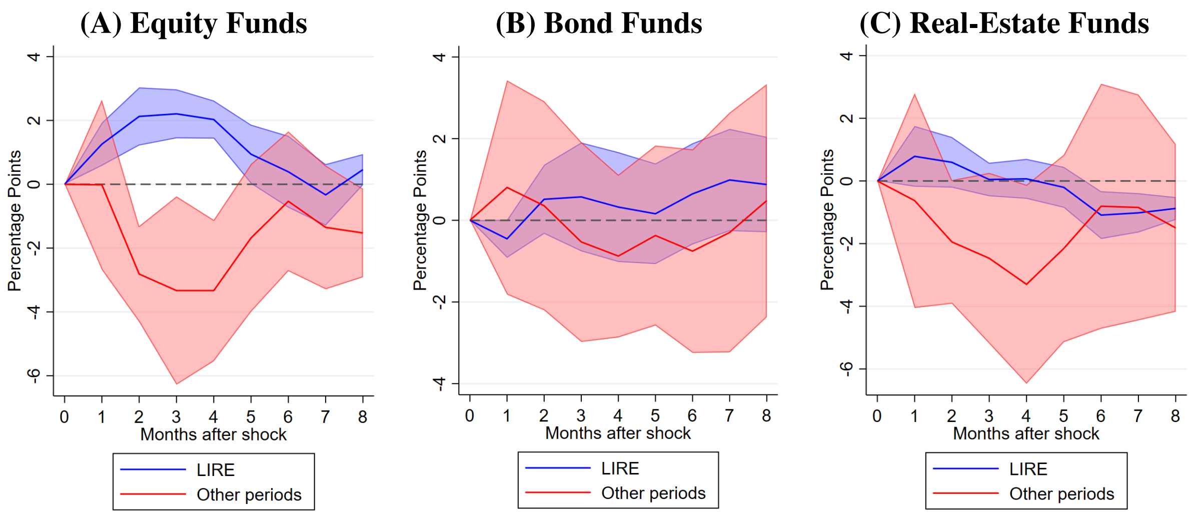
Figure B6: Fund Flows Response to a Monetary Policy Shock During Low Interest Rate Period



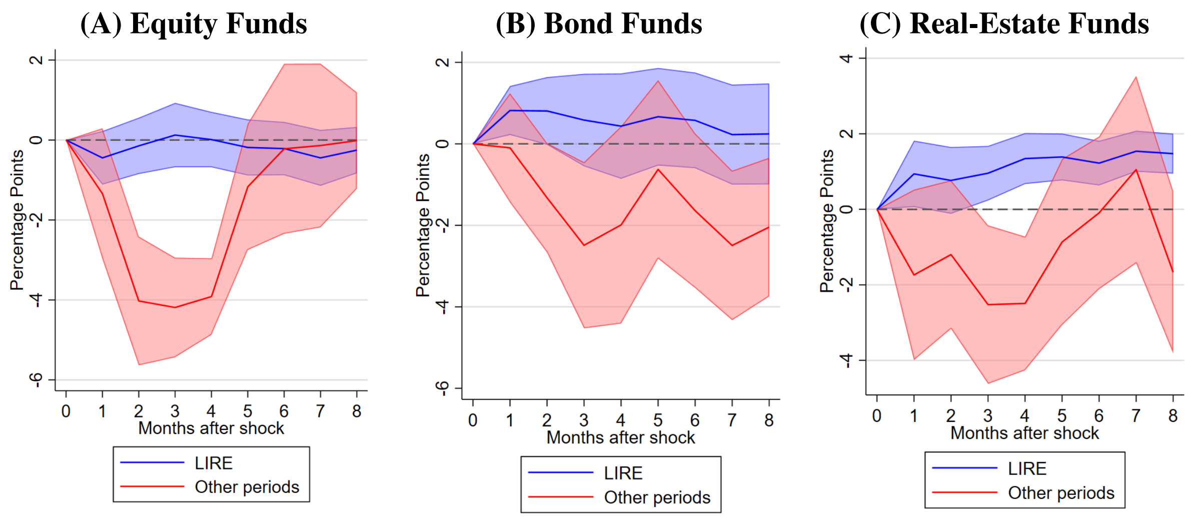
Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure B7: Fund Flows Response to a Monetary Policy Shock During Low Interest Rate Period: Fund Type Breakdown

Panel A: Shock to the Short-Run Differential



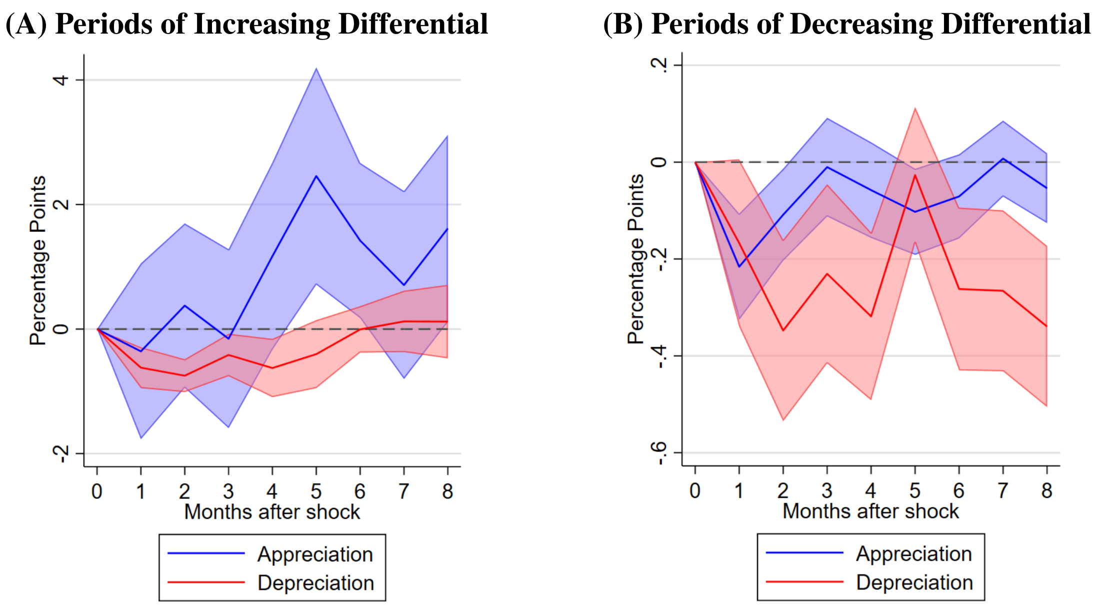
Panel B: Shock to the Long-Run Differential



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

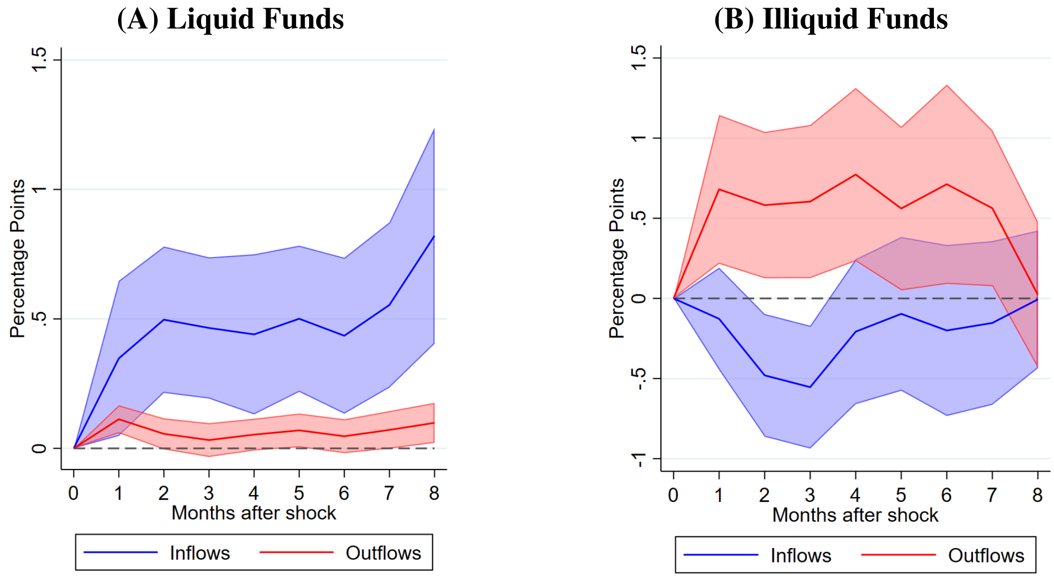
B.4 Additional Results on Transmission Channels and Heterogeneity Analyses

Figure B8: Monetary Policy Shocks and Currency Movements: Periods of SR Differential Increases and Decreases



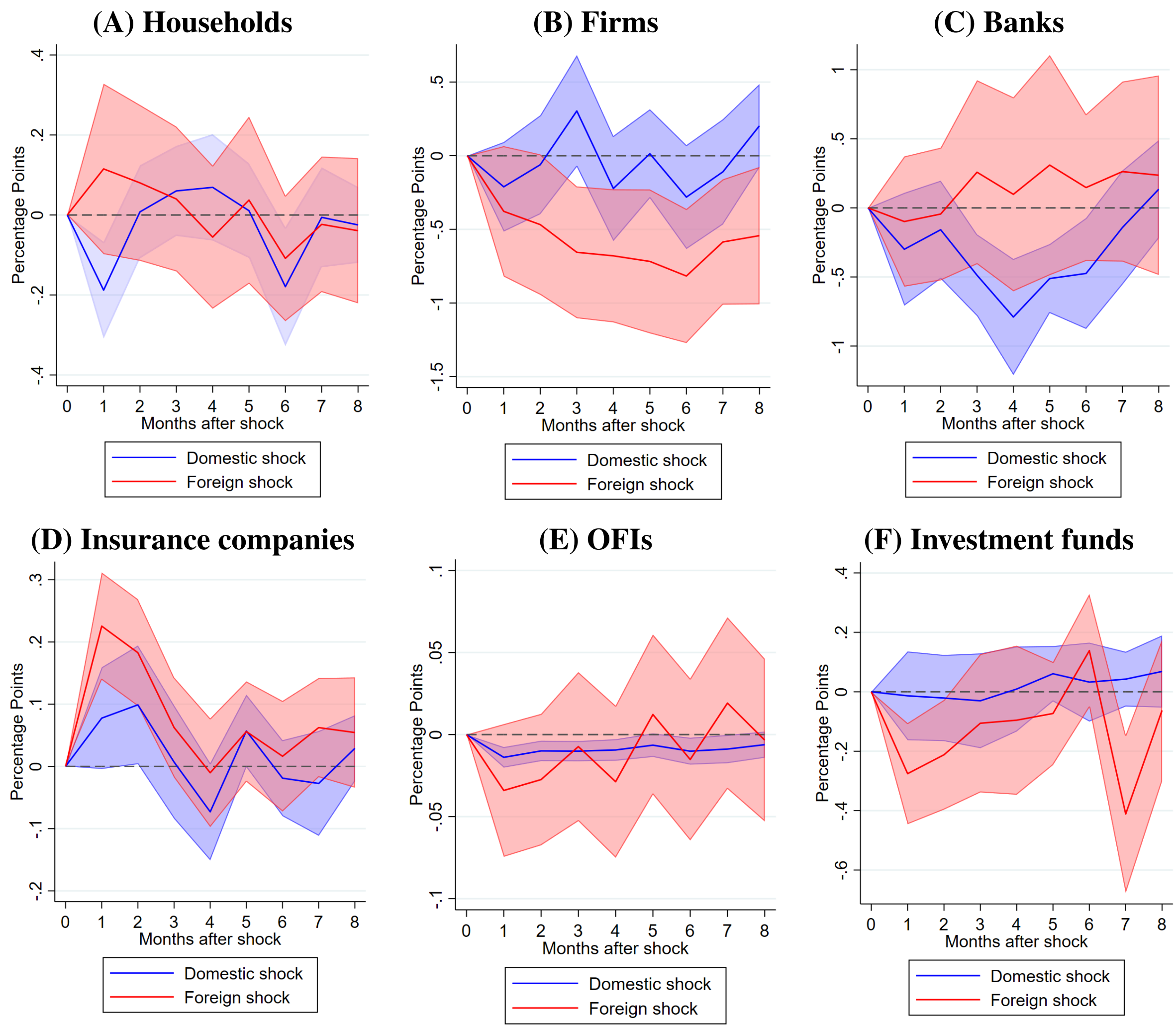
Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure B9: Inflows and Outflows Response to Short-Run Differential: Breakdown by Cash Holdings Ratio



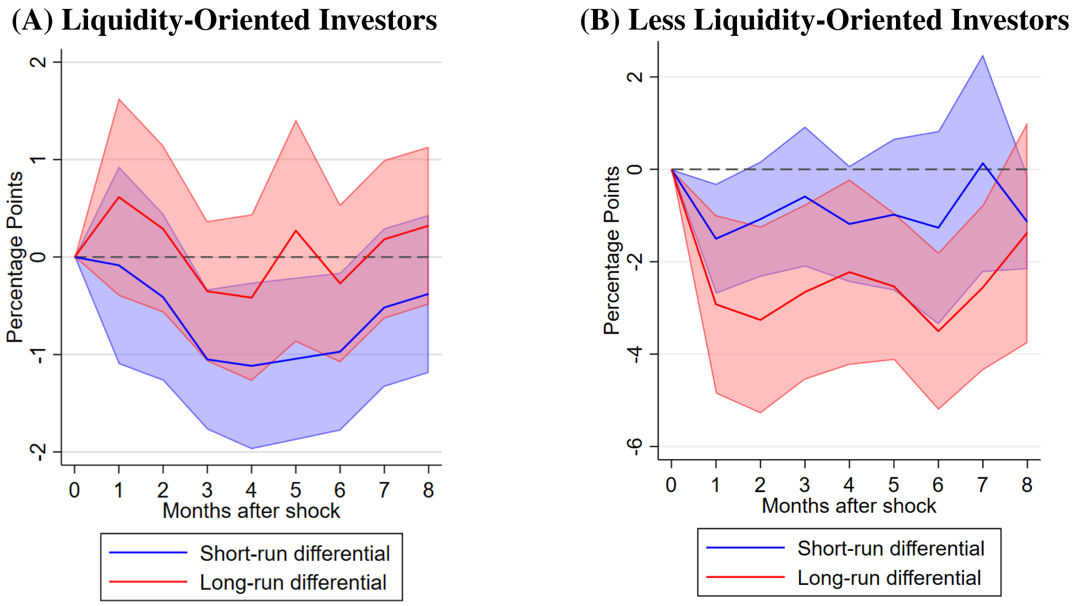
Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M). Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure B10: Sector Holders of Mutual Fund Shares: The Role of Domestic and Foreign Monetary Policy Shocks



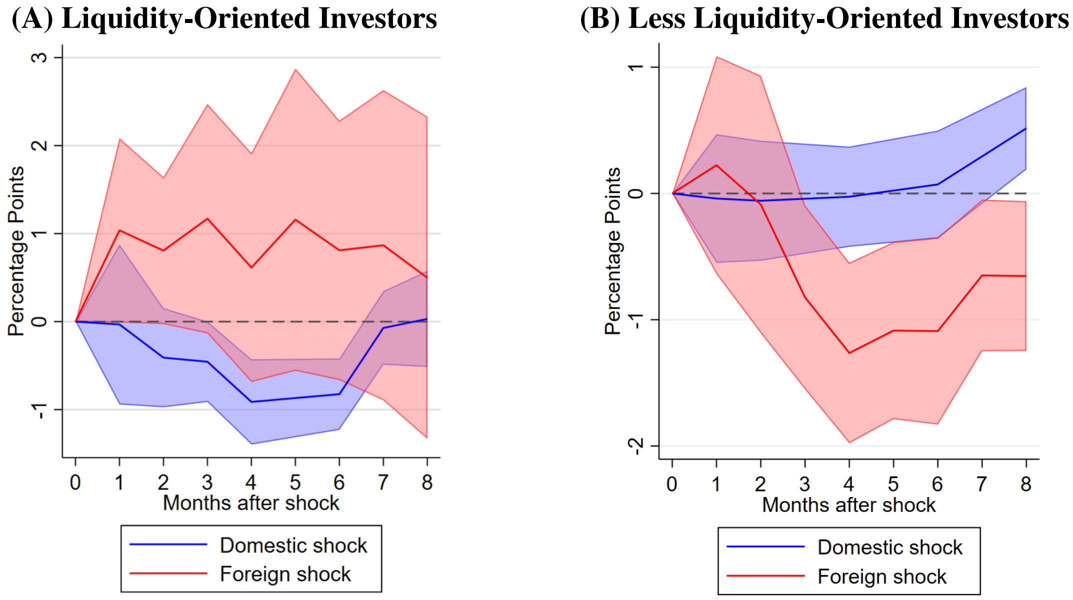
Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

Figure B11: Sector Holders by Liquidity Preference



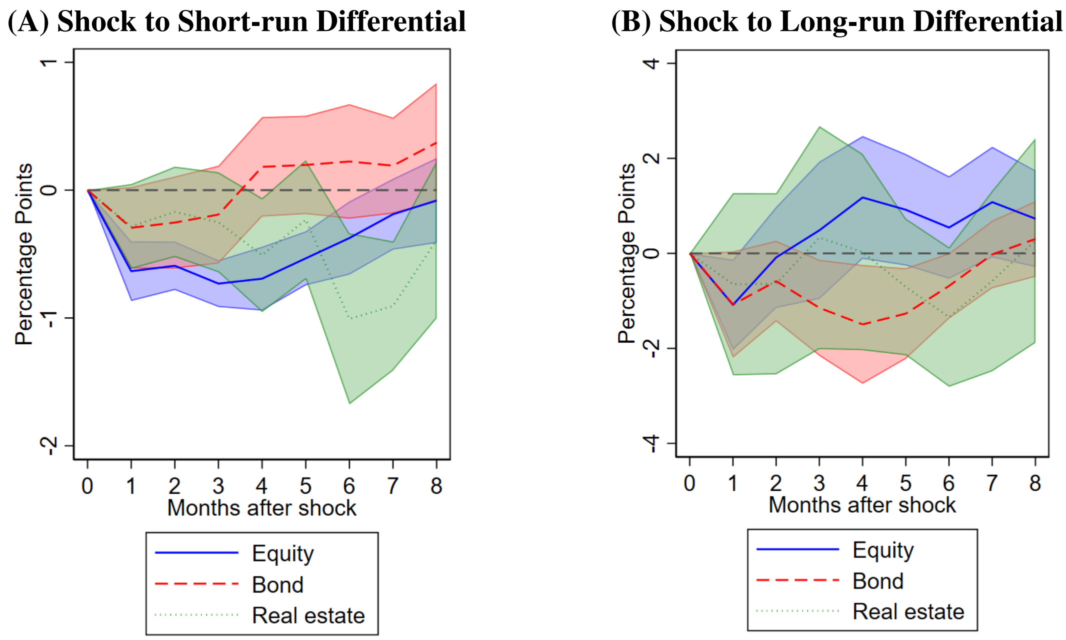
Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level. Liquidity-oriented investors are banks, OFI and investment funds; less liquidity-oriented investors are households, firms, and insurance companies.

Figure B12: Sector Holders by Liquidity Preference: Domestic vs. Foreign Shocks



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Solid lines display the coefficients of (non-cumulative) responses of mutual fund flows over the eight months following a 1 pp change in the short-run interest rate differential defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M). Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level. Liquidity-oriented investors are banks, OFI and investment funds; less liquidity-oriented investors are households, firms, and insurance companies.

Figure B13: Reallocation Effect of Monetary Policy: Estimates for Fund Types



Note: The figure shows impulse response functions constructed from regression results of the lag-augmented local projection model. Individual lines display the coefficients of (non-cumulative) responses of different groups of mutual fund flows over the eight months following a 1 pp change in the interest rate differential. The short-run differential is defined as the difference between 3-month interbank rates (PRIBOR 3M – EURIBOR 3M), while the long-run differential is defined as the difference between Czech and euro area 10-year government bond yields. Shaded areas indicate 90% confidence bands. Standard errors are clustered at the fund level.

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