Convergence, Divergence, and a Divergent: Monetary Policy and Global Imbalances*

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Abstract: This paper examines two interrelated aspects of the post-2008 global financial system—monetary policy and global imbalances—to assess the extent of convergence and/or divergence between emerging markets and advanced economies and what recent developments imply for the resilience of the global economy. It finds that the "rate cycles" of monetary policy have recently been highly synchronized and largely converged between advanced economies and many emerging markets, albeit at a higher level of interest rates and with more heterogeneity for emerging markets. In contrast, global imbalances have diverged, driven primarily by a sharp deterioration in the US debtor position that has corresponded to improvements in international investment positions around the world. This recent divergence in imbalances is mainly driven by financial effects (instead of trade) and linked to the stronger relative performance of US equity markets. The more widespread use of countercyclical monetary policy and recent evolution of global imbalances have provided important support for the global economy to date, but the "divergent" position of the United States and greater sensitivity of imbalances to financial effects increases the risk of a painful adjustment through international wealth effects.

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I. Introduction

In the dystopian series *Divergent*, individuals are divided into factions determining the role they play in commerce and society, providing "rules of the game" in an ostensibly well-functioning system.[1] On rare occasions, however, a "divergent" emerges, someone who does not fit into a single faction and can be a threat to overall stability. This paper examines two interrelated aspects of the post-2008 global financial system—monetary policy and global imbalances—to assess the extent of convergence and/or divergence between emerging markets and advanced economies and if this presents risks to global economic stability. It finds that the "rate cycles" of monetary policy have largely converged between advanced economies and many emerging markets (albeit at a higher level of interest rates and with more heterogeneity in emerging markets), while global imbalances have diverged, driven primarily by valuation effects causing a sharp deterioration in the US net international investment position. The more widespread use of countercyclical monetary policy and recent evolution of global imbalances have provided important support for the global economy to date, but the "divergent" position of the United States increases the risk of a painful adjustment–albeit hopefully not as chaotic as in the dystopian series.

The last two decades have been unusually turbulent for the global economy. Both the 2008 Global Financial Crisis (the "GFC") and 2020 COVID-19 pandemic triggered dysfunction in financial markets followed by the sharpest and most synchronized collapse in global output since at least the 1930s. Policymakers have learned many important lessons from these events.[2] One lesson is the importance of being able to use monetary and fiscal policy to support the economy in response to a range of shocks. Another lesson is the importance of analyzing risks to financial stability, including around macroprudential exposures and global imbalances, and how monetary and fiscal policy could influence these risks. This paper evaluates developments and interactions in two of these areas—the use of monetary policy by emerging markets and the evolution of global imbalances—with the goal of understanding the recent resilience in the global economy as well as potential vulnerabilities that could undermine this resilience in the future.

Since well before the GFC, monetary policy has been a fundamental part of the toolkit in advanced economies to stabilize inflation, output and employment—during standard business cycles as well as in response to crises. In contrast, monetary policy has been less effective and less central to economic stabilization in emerging markets. Emerging markets have often been forced to use monetary policy pro-cyclically instead of countercyclically (e.g., raising interest rates during downturns and periods of stress to support capital flows and the exchange rate rather than support domestic activity) and instead relied more on a mix of exchange rate and reserve management, capital controls and other regulations.

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[1] *Divergent* (2011) by Veronica Roth. In the book series, political uprising leads to chaos, widespread violence, and civil war, and the main heroine is killed (albeit she survived in the movie rendition).

[2] See Forbes (2026) for a discussion of the multifaceted lessons for central banks.

Section II of this paper assesses if the use of monetary policy in emerging markets has become more similar to that in advanced economies.[3] To perform this analysis, we build on a new methodology developed in Forbes, Ha and Kose (2024, 2026b) to identify "rate cycles" for monetary policy. A "rate cycle" is comprised of an easing and tightening phase, similar to how a business cycle includes a recovery and recession phase. We extend their original database for advanced economies to include 38 emerging and developing economies (referred to as emerging markets in the rest of this paper) from 2000-2025.

Analysis of the resulting rate cycles suggests that adjustments in interest rates in the median emerging market have converged to that in advanced economies by most metrics. More specifically, rate cycles in emerging markets have recently been highly synchronized with that in advanced economies, and the median adjustments in interest rates across the two groups of countries have a similar initial velocity, average pace, total amplitude, number of rate changes, and overall duration of tightening and easing phases. The main differences between these groups are greater heterogeneity in the use of monetary policy and higher interest rates (and inflation rates) in emerging economies relative to advanced economies.[4] This higher level of rates also provides emerging markets with more flexibility to use monetary policy countercyclically in response to severe negative shocks (including any painful unwinding in global imbalances).

These similarities in key aspects of monetary policy between advanced economies and emerging markets were accentuated over the last five years. Both groups of countries had highly synchronized shifts between easing and tightening phases around the pandemic, albeit many emerging markets were earlier and more aggressive in responding to the recent inflation surge. In fact, the use of monetary policy in many emerging markets was not only no longer procyclical, but was more countercyclical than in advanced economies (in the sense that emerging markets responded to the pickup in inflation sooner and more aggressively). In both sets of economies, interest rates and inflation had largely stabilized by the end of 2025, albeit at a higher level of interest rates than in the 2010s (particularly in advanced economies) and with a few notable exceptions (such as continuing deviations of inflation from target in the United States, United Kingdom, and Japan). Emerging markets have become more successful in achieving inflation targets since 2000 (at least for those countries which have such targets)—a noteworthy accomplishment after the recent global spike in inflation.

This convergence in the use of countercyclical monetary policy between many emerging markets and advanced economies is positive news for global resilience. It also has direct implications for global imbalances. For example, the more synchronized rate cycles and corresponding decline in interest rate differentials between advanced economies and

[3] We do not focus on the role of fiscal policy, partly as the increase in debt levels around the world suggests fiscal policy may have more limited ability to support economies in response to shocks in the future, and partly as this is covered in more detail in another paper in this conference (Fatas 2026).
[4] De Leo et al. (2024) shows that even if policy rates are adjusted more countercyclically in emerging markets, short-term rates may not move as tightly with policy rates, dampening the transmission of monetary policy.

emerging markets can affect international interest payments (part of current account balances) and relative equity valuations (part of net international investment holdings). These developments can also generate vulnerabilities. In the mid-2000s, increased global imbalances combined with insufficient macroprudential oversight to contribute to a combustible combination of underlying fragilities, including unsustainable valuations, excessive leverage, inefficient investment, and unsustainable borrowing in some countries, combined with excess savings, low interest rates and undervalued exchange rates in others. The subsequent deleveraging, collapse in valuations, and repricing across financial markets led to painful adjustments around the world.

While global imbalances receded by some measures during the 2010s, and most countries have made meaningful progress in improving aspects of financial oversight (particularly for the banking system), most countries have made minimal progress in addressing the factors contributing to global imbalances. This lack of attention is becoming more urgent as global imbalances have increased sharply over the last few years and many vulnerabilities similar to those in the 2000s may be reemerging. Trade imbalances are aggravating geopolitical tensions and generating substantial political backlash, including providing justification for the increased use of trade restrictions and other policies leading to a more fragmented world. This increase in imbalances is also increasing the risks that certain types of shocks could trigger large and painful international spillovers.

Therefore, the next sections of the paper shift to understanding the recent evolution of global imbalances, how this is linked to monetary policy, and the corresponding implications for global resilience.[5] Section III shows that global imbalances, measured as the size and divergence in net international investment positions, have increased meaningfully since 2010. The recent divergence does not reflect larger imbalances in emerging markets, although China's trade surplus and international creditor position are sizable and expected to increase sharply in 2025. Instead, the recent divergence primarily reflects the growth in imbalances in advanced economies, which in turn, primarily reflects a sharp deterioration in the US debtor position.

To understand these imbalances, we build on the framework and analysis in Adjiev, Forbes, Nenova and Santos (2026) to decompose these changes in international investment positions into the role of trade, investment income, other international income, and valuation effects. These decompositions suggest that the drivers of changes in global imbalances have evolved over time, with less impact of trade on average and a greater role for financial channels, including some linked closely to monetary policy. More specifically, the primary drivers of changes in global imbalances are recently investment income flows

[5] There has recently been increased attention to global imbalances, including excellent analysis in Atkeson et al. (2025), Bayoumi and Gagnon (2025), Chari, Converse, Mehl and Milesi-Ferretti (2025), Chari and Milesi-Ferretti (2025), and Obstfeld (2024). Most of this work has focused on the evolution of imbalances in the United States, however, while this analysis and Adjiev et al. (2026) focus on global developments.

(including international interest payments) and valuation effects (particularly for equities), albeit trade still plays a crucial role for some individual emerging markets (such as China).

Section IV provides a closer analysis of the importance of these financial effects in the recent evolution of global imbalances, focusing on the channels most closely linked to monetary policy. International interest rate differentials, and the corresponding interest payments on international bonds and bank loans, have influenced global imbalances and contributed to a deterioration in the international investment position for the US and many emerging markets. The magnitude of these flows, however, has been meaningfully smaller than the impact of relative valuation changes in equity markets. More specifically, one of the most significant shifts since 2010 is that countries with exposure to US equities have had large gains and improvements in international net worth from the stronger relative performance of US markets. These valuation effects have been the main factor behind the sharp deterioration in the US international investment position and central to the recent divergence in global imbalances. The magnitude of these effects is so large that the United States has shifted from having an "exorbitant privilege" to providing a "generous giveaway." International earnings from interest income generally move in the opposite direction from these international valuation effects (with exceptions for the US and several creditors).

While this increased divergence in global imbalances and deterioration in the US debtor position has corresponded to a boost in international net worth in most countries, it has also increased their vulnerability to a repricing of US equities. Therefore the final section of this paper (Section V) brings together the different pieces of analysis to consider how the increased divergence in global imbalances could interact with the increased convergence in global monetary policy in a hypothetical scenario in which equity markets fall sharply around the world and the largest declines occur in US markets (potentially triggered by a repricing of AI and technology-related stocks). These very simple, back-of-the-envelope estimates show the impact on international investment positions and net worth around the world. The effect on most economies would be negative, and in most cases large and significant, although the average effect on emerging markets would be smaller than for advanced economies (roughly one-fifth in our scenario). The US international investment position would improve, partially mitigating the direct negative impact on the US economy of the stock market adjustment. Monetary policy could help cushion these negative effects and the negative spillovers through international wealth effects—with room in most economies (but not all) to adjust rates in line with historical easing phases—albeit these adjustments would be unlikely to fully mitigate the negative impact.

This paper makes several contributions to existing literature and our understanding of recent developments and risks in the global economy. First, while there is a longstanding literature classifying and analyzing cycles in real and financial variables,[6] and several

[6] This includes literature on business cycles (Burns and Mitchell 1946; Harding and Pagan 2002), on credit cycles (Claessens et al. 2009, 2012), on capital flow cycles (Forbes and Warnock 2012, 2021), and the global financial cycle (Rey 2015). Analysis of rate cycles in advanced economies is in Forbes et al. (2024, 2026a).

recent papers analyzing rate cycles in advanced economies, there has not yet been any comparable classification and analysis for emerging markets. This paper provides a first look at how rate cycles in emerging markets compare to those in advanced economies over the last twenty-five years. Second, while there has been substantial analysis of the monetary policy responses to the pandemic and post-pandemic inflation (English et al. 2021; 2024; Forbes 2026), including discussion of how many emerging markets have been more successful using monetary policy countercyclically than in the past (Hardy et al. 2024; IMF 2025a), there has not yet been detailed comparisons of the characteristics of these rate adjustments in emerging markets to in advanced economies. The detailed comparison in this paper is possible due to the new identification of rate cycles.

Third, although there has recently been increased attention to global imbalances (including excellent analysis in Atkeson et al. 2025; Bayoumi and Gagnon 2025; Chari et al. 2025; Chari and Milesi-Ferretti 2025; and Obstfeld 2024), most of this work has focused on the evolution of imbalances in the United States. This paper, as well as Adjiev et al. (2026) and Milesi-Ferretti (2024a), focuses on this evolution of imbalances from a global perspective—highlighting how developments in large economies generate corresponding adjustments and spillovers in the rest of the world. Finally, while other research has highlighted the impact of the relative performance of US equity markets on the US international investment position (e.g., Atkeson et al 2025), there has been little detailed analysis of the corresponding impact on other economies and relationship to monetary policy—including through potential spillovers of an adjustment in US equity markets through international investment positions and net worth. This analysis, and its focus on different types of financial spillovers, is only possible with the type of detailed decomposition provided in this paper of the individual drivers of changes in global imbalances that isolates the role of financial effects.

The analysis and discussion in this paper, however, are subject to several important caveats. First, while this paper often discusses emerging markets and advanced economies as two "factions", there is no clear line distinguishing these groups. Rather than take a stance on what qualifies a country as "advanced", "emerging", or "developing, we simply classify economies into "advanced" or "emerging" based on 2025 IMF definitions (grouping the small set of developing economies into the "emerging" group to simplify language). Second, and closely related, even within each "faction", there are meaningful differences in monetary policy and exchange rate regimes. Each group includes countries with simple inflation targets and others with more complicated goals, and each group includes countries with floating exchange rates, "dirty" floats, pegs and even alternate currency regimes (e.g. the euro). Third, this paper focuses on the convergence in monetary policy and global imbalances around the world, but it ignores developments in other related policies—such as financial regulation and fiscal policy (which is covered in the paper by Antonio Fatas prepared for this conference). Similarly, this paper focuses on one aspect of monetary policy (policy interest rates) and one measure of global imbalances (net international investment positions), while other aspects can also be important (such as other tools for monetary policy and the flows or gross positions for global imbalances).

II. The Rate Cycles of Monetary Policy: Synchronization and Convergence

In the 1980s and 1990s, monetary policy in emerging markets was generally procyclical—as compared to the preferred countercyclical policies typical in advanced economies (Kaminsky, Reinhart and Vegh 2005). In other words, when emerging markets faced a negative shock, they generally had to tighten monetary policy to support capital inflows and avoid sharp currency deprecations (which would, in turn, aggravate risks around inflation and foreign-currency denominated debt), rather than reduce interest rates to support economic activity. This limited ability to use countercyclical monetary policy not only deprived emerging markets of a key tool for economic stabilization, but the procyclical policies tended to amplify boom and bust cycles, aggravating the adjustment during economic downturns as well as the excesses that fed overheating and bubbles (Forbes and Klein 2015; Ghosh et al. 2017). During the GFC in 2008 and in response to the pandemic in 2020, however, many emerging markets were able to adjust monetary policy countercyclically (Coulibaly 2012; Hardy et al. 2024; IMF 2025a). It was unclear whether this was a temporary aberration, possibly reflecting the origins of these crises, or a more permanent shift in the use of monetary policy by emerging markets.

Has the use of monetary policy in emerging markets converged with that in advanced economies since the GFC? To answer this question, this section begins by discussing a new framework to classify the monetary policy cycles of individual economies into easing and tightening phases. Then it applies this methodology to a sample of 56 economies (including 38 emerging markets) and uses the resulting classifications to assess the synchronization in monetary policy adjustments since 2000. Next it examines detailed characteristics of how emerging markets and advanced economies adjust interest rates during these rates cycles, during historical periods as well as more recently around the pandemic. The section ends with an analysis of where inflation and policy rates have settled today, including progress meeting inflation targets. This section draws heavily on a series of papers with Ahyan Kose and Jongrim Ha (2024, 2026a, 2026b).

A. Rate Cycles: Methodology and Data

In order to assess the extent to which monetary policy in emerging markets has converged with that in advanced economies, I use work in progress in Forbes, Ha and Kose (2026a), which uses the methodology developed in Forbes, Ha and Kose (2024, 2026b) to identify "rate cycles" for advanced economies. This methodology classifies monetary policy into "easing" and "tightening" phases, similar to the classification of business cycles. The combination of an easing and tightening phase constitutes a rate cycle, just as the combination of a recession and recovery constitutes a business cycle.

This methodology is described in more detail in Appendix A, but here is a brief synopsis. We begin with the BBQ algorithm, which was initially proposed by Bry and Boschan (1971) and then developed in Harding and Pagan (2002) to identify increases and decreases in a series

and locate local maxima and minima over specified windows.[7] We apply this algorithm to a time-series of policy interest rates for each economy in the sample, so that the local maxima and minima of the series identify the turning points that are the start of easing and tightening phases, respectively, for monetary policy. We set key parameters in this algorithm to allow for relatively long windows on each side of a turning point and focus on changes in interest rates that are not quickly reversed. (We label short-lived adjustments in policy rates that are quickly reversed as "preliminary adjustments" and do not include them as identifying a new rate phase.) We also set parameters to allow for individual phases in a rate cycle to be short-lived and can be triggered by one large and persistent rate adjustment, such as if a central bank lowers rates by a large amount to zero in one meeting and then does not adjust rates for an extended period.

After applying this algorithm, we make several adjustments and apply several additional criteria that are required due to characteristics of policy rates that differ from the macroeconomic data typically used to identify business cycles. One set of adjustments is to address issues when interest rates are constant for an extended period, usually around the lower bound. This includes identifying a month as the start of an easing phase if there is no change in the policy rate, but the central bank starts a new QE program. A second set of adjustments addresses the insufficient data and the substantial volatility in policy rates early in the sample for some economies, particularly around financial crises and periods of high inflation, that can complicate the effectiveness of the algorithm to identify turning points. More details on the application of the BBQ algorithm, our choice of parameters for the algorithm, and the subsequent adjustments to apply this procedure to interest rates are described in Appendix A.

To define these rate cycles, we rely primarily on policy interest rates for several reasons. First, policy interest rates are currently the primary tool used by most central banks to affect the monetary policy stance. Using market-determined measures instead of policy rates would incorporate fluctuations that are not directly under the control of monetary authorities. Second, data for policy interest rates are widely available across a large sample of countries and over a long period—which is crucial for our comparisons across a broad set of emerging markets, including many for which other data is more limited (especially over a long period). Finally, nominal policy rates can be directly measured, while more complex measures of the overall stance of monetary policy require more complex models estimating the neutral interest rate (which is subject to substantial measurement error) and including a range of policy tools (such as the exchange rate, money supply, and guidance). All these tasks are challenging for an individual country, and even more so for a cross-section of diverse economies over a long period when economic and financial structures have shifted and the relationships between variables have changed.

[7] The BBQ algorithm builds on the seminal work of Burns and Mitchell (1946) that lays the foundation for identifying US business cycles.

While there are multiple reasons to focus on policy interest rates as our main guide to identify cycles in monetary policy, they have several limitations. First, although policy interest rates are currently the key tool for adjusting monetary policy in many economies, other instruments are important in some countries (particularly emerging markets) and the importance of different tools has changed in many countries over time. Second, policy interest rates may not fully capture the overall restrictiveness of monetary policy, especially during periods of high inflation and/or structural change that affect the neutral rate. Similarly, this approach does not capture changes in the restrictiveness of monetary policy from changes in guidance or the market curve, which may precede changes in the policy interest rate. Finally, we do not take into account changes in monetary policy goals, frameworks and targets that occurred over the sample period (such as whether a central bank targets inflation, employment, the money supply, or the exchange rate).[8] Despite all these caveats, Forbes, Ha and Kose (2024, 2026b), show that focusing on changes in policy interest rates (supplemented with information on balance sheet policies when rates are at lower bounds) does a fairly good job of capturing changes in the monetary policy stance across a diverse set of countries and long period of time.

Next, in order to apply this algorithm to identify rate cycles in a sample of advanced and emerging economies, we collect monthly data on the nominal interest rate defined as the policy rate by the central bank from January 1970 through November 2025.[9] Our main source is the BIS, but when data are unavailable or there are gaps, we augment this with information from Haver Analytics, FRED and the OECD. For members of the euro area, we use the policy rate for individual member countries through the end of 1998 and then use the European Central Bank's (ECB's) policy rate starting in January 1999. Also, in many economies the policy rate was substantially more volatile in periods when it was not the central bank's operating target (e.g., in the 1970s and 1980s for some advanced economies that allowed their policy rates to adjust frequently as they focused on meeting targets for the money supply). Finally, for advanced economies, which more often had policy interest rates close to zero and relied on balance sheet adjustments for monetary policy, we also augment this data with information on whether the country announced a new QE or QT program and when such program ended.[10]

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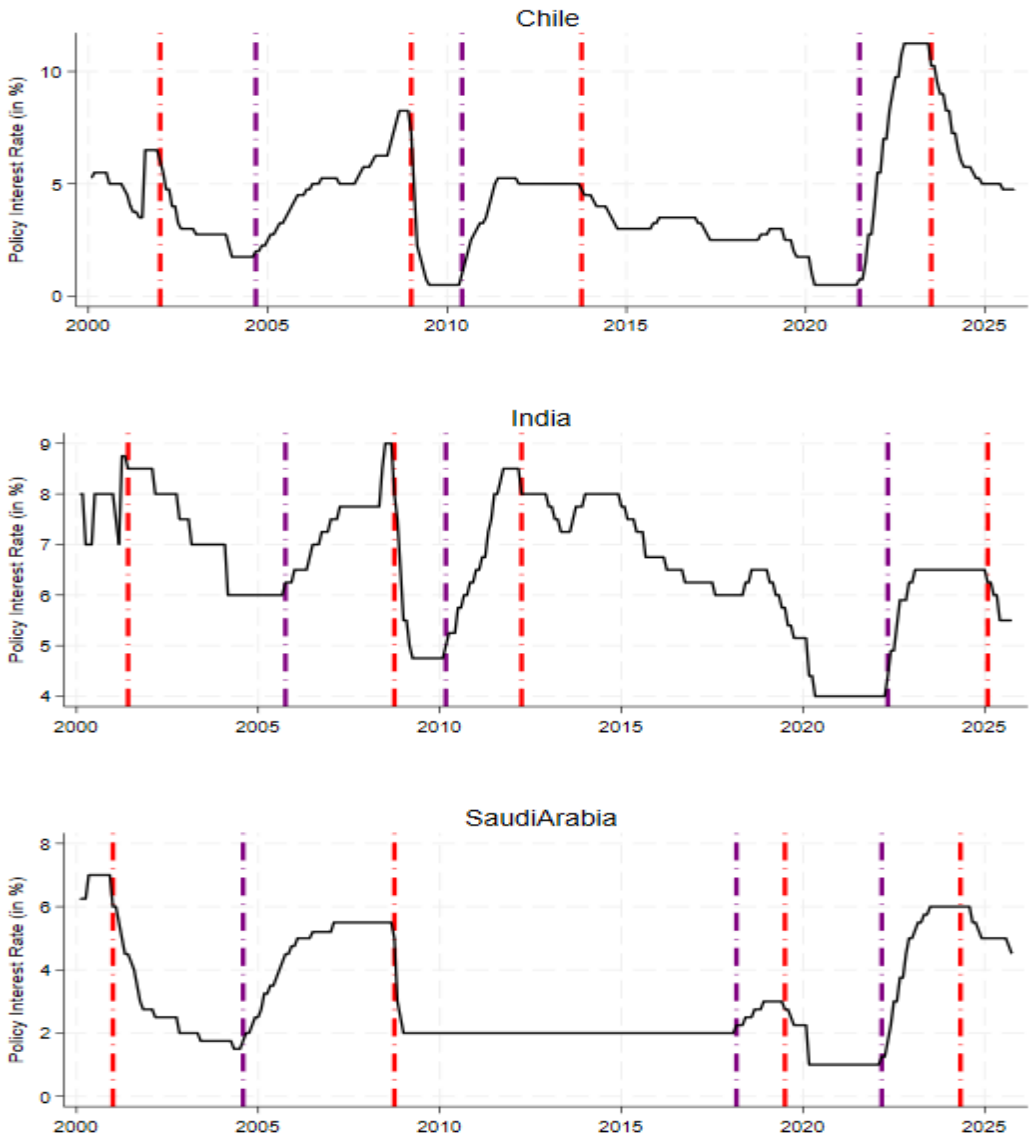
[8] Countries have adjusted their frameworks and targets meaningfully during the sample, but classifying different regimes is not straightforward, especially as some economies had multiple targets and others had substantial discretion in how they adjusted policy (Bernanke and Mishkin 1992; Ball 2011).

[9] For details, see the database "Long Series on Central Bank Policy Rates" compiled by the BIS. The interest rate that the central bank (and BIS) identifies as the policy rate has changed over time in most countries.

[10] We include dates when a new QE/QT program is announced, but only include programs involving government bonds that are related to monetary policy (i.e., not primarily for financial stability). See Forbes, Ha and Kose (2024) for more details, and Du, Forbes, and Luzzetti (2024) and English et al. (2024) for more information on specific programs. Work in progress in Forbes, Ha, and Kose (2026a) is extending this database on QE/QT programs for emerging markets to the definition of rate cycles, but initial results suggest that there are no cases when the use of QE would trigger the start of a new easing phase in emerging markets and affect the identification of the corresponding rates cycles. All emerging markets that have used QE were already identified as being in an easing phase before the start of a new program.

Applying these criteria yields a baseline sample of 56 economies, including 38 emerging markets and 18 advanced economies (with the euro area included as one economy).[11] The list of countries is reported in **Appendix Table A1**.

Figure 1:
Policy Rates and Rate Cycles in Three Emerging Markets



Source: Author's calculations based on the data and methodology identifying rate cycles described in Section II, with data from January 2000 through November 2025.
Notes: The solid black line is the policy interest rate. Dashed purple and red lines indicate the start of tightening and easing phases, respectively.

[11] Since most of this paper focuses on the period starting in 2000 or 2010, we report results with the euro area included as one economy and do not include results for individual euro area members.

B. Rate Cycles: Identification and Dates

Next, we apply the methodology discussed above to identify the rate cycles in our sample of 56 economies. In order to understand how this algorithm works, **Figure 1** shows an example of the resulting rate cycles for three economies from different parts of the world—economies with different monetary and exchange rate arrangements and very different economic structures.[12] More specifically, the figure shows: (1) Chile, which currently has an inflation target of 3.0% (+/- 1.0%) and a floating exchange rate regime; (2) India, which currently has an inflation target of 4.0% (+/- 2.0 %) and a "managed float/crawl-like arrangement" exchange rate regime; and (3) Saudi Arabia, which currently has no inflation target (instead relying on the fixed exchange rate as the monetary policy anchor) and a fixed peg (with the Saudi riyal pegged to the US dollar).[13] In addition to these different monetary policy and exchange rate regimes, Chile is highly dependent on exports of minerals and agriculture; India is a net importer of minerals and oil and Saudi Arabia is highly dependent on oil exports.

Figure 1 shows the policy interest rate (in black) and the start of the tightening phases (in purple) and easing phases (in red) identified using this methodology. To better understand how these rate cycles are defined, consider the top graph for Chile. There is an easing phase starting in January 2002, followed by a tightening phase starting in September 2004, and then another easing phase starting in January 2009 in response to the Global Financial Crisis. These are followed be two other easing and tightening phases, including the start of an aggressive tightening phase in July 2021 as inflation surged around the world after the pandemic—with Chile one of the earliest economies to transition to raising interest rates (and well ahead of most advanced economies). It is also worth noting that the long easing phase starting in April 2012 includes several "bumps" when interest rates were increased and then subsequently cut; these rate increases were not large enough and sustained for long enough to qualify as the start of a new tightening phase.

The comparable graphs identifying the turning points for India and Saudi Arabia also provide a useful contrast to that for Chile. Saudi Arabia has a long period with no change in policy interest rates (an easing phase from October 2008 until March 2018), consistent with its different framework for monetary policy that prioritizes the exchange rate and makes greater use of reserve management. Also noteworthy, even though India and Chile are in different regions of the world and have very different economic structures and exposures to the commodity cycle, they have striking similar patterns in the incidence and timing of their rate cycles since 2000. This supports an important global component in rate cycles (as discussed below and in Forbes et al. 2025).

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[12] As discussed in Appendix A, the measure for the policy rate can change over time. In some cases, this can cause a jump in the black line showing the policy rate in the graph, but this should not qualify as a change in the policy stance. For example, in April 2001 India shifted from using the Bank rate to the overnight repo rate as its policy rate; this increased the policy rate, but does not classify as a transition to a tightening phase.
[13] Classification of exchange rate and monetary regimes based on the IMF's 2025 Article IV Reports.

Moving from individual countries to patterns across the full sample of 56 economies, **Table 1** lists the number of tightening and easing phases over different periods for emerging markets and advanced economies. Over the full sample period from 2000-2025, there are 343 individual phases (159 tightening and 184 easing). There are roughly twice as many cases of each phase in emerging markets than advanced economies, which is not surprising given that there are nearly twice as many emerging markets in the sample.

More noteworthy is the convergence in the incidence of each type of phase over time across the two groups. At the start of the sample in 2000-2009, emerging markets had a lower incidence of both easing and tightening phases per economy than advanced economies—possibly indicating less active use of countercyclical monetary policy or less widespread use of inflation targeting. In contrast, over 2010-19 advanced economies had a lower incidence of rate cycles, likely reflecting the slow recovery after the 2008 GFC and prolonged period with rates around zero in advanced economies combined with the greater use of inflation targeting and countercyclical policy in emerging markets. Over the five-year window from 2020-25, both emerging markets and advanced economies averaged one tightening and one easing phase—with most starting a tightening phase in response to the post-pandemic inflation and most shifting to an easing phase in 2024-25.[14] Granted, this was an unusual period—but consistent with a greater synchronization in global monetary policy, as more emerging markets were able to adjust interest rates countercyclically and in a manner similar to that in advanced economies.

Table 1
Characteristics of Easing and Tightening Phases in Emerging Markets and Advanced Economies

		# Phases		# Phases per Economy	
Period	**Group**	**Tighten**	**Ease**	**Tighten**	**Ease**
2000-25	EM	107	126	2.8	3.3
	AE	52	58	2.9	3.2
2000-09	EM	34	51	0.9	1.3
	AE	23	29	1.3	1.6
2010-25	EM	73	72	1.9	1.9
	AE	29	28	1.6	1.6
2010-19	EM	34	37	0.9	1.0
	AE	11	11	0.6	0.6
2020-25	EM	39	38	1.0	1.0
	AE	18	18	1.0	1.0

Source: Author's calculations based on definitions of rate cycles in Appendix A.
Notes: Table shows the number of tightening and easing phases, and the mean number of each type of phase per economy. Sample is 38 emerging markets (EMs) and 18 advanced economies (AEs), all listed in Appendix Table A1.

[14] Most countries are not identified as starting an easing phase in 2020 in response to the pandemic as most were already in an easing phase.

C. Rate Cycles: Synchronization

In order to assess if rate cycles have become more synchronized across advanced economies and emerging markets over time, we compute two measures: the share of economies adjusting policy rates in each direction and the share in either an easing or tightening phase. In each case we include information on rate cycles for advanced economies starting in 1970 to have a longer time series for comparison, with emerging markets entering the sample in 2000.

The first measure, shown in the top panel in **Figure 2**, is the share of economies where rates are increased or decreased by more than 0.1 percentage point in each quarter.[15] If an economy is easing monetary policy through an asset purchase program when the policy rate is at the lower bound, we include this as a rate decrease.[16] The light blue and light purple shaded areas indicate the share of advanced economies where rates increased or decreased, respectively, and the dark blue and dark purple lines show the corresponding statistics for emerging markets.

Several patterns are immediately apparent. The share of economies adjusting rates in either direction is not steady, but instead moves in "waves". This suggests that movements in policy interest rates are more correlated across countries during certain windows than others. The waves of rate reductions around the pandemic and subsequent rate increases in response to the inflation surge are the most synchronized periods of rate increases and decreases since the sample began for both sets of countries. Most important for this paper, however, is the increased correlation between the incidence of rate increases and decreases between advanced economies and emerging markets over time. The waves across these two groups are similar throughout the entire period with data for both groups—but less correlated in the 2000s than later years—suggesting an increased synchronization in rate adjustments over time.

A second measure to capture this synchronization in policy rates is the share of economies in the same rate phase (i.e., easing or tightening), instead of the share that is increasing or decreasing rates (or doing QE) in any given month. Although increases and decreases in interest rates will be correlated with whether an economy is in a tightening or easing phase, this second measure of synchronization will better capture more sustained shifts in the overall stance of monetary policy—rather than isolated changes in any month.[17] The

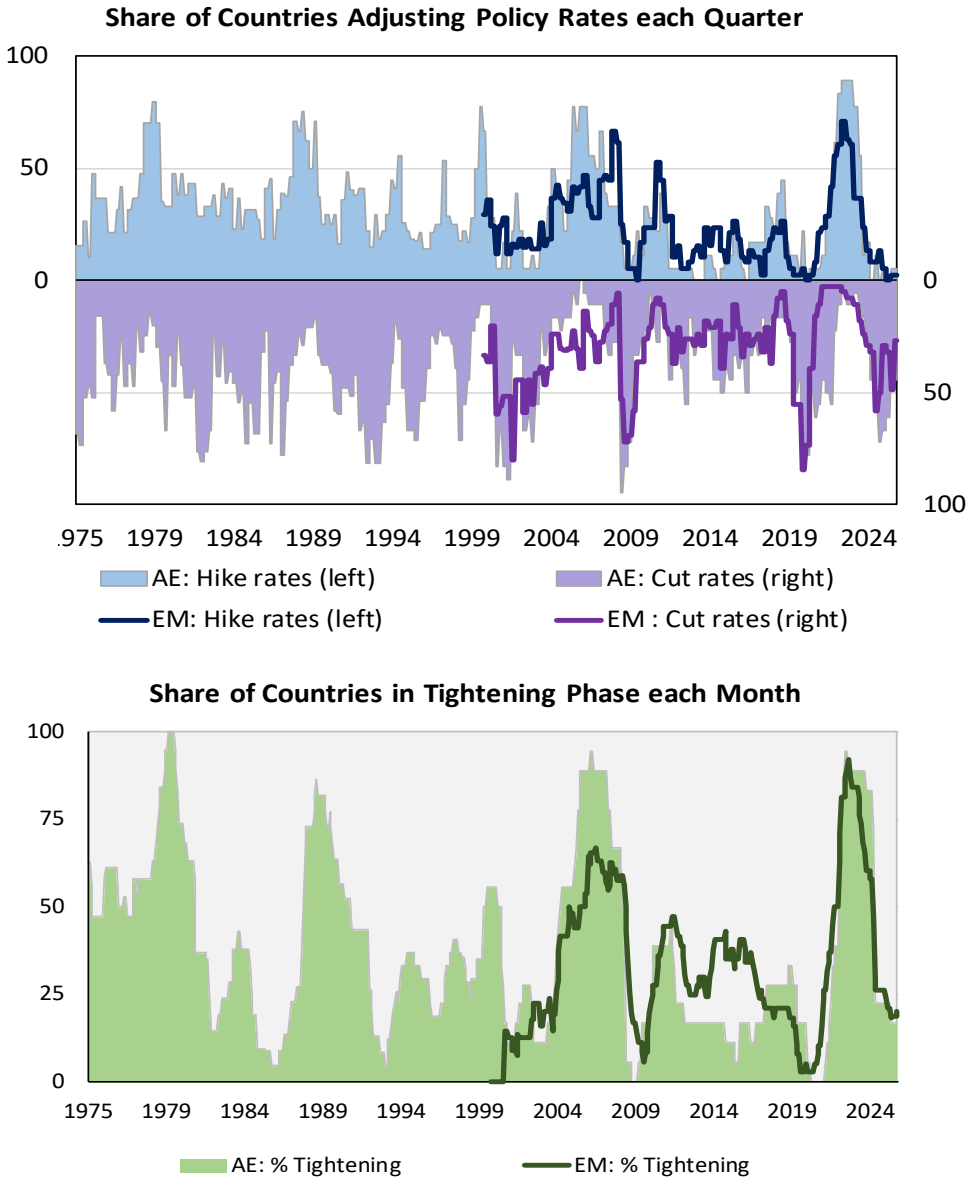
[15] We use the threshold of 0.1 percentage point to exclude minor fluctuations in market-determined rates. We focus on quarters as many central banks do not meet each month. This means that the combined share of economies raising and lowering rates in any quarter can be greater than 100 percent as some economies could both raise and lower rates within a quarter.

[16] We do not include quantitative tightening programs as rate increases, as central banks have stated that these programs are not the primary tool for adjusting monetary policy during tightening phases.

[17] More specifically, an economy can be in an easing phase if it: (a) lowers the policy interest rate or has a QE program in the quarter; (b) keeps the policy rate on hold; or (c) raises the policy rate but this does not qualify as shifting to a tightening phase. Only economies meeting the first criteria (a) are included as decreasing rates in the top panel, while all three sets are in an easing phase in the bottom panel.

bottom panel of **Figure 2** shows this comparison by splitting the same sample into the share of advanced economies in a tightening phase (in light green) and easing phase (in grey), with the corresponding shares for emerging markets denoted by the dark green line (with the share in a tightening phase below the line and in an easing phase above).

Figure 2: Synchronization in Rate Cycles



Source: Author's calculations, based on data on changes in policy interest rates and QE programs described in Section II. Data ends in November 2025.
Notes: Top panel shows share of AEs or EMs hiking/increasing the policy interest rate >0.1 percentage point in any quarter in blue and share cutting/decreasing the policy interest rate or doing QE if rates are at the lower bound in purple. Bottom panel shows share of sample each month in a tightening phase in green (and otherwise in an easing phase in grey), based on the definitions of rate cycles in Section II. In each panel, the shaded area is the percent of advanced economies (AEs) and the dark line is the percent of emerging markets (EMs).

Some of the patterns noted in the top panel of **Figure 2** are even more apparent in the bottom when focusing on phases instead of individual rate adjustments. For example, the waves now look more like steep mountains surrounded by large valleys—indicating periods of highly synchronized tightening and easing phases. These mountains and valleys were particularly severe around the pandemic—with the largest share of both advanced economies and emerging markets in an easing phase in 2020 since the sample began. Also noteworthy, these mountains and valleys have become more similar for advanced economies and emerging markets over time. In the 2000's, more advanced economies were in a tightening phase, and in the 2010s more emerging markets were in a tightening phase (consistent with the discussion above), but from about 2018 the waves become highly synchronized. This is particularly noteworthy given the substantial diversity in monetary and exchange rate frameworks and economic structures across the larger sample of emerging markets.

This high degree of synchronization in rate cycles—across a diverse group of emerging markets as well as advanced economies—and particularly the highly synchronized shifts in most of the sample from easing to tightening and vice versa in recent years is not surprising given the increased importance of global shocks over time. For example, Forbes, Ha and Kose (2025) show that the role of global shocks in explaining the variation in interest rates has more than tripled from 1970-1984 to 2020-24, such that the importance of global shocks has recently been roughly equal to that of domestic shocks. This builds on a recent literature showing that global factors have also played more important roles in driving inflation and activity over time (Ha, Kose and Ohnsorge 2019; Forbes 2020), as well as the literature documenting the increased comovement of financial variables—including government bond yields and equity indices. [18]

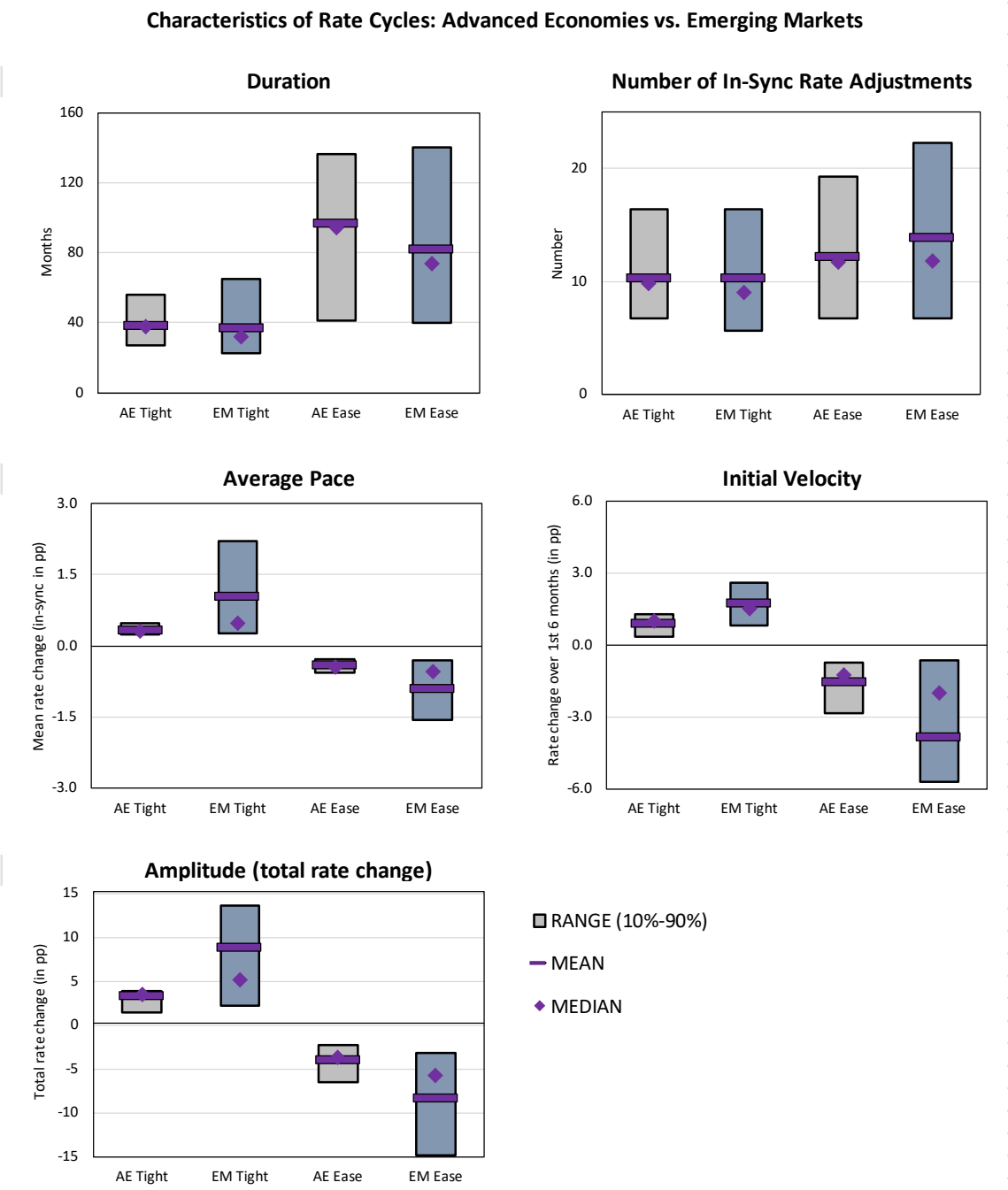
D. Rate Cycles: Characteristics in Emerging Markets versus Advanced Economies

While rate cycles across emerging markets and advanced economies have recently been highly synchronized, this does not provide information on whether the characteristics of these rates cycles and underlying rate adjustments were also similar. For example, do advanced economies and emerging markets adjust rates at a similar pace or by a similar amount? Therefore, this section analyzes these rate cycles in more detail to understand if key characteristics of these easing and tightening phases are similar across emerging markets and advanced economies.

I begin by computing a set of statistics inspired by the extensive literature analyzing business cycles, albeit adjusted in some cases to better apply to the tightening and easing phases for monetary policy. I focus on five statistics:

[18] There is mixed evidence on whether the comovement of financial variables has declined since 2008 from earlier highs. For evidence and discussion, see Avdjiev et al. (2020), Forbes and Warnock (2021), Goldberg and Krogstrup (2019), Ha et al. (2019), and Miranda-Agrippino and Rey (2020).

Figure 3
Characteristics of Rate Cycles for Advanced Economies vs. Emerging Markets



Source: Author's calculations based on the rate cycles defined in Section II with data from January 2000 through November 2025 for sample of 38 emerging markets (EMs) and 18 advanced economies (AEs).
Notes: Figure shows sample statistics across all tightening and easing phases. The number and pace of rate adjustments only include "in-sync" rate adjustments, i.e., rate increases (decreases) for tightening (easing) phases. Initial velocity and amplitude are the total changes in rates (in any direction) over the first six months of the phase or the entire phase, respectively. Duration is the total length of the phase, including when policy rates are unchanged. The euro area is included as a single entity.

- *Duration*: The length of the phase (in months), defined from the turning point marking the start of one phase to the turning point marking the start of the subsequent phase, and including any periods when rates are constant at the end of the phase.
- *Amplitude*: The total change in the policy interest rate (in pp) over the entire phase.
- *Number of in-sync rate changes*: The number of times the policy rate is adjusted by more than 0.1 pp in-sync with the phase (i.e., the number of rate increases >0.1 pp during a tightening phase and the number of rate decreases <-0.1pp during an easing phase).[19]
- *Pace*: The average size of policy rate adjustments in-sync with the phase (as described above); this does not include months with no change in rates.
- *Initial Velocity*: The total change in the policy rate (in pp) over the first six months of the phase.

I calculate each of these statistics using monthly data from January 2000 through November 2025 for the tightening and easing phases identified above. **Figure 3** summarizes the results for each phase in advanced economies (grey) and emerging markets (blue). The graphs show the medians, means, and 10%-90% values of each distribution. There are substantial skews for a few measures, such as the initial velocity of rate cuts during easing phases in emerging markets, but in most cases the means are close to the medians (particularly in advanced economies).

There are a number of interesting patterns in these graphs, but most noteworthy for the focus of this paper is the comparison between emerging markets and advanced economies. Most striking is that for each of the statistics, the medians are similar across the two groups of countries. In other words, policy interest rates are adjusted for a similar length of time, by a similar number of times, at a similar initial velocity and overall pace, and by a similar total magnitude for the median emerging market and median advanced economy. The mean values are also usually similar across the two groups—with the exceptions mainly in nominal values for emerging markets where the skew is largely driven by a small number of countries with high inflation and relatively larger adjustments in nominal rates. Overall, however, this chart suggests that the characteristics of the rate adjustments for a large share of advanced economies and emerging markets are similar during tightening and easing phases.

Shifting from the medians and means to the distributions and skews, however, there are several noteworthy differences in the characteristics of rate cycles across the two groups of countries. For example, the 10%-90% range for each of the statistics is larger for emerging markets, and substantially larger by some metrics, reflecting the greater heterogeneity in how emerging markets adjust monetary policy. This greater variation across emerging markets is particularly noteworthy in the nominal measures—i.e., average pace, initial velocity, and amplitude. This largely reflects the subset of emerging markets with higher

[19] We use the threshold of 0.1pp so that minor movements in market-determined rates are not counted as rate increases or decreases.

inflation and nominal policy rates, but may also reflect less monetary policy credibility in some members of this group (such that rates need to be adjusted by more to achieve inflation goals). This higher level of inflation and nominal rates in a subset of emerging markets also contributes to the larger ranges for the easing phases, as rate adjustments are less likely to be constrained by lower bounds. For the characteristics of rate cycles that are not nominal, however, such as the overall duration and number or rate adjustments, the range across the group of emerging markets and advanced economies is very similar.

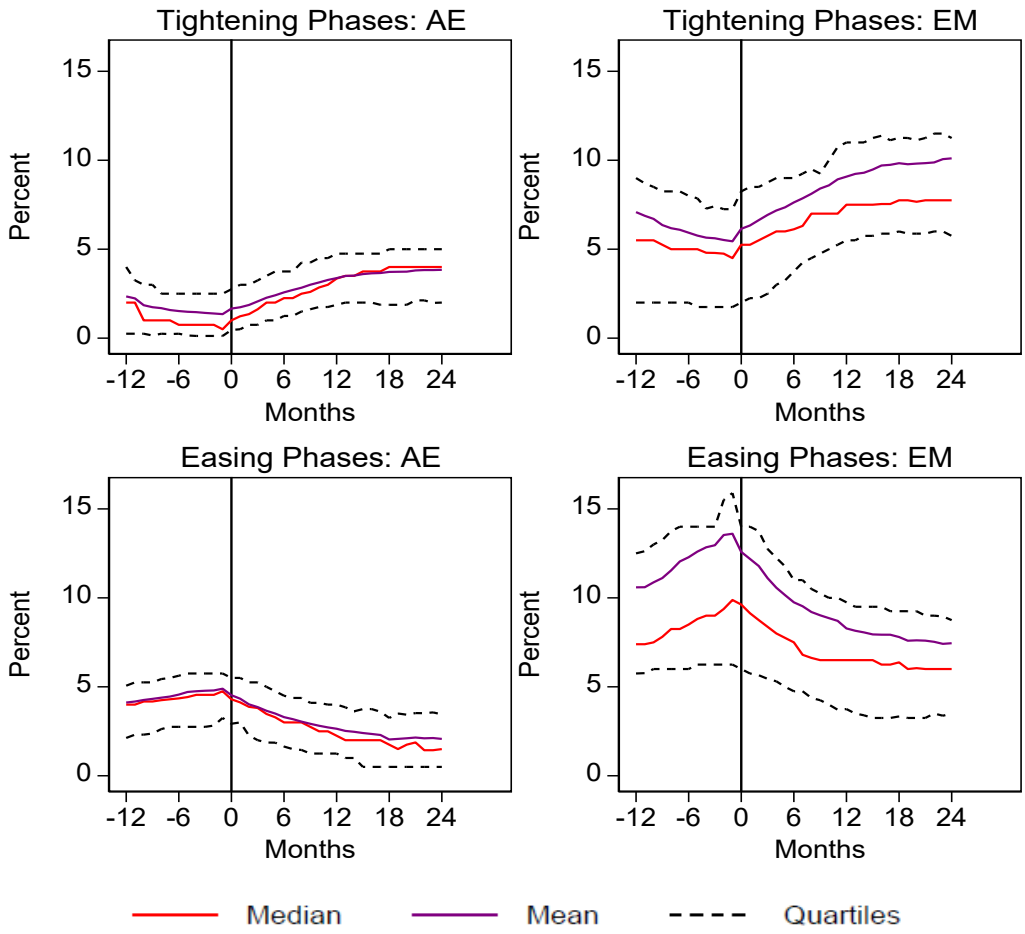
E. Interest Rates and Inflation over Rate Cycles

As a further comparison of the rate cycles of advanced economies versus emerging markets, it is also useful to analyze the evolution of key macroeconomic variables during easing and tightening phases. This section focuses on patterns for interest rates and inflation, beginning with the means, medians and distribution in each group over the last 25 years, and then compares how these patterns changed over three periods: 2000-2009, 2010-2019, and 2020-25. This analysis highlights the unusual performance of inflation—and the corresponding monetary policy response—around the pandemic. [20]

To begin, **Figure 4** shows the evolution of policy interest rates for advanced economies and emerging markets during tightening and easing phases from 2000-2025. The graphs include the mean, median and quartile distribution for the country-phases identified in Section II.B. Interest rate adjustments move in the expected directions during rate cycles—increasing during tightening phases and decreasing during easing phases. The differences between advanced economies and emerging markets are also consistent with the discussion in the last section on the characteristics of these rate adjustments. There is substantially more heterogeneity in the adjustments of emerging markets (i.e., much wider quartile bands), and the mean policy rate is substantially higher than the median in emerging markets, indicating an asymmetric skew in the distribution (which is also apparent in the dashed quartile lines). Policy rates in emerging markets also tend to be higher than in advanced economies (whether measured by the mean, median or quartile values), but the median size of the adjustments during tightening and easing phases is similar. In other words, the median advanced economy and emerging market raised or lowered policy rates by roughly the same amount during easing and tightening phases, respectively, since 2000—but the adjustments in emerging markets all occurred at a higher level of policy rates.

[20] For a detailed analysis of the performance of macroeconomic variables (including inflation) around the pandemic and in earlier decades, see Ha, Kose and Ohnsorge (2019).

Figure 4
Policy Interest Rates during Easing and Tightening Phases



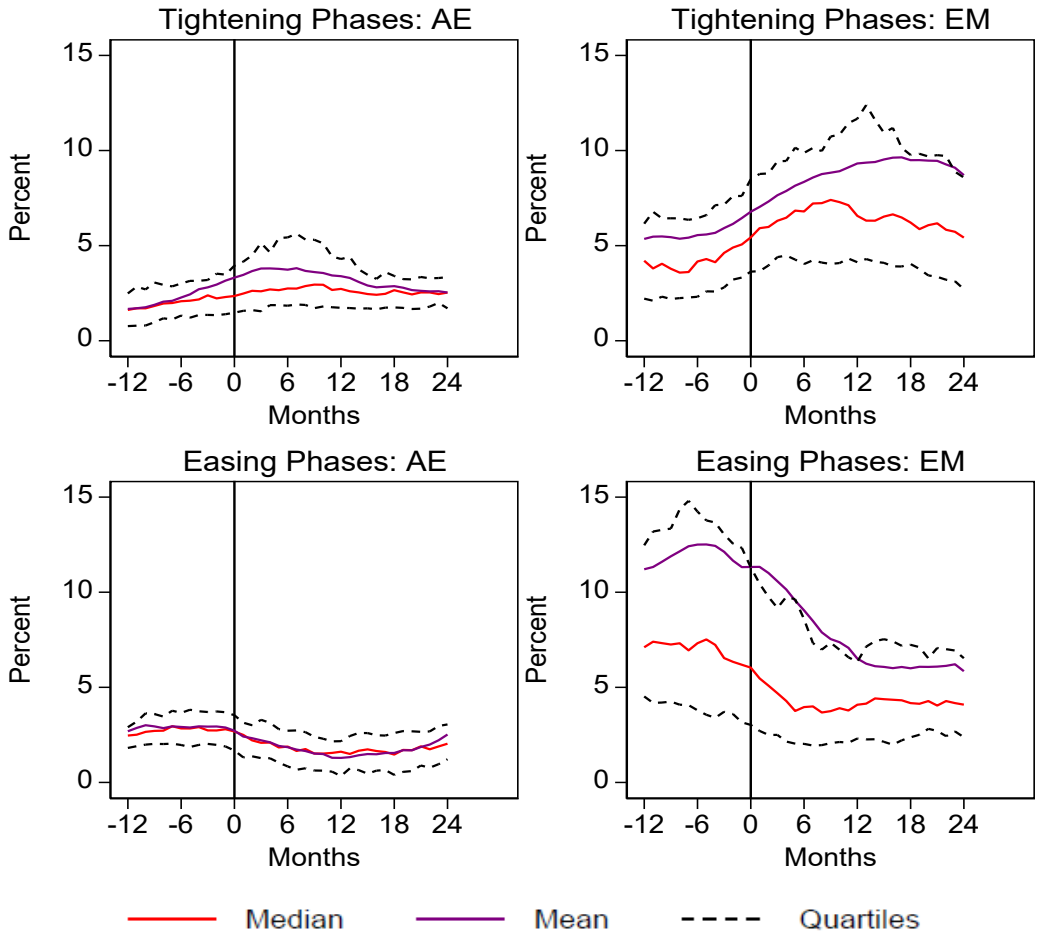
Sources: Authors' calculations using the turning points for rate cycles identified in Section II.
Notes: Figures show the evolution of policy interest rates around the turning points of interest rate cycles, with *t*=0 the start of each phase. Statistics are calculated across all phases for which data is available for at least 6 months prior to *t*=0. The euro area is included as one economy.

Next, **Figure 5** reports the same analysis for the evolution of CPI inflation.[21] Inflation tends to pick up before and just after the start of tightening phases, before starting to decline as the lagged effects of monetary policy affect the economy. Inflation tends to fall over the initial 6-12 months of easing phases, before gradually picking up. These patterns—and particularly the muted patterns for advanced economies— are consistent with the "price puzzle" in the monetary VAR literature and the evidence of a non-linear Phillips curve, as well as with forward-looking monetary policy that targets future expected inflation. [22] Most

[21] Inflation is calculated as the 12-month change in the CPI price index (non-seasonally adjusted), based primarily on data from Havers, and supplemented with data from the OECD. When monthly data is not available, quarterly data is interpolated.
[22] More specifically, this muted correlation between the turning points in rate cycles and inflation may reflect that monetary policy reacts to, and prevents, future expected inflation deviations, based partly on central

relevant for this paper, however, are the sharp differences between advanced economies and emerging markets. Just as in **Figure 4** for policy interest rates, the levels are higher for emerging markets by each measure, and the mean inflation rate is substantially higher than the median in emerging markets (and only moderately higher in advanced economies during tightening phases). These patterns show that not only is inflation higher in the median emerging market than in the median advanced economy, but there is a larger asymmetric skew in emerging markets of much higher inflation in a small number of countries.

Figure 5
CPI Inflation during Easing and Tightening Phases



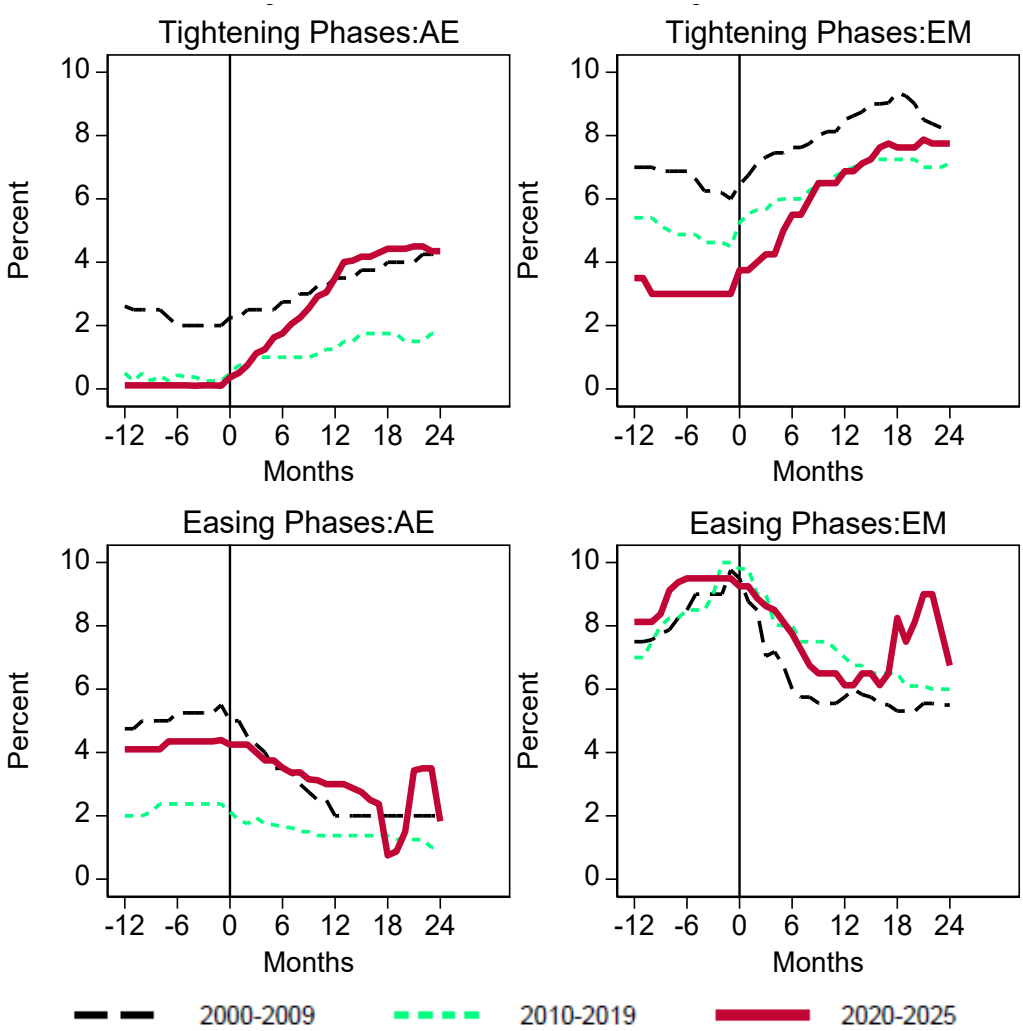
Sources: Authors' calculations using the turning points for rate cycles identified in Section II.
Notes: Figures show the evolution of CPI inflation around the turning points of interest rate cycles, with *t*=0 the start of each phase. Inflation is calculated as the percentage change relative to 12 months earlier based on the consumer price index. Statistics are calculated across all phases for which inflation data is available for at least 6 months prior to *t*=0. The euro area is included as one economy.

banks' information on future inflation developments (Castelnuovo and Surico 2010; Jarocinsky and Karadi 2020; Ha et al. 2025). These findings are also consistent with a flat Phillips curve, or a non-linear Phillips curve with the median cycle on the flat section of the curve (Forbes, Gagnon, and Collins 2022; Benigno and Eggertsson 2023). In order to assess the direct effects of monetary policy, it would be necessary to use a different analytic approach that controls for the reaction functions of central banks.

Have these patterns changed over time? To assess if these relationships have changed since the 2008 Global Financial Crisis and around the pandemic, **Figures 6 and 7** repeat this analysis of the evolution of policy rates and inflation during easing and tightening phases, except now report the statistics for three sub-periods: (1) 2000-2009 (a period of globalization and the 2008 GFC); (2) 2010-2019 (the prolonged recovery after the GFC, including the euro crisis); and (3) 2020-25 (the period around the pandemic and subsequent inflation surge). These graphs highlight the unusual adjustments in monetary policy and inflation after 2020.

Figure 6

Policy Interest Rates over Tightening and Easing Phases, during Different Periods



Sources: Authors' calculations using the turning points for rate cycles identified in Section II. Data from January 2000 through November 2025.

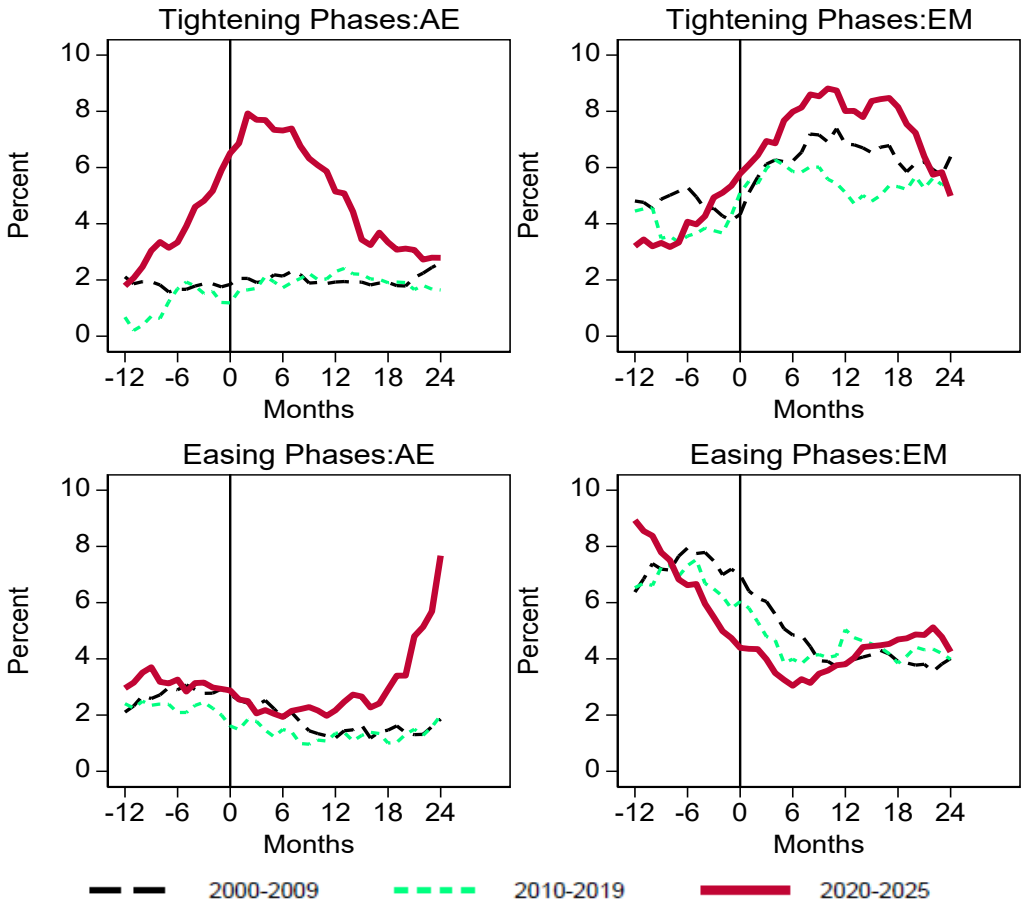
Notes: Figure shows policy interest rates around the turning points of rate cycles during different sub-periods, with t=0 the start of each phase. Lines are the medians for all phases for which data on the policy rate is available for at least 6 months prior to *t*=0. The euro area is treated as one economy.

For both advanced economics and emerging markets, interest rates were increased in response to the post-pandemic inflation more quickly and by more in total than during recent tightening phases. In advanced economies, these sharp increases returned interest rates to the higher levels typical of the 2000s, rather than the lower levels typical in the 2010s. During the easing phase in response to the pandemic, the reductions in policy rates were initially similar to at least one historical period of easing phases in both advanced economies and emerging markets, but then these cuts were reversed much more quickly than traditionally occurred as countries recovered faster than expected and inflation surged. The most noteworthy difference between these adjustments in advanced economies and emerging markets (other than the level of rates) is the more aggressive adjustments in emerging markets. The median emerging market raised rates more quickly and by more overall in response to the post pandemic inflation—despite inflation peaking at similar levels (**Figure 7**).

Shifting to **Figure 7** with the comparable results for inflation, the period around the pandemic continues to stand out and explains the unusual adjustments in monetary policy around this period (**Figure 6**). Inflation was already surging in most economies and well-above target levels before the start of the post-pandemic tightening phases, consistent with central banks being unusually slow to start tightening monetary policy compared to historical rate cycles. Advanced economies were even slower to respond than emerging markets—with the first rate hike not occurring until median inflation reached 6 ¼%; in comparison, the first rate hike in emerging markets occurred when median inflation reached 5 ¾%—despite higher inflation targets in much of this group. Inflation subsequently fell back quickly in both sets of countries, but remained elevated three years after the start of tightening phases in advanced economies, not only compared to historical patterns but also relative to 2% inflation targets. In comparison, inflation in emerging markets fell back to levels consistent with historical patterns for this stage in tightening phases—albeit with more variation in the distance to inflation targets—as discussed in more detail below.

One reason why emerging markets may have been less slow to respond to the pickup in inflation was that they had more recent experience with this type of volatility in inflation. Advanced economies had not experienced a comparable surge in inflation since the late 1970s and early 1980s, while **Figure 7** shows that emerging markets had experienced roughly comparable surges in the 2000s (at least for the median economy). Emerging markets were likely more attuned to the risks of an inflation surge having a more persistent effect on wage and price setting, even if initially caused by a temporary shock. Also, central banks in emerging markets that had only adopted inflation targeting more recently may have been more attentive to reinforcing their credibility by being less tolerant of inflation deviations.

Figure 7
CPI Inflation over Tightening and Easing Phases during Different Periods



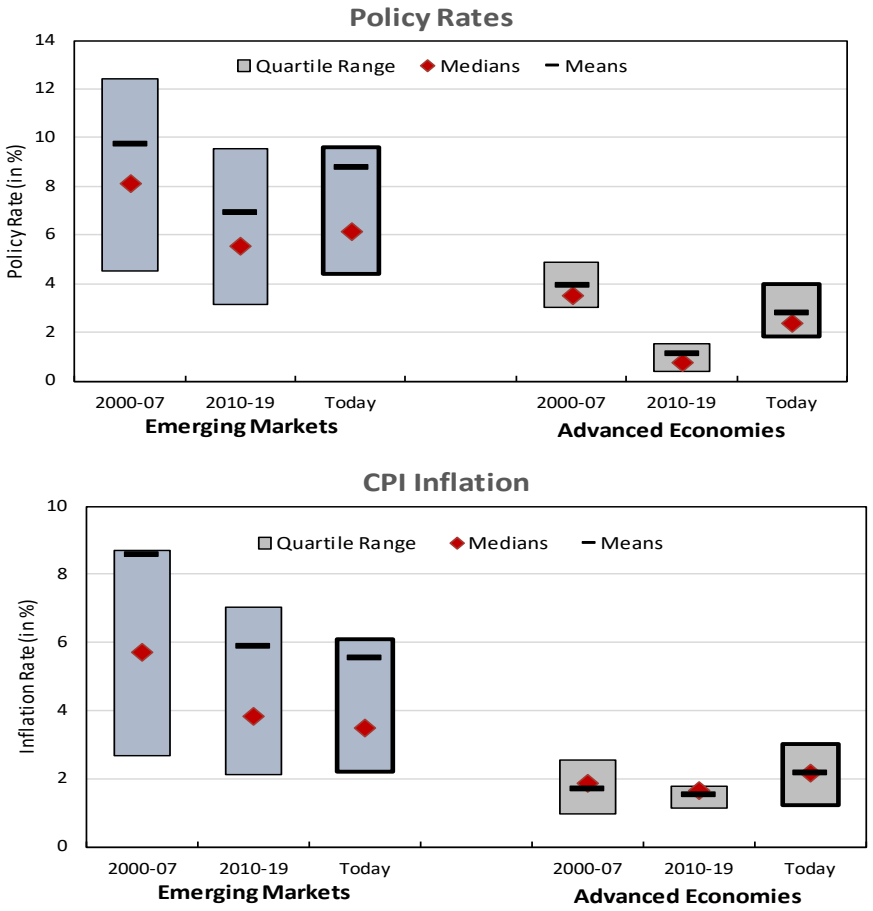
Sources: Authors' calculations using the turning points for rate cycles identified in Section II. Data from January 2000 through November 2024.
Notes: Figure shows inflation around the turning points of rate cycles during different sub-periods, with t=0 the start of each phase. Inflation is calculated as the percentage change relative to 12 months earlier based on the consumer price index. Lines are the medians for all phases for which data on inflation is available for at least 6 months prior to *t*=0. The euro area is treated as one economy.

F. Interest Rates and Inflation Today versus Historical Periods

After this unusual period of inflation and rate adjustments around the pandemic and post-pandemic inflation (particularly for advanced economies), have inflation and interest rates returned to pre-pandemic averages? It has now been about five years since the onset of the pandemic, and over three years since the peak in global inflation (in September 2022). Have the aggressive monetary policy responses in advanced economies and emerging markets been able to stabilize inflation around targets? And if so, are policy interest rates also stabilizing around pre-pandemic norms? To answer these questions, I calculate the average policy rate and CPI inflation for each economy in the sample over 2000-07 (the period of rapid globalization before the GFC) and from 2010-19 (a period when the shift in global imbalances discussed below occurred). **Figure 8** shows the resulting medians, means, and quartile ranges for emerging markets and advanced economies.

For both groups of economies, mean and median policy interest rates today are higher than in the 2010s and lower than in the 2000s, consistent with an increase in neutral interest rates since the pandemic after a steady decline over the previous decade. In emerging markets, the net effect of these changes is to reduce median interest rates by 2.0pp from 2000-07 through today (from 8.1% to 6.1%), while in advanced economies the net effect is a smaller reduction of 1.1pp (from 3.5% to 2.4%). As a result, the median interest rate differential between emerging markets and advanced economies has closed since the 2000s, a change which could affect cross-border interest payments and global imbalances (discussed in Section IV). Another important difference between emerging markets and advanced economies over the sample period is the change in inflation. Inflation has continued to fall over each window in emerging markets (by each metric), but has increased in advanced economies, such that the mean, median, and quartile range are all higher now than in the 2000s and 2010s.

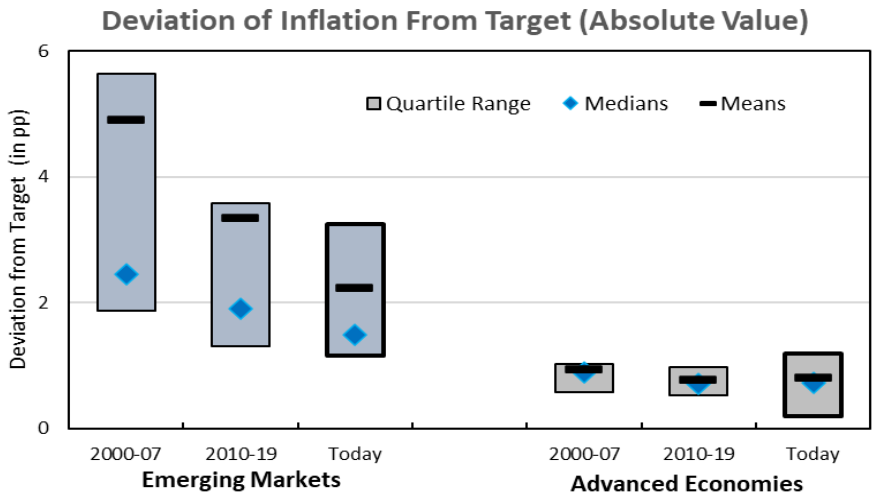
Figure 8
Policy Rates and Inflation in Advanced Economies and Emerging Markets



Source: Author's calculations for sample of 38 emerging markets (EMs) and 18 advanced economies (AEs). "Today" is the most recent data available when this project began, which is November 2025 for most economies.
Notes: Figure shows sample statistics across the windows listed at the bottom. Members of the euro area are included as a single entity. CPI inflation is the annual change in the CPI price index.

This higher level of inflation in advanced economies today, however, may simply be a healthy recovery of inflation to targets rather than an indication inflation is too high—supported by the median and mean inflation rates today of 2.2% and 2.1%, respectively. Therefore, as a final test, **Figure 9** shows the deviation of inflation from target in each country that has an official inflation target.[23] After overshoots in inflation over 2020-24, inflation has fallen such that the mean and median deviation of inflation from target in advanced economies is now at historical averages since 2000. This still implies a "miss" of inflation deviating from target (in either direction) by an average of 0.7pp, however, and the variation in these inflation misses is larger today than in the previous two decades. In fact, some of the largest inflation deviations in advanced economies today are in the largest members of this group—including a deviation of 1.0pp in Japan and the United States and 1.9pp in the United Kingdom.[24] For emerging markets, although inflation deviations remain higher than in advanced economies, there has been more notable progress in meeting inflation targets over time. The average deviation of inflation from target in emerging markets (with an explicit inflation target) has fallen from 4.9pp over 2000-07 to 3.4pp in 2010-19 to 2.2pp today. The stronger performance today is particularly impressive given the substantial volatility and sharp spike in inflation over the last five years.

Figure 9
Inflation Deviations from Target in Advanced Economies and Emerging Markets



Source: Author's calculations based on the subset of 38 emerging markets (EMs) and 18 advanced economies (AEs) that have an official inflation target in the given year. "Today" is the most recent data available when this project began, which is November 2025 for most economies.
Notes: Figure shows the absolute value of the deviation of inflation from the official target. For countries with a band for the inflation target, this is the deviation from the upper or lower end of the band. Statistics are based on absolute value deviations to give equal weights to periods of inflation above and below target.

[23] For countries with a band for the inflation target, I calculate the deviation from the upper or lower limit of the band (not the midpoint). In order to incorporate deviations both above and below an inflation target, I use the absolute value of the deviations. Data on inflation targets is from Ha, Kose and Ohnsorge (2019).
[24] Data as of November 2025. Some of these gaps have fallen slightly since.

III. Global Imbalances: Divergence and a Divergent

While there has been a high degree of convergence in the use of monetary policy across advanced economies and many emerging markets, has the same occurred for global imbalances? Has the greater synchronization and more similar use of monetary policy—including the smaller differential between median interest rates in advanced economies and emerging markets—aggravated or mitigated concerns around imbalances? Can the more widespread use of countercyclical monetary policy (particularly in many emerging markets) help provide resilience against risks related to global imbalances? While many factors contribute to the levels and changes in imbalances, interest rates play a crucial role, not only directly through their impact on relative returns and the corresponding international capital flows, but also indirectly through their effect on domestic demand, exchange rates, and equity valuations.

To address this series of questions and better understand these relationships, this section begins by examining the recent evolution of global imbalances, focusing on net international investment positions and the differences between advanced economies and emerging markets. Then it provides a more detailed decomposition of the factors driving the recent growth in imbalances, focusing on the relative importance of trade, international income flows, and valuation effects. The next section uses these decompositions to examine how international interest income and the valuation effects on international holdings of equities and foreign direct investment—both of which are closely linked to monetary policy—have contributed to the recent divergence in imbalances (and especially the "divergent" position of the United States). This section draws heavily on the framework developed in Forbes, Hjortsoe and Nenova (2017) and recent data and analysis in Adjiev, Forbes, Nenova and Santos (2026).

A. The Evolution of Global Imbalances

To assess the evolution of global imbalances, we focus on the most comprehensive measure of cross-country exposures: net international investment positions (NIIPs).[25] The NIIP is calculated as the difference between a country's aggregate international assets less its international liabilities, thereby including exposures for households, financial and non-financial companies, and government entities (including any local or quasi-government bodies as well as the sovereign). This focus on a country's total exposure (and not just the sovereign) is important as the financial health of companies, financial institutions and households is often linked to the financial situation of the sovereign as well as the entire economy.[26] We focus on the accumulated stock of international exposures, rather than on annual cross-border flows (such as the financial or current account), in order to focus on

[25] Gross (instead of net) international exposures can also be important, particularly during a liquidity shock. For more discussion of the role of gross flows and exposures, see Lane and Milesi-Ferretti (2007, 2012, 2018), Gourinchas and Rey (2007), Forbes and Warnock (2012), and Avdjiev, McCauley and Shin (2016).

[26] For example, a government with modest sovereign debt, but large liabilities in the private sector, might need to assume these liabilities in a crisis and thereby constrain the policy options of the sovereign.

the underlying sustainability of exposures. These measures of international investment positions are also central for the analysis in Sections IV and V on potential vulnerabilities and spillovers, as shocks can not only have a meaningful impact on a country's net worth through its NIIP, but can also determine the effectiveness of different policy responses. [27]

To measure imbalances, I draw from the dataset compiled in Adjiev et al. (2026), which is primarily based on the IMF's Balance of Payments and International Investment Position Statistics (BOP/IIP, version 6) and then supplemented with a range of other sources. I focus on a subset of their data for 23 economies (12 advanced and 11 emerging markets) from 1980 through 2024. [28] I treat the euro area as one entity (i.e., do not include individual member countries as separate entities) and exclude major financial centers. Appendix B provides more information on the data compilation and resulting sample. Although this is only a subset of all countries in the world, Adjiev et al. (2026) shows that this sample covers the vast majority of international investment positions and global imbalances, and the aggregate trends for this sample closely follow their global counterparts (as captured in databases with more extensive coverage, such as Lane and Milesi-Ferretti 2012).

Figure 10 provides an initial look at the evolution of global imbalances over time for this sample of economies. It shows the aggregate NIIPs for emerging markets (darker shading) and advanced economies (lighter shading) relative to global GDP, with each group divided into countries that are creditors (blue) and debtors (orange). The net positions for all emerging markets or all advanced economies are shown in dashed lines. Most striking is the growth in global imbalances over time, as captured by the size (i.e., "fan") of the aggregate creditor position, aggregate debtor position, and combination of the two.

To better understand this growth in imbalances, **Figure 11** reports the "divergence" in NIIPs for each group of economies and the full sample, with divergence calculated as the sum of the absolute values of the aggregate creditor and debtor positions relative to global GDP. For the sample as a whole, this divergence has increased from 8% of global GDP in 1980 to 42% in 2024. This primarily reflects an increased divergence in NIIPs in advanced economies, which jumped nearly sixfold from 6% of global GDP in 1980 to 35% in 2024. In contrast, the divergence in emerging market NIIPs was more stable, increasing from only 3% of global GDP in 1980 to 7% in 2024. The increased divergence also appears to have occurred in two waves; there was an initial increase for a few years starting in 1997, and then another jump and more persistent period of growing divergence starting in 2008 and continuing through the end of the sample—with a particularly large jump over 2023-24.

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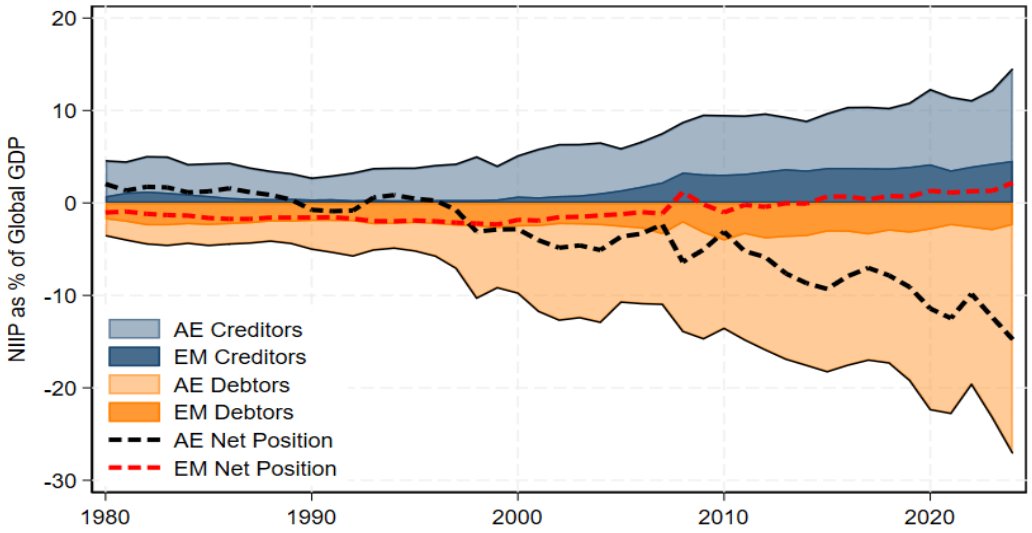
[27] For example, Atkeson et al. (2025) shows how countries with debtor NIIPs often require more difficult policy responses to global financial shocks than domestic financial shocks.

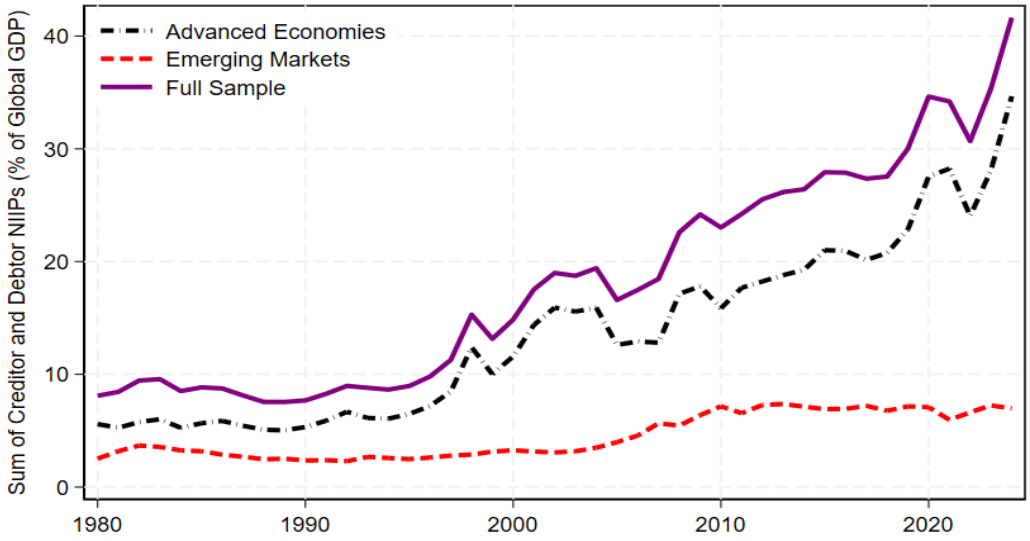
[28] Countries were selected based on the availability of key data for the decompositions below, as well as to focus on countries with the largest impact on global imbalances. The main difference between the sample used in this paper with that in Adjiev et al. (2026) is that I include the euro area as one entity, while Adjiev et al. (2026) includes individual members of the euro area. As a result, in this paper cross-border exposures of euro area countries with other members are netted out and not included in measures of global imbalances.

Figure 10
Evolution of Imbalances in Advanced Economies and Emerging Markets



Source: Authors calculations. Data on NIIPs from the IMF's BOP/IIP database (version 6) and for GDP from the IMF's World Economic Outlook database (October 2025).
Notes: Figure shows the aggregate net international investment positions (NIIPs) for each group of economies as a percentage of global GDP. "EM" is group of 11 emerging markets and "AE" is group of 12 advanced economies, including the euro area as a single entity. Creditors (debtors) are countries with positive (negative) NIIPs in the given year. The "Net Positions" are aggregated across all EMs or AEs (including creditors and debtors) in the sample. See Appendix B for list of economies in the sample.

Figure 11
Divergence in Net International Investment Positions



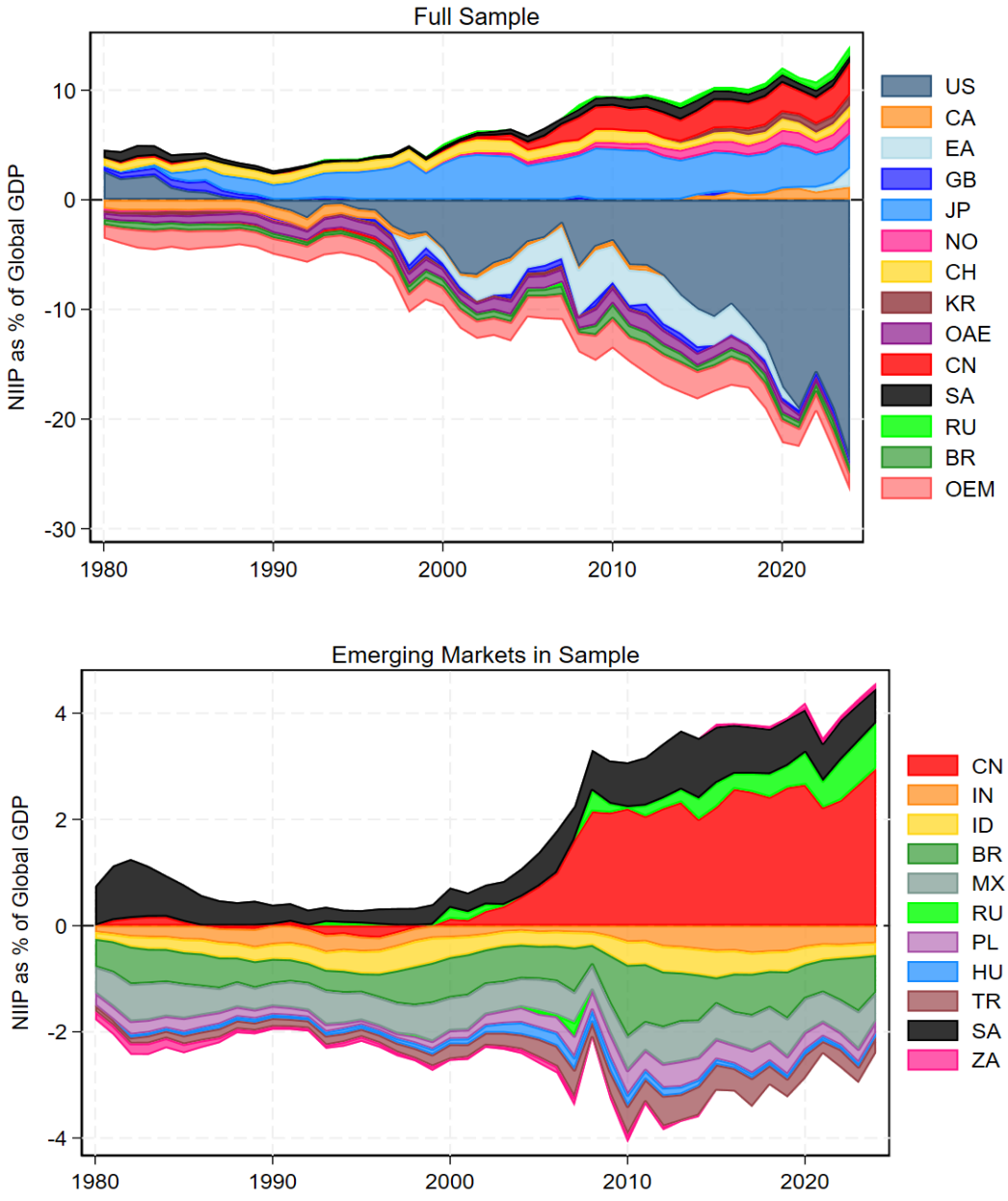
Source: Authors calculations. Data on NIIPs from the IMF's BOP/IIP database (version 6) and for GDP from the IMF's World Economic Outlook database (October 2025).
Notes: Figure shows the sum of the aggregate creditor and debtor NIIPs (in absolute value) for each group of economies as a percentage of global GDP. "EM" is group of 11 emerging markets and "AE" is group of 12 advanced economies, including the euro area as a single entity. Creditors (debtors) are countries with positive (negative) NIIPs in the given year. See Appendix B for list of economies in the sample.

The more detailed breakdown of imbalances in **Figure 10** helps identify exactly which changes within each group of economies are driving these patterns. The increased divergence primarily reflects a growing debtor position in advanced economies with negative NIIPs, albeit combined with more modest growth in the creditor positions of both emerging markets as well as advanced economies. This is most apparent in the net positions (dashed lines) for each group of economies. The net position for all the advanced economies deteriorated from slightly positive in the 1980s and much of the 1990s, to slightly negative in the late 1990s and much of the 2000s, to sharply negative after 2010 to reach -12.6% of global GDP in 2024. In contrast, the net position for all the emerging markets was relatively stable across the sample. It moved from slightly negative in the 1980s through the late 2000s (peaking at -2.3% of global GDP in 1999) to become slightly positive in 2015 and reach 2.2% of GDP in 2024. This improvement in the NIIP for emerging markets primarily reflects growth in the positions of creditors (with the size of debtor positions for this group relatively steady)—a sharp contrast to the growth in the debtor position for advanced economies (and greater stability in creditor positions).

To better understand which individual economies are driving these patterns and the increase in divergence, **Figure 12** shows the evolution of NIIPs relative to global GDP for each country in the sample (with the positions of several with smaller positions aggregated into "Other AE" and "Other EM"). Several economies stand out, not only in driving overall imbalances, but also in driving the increased divergence over time. The United States and the growth in its debtor position dominates the graph; for most of the 1980s the US NIIP was close to zero, but by 2000 it had increased to 4.5% of global GDP, explaining 30% of NIIPs and 46% of net debtor positions in the sample. In 2024 the US NIIP set a historical record (at least since our data begins in 1980) with an NIIP of -24% of global GDP, which explained 57% of global NIIPs and 88% of debtor positions.

No single country plays a dominant role in explaining the creditor positions comparable to that of the US for debtor positions, but the impact of China and Japan overshadows that of other economies with positive and more modest NIIPs (including Norway, Switzerland, Russia and Saudi Arabia). More specifically, in 2024 China's and Japan's share of global imbalances were 7% and 8%, respectively, such that the two countries explained 22% of the global creditor NIIP. The roles of these two creditor economies, however, have evolved differently over time. Japan's contribution to global imbalances has declined—with its share of global NIIPs peaking in 1995 at 29%. In contrast, China's contribution has increased over time, with its share of global NIIPs growing from less than 1% through 2001, to peak at 9% of imbalances in 2016 (before declining modestly). The NIIPs of other creditor economies have followed different patterns over time. For example, Switzerland has had a consistently positive and fairly steady NIIP relative to global GDP for much of the sample, while several commodity exporters have had meaningful increases. Also noteworthy are several economies that transitioned from being NIIP debtors for much of the sample to creditors since around 2010-2015, including Canada, the euro area, Korea and South Africa.

Figure 12
Evolution of NIIPs in Individual Economies



Source: Author's calculations. Data on net international investment positions (NIIPs) from the IMF's BOP/IIP database (version 6) and for GDP from the IMF's World Economic Outlook database (October 2025).
Notes: Panels show the evolution of NIIPs relative to global GDP from 1980 through 2024. Full sample includes 12 advanced economies (including the euro area as one entity) and 11 emerging markets, listed in Appendix B. The bottom panel only includes the 18 emerging markets. Abbreviations are: "BR": Brazil; "CA": Canada; "CH": Switzerland; "CN": China; "EA": Euro area; "GB": Great Britain/UK; "HU": Hungary; "ID": Indonesia; "IN": India; "JP": Japan; "KR": Korea; "MX": Mexico; "NO": Norway; "PL": Poland; "RU": Russia; "SA": Saudi Arabia; "TR": Turkey; "US": United States; "ZA": South Africa; and "OAE" and "OEM" are Other Advanced Economies and Other Emerging Markets that are not otherwise broken out in the top panel.

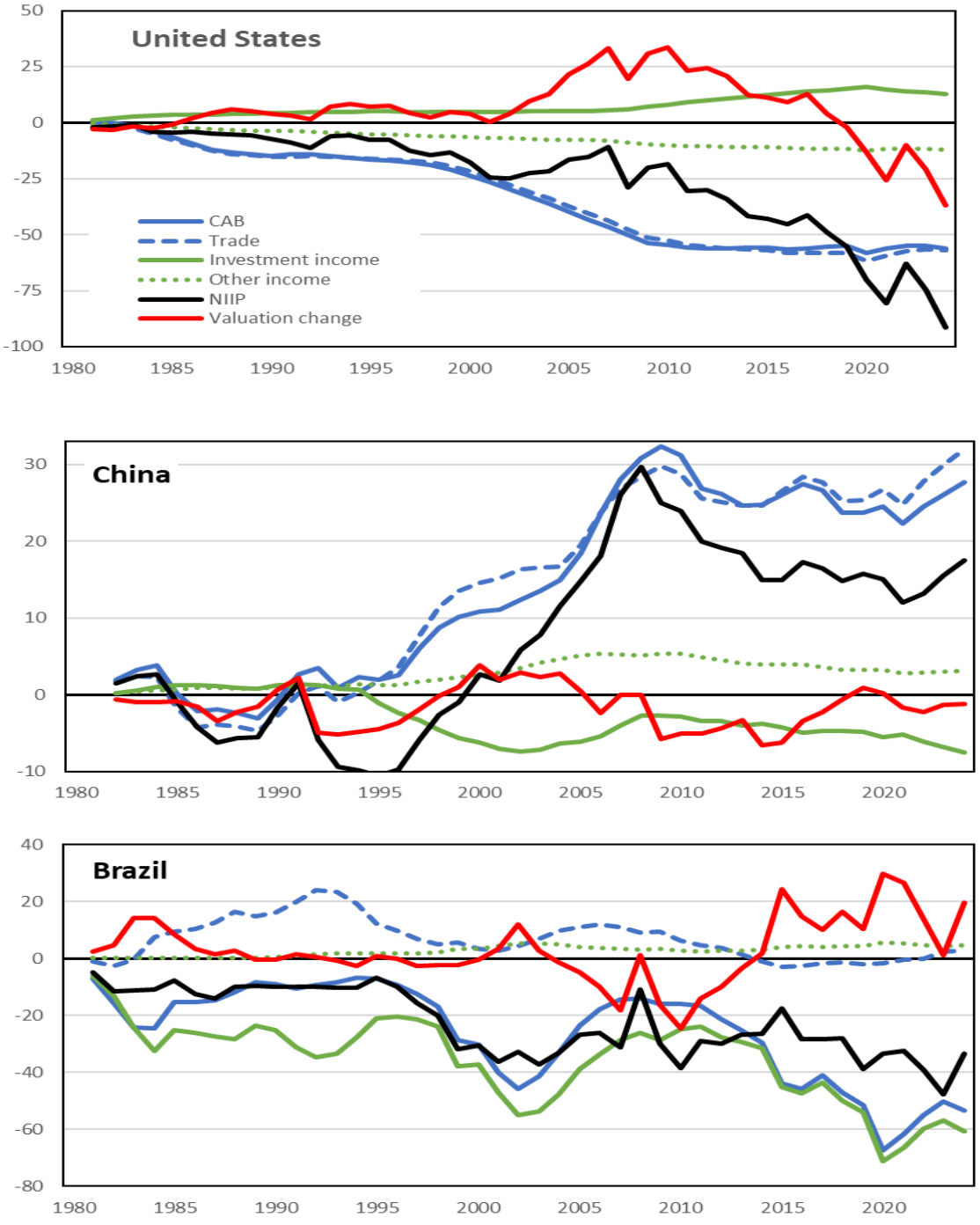
The bottom panel of **Figure 12** shows the same decomposition for just emerging markets, allowing a closer analysis NIIPs in this group. It highlights the rapid growth in China's NIIP over the second half of the sample—shifting from slightly negative or roughly balanced until China entered the WTO, before jumping to 2.2% of global GDP in 2008. China's NIIP roughly stabilized at this level until 2015, before increasing again near the end of the sample to reach 3.0% of global GDP in 2024. Saudi Arabia has also been a modest creditor for most of the sample, with its NIIP peaking over 2013-2015 at 1.1% of global GDP, before declining to 0.7% in 2024. South Africa and Russia had smaller debtor positions early in the sample, before shifting to creditor positions (in 2008 for Russia and 2014 for South Korea), with the creditor positions growing more rapidly since 2020. Most other emerging markets have had fairly consistent debtor positions for most of the sample—with the largest (relative to global GDP) for Brazil, Mexico and Turkey, and more modest but persistent debtor positions in Indonesia, India, Poland and Hungary. The aggregate EM debtor position in this sample peaked in 2010, before gradually improving, such that in 2024 the aggregate NIIP of debtor emerging markets reached its lowest level in two decades.

B. Decomposing the Drivers of Global Imbalances

What is driving this evolution in global imbalances—and especially the increased divergence over time? Has the increased convergence and synchronization in monetary policy across advanced economies and emerging markets played a role? In order to understand these patterns, it is useful to assess the extent to which changes in NIIPs originate from accumulated trade, investment income (which includes interest payments), other income, and valuation effects. To perform this analysis, I use the methodology introduced in Forbes, Hjortsoe and Nenova (2017) and then extended in Adjiev, Forbes, Nenova and Santos (2026). This methodology has several advantages relative to decompositions of imbalances used in other work. It decomposes the current account into a trade component and different international income flows, unlike much work which just focuses on current accounts—thereby allowing us to better isolate the role of interest rate differentials (which affect certain types of investment income) from that of other types of income flows (such as remittances) and that of trade.[29] This methodology also allows us to quantify the relative importance of financial channels in explaining NIIPs, including the role of valuation effects as well as investment income flows, and can be extended to provide even more detailed decompositions of these financial channels to break out the role of exchange rate movements, relative returns, portfolio composition, and stock effects.

[29] For example, Atkeson et al. (2025) does not decompose the current account into trade and investment income. This aggregation could be justified for their analysis of the United States, as the investment income component is relatively small, but this additional disaggregation is important for many countries where investment income flows are volatile, significant, and in some cases even larger than trade flows. It is also important to distinguish between investment income and other income flows (often reflecting remittances), as they have different drivers and their relative importance can vary meaningfully across economies and over time. For example, in India, Mexico, and the Philippines, the contribution of other income to NIIPs is often larger than that of investment income, and in some years even larger than for net trade.

Figure 13: Decomposing the NIIP in Three Countries



Source: Authors calculations. See Section III for details.
Notes: Panels show the accumulated change in the net international investment position (NIIP) and its underlying components from 1980 through 2024. Each variable is expressed as a percentage of domestic GDP and set to zero in 1980. The figure does not break out small changes in the NIIP from the capital account and other errors and omissions. CAB is the current account balance, which includes trade, investment income and other income. The valuation change is calculated as the change in the NIIP less the sum of the current account balance, capital account, and errors and omissions. See Appendix B for more details.

The model and details on how to perform these decompositions are provided in Adjiev et al. (2026), but to clarify concepts and better understand these decompositions, **Figure 13** provides an example of the results for three countries: the United States (the country with the largest debtor position and central to the recent divergence in imbalances); China (the emerging market with the largest creditor position and central to the increase in positive NIIPs since 2000); and Brazil (the emerging market with the largest debtor position).[30] In each graph, the lines show the evolution of different components of the NIIP from 1980 through 2024, with each component cumulated from 1980 and reported on an annual basis relative to domestic GDP (unlike earlier figures in which NIIPs were reported relative to global GDP).[31] The black line shows the level of the NIIP and the solid and dashed blue lines show the cumulated current account and trade balances, respectively. The solid and dotted green lines show the cumulated investment income (which includes interest payments) and other income balances, respectively, and the red line shows the cumulated valuation changes.

Each of the three panels illustrates how financial variables can lead to substantial divergences between the NIIP and a counterfactual NIIP reflecting solely trade flows. For example, accumulated trade flows are more negative than the NIIP for most of the sample in the United States, and more positive in China and Brazil. In other words, financial channels have been providing a boost to the US NIIP and therefore US net external wealth, while providing a reduction to China's and Brazil's NIIIP and net external wealth. These wealth effects can be meaningful and large. For example, accumulated investment income and valuation effects increased the US NIIP by a peak of about 40% of GDP in 2010, and just the accumulated investment income outflows reduced China's NIIP by 7% of GDP and Brazil's by 61% of GDP in 2024. The size, direction and drivers of these financial effects, however, can also change meaningfully over time—with a notable shift in valuation effects in many economies since around 2010.

To better understand what drives these large financial effects on NIIPs, consider the decompositions for the United States in the top panel of **Figure 13**.[32] The United States had an accumulated deficit from trade flows over 1980-2007 that would have required financing equivalent to 44% of GDP (holding everything else constant). The reported NIIP in 2007, however, was only -11% of GDP. Two factors explain this substantial gain in net worth: a fairly consistent stream of positive investment income (worth 5% of GDP) and large, positive valuation gains (worth 38% of GDP), with the remaining difference largely explained by accumulated losses on other income flows. Adjiev et al. (2026) further decomposes these positive financial effects to show that they result from: (1) higher

[30] Assessments of the largest credit/debtor positions are relative to global GDP.
[31] This methodology sets the cumulated trade balance equal to the initial NIIP as of 1980 and sets all remaining components (investment income, other income, and valuation changes) to 0 in 1980. This allows us to use the reported NIIP, despite more limited information on financial flows and valuations early in the sample. It assumes financial transfers were negligible compared to trade flows pre-1980.
[32] For detailed analysis of the US current account and NIIP, see Atkeson et al. (2025), Bayoumi and Gagnon (2025), Chari et al. (2025), Chari and Milesi-Ferretti (2025), Milesi-Ferretti (2024a) and Obstfeld (2024).

returns on US international assets than paid on US international liabilities within the same asset class (partly from higher returns on US holdings of foreign bonds than the US pays on its debt) and (2) the composition of US assets and liabilities, with a higher share of equity and FDI positions in US international assets (that traditionally pay higher returns) relative to a higher share of bonds and other debt positions in US international liabilities (that traditionally yield lower returns). This ability of the United States to run trade deficits of 5-6% of GDP per year in the early 2000s financed entirely by these financial gains is the "exorbitant privilege" highlighted in Gourinchas and Rey (2007) and Forbes (2010).

Since 2008, however, this exorbitant privilege has reversed to become more of a "generous giveaway", contributing to a rapid deterioration in the US NIIP when combined with perennial US trade deficits. This shift began in 2008 when the sharp fluctuations in returns and exchange rates around the Global Financial Crisis generated a transfer of wealth from the United States to other countries that had held safer US assets (largely US Treasury bonds).[33] Since then, the US has continued to earn a stream of positive investment income, but this has been outweighed by a sharp deterioration in accumulated valuation effects, as the returns from investing in US equities and FDI consistently outperformed those from similar types of investment in other countries. By 2024 these accumulated valuation effects from relative return differentials were so large that they had reduced the US NIIP by 37% of GDP—a loss even greater than the peak "exorbitant privilege" accumulated from 1980-2007. When combined with consistent trade deficits (and more modest losses on other income flows), the US NIIP deteriorated to a record -91% of GDP in 2024.[34]

In China and Brazil, the drivers of NIIPs and role of financial effects are starkly different than in the United States—and more typical of other economies (both advanced and emerging). The financial effects from accumulated investment income flows and valuation changes have had a negative effect on NIIPs for most years from 1995 through 2024 in both China and Brazil (versus consistently positive accumulated effects in the United States until about 2020). More specifically, in China, the accumulated trade balance over 1980-2024 (which includes modest deficits in the 1980s) would have generated an NIIP of 32% of GDP in 2024, rather than the actual 18% of GDP. In Brazil the accumulated trade balance would have generated an NIIP of 3% of GDP, rather than the large debtor position of -33% of GDP.

[33] Gourinchas, Rey and Truempler (2012) documents this "exorbitant duty" in which foreigners are willing to accept lower returns from holding US assets during normal periods as a form of insurance and higher relative returns during periods of stress.

[34] There is an extensive debate on whether the US NIIP is overstated, due to issues such as: profit shifting; incorrect valuation of FDI assets and liabilities; including non-dividend income and current cost adjustment in portfolio equity returns; and removing monetary gold from external assets. Bayoumi and Gagnon (2025) provides an excellent discussion of these concerns and suggests that adjusting for these issues reduces the US NIIP in 2024 from -90% of GDP to -67% of GDP (mainly due to adjusting for the valuation of FDI liabilities). See Curcuru et al. (2008) for an early discussion of these concerns and Milesi-Ferretti (2024b) for a discussion of how these issues impact the measurement of global cross-border holdings of portfolio equity.

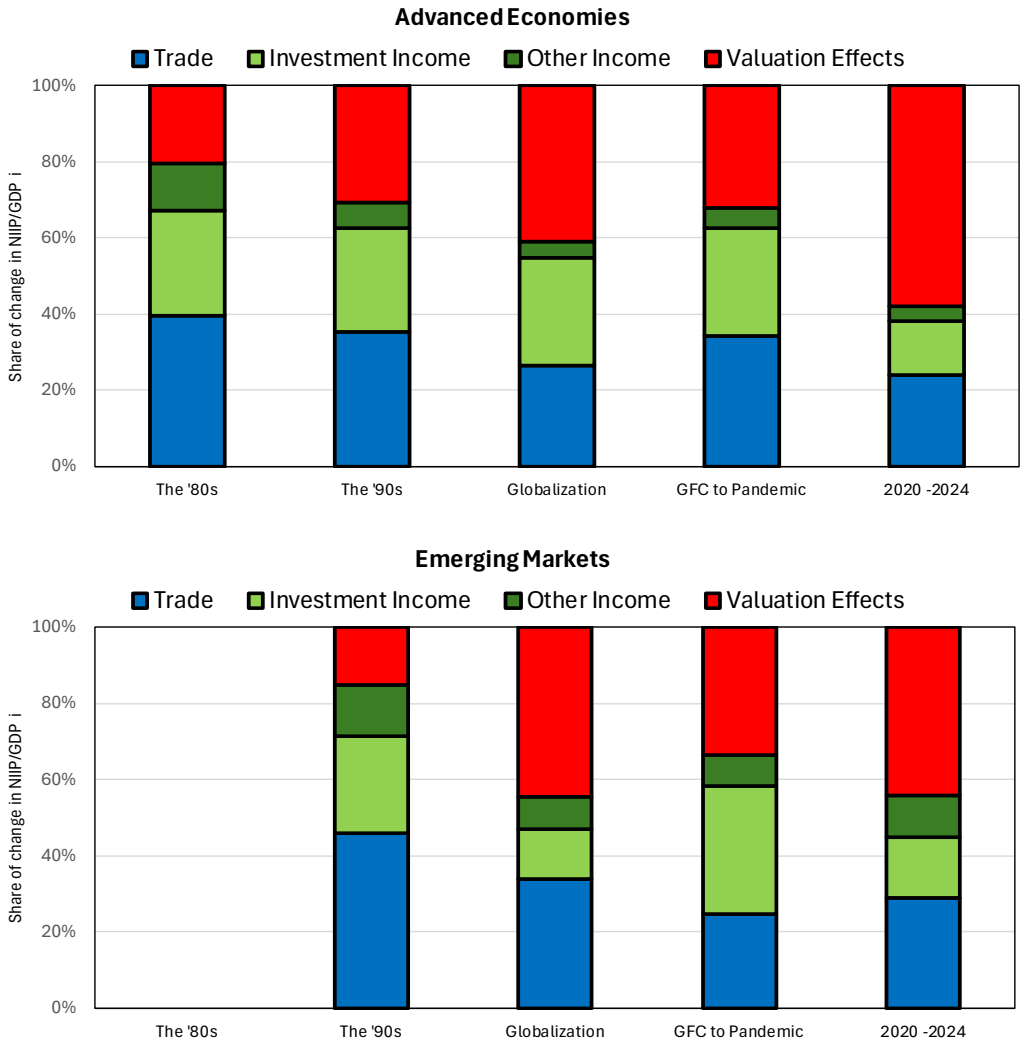
What explains this loss in net worth—of roughly 14% of GDP in China and 30% of GDP in Brazil—relative to what would have occurred from simply accumulating the financial flows corresponding to trade balances? Most of this loss reflects financial effects in the NIIP. In Brazil, and for much of the sample in China, these financial effects primarily reflect investment income flows (versus larger valuation effects in the United States), albeit with a meaningful role for "errors and omissions" in China. In China, these negative investment income flows largely reflect the composition of its international assets and liabilities (with a relatively larger share of international assets held in relatively lower yielding bonds and loans). In Brazil this also reflects the relatively higher interest rates that Brazil pays on its large stock of international liabilities relative to what it earns on its international assets—an important link to the monetary policy decisions discussed in Section II.

While valuation effects have had a smaller net impact on NIIPs over 1980-2024 than investment income flows in Brazil and China, these valuation effects have been volatile and recently shifted in meaningful way—the counterpart of the shift in the United States to large valuation losses since 2008. More specifically, valuation gains in Brazil and China have been positive in some periods and negative in others, with these fluctuations largely cancelling out over the longer period since 1980 such that the net accumulated effects were modest in many years. Since 2010, however, as US international valuation gains turned negative, and foreign holdings of US equities and FDI increased, these valuation gains have turned sharply positive in many economies outside the United States. In Brazil, this has led to a meaningful improvement in its NIIP, with the gain peaking at 30% of GDP in 2020 (before declining to about 20% in 2024). This is a meaningful boost to net worth; without these valuation gains, and holding everything else constant, Brazil's NIIP would be -53% of GDP instead of -33%. If these valuation effects suddenly reversed, there could be large and rapid effects on Brazil's NIIP and the net worth of households, businesses, financial institutions and the government (a scenario explored in more detail in Section V).

These decompositions of the NIIPs for the United States, China and Brazil highlight the diversity of country experiences in the evolution of global imbalances. Are there any regularities across the sample of economies? Have certain channels become more important in ways that can explain the recent divergence in imbalances? To assess if there are any commonalities across countries and time, Adjiev et al. (2026) performs the decompositions of changes in NIIPs in **Figure 13** for a larger sample of countries and reports the median absolute value contributions from (1) trade; (2) investment income flows; (3) other income flows; and (4) valuation effects.[35] They focus on the absolute value of these contributions in order to capture the overall magnitudes, independent of sign. **Figure 14** replicates one set of their results showing the *relative* contributions of each of these components to changes in the NIIP for the countries listed in Appendix B.

[35] In addition to trade, income and valuation effects, there is also an "other income" category which can contribute to changes in the NIIP. This reflects changes in the capital account and errors and omissions. This component is generally small, so we ignore it in the subsequent analysis and discussions.

Figure 14
Decomposing Changes in the NIIP by Period



Source: Based on data and analysis in Adjiev et al. (2026). See Section III for details.
Notes: Figure shows the sample median of the absolute value contribution share of each of the four components (trade, investment income, other income, and valuation effects) to changes in NIIPs over the given window for advanced economies (top panel) and emerging markets (bottom panel). Shares do not include small changes in the NIIP from the capital account and other errors and omissions (such that the shares of each of the four components reported sum to 100%). The "Globalization" window is 1999-2007 and the "GFC to pre-pandemic" window is 2008-2019. Results for emerging markets in the 1980s are not reported due to limited data availability.

In the 1980s and 1990s, trade played the largest role in explaining changes in NIIPs in both advanced economies and emerging markets, and valuation effects played the smallest role. During the period of increased globalization starting in 2000, however, this pattern reversed, such that during the 2000s as well as the most recent period over 2020-24, valuation effects played the largest role, and trade made the smallest contribution to changes in NIIPs. More specifically, in the 1990s trade contributed to a median 35% of the total change in NIIPs in advanced economies and 46% in emerging markets, while

valuation changes contributed 31% and 15%, respectively. Fast forward to 2020-24, the median contribution of trade fell to 24% in advanced economies and 29% in emerging markets, while the corresponding contribution of valuation effects rose to 58% and 44%, respectively. The role of investment income flows on NIIPs has also been significant, albeit more heterogeneous across time and countries than for trade and valuation effects.

A closer look at these results for groups of countries also highlights several patterns. In advanced economies with well-developed financial sectors—such as the US, UK and Japan—the contributions of financial components (investment income and valuation effects) to changes in the NIIP are dominant, especially in the more recent periods. For countries that have traditionally been more export-oriented (e.g., South Korea), including more reliant on commodity exports (e.g., Norway) and advanced economies with relatively smaller financial sectors (e.g., Sweden), trade still tends to play a larger role than financial factors in driving overall NIIPs. Many emerging markets with smaller international investment positions are less exposed to valuation effects, particularly early in the sample, although investment income flows can be important (particularly in economies with large international debts combined with relatively high interest rates). For some emerging markets, "other income flows," which includes the compensation of workers in other countries and remittances, can also make an important contribution to the overall external balance (particularly in India, Mexico and the Philippines).

IV. Linking Monetary Policy and Global Imbalances: International Interest Income and Valuation Effects

Monetary policy can affect the NIIP and its underlying components through multiple channels, and its impact depends on a range of country characteristics (Hjortsoe et al. 2016; Lee and Chin 2006). For example, adjustments in policy rates can affect the interest rate a country pays on its outstanding international liabilities (e.g., bonds and loans), thereby influencing the investment income component of the NIIP. Adjustments in policy rates can also affect asset valuations (including the price of equities, FDI and bonds), thereby influencing the valuation of international liabilities. Monetary policy can affect the exchange rate, and thereby the valuation of any foreign assets or liabilities denominated in foreign currency. And last, but certainly not least, monetary policy can affect aggregate demand through the multiple channels documented in standard economics textbooks, thereby influencing the demand for imports and trade balances.

Many of these channels linking monetary policy to changes in NIIPs are difficult to identify—not only because many of these channels operate simultaneously—but also because many variables other than monetary policy can simultaneously affect borrowing costs, equity and bond prices, exchange rates, and trade flows. Further complicating identification, monetary policy can respond to current accounts and other components of the NIIP, such that monetary policy is endogenously determined with the NIIP (Corsetti et

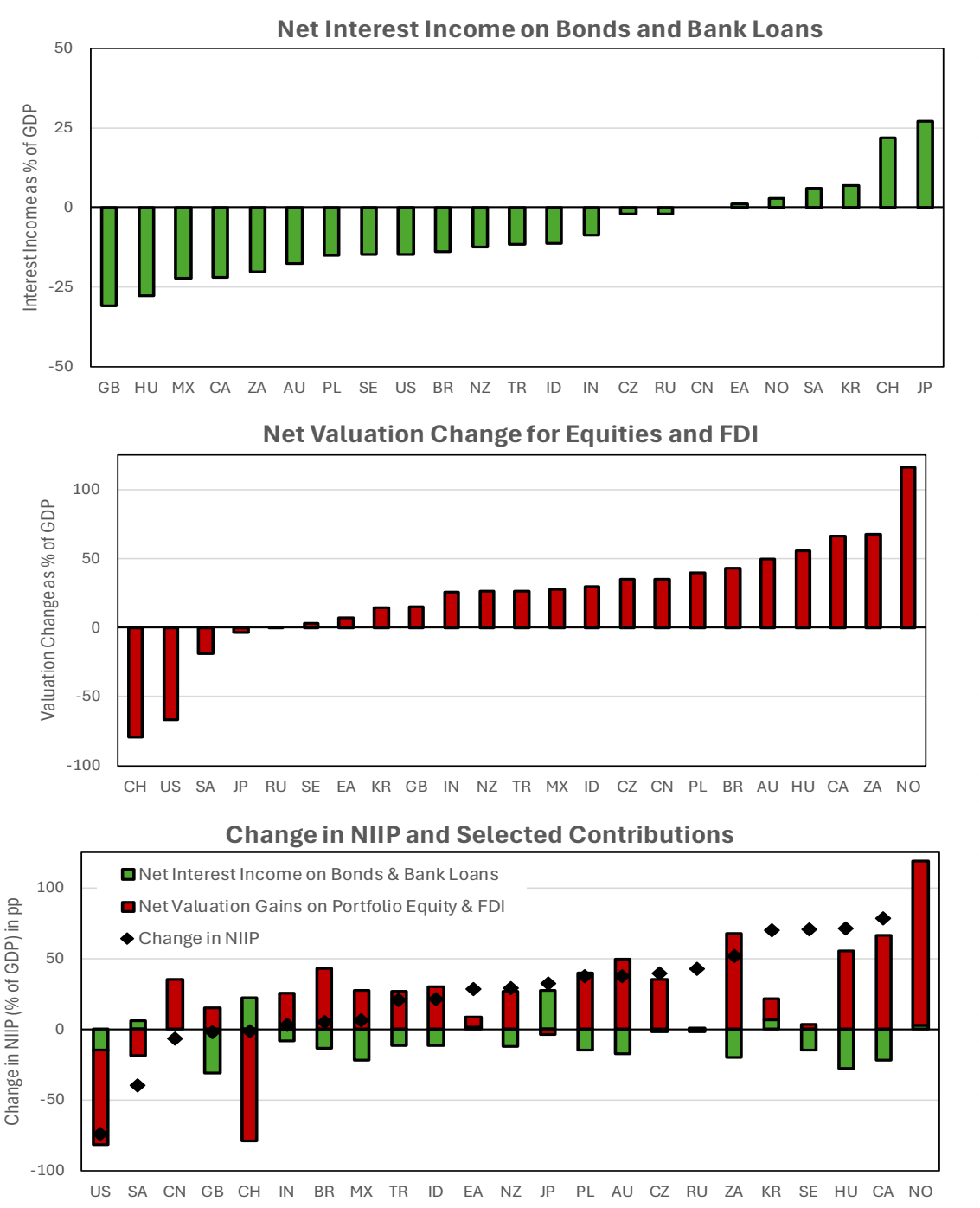
al. 2023). Nonetheless, given the increased importance of financial channels for the NIIP, it is worth examining more closely how subcomponents of the NIIP linked more closely to monetary policy have contributed to global imbalances. This section examines two of these subcomponents: the international flows of interest income (a subset of investment income flows) and valuation effects for equities and FDI (a subset of valuation effects). It focuses on changes over 2010–2024, the period of increased divergence in global NIIPs and during which there appears to be a structural shift as the United States transitioned from an era of "exorbitant privilege" to a "generous giveaway."

To begin, I focus on the change in NIIPs most directly linked to monetary policy and interest rate differentials: international investment income on bonds and bank loans.[36] This is a component of the investment income category in **Figures 13-14,** but does not include other sources of investment income that can be important in some countries (such as dividends). The top panel of **Figure 15** shows this measure of international interest income (as a percentage of domestic GDP) accumulated over 2010-2024 for each economy. Interest income has made large and meaningful contributions to NIIPs over the last fifteen years, such as reducing the UK's NIIP by 31% of GDP and increasing Japan's NIIP by 27% of GDP. Emerging markets have larger average net interest payments on international obligations (-11% of GDP) relative to advanced economies in the sample (-5% of GDP), which is not surprising given the higher policy interest rates and risk premia in most emerging markets relative to in most advanced economies (as discussed in Section II). Some emerging markets (such as Saudi Arabia) receive positive net interest income on their international debt and bank loans, however, and many advanced economies (such as the United States) make large net interest payments.

Several factors explain the direction and magnitude of these international flows of interest income across economies and over time.[37] Most important is the outstanding stock of international assets relative to international liabilities. Countries with positive contributions to their NIIP from interest income (such as Switzerland and Japan) tend to be net creditors (i.e. hold larger international assets than they owe in liabilities) for bonds and bank loans, and countries with negative contributions tend to be net debtors. Also important is the interest rate differential between what the home country pays on its debt liabilities relative to the interest rate for the countries represented in its portfolio of bonds and bank loans (i.e., relative returns). Countries with relatively higher interest rates (whether from central banks setting a higher policy interest rate and/or from greater perceived country risk), tend to pay relatively more on their bond and loan liabilities (such as Brazil). The composition of the asset and liability portfolio of bonds and bank loans can also be important, with higher average returns or payments on riskier obligations.

[36] More specifically, this is measured as sum of the net NIIP flows for interest income on bonds and "other", with the "other" category dominated by bank loans. This measure nets out the interest income on foreign assets less the interest payments on the corresponding foreign liabilities.
[37] Adjiev et al. (2026) breaks down these components in more detail in their cross-section of countries; Forbes et al. (2017) provides a detailed decomposition for the United Kingdom.

Figure 15: Changes in NIIP and Selected Components over 2010-24



Source: Authors calculations. See Section III for details.
Notes: Each panel shows the change in the relevant component of the NIIP (as a percentage of domestic GDP) from 2010 through 2024 in percentage points. Top panel shows the change in net international interest income on bonds and bank loans. The middle panel shows the net valuation change on portfolio equity and foreign direct investment. The bottom panel also reports the change in the NIIP. See Figure 12 for country abbreviations. The change in the NIIP for Norway is truncated in the bottom panel from 357% to avoid distorting the scale.

Another important financial component of changes in NIIPs is valuation effects—especially from the recent divergence and broader evolution of global imbalances. This is more loosely linked to changes in monetary policy, but reductions in domestic interest rates (or expectations of future reductions in rates) tend to increase domestic asset prices and thereby weaken NIIPs (i.e., increase the size of debtor positions and reduce the size of creditor positions) as the value of international liabilities increases relative to that of assets. The middle panel of **Figure 15** shows the valuation change in international equity and FDI exposures for each economy in the sample from 2010 through 2024 (as a percentage of domestic GDP). The range and magnitude of these effects on the NIIP is even larger than for international interest income (with the scale on the graph twice as large). At one extreme, Switzerland and the United States had valuation losses of 80% and 67% of GDP, respectively, over the last fifteen years. This has corresponded to substantial net valuation gains in most other economies around the world, reaching 55% of GDP in Hungary, 66% in Canada, 68% in South Africa, and 116% in Norway. The mean valuation gain on equities and FDI in the NIIP over this period was 15% of GDP in advanced economies (even including the large losses in the United States and Switzerland), and twice as large (at 30% of GDP) for emerging markets.

The direction and magnitude of these valuation effects on the NIIP reflect many of the same factors as those determining the direction and magnitude of interest income flows, including whether the country is a net international creditor or debtor and the impact of any exchange rate adjustment (which can be significant when there is a large currency move and/or a large mismatch between the currency denomination of international assets and liabilities).

Most important recently, however, has been the relative returns in equity markets at home relative to those for the countries held in the asset portfolio (a point also highlighted in Atkeson et al. 2025). Relatively stronger equity market returns—such as the recent outperformance in the United States—correspond to higher returns on foreigners' equity assets than they pay on their liabilities, and therefore an improvement in the NIIPs of countries with lower relative returns. [38] In recent years, the strong outperformance of US equity markets relative to that in other countries has corresponded to a meaningful deterioration in the US NIIP and improvement in most other economies' NIIPs. This has been an important transfer of wealth from the United States to the rest of the world. US valuation losses on its NIIP of -67% of US GDP over 2010-24 have generated an average valuation gain in the NIIPs of the other economies in our sample of 26% of domestic GDP.

To put the magnitude of these international valuation effects and interest income flows in the context of aggregate changes in NIIPs over 2010-24, the bottom panel of **Figure 15** shows the international interest income on bonds and bank loans (from the top panel) and

[38] Atkeson et al. (2025) estimates the magnitude of these effects. They show that the US equity price index more than tripled over 2010-20, while the rest-of-world local currency price index rose by less than 50 percent, explaining most of deterioration in the US NIIP from -30% to -70% of GDP over this window.

international valuation changes on equities and FDI (from the middle panel) compared to the total change in the NIIP for each economy (shown by the black diamond). Most countries which have earned positive international interest income have negative valuation gains and vice versa (with the United States, Norway and South Korea the exceptions). This at least partially reflects a link with monetary policy. More specifically, countries with net debtor positions generally have higher interest rates, which correspond to higher interest payments on international liabilities and potentially lower valuations in domestic equity markets. For countries with net creditor positions (Norway and Korea), or a weaker relationship between outstanding liabilities and borrowing costs (the United States), this relationship could be weaker—or even reverse. For example, countries with positive NIIPs tend to have lower interest rates and earn relatively higher interest income (from rate differentials as well as their surplus position), and these lower interest rates would normally correspond to stronger returns in equity markets.

The other important result in the bottom panel of **Figure 15** is that for most countries, valuation gains have been meaningfully larger than any gains or losses from international interest income (supporting the decompositions in **Figure 14**). In fact, these valuation effects have been a key factor driving improvements in NIIPs and the increased divergence in global imbalances. More specifically, these valuation gains have more than balanced any deterioration in NIIPs from paying interest income in countries such as Canada, Hungary, South Africa, the Czech Republic, Poland, Australia, Indonesia, New Zealand, Turkey, Mexico, Brazil and India.

To put the relative magnitude of these valuation gains in context, consider Brazil—with a fairly stable NIIP over 2010-24 (improving by only 5% of GDP over 15 years). Brazil paid 14% of GDP in net international interest income on bonds and bank loans over this period, which would have contributed to a fall in its NIIP to –80% of GDP in 2024 without any valuation gains. Instead, Brazil's valuation gains of 44 percentage points on its net international equity and FDI positions reduced Brazil's debtor position by more than half to -36% of GDP. This is still a large and negative NIIP, but much less worrisome than -80% of GDP. Financial effects can make a meaningful difference in a country's international net wealth—in both directions.

V. Resilience and Risks from Convergence in Monetary Policy and Divergence in Global Imbalances: A Hypothetical Scenario

The analysis in this paper has highlighted two important developments for the resilience of the global economy and financial system—one more positive and one more worrisome. Starting with the positive, many emerging markets have used monetary policy over the last two decades in a manner that has largely converged with that in advanced economies. This does not mean that countries all adjust monetary policy in the same manner at the same time, but instead that they can adjust rates countercyclically to support growth and

employment in response to negative shocks. Even the characteristics of "rate cycles" for advanced economies and emerging markets have become very similar, such as in the median size, pace, amplitude and length of tightening and easing phases, albeit with the important caveats that emerging markets still adjust nominal policy rates from higher levels and have more variation in their rate cycles within this diverse group. All in all, however, this more widespread ability to use monetary policy to support the real economy (rather than stabilize capital flows and the exchange rate) has provided emerging markets with an important tool that should strengthen their resilience to a range of shocks.

More worrisome, however, is the increase in global imbalances over the last 15 years, and particularly since 2020, which primarily reflects a sharp deterioration in the US international debtor position. While some degree of imbalances in NIIPs is part of a well-functioning global economy (due to economies being in different cyclical positions and having different demographics and other structural characteristics), the recent growth and size of imbalances is hard to justify with macroeconomic fundamentals (IMF 2025b). Moreover, since the "divergent" debtor position has occurred in the world's largest economy, the potential spillovers and risks from some types of adjustment are substantially greater than implied by simply assessing the magnitude of the US position relative to its domestic GDP.

Figure 16 captures this risk. The top panel shows NIIPs relative to domestic GDP at end-2024 for the sample of 23 advanced economies and emerging markets analyzed in Sections III and IV. The US debtor position is large by this measure (-91% of GDP)—and roughly twice as large as that of the country with the 2nd largest debtor position (New Zealand, at -47% of GDP), but does not seem out-of-line when compared to the large creditor positions for several countries (such as 123% of GDP for Switzerland and 357% for Norway). The bottom panel, however, graphs the same NIIPs, except now relative to global GDP. This highlights the outsized role of the US NIIP relative to the rest of the world. As the US international debtor position has grown, even though this has occurred in just one "divergent" country, its size has corresponded to an improvement in NIIPs throughout much of the rest of the world. This is an important transfer of wealth and underappreciated support for growth outside the United States. Looking forward, however, any shock that affects the US NIIP could have larger spillover effects than has occurred in the past.

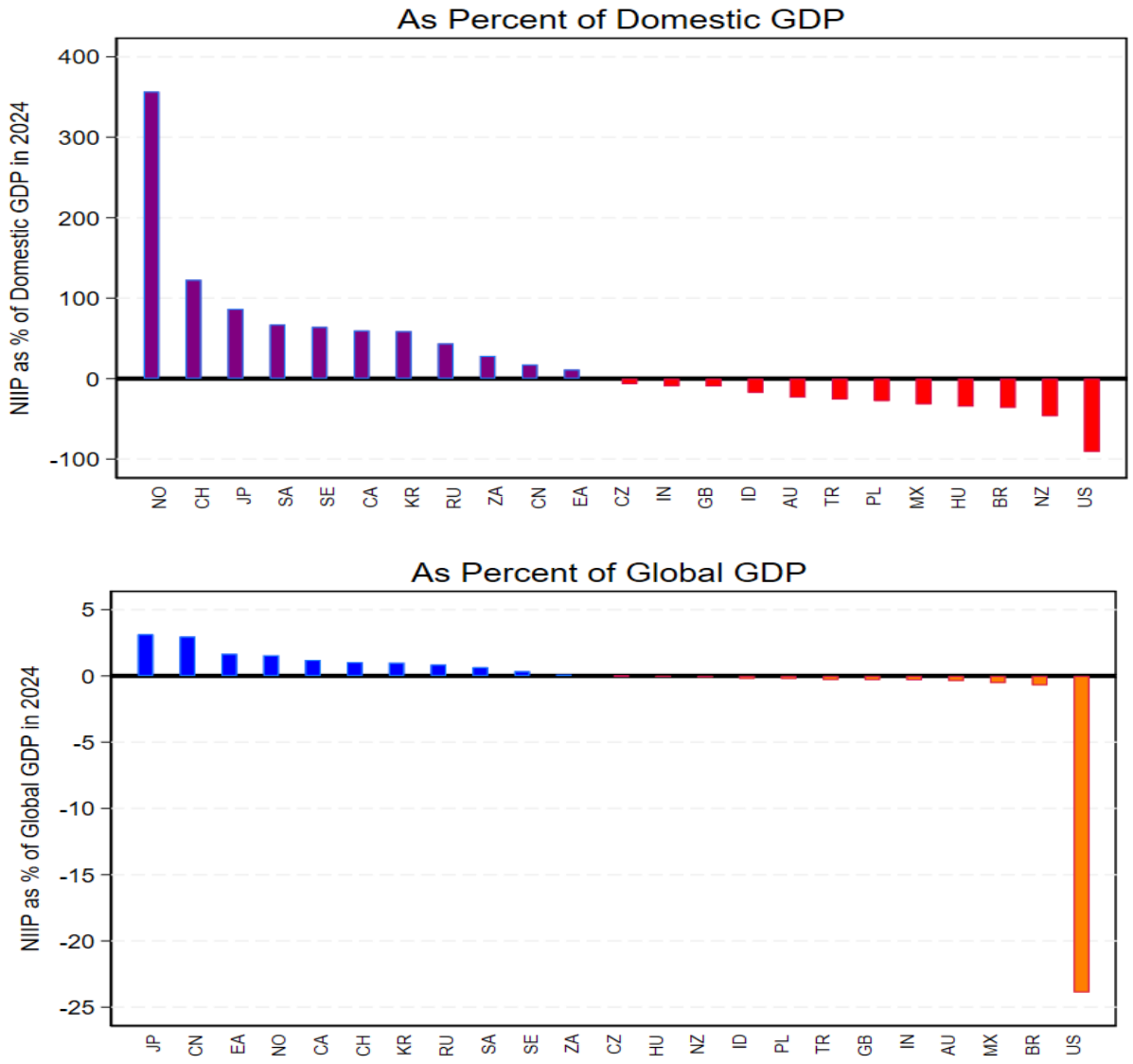
A. Hypothetical Scenario: Impact on Imbalances of Collapse in Global Equities

There are a range of shocks that could reduce the US NIIP, with a range of potential spillover effects.[39] A full assessment and detailed scenario analysis is beyond the scope of this paper, but it is useful to consider one concrete example to get a sense of the potential magnitude of these risks as well as the role of monetary policy to respond and cushion the impact. I will focus on a scenario that has recently received heightened attention: a sharp

[39] Also see Rey and Stavrakeva (2025), which analyzes spillovers of foreign investor holdings during periods of turbulence.

fall in equity markets—led by an outsized adjustment in US markets—potentially due to a repricing of AI and technology-related stocks. I will consider a very "back-of-the-envelope" estimate of the direct effects, leaving a more complete multiple equilibrium analysis that incorporates the many important second-round effects to other work. If this scenario actually occurred, there would likely be offsetting adjustments in other financial markets—such as exchanges rates and risk premia—but for the analysis below, these additional effects are not considered.

Figure 16
Net International Investment Positions in 2024



Source: Authors calculations. Data on NIIPs from the IMF's BOP/IIP database (version 6) and for GDP from the IMF's World Economic Outlook database (Oct 2025).
Notes: Graphs show net international investment positions (international assets less international liabilities) relative to domestic or global GDP for the economies listed in Appendix Table B1. Data for the Euro area as one entity nets out exposures between member countries. See notes to Figure 12 for country abbreviations.

To begin, assume a major stock market correction which drives the valuation of US and global equity markets and FDI back to the levels from end-2019—a period before the hype about AI related companies and pandemic-related swings.[40] In other words, the 83% increase in the US equity index and 9% increase in non-US equity index from end-2019 through end-2024 would be reversed.[41] The largest losses would therefore occur in the United States, unwinding the recent outperformance of AI and tech-related stocks that have driven most of the higher US returns relative to the rest of the world in recent years. As a result of this stock market correction, the value of every country's international equity and FDI assets and liabilities would decline, with the net impact on the NIIP determined by the share of their assets held in each foreign country and the decline in each foreign market relative to that at home. Countries with a larger US equity exposure in their international portfolio, and with lower relative domestic returns since 2000, would be more negatively affected. The resulting changes in each country's net worth could generate significant wealth effects that reduce consumption, growth and employment.

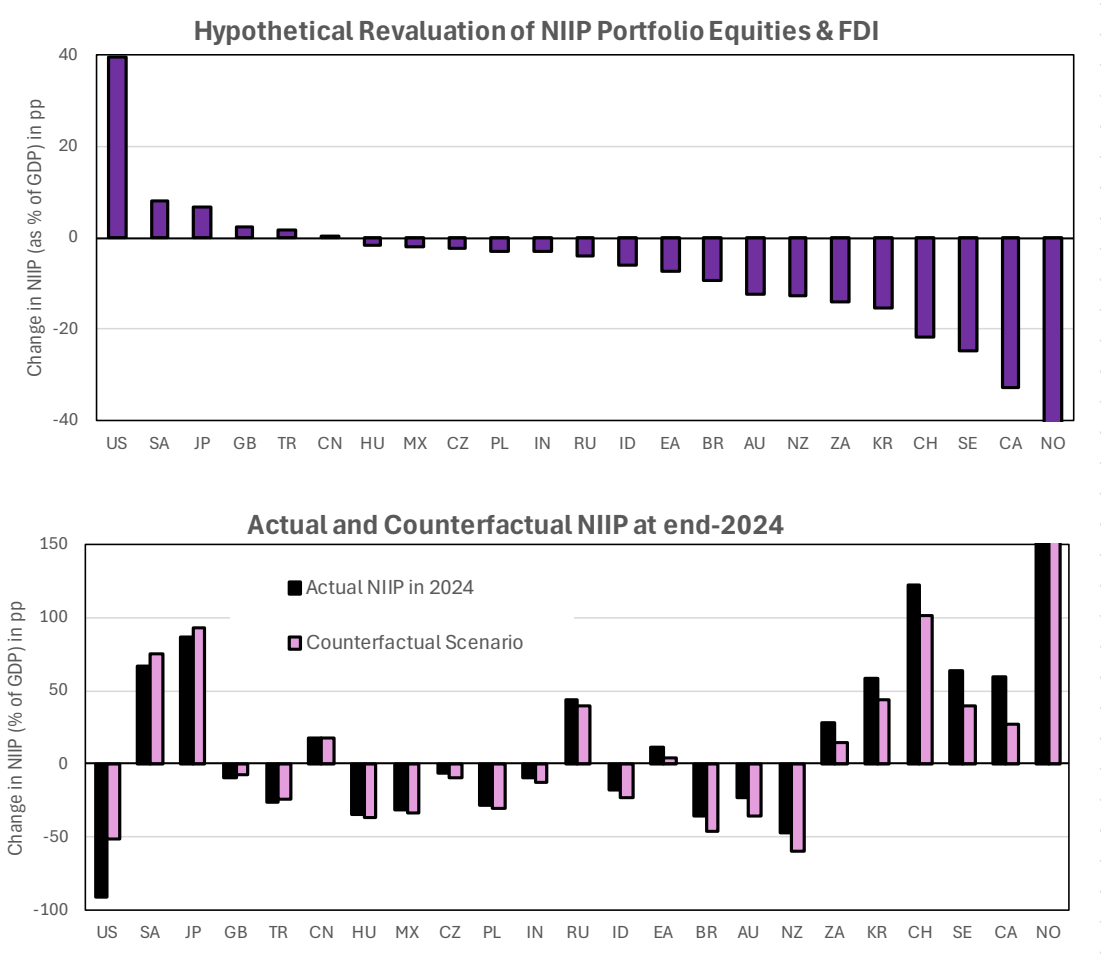
What is the impact of this hypothetical, large global correction in equity markets on global imbalances? **Figure 17** (top panel) shows the estimated impact on NIIPs for the sample of 23 economies. The US would experience the largest improvement in its NIIP—of about 40% of GDP—generating an increase in net worth that would at least partly offset the direct effect and loss in net worth from the correction in US equity markets. Saudi Arabia, Japan, the United Kingdom and Turkey would experience more modest gains in their NIIPs that could partially mitigate the negative effects of the decline in equity markets. Most countries in the sample, however, would experience substantial losses on their NIIPs—in addition to the direct impact from lower domestic equity valuations. For example, Norway, Canada, Sweden and Switzerland would all see reductions in their NIIPs of over 20% of GDP (with the losses for Norway reaching 80% of GDP). The estimated effects on emerging markets are more modest—with the mean estimated decline in emerging market NIIPs of only 3% of GDP, as compared to 18% of GDP for advanced economies (excluding the United States).[42] The loss for several emerging markets, however, is estimated to be large—reaching 14% of GDP in South Africa and 10% of GDP for Brazil.

To put these estimates in context, the bottom panel of **Figure 17** shows the actual NIIP (relative to domestic GDP) for each economy at end-2024 and then the hypothetical NIIP from this scenario in which international portfolio equities and FDI were revalued to end-2019 levels. For some countries, the size of these equity adjustments relative to their overall NIIP is substantial. The large US NIIP would shrink by almost half—from -91% of GDP to 51% of GDP—thereby having a meaningful impact in terms of mitigating the recent divergence in global imbalances. Working in the other direction, however, some countries

[40] Equity market adjustments are based on the price of the MSCI US and MSCI ex-US indices, reported in Bloomberg. To calculate the effects on the NIIP, I assume the valuation of net international portfolio equity and FDI holdings falls to end-2019 levels at end-2024, with the impact on the NIIP scaled by end-2024 GDP.
[41] Based on the MSCI US equity and MSCI non-US equity indices. These reflect changes in the price of the equity index and do not include dividends (which are investment income in the NIIP).
[42] Median effects are similar: -13% (-3%) for advanced economies (emerging markets), excluding the US.

with large NIIP creditor positions would see those positions widen—thereby potentially increasing the divergence in NIIPs—including in Saudi Arabia (with the NIIP increasing from 67% to 75% of GDP) and Japan (with the NIIP increasing from 87% to 93% of GDP). For most economies, however, this scenario would erase much (if not all) of the improvement in their NIIPs over the last few years and therefore reduce net worth in addition to the direct effects from the equity market adjustment. Some of the largest effects on international net worth are estimated for Canada and South Africa, which would experience a decline in their NIIPs by roughly half (from 60% to 27% of GDP in Canada and 28% to 14% of GDP in South Africa).

Figure 17
Hypothetical Scenario: International Equities and FDI Fall to end-2019 Valuations



Source: Authors calculations. See Section III for details. Data on net international investment positions (NIIPs) from the IMF's BOP/IIP database (version 6) and for GDP from the IMF's World Economic Outlook database (October 2025).
Notes: Top panel shows the hypothetical change in the value of each country's NIIP if portfolio equity and FDI values around the world fell to end-2019 levels. The bottom panel shows each country's reported NIIP at end-2024 in grey, and the counterfactual NIIP in this scenario in purple (with no changes other than the fall in equity and FDI valuations). All statistics are calculated as a percentage of 2024 domestic GDP. Data points for Norway are truncated from -81% of GDP for the revaluation in the top panel and 357% and 276% for the actual and counterfactual NIIP in the bottom panel. See Figure 12 for country abbreviations.

What is the potential macroeconomic impact of these types of declines in international investment positions? To the best of our knowledge, there has been limited research on the impact of international wealth effects, but a number of papers estimate the impact of exogenous shocks to financial wealth (e.g., through equity valuations, housing prices, or lottery winnings) and find that an exogenous positive wealth shock affects consumption, demand, employment, output, and inflation.[43] The magnitudes of these estimated effects varies substantially, but recent work suggests they can be large.[44] For example, Andersen, Johannesen and Sheridan (2024) uses idiosyncratic equity gains in Denmark to document a spending increase of 16% of a wealth gain over three years. A shock to international wealth would likely have a lower impact than that to domestic wealth, as a share of the valuation effects on international equity and FDI exposures would initially go to companies (which have a lower marginal propensity to consume and may not fully pass through increased earnings to investors), but the impact on domestic demand could still be meaningful.

To be concrete, assume the impact from a wealth shock to the NIIP is half of that from a domestic wealth shock (i.e., an impact of 8% of the change in the NIIP, based on the estimates cited above in Andersen et al. 2024). Then the hypothetical change in NIIPs shown in **Figure 17** from a fall in equity and FDI valuations to end-2019 levels would roughly correspond to a decline in demand in Canada of about 2.5% of GDP over three years, of 2% in Sweden, 1% in Australia, New Zealand, South Africa, and Korea, ¾% in Brazil, ½% in Indonesia and ¼% in India and Poland. These are extremely rough estimates—but when combined with the initial impact of the nearly 50% decline in global equity markets over this period—could exert a meaningful drag on economic activity.[45]

B. Hypothetical Scenario: The Monetary Policy Response

This body of research on the impact of wealth effects, however, also highlights that one factor determining the magnitude of the impact on demand is the monetary policy response. Although central banks generally do not respond to modest movements in equity markets, this hypothetical scenario of a large decline in global equity markets would likely merit an easing in monetary policy, particularly as a majority of countries would not only have a negative impact on their own market valuations, but the additional negative wealth effect from a decline in their NIIPs. With interest rates in most economies currently well above lower bounds and the low levels of the 2010s, most countries (albeit not all) have room to reduce interest rates as occurs during a typical easing phase.

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[43] One noteworthy exception is Atkeson et al. (2025), which discusses the potential wealth effects in the United States from changes in the valuation of US equity assets and liabilities in the NIIP.
[44] Dynan and Maki (2001) concludes that the MPC of a surprise wealth gain is about 5–15 cents per dollar per year, while Chodorow-Reich, Nenov and Simsek (2019) estimates a lower MPC of 2.8 cents per dollar of income gain in the United States. Di Maggio, Kermani and Majlesi (2020) estimates an MPC in Sweden of about 13% for the bottom 50% of the wealth distribution and about 5% for the rest of the population.
[45] The fall in global equity markets is based on the MSCI World Index (MXWD) as reported by Bloomberg.

The historical experience, shown in **Figure 3**, suggests that if emerging markets adopt the median strategy used during easing phases over 2000-2024, they would: reduce policy interest rates 1.8 percentage points in the first 6 months (i.e., the initial velocity of rate adjustments), and then continue to reduce rates so that by the end of the easing phase they would cut rates 13 times, at an average pace of 50 basis points per cut, for a total median amplitude of rate reductions of 5.5 percentage points. **Figure 8** shows that the median (mean) policy rate in emerging markets was 6.1% (8.8%) at the end of 2025, so many emerging markets would have the space to make these reductions. The median length of the entire easing phase has historically been 77 months, including any period during which there was no change in rates but before the next tightening phase begins. [46]

The actual magnitude and speed of any adjustments, however, would depend on the outlook for inflation, activity, and the monetary and exchange regime—which would, in turn, depend on the size of these wealth effects, initial level of inflation, inflation expectations, any corresponding impact on the exchange rate (and pass-through to import prices), credibility of the central bank, and many other variables which influence monetary policy decisions. The wide bands in **Figure 3** showing the variation in how rates are adjusted during easing phases in different economies, and the particularly wide bands for emerging markets, suggest that there would be substantial variation in the monetary policy response across countries—even if most responded countercyclically.

Shifting to advanced economies, the historical experience suggests that the median response would be similar to that described above for emerging markets, albeit the rate adjustments would be more muted by most measures and there would be less variation in how individual countries in the group responded. More advanced economies would also reach their lower bounds before achieving the average stimulus during past easing phases. Specifically, if advanced economies adopted their median rate adjustment from 2000-24, they would initially reduce rates by 85bps over six months (albeit this initial velocity of rate cuts would likely be larger today than possible over the 2010s as most advanced economies are less constrained by lower bounds). Central banks would continue to ease policy for a total of 10 rate cuts, at a median pace of 40 basis points per cut, for a total median amplitude of rate reductions of 3.4 percentage points. Since the mean and median policy rate in advanced economies is currently below this level (at 2.4% and 2.8%, respectively), this implies that some advanced economies would need to consider using alternate tools to ease monetary policy (such as asset purchases).

While the historical experience suggests that the rate adjustments during easing phases have typically been more muted in advanced economies than in emerging markets, there are several reasons why this may not occur in response to the hypothetical scenario outlined above of a collapse in equity and FDI valuations. The primary reason is that the

[46] These statistics are all medians—such that they may not be internally consistent for a single economy. For example, the median pace of rate cuts multiplied by the median number of rate cuts may not equal the median amplitude of the total rate adjustment.

negative wealth effects in this scenario would be larger in advanced economies than emerging markets (ignoring any secondary effects from exchange rate adjustments, risk premia, or the monetary policy response). This larger wealth effect in advanced economies is due to the combination of the larger impact on NIIPs and international wealth (with a mean effect of -3% in emerging markets and -18% in advanced economies, excluding the United States) plus the larger assumed adjustment in domestic equities (which rose by more over 2020-24 in advanced economies then emerging markets).

Advanced economies may also have to balance more difficult tradeoffs between supporting activity and inflation than in the past, partly due to their monetary policy responses to the pandemic and post-pandemic inflation. Political concern about asset purchase programs has raised the threshold to restart these programs, which could constrain the ability of advanced economies to ease monetary policy if rates return to lower bounds. Central banks may also place greater weight on maintaining inflation-fighting credibility and keeping inflation expectations anchored after their slow response to the post-pandemic inflation (discussed in Section II) and the corresponding increase in attention to the permanent increase in the cost-of-living (Forbes et al. 2026b). This tradeoff is likely to be more difficult in countries which have not stabilized inflation at target for over five years (e.g., the United States and United Kingdom), as well as economies which were initially slower to respond to the post-pandemic inflation (i.e., advanced economies).

VI. Final Thoughts: Convergence with a Divergent

Monetary policy and global imbalances have both evolved in important and interrelated ways since the 2008 Global Financial Crisis. The rate cycles in many emerging markets have largely converged with those in advanced economies (albeit interest rates and inflation are still higher in many emerging markets and there is substantially more heterogeneity across this group). These similarities were accentuated in the monetary policy responses around the Covid pandemic—with advanced economies and emerging markets all shifting between easing and tightening phases in similar patterns. In fact, many emerging markets adjusted even earlier and responded more forcefully to the post-pandemic inflation surge, such that monetary policy in many (albeit not all) emerging markets is not only no longer procyclical, but may have become more countercyclical than in advanced economies.

Interest rates and inflation have mostly normalized to pre-pandemic values, but at higher interest rates than in the 2010s (particularly in advanced economies), and inflation has still not fully returned to target in several major economies. Most emerging markets have made notable progress each decade since the 2000s in terms of stabilizing inflation around targets (for countries which have such targets). These improvements, combined with the increased convergence in rate cycles with advanced economies, have reduced international interest-rate differentials and have implications for cross-border interest payments, international investment income, current accounts, and other measures of global imbalances.

Global imbalances have grown since 2010, with most of the divergence driven by advanced economies, and within the advanced economies, with most of the increase driven by a sharp deterioration in the US international investment position. Emerging markets have played a smaller role in this divergence, although China's large creditor position (along with Japan's) has been an important counterpart to the large US debtor position. Decompositions of the drivers of changes in global imbalances since 2010 find a larger role for financial effects than trade on average across countries—suggesting an important link to monetary policy and other factors affecting financial markets.

Of the financial effects driving the recent divergence in global imbalances, most important has recently been valuation effects, as countries with exposure to US equities and FDI benefited from the stronger relative performance of US markets. Differences in equity valuations and growth rates are therefore central to the increased divergence in global imbalances and shift from the United States being in a position of "exorbitant privilege" to providing a "generous giveaway". Interest rate differentials, and the corresponding net interest payments on international bonds and bank loans have also influenced international investment positions, but their magnitude is meaningfully smaller than for valuation effects in most economies and would have contributed to a reduction (instead of increase) in global imbalances in most economies (outside the United States and several creditors). In most countries, international earnings from interest income generally move in the opposite direction from international valuation effects, at least partially reflecting a link with rate cycles and the monetary policy stance.

This recent combination of increased convergence in monetary policy with increased divergence in global imbalances (and one "divergent" in particular) has supported the recent recovery in the global economy. A simple scenario based on a sharp fall in US equity markets and more modest fall in equity markets in other economies, however, highlights how this has also created risks for the future. The large imbalances in international investment positions—and the increased sensitivity of these positions to valuation effects—make the international financial system susceptible to large international wealth transfers that could be triggered by a range of shocks.

For example, any repricing of AI and tech related stocks (which would have the largest impact on US equity valuations), would sharply reduce the large US debtor position and improve its sustainability, but be balanced by a meaningful deterioration in international investment positions and net worth around much of the rest of the world. The ability to use monetary policy countercyclically in many emerging markets (as well as advanced economies) is an important development that should help mitigate these negative spillover effects—but is unlikely to fully protect economies against these types of rapid adjustments in global imbalances and net worth. As learned in the *Divergent* books, the transition to a new economic order can be unpleasant and painful.

References

Allen, Cian, Deepali Gautam, and Luciana Juvena. (2023). "Currencies of External Balance Sheets." IMF Working Paper 23/237.

Andersen, Asger, Niels Johannesen and Adam Sheridan. (2024). "Dynamic Spending Responses to Wealth Shocks: Evidence from Quasi Lotteries on the Stock Market." *American Economic Review: Insights* 6(3): 434-52.

Atkeson, Andrew, Jonathan Heathcote and Fabrizio Perri. (2025). "The End of Privilege: A Reexamination of the Net Foreign Asset Position of the United States." *American Economic Review* 115(7): 2151–2206.

Avdjiev, Stefan, Kristin Forbes, Tsvetelina Nenova and Marjorie Santos. (2026). "Global Imbalances in a Post-Exorbitant Privilege World: Spillovers and Vulnerabilities." Unpublished mimeo.

Avdjiev, Stefan, Leonardo Gambacorta, Linda Goldberg and Stefano Schiaffi. (2020). "The Shifting Drivers of Global Liquidity." *Journal of International Economics* 125: 103324.

Avdjiev, Stefan, Robert McCauley, and Hyun Shin. (2016). "Breaking Free of the Triple Coincidence in International Finance." *Economic Policy* 31(87): 409-451.

Ball, Laurence. (2011). "The Performance of Alternative Monetary Regimes." In *Handbook of Monetary Economics,* vol. 3B, pp.1303–43. Elsevier.

Bayoumi, Tamim and Joseph Gagnon. (2025). "The US Trade Deficit and Foreign Borrowing: How Long Can It Continue?" Peterson Institute of International Economics Working Paper 25-14.

Bénétrix, Agustin, Deepali Gautam, Luciana Juvenal, and Martin Schmitz. (2019). "Cross-Border Currency Exposures." IMF Working Paper 2019/299.

Bénétrix, Agustin, Philip Lane and Jay Shambaugh. (2015). "International Currency Exposures, Valuation Effects and the Global Financial Crisis." *Journal of International Economics* 96(1): 98-109.

Benigno, Pierpaolo, and Gauti Eggertsson. (2023). "It's Baaack: The Surge in Inflation in the 2020s and the Return of the Nonlinear Phillips Curve." *NBER Working Paper* 31197. Cambridge, MA: National Bureau of Economic Research.

Bernanke, Ben and Frederic Mishkin. (1992). "Central Bank Behavior and the Strategy of Monetary Policy: Observations from Six Industrialized Countries." *NBER Macroeconomics Annual 1992* 7: 183–228.

Bry, Gerhard and Charlotte Boschan. (1971). *Cyclical Analysis of Time Series: Selected Procedures and Computer Programs*. Cambridge, MA: National Bureau of Economic Research.

Burns, Arthur and Wesley Mitchell. (1946). *Measuring Business Cycles*. Cambridge, MA: National Bureau of Economic Research.

Castelnuovo, Efrem, and Paolo Surico. (2010). "Monetary Policy, Inflation Expectations and the Price Puzzle." *Economic Journal* 120 (549): 1262–83.

Chari, Anusha, Nathan Converse, Arnaud Mehl, Gian Maria Milesi-Ferretti and Isabel Vansteenkiste. (2025). "Geneva 28: Geopolitical Tensions and International Fragmentation: Evidence and Implications." CEPR Press: Paris and London.

Chari, Anusha and Gian Maria Milesi-Ferretti. (2025). "The United States and its Creditors: How Risky is the US External Position?" Paper presented at 26th Jacques Polak Annual Research Conference held at the International Monetary Fund on Nov 6-7, 2025. Unpublished mimeo.

Chodorow-Reich, Gabriel, Plamen Nenov and Alp Şimşek. (2021). "Stock Market Wealth and the Real Economy: A Local Labor Market Approach." *American Economic Review* 111(5): 1613–1657.

Claessens, Stijn, M. Ahyan Kose and Marco Terrones. (2009). "What Happens During Recessions Crunches and Busts?" *Economic Policy* 24: 653-700.

Claessens, Stijn, M. Ahyan Kose and Marco Terrones. (2012), "How Do Business and Financial Cycles Interact?" *Journal of International Economics* 87(1): 178-90.

Corsetti, Giancarlo, Luca Dedola and Sylvain Leduc. (2023). "Exchange Rate Misalignment and External Imbalances: What is the Optimal Monetary Policy Response?" *Journal of International Economics* 144 (Sept): 103771.

Coulibaly, Brahima. (2012). "Monetary Policy in Emerging Market Economies: What Lessons from the Global Financial Crisis?" *International Finance Discussion Papers No. 1042* (Washington: Board of Governors of the Federal Reserve System).

Curcuru, Stephanie, Tomas Dvorak, and Francis Warnock. (2008). "Cross-Border Returns Differentials." *Quarterly Journal of Economics* 123(4): 1495–1530.

De Leo, Pierre, Gita Gopinath and Sebnem Kalemli-Ozcan. (2024). "Monetary Policy and the Short-Rate Disconnect in Emerging Economies." NBER Working Paper 30458.

Di Maggio, Marco, Amir Kermani and Kaveh Majlesi. (2020). "Stock Market Returns and Consumption." *Journal of Finance* 75(6): 3175–3220.

Du, Wenxin, Kristin Forbes and Matthew Luzzetti. (2024). "Quantitative Tightening around the Globe: What Have We Learned?" *NBER Working Paper 32321* (April).

Dynan, Karen and Dean Maki. (2001). "Does Stock Market Wealth Matter for Consumption?" *Finance and Economics Discussion Series, Federal Reserve Board, No. 2001-23*.

English, Bill, Kristin Forbes and Ángel Ubide. (2024). "Monetary Policy Responses to the Post-Pandemic Inflation" In Bill English, Kristin Forbes and Ángel Ubide, eds., *Monetary Policy Responses to the Great Inflation,* e-book published by Centre for Economic Policy Research (Feb).

English, Bill, Kristin Forbes and Ángel Ubide. (2021). "Monetary Policy and Central Banking in the Covid Era." In Bill English, Kristin Forbes and Ángel Ubide, eds, *Monetary Policy and Central Banking in the Covid Era*, e-book published by Centre for Economic Policy Research (June).

Fatas, Antonio. (2026). "Fiscal Policy Frameworks for Emerging Markets." Paper prepared for Annual AlUla Conference for Emerging Market Economies, jointly organized by the Ministry of Finance of the Kingdom of Saudi Arabia and the International Monetary Fund. February 8-9, in AlUla, Kingdom of Saudi Arabia.

Forbes, Kristin. (2010). "Why do Foreigners Invest in the United States?" *Journal of International Economics* 80(1): 3-21.

Forbes, Kristin (2020). "Inflation Dynamics: Dead, Dormant, Or Determined Abroad?" *Brookings Papers on Economic Activity, Fall 2019 Meetings,* pgs. 257-319.

Forbes, Kristin (2026). *The Art of Monetary Policy: Lessons from Sun Tzu for Central Banks*. Karl Brunner Distinguished Lecture Series. Cambridge, MA: MIT Press. Forthcoming.

Forbes, Kristin, Joseph Gagnon, and Christopher Collins. (2022). "Low Inflation Bends the Phillips Curve Around the World." *Economia* 45 (89): 52–72.

Forbes, Kristin, Jongrim Ha and M. Ayhan Kose. (2024). "Rate Cycles." In "Monetary Policy in an Era of Transformation", proceedings from the ECB Forum on Central Banking in Sintra, Portugal on July 1-3, 2024.

Forbes, Kristin, Jongrim Ha and M. Ayhan Kose. (2025) "Heaven or Earth? The Evolving Role of Global Shocks for Domestic Monetary Policy." Working paper.

Forbes, Kristin, Jongrim Ha and M. Ayhan Kose. (2026a). "Rate Cycles in Emerging Markets." Unpublished mimeo.

Forbes, Kristin, Jongrim Ha and M. Ayhan Kose. (2026b). "Tradeoffs over Rate Cycles: Activity, Inflation and the Price Level." *NBER Macroeconomics Annual* 40(1). Forthcoming.

Forbes, Kristin, Ida Hjortsoe and Tsvetelina Nenova. (2017). "Current Account Deficits During Heightened Risk: Menacing or Mitigating." *The Economic Journal 127(May: 571-625.*

Forbes, Kristin and Michael Klein. (2015). "Pick Your Poison: The Choices and Consequences of Policy Responses to Crises." (2015). *IMF Economic Review* 63 (April), pgs.197-237.

Forbes, Kristin and Francis Warnock. (2021). "Capital Flow Waves—Or Ripples? Extreme Capital Flow Movements Since the Crisis." *Journal of International Money and Finance* 116, 102394.

Forbes, Kristin and Francis Warnock. (2012). "Capital Flow Waves: Surges, Stops, Flight, and Retrenchment." *Journal of International Economics* 88(2): 235–251.

Ghosh, Atish, Jonathan Ostry, and Mahvash Qureshi. (2017). "Managing the Tide: How Do Emerging Markets Respond to Capital Flows?" IMF Working Paper 17/069, International Monetary Fund, Washington, DC.

Goldberg, Linda and Signe Krogstrup (2019). "International Capital Flow Pressures and Global Factors." *Journal of International Economics* 146(Dec): 103749.

Gourinchas, Pierre-Olivier and Hélène Rey. (2007). "International Financial Adjustment." *Journal of Political Economy* 115(4): 665-703.

Gourinchas, Pierre-Olivier, Hélène Rey, and Kai Truempler. (2012). "The Financial Crisis and the Geography of Wealth Transfers." *Journal of International Economics* 88(2): 266–283.

Ha, Jongrim, Dohan Kim, M. Ayhan Kose, and Eswar Prasad. (2025). "Resolving Puzzles of Monetary Policy Transmission in Emerging Markets." *European Economic Review* 104957.

Ha, Jongrim, M. Ayhan Kose, and Franziska Ohnsorge, eds. (2019). *Inflation in Emerging and Developing Economies: Evolution, Drivers, and Policies*. Washington, DC: World Bank.

Harding, Don and Adrian Pagan. (2002). "Dissecting the Cycle: A Methodological Investigation." *Journal of Monetary Economics* 49: 365–81.

Hardy, Bryan, Deniz Igan and Enisse Kharroubi. (2024). "Resilience in Emerging Markets: What Makes It, What Could Shake It?" BIS Bulletin 88. Bank for International Settlements, Basel.

Hjortsoe, Ida, Martin Weale and Tomasz Wieladek. (2016). "Monetary Policy and the Current Account; Theory and Evidence." External MPC Unit Discussion Paper No. 45, Bank of England.

International Monetary Fund (IMF). (2025a). "Emerging Market Resilience: Good Luck or Good Policies?" *World Economic Outlook, October 2025*. IMF: Washington, DC.

International Monetary Fund (2025b). *External Sector Report.* International Monetary Fund: Washington, DC.

Jarociński, Marek and Peter Karadi. (2020). "Deconstructing Monetary Policy Surprises: The Role of Information Shocks." *American Economic Journal: Macroeconomics* 12 (2): 1–43.

Kaminsky, Graciela, Carmen Reinhart, and Carlos Végh. (2005). "When It Rains, It Pours: Procyclical Capital Flows and Macroeconomic Policies," *in NBER Macroeconomics Annual 2004*, Vol.19, ed. by Mark Gertler and Kenneth Rogoff (Cambridge, MA: National Bureau of Economic Research).

Lane, Philip and Gian Maria Milesi-Ferretti. (2007). "The External Wealth of Nations: Mark II." *Journal of International Economics,* 73: 223-250.

Lane, Philip and Gian Maria Milesi-Ferretti. (2012). "External Adjustment and the Global Crisis." *Journal of International Economics* 88(2): 252–265.

Lane, Philip and Gian Maria Milesi-Ferretti. (2018). "The External Wealth of Nations Revisited: International Financial Integration in the Aftermath of the Global Financial Crisis." *IMF Economic Review,* 66: 189-222.

Lee, Jaewoo and Menzie Chinn. (2006). "Current Account and Real Exchange Rate Dynamics in the G7 Countries." *Journal of International Money and Finance* 25: 257-274.

Milesi-Ferretti, Gian Maria. (2024a). "Many Creditors, One Large Debtor: Understanding the Buildup of Global Stock Imbalances after the Global Financial Crisis." *IMF Economic Review* 72: 509-553.

Milesi-Ferretti, Gian Maria. (2024b). "Missing Assets: Exploring the Sources of Data Gaps in Global Cross-Border Holdings of Portfolio Equity." *CEPR Discussion Paper 19253*.

Miranda-Agrippino, Silvia and Hélène Rey. (2020). "US Monetary Policy and the Global Financial Cycle." *The Review of Economic Studies* 87(6, November): 2754–2776.

Obstfeld, Maurice. (2024)." Economic Multilateralism 80 Years after Bretton Woods." *Oxford Review of Economic Policy* 40(2): 307–328.

Rey, Hélène. (2013). "Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence." Proceedings from the Economic Policy Symposium organized by the Federal Reserve Bank of Kansas City in Jackson Hole, Wyoming. August.

Rey, Hélène and Vania Stavrakeva. (2025). "Interpreting Turbulent Episodes in International Finance." NBER Working Paper No. 34409.

Appendix A
Identification and Sample of Rate Cycles

In order to identify the rate cycles used for our analysis, this paper builds on Forbes, Ha and Kose (2026a), which follows the methodology developed in Forbes, Ha and Kose (2024, 2026b) to identify rate cycles in advanced economies, except extends the analysis to include emerging markets. In this paper, we also extend the period to end in November 2025 (versus ending in October 2024).

To apply this methodology, we apply the BBQ algorithm proposed by Bry and Boschan (1971) and developed in Harding and Pagan (2002) to identify rate cycles in a large sample of advanced economies and emerging markets.[47] This algorithm evaluates increases and decreases in a series to locate local maxima and minima over specified windows. When applied to our series of policy interest rates (described below), the local maxima and minima identify the turning points that are the start of easing and tightening phases, respectively.

We set key parameters in this algorithm to allow for relatively long windows on each side of a turning point and for the full rate cycle in order to focus on changes in interest rates that are not reversed soon afterward (and which we call "preliminary adjustments"). More specifically , we set three parameters: (i) a window of at least 18 months on each side of a local maxima and minima; (ii) a window of at least 36 months for a full cycle (including both tightening and easing phases); and (iii) a window of at least 7 months for any individual phase of a cycle (either a tightening or easing phase). These longer windows also avoid classifying changes in interest rates that largely reflect market-driven movements as turning points, an issue earlier in the sample when interest rate data is more volatile and policy rates may not be directly set by central banks. We also set parameters to allow for individual phases in a cycle to be short-lived, such as when a central bank adjusts rates quickly by a large amount and then does not adjust rates again (such as lowering rates to zero in one meeting).

After applying this algorithm, we make several adjustments to the dates identified for a month *t* to qualify as a turning point. One set of adjustments follows that in Forbes, Ha and Kose (2026b) and is mainly to address issues when interest rates are constant for an extended period around the lower bound. The main adjustments are: (1) a month can qualify as the start of an easing (tightening) phase if there is no change in the policy rate but the central bank starts a new QE (QT) program (defined below); (2) if there is not a new balance sheet program, there must be an increase (decrease) in the policy interest rate to qualify as the start of a tightening (easing) phase; (3) any such increase (decrease) in the policy rate must be meaningful and lasting, defined as $|\Delta i_t| \geq 0.50$pp over one month, or at

[47] The BBQ algorithm was first proposed by Bry and Boschan (1971), building on the work of Burns and Mitchell (1946) that lays the foundation for identifying US business cycles.

least two rate changes (of any size) occurring over a year, such that the policy rate is at least 30 basis points higher/lower one year after the first rate change.

A second set of adjustments responds to insufficient data and the substantial volatility in policy rates early in the sample for some economies, particularly around financial crises and periods of high inflation, that can complicate the ability of the algorithm to identify turning points. These issues are generally more of a concern in the emerging markets that are new to our sample and not used in the earlier calculations of rate cycles. The main adjustments to address for these issues are: (1) we start the sample in 2000 for emerging markets; (2) we manually identify the first turning point of a phase when there is a short prior time series; (3) we exclude countries that have less than two full cycles, which are generally countries that do not rely on adjustments to policy interest rates for monetary policy.

Appendix Table A1
Economies in Sample for Analysis of Rate Cycles

Emerging Markets		Advanced Economies
Albania	Mexico	Australia
Argentina	Morocco	Canada
Armenia	North Macedonia	Czechia
Belarus	Oman	Denmark
Brazil	Peru	Euro area
Bulgaria	Philippines	Hong Kong
Chile	Poland	Iceland
China	Qatar	Israel
Colombia	Romania	Japan
Egypt	Russia	Korea
Ghana	Saudi Arabia	New Zealand
Honduras	Serbia	Norway
Hungary	South Africa	Singapore
India	Tajikistan	Sweden
Indonesia	Tanzania	Switzerland
Kenya	Thailand	Taiwan
Kuwait	Turkey	United Kingdom
Kyrgyz Republic	Ukraine	United States
Malaysia	Zambia	

Appendix B
Data on Global Imbalances

To analyze and decompose net international investment positions (NIIPs) around the world, I utilize the data compiled in Adjiev, Forbes, Nenova and Santos (2026). This data draws from several sources. The primary source is the International Monetary Fund's Balance of Payments and International Investment Position Statistics (BOP/IIP, version 6) for information on BOP balances, income flows, financial account flows, and IIPs. When data on a specific country is not available, we supplement with information from *The External Wealth of Nations* database, originally developed in Lane and Milesi-Ferretti (2007, 2018) and now updated through the Brookings Institution.[48] For currency weights for the IIP data, we use Bénétrix et al (2015, 2019) and Allen et al. (2023). Information on bilateral exchange rates is from BIS data and DataStream, and information on nominal GDP from the IMF's World Economic Outlook database.

Much of our data starts in 1980. Therefore, to be consistent across countries, we begin by setting IIPs equal to the trade balance in 1980 for each country and then calculate positions in future years based on accumulated changes in positions from 1980. This approach will miss any international holdings accumulated before 1980, but these positions were generally very small relative to GDP—particularly when compared to the changes in positions which happened in subsequent years.

The resulting baseline sample used in this paper includes 23 economies (12 advanced economies and 11 emerging markets) listed in Appendix Table B1 from 1980 through 2024. This is a subset of the countries in this dataset compiled in Avdjiev et al. (2026).[49] I continue to classify economies as "advanced" or "emerging market" based on 2025 IMF classifications, with emerging markets also including any countries classified as "developing". These economies are chosen based on whether there is a sufficient time series of data, as well as to focus on large economies in each region which could have a meaningful impact on imbalances. This sample only has limited data on countries in the Middle East and Africa, largely due to incomplete data on NIIPs and the underlying flows.

[48] The full dataset, updated in January 2025, is available at: The external wealth of nations database | Brookings

[49] The full dataset in Avdjiev et al. (2026) includes 28 economies (15 advanced economies and 13 emerging markets), with the individual members of the euro area treated as separate economies instead of analyzing the euro area as one entity. In this paper, I treat the euro area as one entity and therefore do not include statistics for individual members.

Appendix Table B1
Economies in Sample for Analysis of Global Imbalances

Emerging Markets	Advanced Economies
Brazil	Australia
China	Canada
Hungary	Czech Republic
India	Euro area
Indonesia	Japan
Mexico	Korea
Poland	New Zealand
Russia	Norway
Saudi Arabia	Sweden
South Africa	Switzerland
Turkey	United Kingdom
	United States