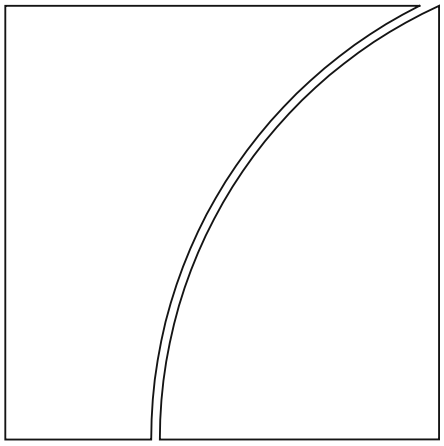

BIS Working Papers

No 1379

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Monetary and Economic Department

September 2026

JEL classification: F1, F3, F4, G15

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This publication is available on the BIS website (www.bis.org).

ISSN 1020-0959 (print)
ISSN 1682-7678 (online)

Unraveling the Cobweb of Global Imbalances: *Drivers, Vulnerabilities, and Adjustment Scenarios*[*]

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September 2026

Abstract: This paper analyses the evolution and drivers of the stock of global imbalances in order to assess associated vulnerabilities and potential adjustment scenarios. These imbalances have recently increased sharply, with a deterioration in the US net international investment position (NIIP) mirrored by NIIP improvements in most other major economies. We decompose these NIIP changes into their proximate drivers for a sample of 28 economies and find that financial factors (including valuation changes and investment income flows) are the primary drivers of global imbalances at both short and long horizons, while trade also plays a significant role (especially at long horizons). Valuation gains on international investment positions have supported economic growth in many countries since 2010, while also increasing their vulnerability to financial market adjustments. To assess the implications and potential risks, we simulate the spillovers through this cobweb of global imbalances from: (i) a sharp dollar depreciation, (ii) a repricing of equity markets, (iii) higher interest rates, and (iv) a halving of trade imbalances. These scenarios highlight the large international spillovers that would be associated with any reduction in global imbalances, the heterogeneous impact of various rebalancing mechanisms on individual countries and the limits of popular proposals for reducing these imbalances. The persistence of global imbalances underscores the importance of building resilience to the large spillovers that can occur through this cobweb of international exposures.

Key words: global imbalances, net international investment position, spillovers, current account, trade deficit, trade surplus, exorbitant privilege, international debt, dollar depreciation

JEL Codes: F1, F3, F4, G15

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I. Introduction

Global imbalances have recently increased significantly and reached historical highs by many measures, generating a wide range of concerns around economic resilience, geopolitical, financial and macroeconomic vulnerabilities, as well as broader systemic risks. These imbalances have also been a central argument for the increased use of tariffs and other trade restrictions. This confluence of developments has elevated global imbalances to the forefront of G-7 and G-20 priorities and triggered a surge of new research and reports.[1] This paper contributes to this literature by unraveling these cross-country linkages and analysing the financial vulnerabilities corresponding to the stock of global imbalances. We provide a framework to decompose the drivers of imbalances across countries and time and then use this to assess the implications of various shocks and potential adjustment paths. The analysis highlights the prominent role of financial channels (as compared to trade), the underlying persistence of global imbalances, the potential for large international spillovers driven by financial shocks propagating through these cross-country exposures, and the very heterogeneous impact of different adjustment mechanisms on individual countries and global outcomes.

Global imbalances initially gained attention in the 2000s as the current account balances for China and the United States reached record highs. Research began to focus more on the corresponding financial flows, such as the "global savings glut" (Bernanke, 2005), and the role of financial markets and relative returns, such as the US "exorbitant privilege" (Gourinchas and Rey, 2007).[2] Work also highlighted the importance of understanding the gross stocks and flows behind imbalances (Lane and Milesi-Ferretti, 2007; Forbes and Warnock, 2012). After the 2008 Global Financial Crisis (GFC), annual current account imbalances moderated, although the underlying stock of imbalances continued to increase. After the 2020 pandemic, however, current account imbalances began to increase sharply, prompting another surge of research. Recent work includes analyses of industrial policies on trade balances (Cesa-Bianchi et al., 2026a and 2026b; International Monetary Fund, 2026; Rey et al., 2026), and many papers continue to focus on the United States (Obstfeld, 2025; Atkeson et al., 2025; Bayoumi and Gagnon, 2025; Chari and Milesi-Ferretti, 2025).

What has received less attention than the recent growth in *flow* measures of imbalances (e.g., trade and current account balances), however, is the even sharper growth in *stock* measures. The US net international investment position (NIIP) has deteriorated to an unprecedented (negative) level, balanced by meaningful improvements in the NIIPs of most other countries. This has provided an underappreciated boost to economic growth in many countries outside the United States (by easing financial conditions and generating positive wealth effects) but also increased vulnerabilities to adjustments in financial markets. These external exposures can improve international risk sharing (Brandt et al., 2006) but also increase the macroeconomic and financial stability risks associated with a range of shocks (including some which would shrink overall imbalances). Moreover, the spillovers through imbalances have increased not only due to their larger size, but also the "rewiring" of the global financial system away from bank-based

[1] Prominent examples from just the first half of 2026 include: Bai, Gopinath, Rey and Weber (2026), Bayoumi and Gagnon (2026), Bruno, Kamin, Ubide and Tille (2026), Cesa-Bianchi et al. (2026a), Frohm et al. (2026), International Monetary Fund (2026), and Rey, Weder di Mauro and Zettelmeyer (2026).

[2] A vein of this literature also highlighted the importance of the depth and liquidity of US financial markets, including Caballero, Farhi, and Gourinchas (2008) and Forbes (2010).

international capital flows towards more price-sensitive, market-based investors (Hernández de Cos, 2025; Bruno et al., 2026; Shin, 2026).

To understand these spillovers, our analysis focuses on the most comprehensive measure of external balances—net international investment positions (NIIPs)—complemented by information on gross international investment positions (IIPs) and current account balances (including trade and investment income flows). Focusing on NIIPs has several advantages. First, they capture the exposure of the whole economy (not just the sovereign), which is essential for financial stability analysis as private entities account for a growing share of cross-border positions. Second, NIIPs allow us to analyse the accumulated stocks of imbalances, rather than just the annual flows (as measured by the current account or trade balances). This focus is necessary to comprehensively assess vulnerabilities to specific shocks (similarly to how fiscal sustainability analysis needs to incorporate information on debt stocks as well as annual deficits). Finally, by looking at NIIP stocks (and the annual flows and valuation changes that created them) we can distinguish between the short-run versus long-run drivers of imbalances, as well as the different vulnerabilities that arise from international asset exposures (and not just liability exposures, which tend to receive more attention).

This paper begins by constructing a detailed data set on international investment positions, trade flows, capital flows, and their various components by asset category from 1980 through 2025. We also incorporate information on financial market movements and returns for individual countries and global indices, including for equity markets, interest rates and exchange rates. We focus on a sample of 28 countries (17 advanced economies and 11 emerging markets) covering about 85% of global GDP.[3] Then we use this data set to analyse the current landscape of international investment positions and how they have evolved since 1980.

Global imbalances have been increasing over most of the last 46 years — with the absolute value of NIIPs in our sample increasing from 11% of global GDP in 1980 to 41% in 2025. This increase primarily reflects trends in the advanced economies, which in turn largely reflects the sharp deterioration in the US NIIP from roughly balanced in 1980 to -19% of global GDP in 2025 (almost half of global imbalances in our sample). A structural shift appears to have occurred around 2010—as the US NIIP began to consistently deteriorate, resulting in regular net wealth transfers to much of the rest of the world.[4] Any reduction in global imbalances is therefore likely to include some unwinding in the US international debtor position and corresponding reversal in the (often substantial) NIIP improvements of other economies. The recent large shifts in international exposures and the associated external imbalances have increasingly been driven by changes in equity exposures rather than debt, a "rewiring" which can yield benefits as well as generate new vulnerabilities (independent of the size of exposures).

We unpack this evolution in global imbalances and assess potential risks from gradual adjustments or sudden shocks in Section III by building on the framework in Forbes, Hjortsoe and Nenova (2017)

[3] Our primary criterion for our benchmark sample is whether countries have the detailed data necessary for the subsequent decompositions. We do not include financial centers in much of the analysis due to data challenges discussed in Section II.D, but do include them for parts of the scenario analysis (in Section VI).
[4] This structural shift is distinct from the sharp (but short-lived) adjustments in imbalances around the 2008 Global Financial Crisis that corresponded to a wealth transfer from the United States through global imbalances when the US NIIP acted as an "insurer of last resort" (Gourinchas, Rey and Truempler, 2012).

to decompose changes and levels in NIIPs into contributions from four main components: (i) trade flows; (ii) investment income flows; (iii) other income flows; and (iv) valuation effects (arising from changes in the market values of existing positions). This approach has several advantages relative to decompositions of current accounts and international investment positions used in recent work. Instead of focusing on the current account in aggregate, our decompositions allow us to isolate the relative importance of its heterogeneous underlying components (e.g., trade versus investment income). Moreover, by incorporating both "flows" through current accounts and "stocks" of financial positions, it highlights the joint role of financial factors working through both valuation effects and annual investment income flows. When it comes to assessing risks from growing imbalances, this framework allows us to further decompose these financial factors into primitives which we can shock in our scenario analysis: (i) exchange rate movements; (ii) relative returns; (iii) the initial net stock of assets and liabilities; and (iv) the relative composition of these assets and liabilities (e.g., between equity, debt, FDI, bank loans, and other exposures). These decompositions are essential to understand how international risk sharing mechanisms vary with the structure of countries' balance sheets and trace spillovers through the web of global imbalances from hypothetical shocks.

Section IV applies this methodology to explain changes in international investment positions across our sample covering 1980-2025. We first summarize the relative magnitudes of the drivers across all countries by decade—a medium-term horizon over which policy could have a meaningful impact. While trade continues to play an important role, financial factors (including both valuation effects and investment income) have been more influential in explaining NIIP changes over recent decades. For example, between 2010 and 2019, financial factors drove NIIP changes that were twice as large on average than trade. The most notable development has been the increased importance of valuation effects, which made minimal contributions to NIIP changes in the 1980s. We also explore how the contributions of different components of imbalances vary over different horizons. The majority of the divergence in NIIP *levels* across countries is explained by persistent imbalances in trade and investment income flows, while annual NIIP *changes* are predominantly driven by valuation adjustments (which recently account for almost all of this short-term variation). Therefore, financial components are key to not only understanding the current divergence in the level of global imbalances, but also to assess the vulnerabilities to a range of shocks (e.g., to exchange rates or asset prices)—even if short-lived.

Next, we shift to more detailed decompositions of valuation effects and investment income flows to understand the drivers of these financial factors. Relative returns (for each asset and liability category relative to that in other countries) are the dominant factor explaining the financial effects, especially over shorter horizons. Mismatches in the composition of assets versus liabilities also play a meaningful role. Large exchange rate movements contribute substantially to valuation effects, particularly over shorter windows and for specific countries and periods. "Stock" effects (i.e., the initial level of total assets relative to total liabilities) are the primary determinant of investment income flows and particularly important over longer horizons. This series of results has two important implications. First, imbalances are increasingly susceptible to swings in risky asset prices and exchange rates. Second, as the size of imbalances (as well as any mismatches across asset classes) grows, many of these financial effects also grow—not only through larger valuation effects, but also through larger income flows on existing positions. In turn, larger investment income flows generate more persistence in the flow measures of imbalances (i.e., current accounts) and make it harder to unwind existing stocks.

Many of these patterns, however, vary across countries and reflect the size and composition of their balance sheets, macroeconomic structure and policies. Section V explores this considerable heterogeneity at the country level. Although trade explains a large share of NIIP movements in some countries (such as Korea, Australia, and Germany) since 2010, accumulated trade flows are only weakly correlated with NIIP changes for most economies. In countries such as the United States and Canada this reflects the larger role of financial factors in driving NIIP changes, while in other countries the impact of accumulated trade flows has been largely balanced by financial factors working in the opposite direction. For example, since 2010 China's NIIP improved by only about half as much as its accumulated trade surpluses, and Saudi Arabia and Switzerland by even less, as financial transfers offset their respective gains from trade. A closer look at these financial channels shows a prominent role for valuation effects driving the largest shifts in NIIPs for advanced economies, and a larger average role of investment income flows (which include interest payments on international borrowing) for emerging economies.

To make these substantial differences across countries more concrete, Section V contrasts two countries with a large role for valuation effects (the United States versus the United Kingdom) and two with important investment income flows (Japan versus Brazil). Both the United States and the United Kingdom enjoyed a form of "exorbitant privilege" before 2010, in the sense that higher relative returns and valuation gains on their investment portfolios more than offset accumulated trade deficits.[5] The United Kingdom has maintained this "privilege", partly through exchange rate adjustments and weak returns on UK liabilities, while the United States appears to have lost this privilege since 2010 and transitioned to providing a "generous giveaway", driven primarily by the stronger relative performance of US equities and recent dollar appreciation. Japan and Brazil currently have large current account imbalances (a surplus and deficit, respectively), despite having roughly balanced net trade flows. Their large current account imbalances are primarily driven by investment income flows, which mainly result from large stocks of imbalances (with some additional role for return differentials). This demonstrates how the increased size of imbalances is generating more persistence in current account flows, which could in turn contribute to even larger imbalances without any other changes.

The final section of the paper analyses several scenarios of major shocks to the drivers of imbalances and assesses their impact on NIIPs of individual economies as well as how these shocks could spread through the web of global imbalances. We complement the decompositions developed in the previous sections with bilateral financial exposures data to perform back-of-the-envelope, partial equilibrium calculations of several hypothetical events: a 20% depreciation of the US dollar, a sharp correction in US and/or global equity markets (potentially related to a repricing of AI and technology-related companies), a large increase in interest rates on debt (for all countries or just high-debt economies), and a reduction in trade imbalances by half (potentially related to increased trade restrictions). The analysis identifies which economies are most vulnerable to the resulting NIIP changes, including many whose growth has likely been boosted (through looser financial conditions and positive wealth effects) by NIIP improvements since 2010 corresponding to

[5] The term "exorbitant privilege" has been used to define several (related) patterns. Some papers use this term when a country pays a higher return on foreign assets than on foreign liabilities in the same asset/liability category, while others do not differentiate by asset class or only focus on fixed income. Some incorporate valuation changes as well as relative income returns. We define it broadly as situations when a country is a NIIP debtor, but still has positive investment income and/or valuation gains on their international portfolios that offset trade deficits to stabilize the NIIP.

the sharp deterioration in the US NIIP. The scenarios also underscore how a given reduction in imbalances could occur through more benign or more severe outcomes for the global economy.

Perhaps most important, these scenarios also highlight the persistence of global imbalances. If trade and investment income flows remain around current levels and there are no relative valuation changes, imbalances will continue to increase from 41% of global GDP in 2025 to 46% in 2030. Higher interest expenses for more indebted countries will increase global imbalances even further to 48% of GDP in 2030 by increasing investment income payments from debtor to creditor economies. A dollar depreciation would reduce imbalances by devaluing the external liabilities of the world's largest external debtor—the US—but the impact of even a 20% depreciation is estimated to only reduce imbalances modestly from 41% to 38% of GDP in 2025; a dollar depreciation that was large enough to meaningfully reduce imbalances would likely generate additional financial stability risks that are not incorporated in our scenarios. A halving of annual trade imbalances would only reduce the stock of global imbalances by a meaningful amount if it persisted for multiple years—and even this large adjustment would only roughly stabilize global imbalances in 2030 at the same level as in 2025. The scenario which has the potential to generate the largest and fastest reduction in global imbalances (by far) is a sharp correction in US equity markets. Such an adjustment, however, would be extremely painful for both the United States (due to the associated decline in domestic wealth) as well as the rest of the world (by sharply reducing the valuation of external assets), even before any second-round effects on other asset prices or broader financial stability. Even though these scenarios are only rough calculations of the immediate effects of certain shocks, they show the limited effect of policies often proposed to address concerns around global imbalances (in both policy discussions and academic research); if a reduction in global imbalances is the goal, a combination of policy adjustments will be required.

Granted, there is no optimal level for imbalances, or fixed amount by which they should necessarily fall, and some degree of global imbalances is part of a well-functioning global economy. Moreover, with a higher share of equity and FDI exposures, adjustments that occur through valuation changes on such state-contingent assets could take place more smoothly than currency adjustments or debt restructurings. In any of these scenarios, it is crucial to understand the specific channels through which these types of shocks could spread globally to assess different sectors' potential vulnerabilities, and whether such rebalancing could trigger financial or macro instability.

The analysis and results in this paper provide several useful policy insights. First, for countries concerned about large trade imbalances, valuation effects and investment income flows should also be central to the discussion. These financial channels can largely offset—and even outweigh—the impact of trade on current account balances and NIIPs. Second, as the size of imbalances has grown, it has become even more important for countries to understand the spillovers they could face as a consequence of financial market shocks working through the "cobweb" of global imbalances. Most economies have benefited from an unprecedented net transfer of resources through valuation effects on their international investment positions since 2010. These transfers could not only suddenly stop, but reverse. Understanding exactly which sectors of the economy are affected by these types of spillovers, including if they are well positioned to absorb a potentially large and abrupt decline in international net worth (and not just a shock to international liabilities), is critically important to assess financial stability risks.

Finally, the results highlight the challenges in reducing global imbalances—and even stabilizing them around current levels. Even if some combination of trade restrictions and/or geopolitical

events led to a sharp and long-lasting reduction in trade imbalances, the large stock of imbalances would persist (as well as some continuation of current account imbalances from investment income flows on these positions). In other words, the cobweb of imbalances and the corresponding vulnerabilities are unlikely to disappear anytime soon. As a result, policymakers should prioritize not only understanding the vulnerabilities related to this stock of global imbalances, but also take steps to build resilience to the range of potential shocks that could spread through this cobweb in the future.

Related Literature

This analysis relates to several extensive strands of literature—including on global imbalances, capital flows, global capital allocation, the sustainability of current account deficits and international debt. Our analysis approaches these issues from a global perspective. We highlight the "web" of international connections and spillovers such that gains (or losses) in some parts of the world correspond to losses (or gains) elsewhere. In addition, we focus on the aggregate exposures for the entire economy, including private sector exposures (in contrast to most work on debt sustainability which focuses on sovereign exposures) as well as across all asset categories (in contrast to work which focuses on just portfolio exposures or debt). The resulting network of international exposures in our analysis therefore has numerous threads, but this mapping is necessary to understand how various shocks propagate across the cobweb. [6]

The closest vein of literature is a series of papers analysing global imbalances through international financial positions and the underlying financial exposures. Early and influential papers focused on how valuation changes and relative returns within asset categories affect these positions, including: Lane and Milesi-Ferretti (2007, 2012), Gourinchas and Rey (2007), Forbes (2010) and Gourinchas, Rey and Truempler (2012). A closely related series of papers highlighted the role of exchange rate movements and correctly measuring the corresponding financial exposures when assessing NIIPs, such as Lane and Shambaugh (2010) and Bénétrix, Lane and Shambaugh (2015). Forbes, Hjortsoe and Nenova (2017) merged the above approaches to simultaneously analyse how valuation effects, investment income flows, relative returns and exchange rate movements all affect NIIPs, with these decompositions providing the starting point for parts of the analysis in this paper.

Much of the recent work on global imbalances has focused primarily on the United States, prompted by increased attention to US trade deficits and the deterioration in the US NIIP, as well as concerns about the future of the US dollar, and US debt sustainability. For example, Bayoumi and Gagnon (2025), Chari and Milesi-Ferretti (2025), and Obstfeld (2025) provide in-depth analyses of the US current account deficit and corresponding capital flows, with some analysis of changes in the US NIIP. Tabova and Warnock (2026) analyse recent changes in the US exorbitant privilege, and Atkeson et al. (2025) models how this reflects fluctuations in the market valuations of US corporations, generating a large welfare loss for US households. While some of these papers also

[6] The first part of our analysis examines *unilateral* NIIPs (i.e. each country's position vis-à-vis the rest of the world), in contrast to work analysing the patterns and drivers of *bilateral* financial exposures (Daude and Fratzscher, 2008; Milesi-Ferretti et al., 2010; Hale and Obstfeld, 2016; BIS, 2017; and Broner et al., 2023). Our scenario analyses also use the "cobweb" of *bilateral* international investment positions, but as an input into the various estimates (as described in Section VI).

examine developments outside of the United States, they do so in a targeted manner, focusing on non-US factors only to the extent that they can be used to explain certain US developments.

Several very recent papers have taken a more international approach to understanding global imbalances.[7] In the most thorough analysis to date, Bruno, Kamin, Ubide and Tille (2026) provide a detailed analysis of the recent evolution of global imbalances (measured by current accounts and NIIPs), as well as how this could interact with potential changes in US dollar dominance, sovereign bond markets, and liquidity in global financial markets. Bayoumi and Gagnon (2026) highlight the growth in China's trade surplus and the international ramifications, and Chari et al. (2025) include a chapter examining how geopolitical tensions have affected the bilateral, external financial exposures since 2019 for China, Russia, the euro area and the United States. A collection of papers have been written for policymakers in response to the recent focus on global imbalances in the G-7 and G-20, including Rey, Weder di Mauro and Zettelmeyer (2026), Bai, Gopinath, Rey and Weber (2026), Cesa-Bianchi et al. (2026a), and International Monetary Fund (2026). Much (albeit not all) of the focus in these papers and the corresponding policy discussion is on current account imbalances (i.e., the annual flows), rather than the stock of international positions.

Outside the literature on global imbalances, this paper is also loosely connected to several other large bodies of literature. One is the extensive literature on capital flows, which highlights the greater stability of certain types of flows (such as FDI) and the importance of focusing on gross positions rather than on net positions (Lane and Milesi-Ferretti, 2007; Gourinchas and Rey, 2007; Forbes and Warnock, 2012 and 2021; Avdjiev, McCauley and Shin, 2016). A second vein of literature focuses on the sustainability of current account imbalances, including Avdjiev, Everett, Lane and Shin (2018) and Forbes, Hjortsoe and Nenova (2017), which both document the growing "financialization" of the current account (i.e., the increased importance of income flows relative to trade flows). A third branch of research links foreign exposures to risks around debt sustainability and crisis vulnerability (Arellano and Ramanarayanan, 2012; Mendoza and Yue, 2012; and Arellano, Bai and Mihalache, 2024). A more recent strand of literature has highlighted how many of the relationships documented in earlier work may have changed around the 2008 Global Financial Crisis (Avdjiev, Gambacorta, Goldberg and Schiaffi, 2020; Forbes and Warnock, 2021).

Finally, a series of papers has taken advantage of the greater availability of micro data on portfolio holdings and firm ownership structures to better understand cross-country exposures. For example, Coppola et al. (2021), Beck et al. (2024), Chan et al. (2025) and Aldasoro et al. (2026) look through the growing role of offshore centres to draw a more accurate map of external exposures via portfolio debt and equity investment. These exercises highlight the limits of using data on official bilateral exposures between large, developed economies (e.g., vis-à-vis the US), as these miss important capital re-routing via financial centres. These data issues are discussed in more detail in Section II.D, and are why we focus on aggregate positions in our analysis (i.e., vis-à-vis the rest of the world) instead of bilateral positions between individual countries. Some of this more micro-based literature goes beyond documenting exposures and uses a demand system approach to asset pricing (introduced by Koijen and Yogo, 2019) in order to analyse domestic and international financial markets (Koijen and Yogo, 2020; Brunnermeier et al., 2021; Bretscher et al., 2025; and

[7] The IMF's annual *External Sector Report* (IMF, various years) has provided regular updates on global imbalances and the net international positions of the largest economies since 2012.

Nenova, 2025).[8] While these micro studies are useful to understand details of market structure, spillovers, and vulnerabilities in an important asset category (portfolio investments), our analysis incorporates all cross-border investment categories—also including FDI, bank, and reserve assets—in order to understand the broader landscape of international exposures.

II. International Investment Positions: Data, Current Landscape and Evolution over Time

This section describes our main database on international investment positions around the world and provides initial descriptive analysis. It begins by discussing the definitions and construction of key variables, as well as data sources and the resulting sample used throughout the paper. Then it provides information on the status of global imbalances at the end of our sample in 2025, as well as how these imbalances and positions have evolved since 1980. The section closes with a brief discussion of several caveats and limitations with the international statistics on global imbalances.

A. The Data: Definitions, Sources and Sample

To assess the evolution of global imbalances, we focus on the most comprehensive measure of cross-country exposures: net international investment positions (NIIPs). 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 necessary in order to assess the financial stability risks around imbalances, especially as non-sovereign entities hold a growing share of international investments and these exposures can constrain the policy options of the sovereign.[9] Parts of the analysis also utilize information on gross (instead of net) international assets and liabilities[10] and on annual cross-border flows (including the current account as well as its trade and income components). For our initial description of global imbalances, however, we focus on the stocks of net international exposures, as these measures are central for the analysis of spillovers and potential vulnerabilities, not only through the impact of shocks on a country's net worth through its NIIP, but also as they can determine the effectiveness of different policy responses.[11]

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[8] Also see Rey and Stavrakeva (2025), which links foreign investor holdings in equity and debt to episodes of market turbulence. A subset of this research focuses on sovereign debt and highlights the weight given to liquidity versus other purposes, which in turn determines the demand by different investor groups, such as: Krishnamurthy and Vissing-Jorgensen (2012), Jiang, Krishnamurthy, and Lustig (2021) and Jiang et al. (2024).
[9] For example, in a country with modest sovereign debt, but large liabilities in the financial sector, the government might need to assume these liabilities in a crisis.
[10] Gross (instead of net) international exposures can be particularly important when assessing the impact of shocks, including shocks to liquidity or that affect the valuation of international exposures. For more discussion of the role of gross exposures and flows, see Lane and Milesi-Ferretti (2007, 2012, 2018), Gourinchas and Rey (2007), Forbes and Warnock (2012, 2021), and Avdjiev, McCauley and Shin (2016).
[11] 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.

To compile our data set to analyse and decompose NIIPs around the world, we utilize data from several sources, using the latest vintage available as of June 2026. Our primary sources are the International Monetary Fund's Balance of Payments and International Investment Position Statistics (BOP/IIP) for information on BOP balances, income flows, financial account flows, and IIP positions.[12] When data on a specific country is not available, we supplement with additional sources, including information from *The External Wealth of Nations* database, originally developed in Lane and Milesi-Ferretti (2007, 2018) and now updated through the Brookings Institution.[13] For currency weights for the IIP data, we use Bénétrix et al. (2019) and Allen et al. (2023). Information on bilateral and trade-weighted exchange rates is from the BIS and Datastream, and information on nominal GDP from the IMF's World Economic Outlook (WEO) database. There are a number of well documented challenges with the above data series. We discuss those issues in more detail in **Appendix A**. For our baseline analysis, however, we use the sources listed above in order to be consistent with national sources.

For our baseline analysis, we focus on 28 economies—17 advanced economies (AEs) and 11 emerging markets (EMs) — from 1980 through 2025[14]. This sample is listed in **Appendix Table 1** (along with country codes used for the graphs) and divided into "advanced" or "emerging market" based on April 2025 IMF WEO classifications. We chose these economies based on whether they have sufficient time series for key data (particularly for the decompositions in Section III), 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. We include six countries from the euro area as separate entities for most of the analysis, but report some results for the euro area as one economy (which nets out euro area exposures between member countries).[15] We exclude small economies that are major financial centres from our baseline analysis—including Luxembourg and Ireland — due to concerns about data reliability and because their outsized financial positions relative to GDP can distort some of the statistics reported below.[16]

Although our sample of 28 countries only covers a subset of the world, it represents 85 percent of global GDP over 1980-2025. In addition, the time series of aggregate NIIPs for our sample closely follows that from datasets with broader coverage (but without the details necessary for the decompositions and analysis below).[17] For example, **Appendix Figure 1** compares key statistics for our sample of 28 countries with a sample of more than 200 countries based on the *External Wealth of Nations* database ("World"), with each statistic scaled by global GDP (from the IMF and including

[12] This includes updated BEA estimates of US FDI valuations, discussed in Appendix A.
[13] The full dataset with data up to 2024, updated in April 2026, is available at: The external wealth of nations database | Brookings. In addition, unpublished data from the IMF's *World Economic Outlook* have been used to fill in missing earlier data on the balance of payments. Any remaining missing data were estimated through "internal filling", including deriving them from existing components and linear interpolation in limited cases.
[14] A few countries have a shorter history of BOP and other statistics, such as Russia and the Czech Republic.
[15] We do not focus on the aggregated euro area for our baseline as some data are only available for a shorter period, and key statistics for some of the detailed decompositions (particularly the currency composition of different categories of assets and liabilities over a long period) are not available for all members.
[16] More specifically, we exclude Luxembourg and Ireland as their gross IIPs exceed 3000% of GDP, both substantially more than that of the next largest IIP in the sample. We also check key results for robustness to excluding other financial centers, such as Switzerland, the Netherlands, the United Kingdom and Belgium.
[17] Our sample covers between 83% and 88% of global GDP in each year, based on IMF data for global GDP. As mentioned above, data for the Czech Republic and Russia are only available well after 1980.

an even larger set of economies). The aggregate NIIPs and changes over time for our sample closely mirror that of the larger group of countries, with the expected smaller aggregate positive and negative positions for our baseline sample due to the smaller number of countries and exclusion of the hard-to-track financial centres.

B. Net International Investment Positions Today

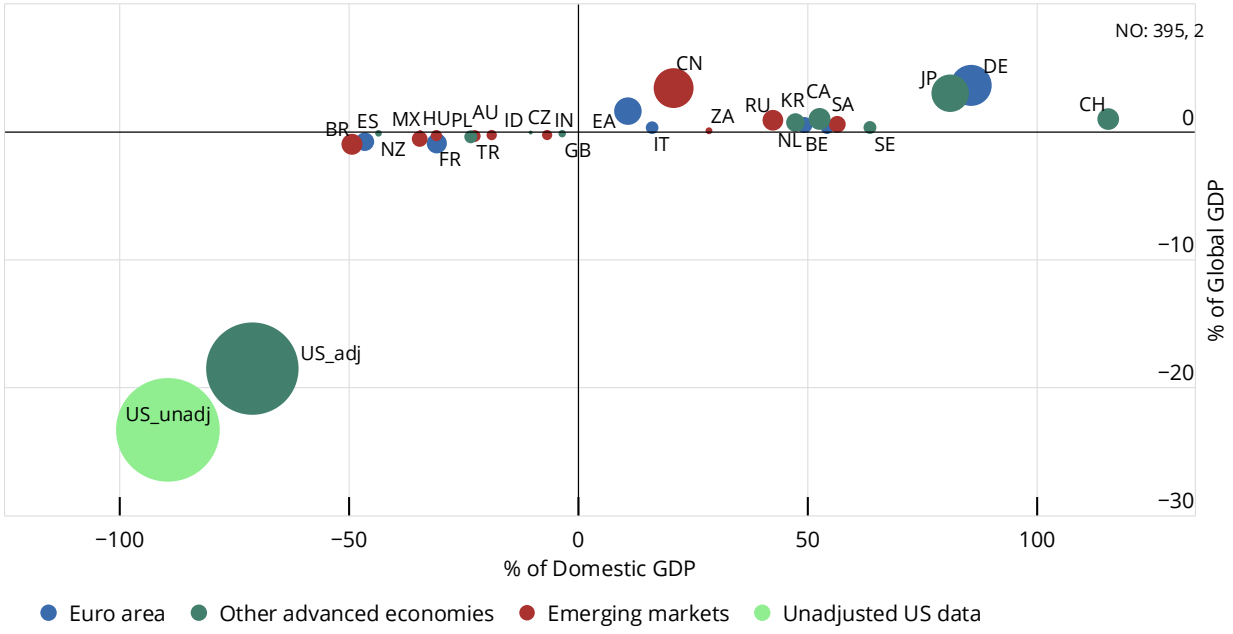
As a first look at the latest landscape of global imbalances, **Figure 1** shows NIIPs as of end-2025 for each country in our sample, with more details in **Appendix Figure 2**. For comparison, we include the two vintages of US NIIP data (discussed in part D below). We also include the euro area as a single entity, netting out exposures between members (including those not in our baseline sample).

The x-axis shows each economy's NIIP scaled by its domestic GDP. There is an equal number of individual countries with creditor and debtor positions (14 of each) in 2025. There is also a fairly even distribution of creditor and debtor countries across the x-axis, albeit with a notable tail on both sides—Norway with the largest creditor position (parsed on the graph) and the United States with the largest debtor position. Switzerland, Germany, and Japan also have large creditor positions (each exceeding 80% of domestic GDP), while Brazil, Spain, and New Zealand also have large debtor positions (all greater than 40%). The EMs with the largest creditor positions relative to domestic GDP in 2025 are Saudi Arabia (56%), Russia (42%) and South Africa (28%), while the EMs with the largest debtor positions are Brazil (-49%), Mexico (-35%), and Hungary (-34%).

The y-axis and size of the bubbles in **Figure 1** shows each economy's NIIP scaled by global GDP. The distribution of countries along this dimension is highly asymmetric—with the United States clearly standing out (based on both data vintages). The latest US NIIP position of -19% of global GDP far overshadows that of any other country (either positive or negative). This highlights the importance of understanding the dynamics of US international exposures in order to analyse imbalances and spillovers from a global perspective. Even modest changes in the US position relative to its own (large) economy could have significant implications for the rest of the world, potentially triggering considerable adjustments outside the United States that are substantially larger relative to the size of the respective economies. It is also notable that China's surplus features more prominently when NIIPs are scaled by global GDP; China has the second largest creditor position (3.4% of global GDP) based on official statistics, just behind Germany (3.7% of global GDP); China's surplus is likely larger when adjusted for several data discrepancies (as discussed in Appendix A.)

Appendix Figure 2 (panels C and D) also shows *gross* international investment positions for our sample, with positions once again scaled by domestic and global GDP. The magnitude of these gross positions is much larger than that of the net positions (panels A and B). These large underlying gross positions play an important role in shaping the dynamics of global imbalances in the decompositions analysed later in this paper. Modest movements in financial markets (e.g., in exchange rates or in relative asset returns) can have large effects on both gross and net international investment positions.

Figure 1
Net International Investment Positions in 2025

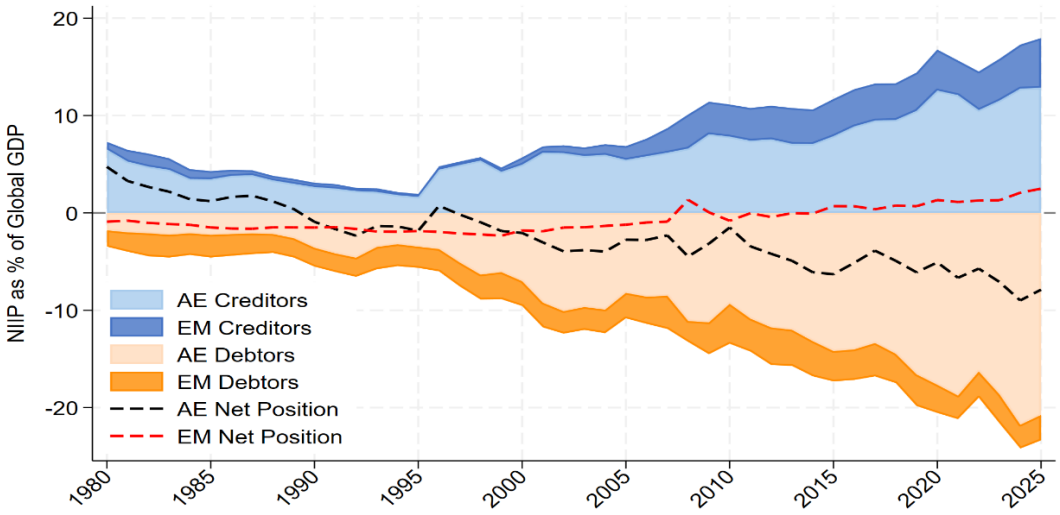


Notes: Graphs show NIIPs (international assets less international liabilities) relative to domestic and global GDP for each country in the baseline sample (except Norway) plus the euro area (EA). Bubble size is the absolute value of the NIIP relative to global GDP. Norway's NIIP (not graphed) is 395% of domestic GDP and 1.8% of global GDP. Data for the EA as one entity nets out exposures between member countries. See Appendix Table 1 for country codes. Underlying data on NIIPs from the IMF's BOP and IIP database and for GDP from the IMF's World Economic Outlook database. The US includes two dots: the "unadjusted" position based on data prior to US Bureau of Economic Analysis' April 2026 data release and the "adjusted" position, which includes downward revisions to the valuation of FDI liabilities.

C. The Evolution of NIIPs over Time

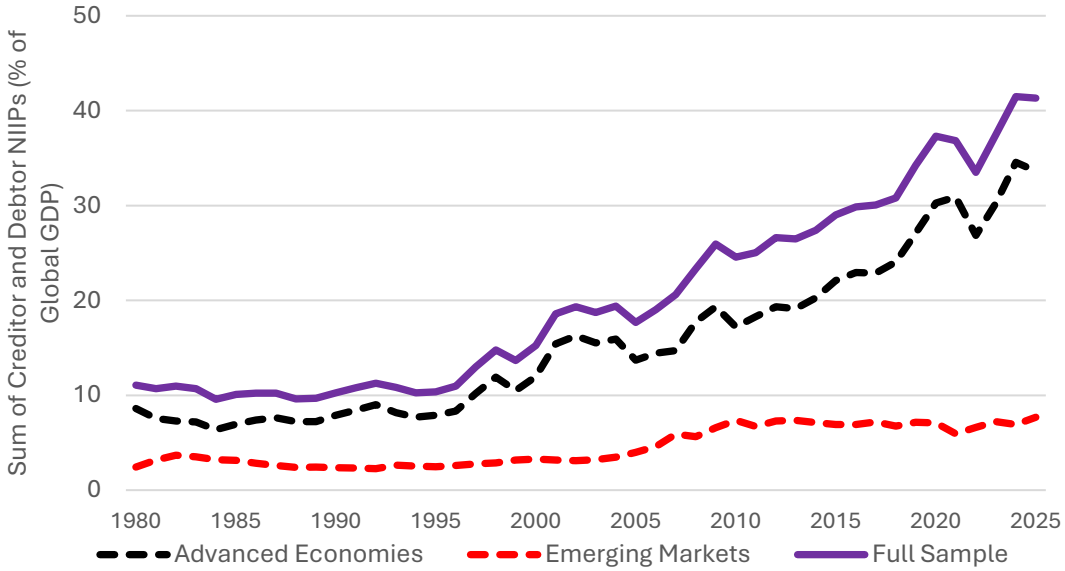
Figure 2 shows the evolution of these global imbalances from 1980 through 2025, aggregated across the sample of 28 economies and differentiating between AEs and EMs (lighter and darker shading, respectively) and creditors and debtors (blue and orange, respectively). The increase in global imbalances has been primarily driven by divergence within AEs, with more muted changes in EMs' positions. Particularly striking is the divergence in the net positions (dashed lines) for each group. The AEs' aggregate NIIP deteriorated from slightly positive in the 1980s and much of the 1990s, to slightly negative in the late 1990s through 2000s, to sharply negative after 2011, peaking at -9% of global GDP in 2024 (before falling back slightly to -8% of global GDP in 2025). In contrast, the EMs' aggregate NIIP has been relatively stable across the sample, moving from slightly negative for most years from 1980 through 2014, before turning slightly positive since 2015 to peak at only 2.5% of global GDP in 2025.

Figure 2
Evolution of Stock of Global Imbalances



Notes: Figure shows the aggregate NIIPs for each group of economies as a percentage of global GDP. "EM" is group of 11 emerging markets and "AE" is group of 17 advanced economies, including six members of the euro area (and not netting out exposures between euro area members). 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 Table 1 for countries in the sample. Underlying data on NIIPs from the IMF's BOP and IIP database and for GDP from the IMF's World Economic Outlook database.

Figure 3
Aggregate Divergence in Net International Investment Positions



Notes: Figure shows the sum of the aggregate creditor and debtor NIIPs (in absolute values) for each group of economies as a percentage of global GDP. Creditors (debtors) are countries with positive (negative) NIIPs in the given year. See Appendix Table 1 for list of 17 advanced economies and 11 emerging markets in the sample. Underlying data on NIIPs from the IMF's BOP and IIP database and for GDP from the IMF's World Economic Outlook database.

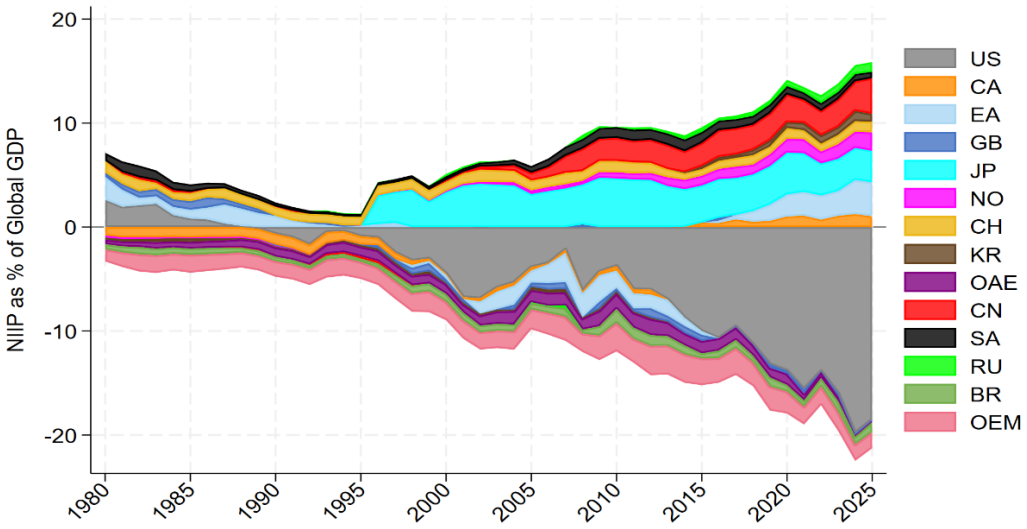
Another striking characteristic of this graph is the overall growth in global imbalances over time as captured by the size of the aggregate positions. To better capture this aggregate "divergence" (i.e., the size of the fan), **Figure 3** reports the sum of the absolute values of the aggregate creditor and debtor positions for each group of countries (all relative to global GDP). For the sample as a whole, this divergence has increased from about 10% of global GDP throughout the 1980s to 41% in 2025. This primarily reflects an increased divergence in NIIPs in advanced economies, which jumped almost fourfold from 9% of global GDP in 1980 to 34% in 2025. The global divergence appears to have occurred in several waves: an initial increase starting just before 2000 (around when China was preparing to join the WTO), then another larger and more persistent increase starting in 2008 and continuing through 2020 (reflecting the post-Global Financial Crisis landscape), some volatility around the pandemic (which partially reflects sharp volatility in GDP), and then a large jump over 2023-24 (the largest two-year jump in this measure of global imbalances over the entire sample period).

To better understand which individual economies are driving this increased divergence, **Figure 4A** shows the evolution of NIIPs relative to global GDP for different countries in the sample and several country groups (with detailed breakdowns for just the AEs or EMs in **Appendix Figure 3**). The United States and the growth in its debtor position dominates the graph; for most of the 1980s the US NIIP was positive and close to zero, after which it deteriorated modestly to average -3% of global GDP from 1990-2009. After 2010, however, the US position deteriorated sharply, peaking at -20% of global GDP in 2024 — a historical record (at least since our data begins) — before falling back slightly to -19% of global GDP in 2025. To better highlight this prominent role of the US position in global imbalances, **Figure 4B** shows the US share of aggregate NIIPs (the absolute value of positive and negative positions in the sample), as well as the share of aggregate debtor positions. In 1990, the US NIIP was only 6% of the global NIIP (12% of global debtor positions), and after some volatility over the next two decades, was only 15% of global positions (28% of debtor positions) in 2010. These measures of imbalances subsequently increased sharply, so that in 2025 the US constituted 45% of global NIIPs (and 79% of global debtor positions) for our sample.

Returning to **Figure 4A**, no single country plays as dominant a role in the creditor NIIPs comparable to that of the US for debtor positions, although China and Japan overshadow that of other economies, as well as Germany (when broken out from the euro area, as shown in **Appendix Figure 3**). More specifically, in 2025 Germany, China and Japan each had an international creditor position over 3% of global GDP, although these have evolved very differently over time. For example, Japan's contribution to global imbalances peaked in 2009, while China's contribution increased rapidly over the 2000s to remain over 2% of global GDP since 2008.[18] The NIIPs of other creditor economies have also followed heterogeneous patterns over time. For example, Switzerland has had a consistently positive and fairly steady NIIP rounding to 1% of global GDP for the entire period, while several commodity exporters have had meaningful increases (such as Norway and Russia). Also noteworthy are several economies that transitioned from being international debtors for much of the sample to creditors in 2014-2016, including Canada, Korea and South Africa.

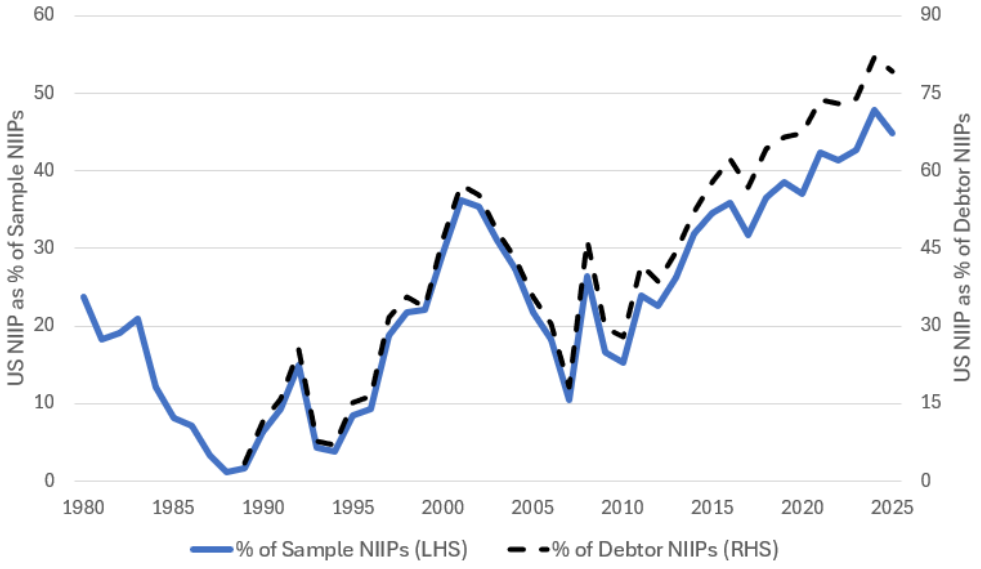
[18] More specifically, China's NIIP shifted from slightly negative or roughly balanced until China entered the WTO, before jumping to 2.2% of global GDP in 2008 and then roughly stabilizing at this level until 2015, before increasing again near the end of the sample to reach 3.4% of global GDP in 2025. As discussed in Appendix A, these official statistics likely understate China's trade surplus and investment income.

Figure 4
A. Evolution of NIIPs in Individual Economies



Notes: Graph shows NIIPs relative to global GDP from 1980 through 2025 for the baseline sample of 28 countries. See Appendix Table 1 for countries and codes. Countries not listed individually in the legend above are included in one of the following groups: EA =six members of euro area; OAE = other advanced economies; and OEM = Other emerging markets. For these groups, exposures between the individual countries are aggregated and not netted out. Underlying data on NIIPs from the IMF's BOP and IIP database and for GDP from the IMF's World Economic Outlook database.

B. Role of US in Global Imbalances over Time



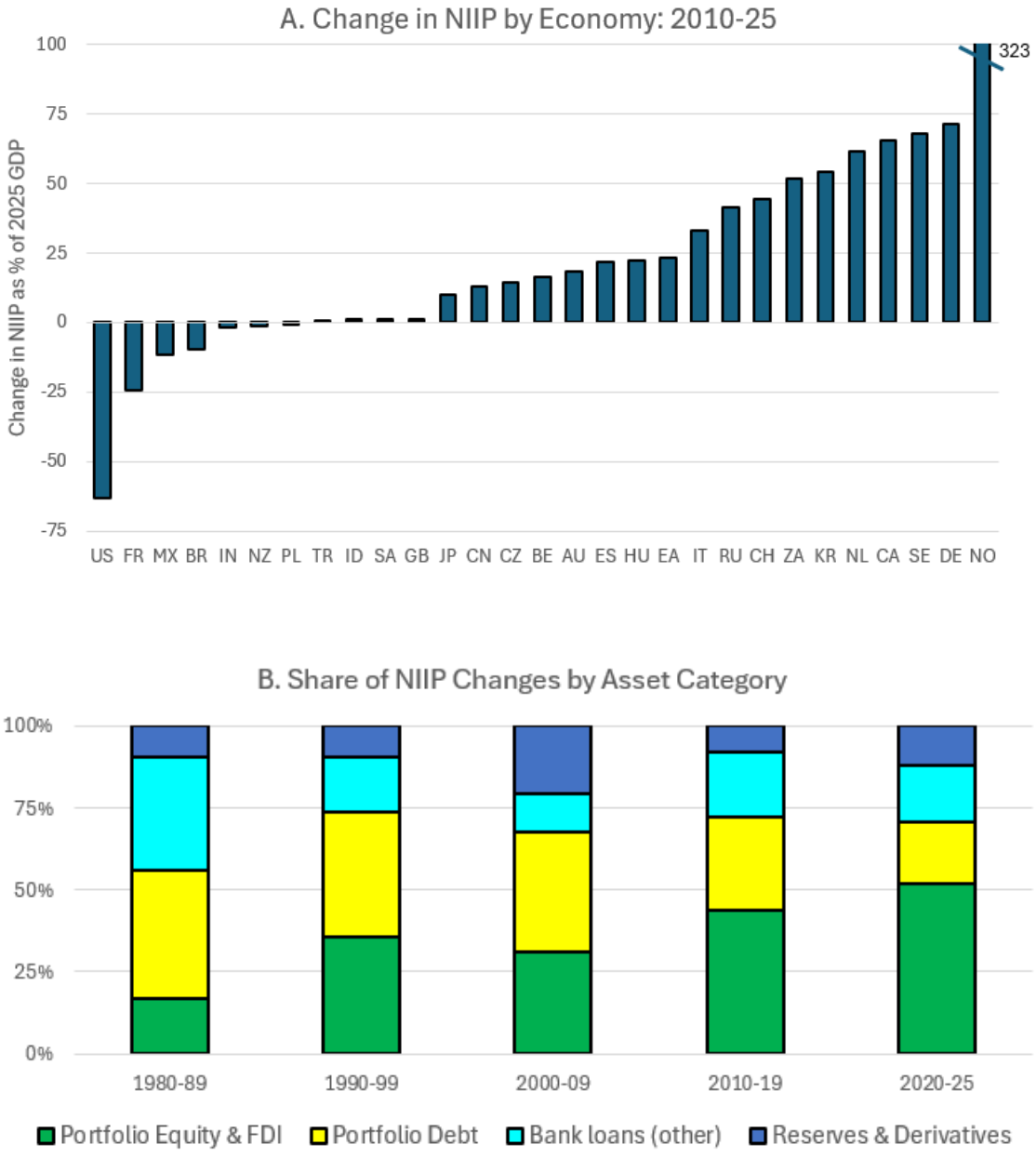
Notes: Graph shows US share of aggregate NIIPs (the sum of the absolute value of positive and negative positions) or of debtor NIIPs (just negative positions) for sample of 28 countries listed in Appendix Table 1. The US share of debtor NIIPs is not reported before 1989 as the US was a net creditor.

The outsized role of the United States in driving the recent evolution and divergence in global imbalances is important for understanding a number of patterns and the potential spillovers from any adjustment in these imbalances. The number of international creditor countries and the average size of their NIIPs (relative to their domestic GDP) have both increased over time, while the aggregate NIIP for the full sample is a growing debtor position, driven primarily by the United States. The deterioration in the US position is so large and in such a large economy that it is mirrored by improving NIIPs around much of the rest of the world. **Figure 5A** captures the corresponding and important spillovers by showing the change in the NIIP for each economy from 2010-2025 relative to domestic GDP in 2025. The United States has the sharpest deterioration in its NIIP (-63% of 2025 GDP). France, Mexico and Brazil also have meaningful declines (ranging from -9% to -24%), while 21 countries (plus the euro area as one entity) have improvements in their positions averaging 44% of their 2025 GDP. In fact, 7 economies (South Africa, Korea, the Netherlands, Sweden, Canada, Germany, and Norway) experience an improvement in their NIIP of over 50% of their 2025 GDP. Norway's gain is so large at 323% of GDP that it is truncated on the graph. These comparisons accentuate an important point: any reduction in global imbalance (which is likely to include some reversal in the US debtor position) will correspond to a (potentially large) reversal in the gains that have accrued to other economies.

Which type of assets explain these sharp changes in global imbalances since 2010? **Appendix Figure 4** breaks down the changes in NIIPs over 2010-25 (from **Figure 5A**) into four asset classes: (1) portfolio equity and FDI, (2) portfolio debt, (3) bank loans (i.e., "other" flows), and (4) reserves and derivatives. For about half of the countries in the sample, changes in equity and FDI exposures are the most important driver of NIIP changes, and in about two-thirds of the countries these changes generate NIIP gains. This is largely balanced by NIIP losses in the United States, where over half of the large NIIP deterioration over 2010-25 occurs in equity and FDI positions. Portfolio debt also contributes meaningfully to NIIP changes—contributing to losses in over two-thirds of the sample and the only asset category generating losses on average for the sample.

This prominent role of portfolio equity and FDI in driving the evolution of NIIPs since 2010 is a change from earlier periods and reflects the "rewiring" of international exposures. To put this in context, **Figure 5B** shows the share of aggregate NIIP changes across our sample over each decade for the same four asset categories. In the 1980s, about 75% of NIIP changes were driven by portfolio debt and bank flows, with FDI and portfolio equity accounting for only 16%. In the 1990s, the respective share of portfolio equity and FDI roughly doubled, but portfolio debt continued to explain the largest share of NIIP changes out of the four categories. Since 2010, however, portfolio equity and FDI have become the main drivers of NIIP changes, with their share continuously increasing and surpassing 50% during the latest period we examine (2020-25). Cross-border portfolio equity exposures can be beneficial in terms of providing more automatic risk sharing across countries than debt exposures (including bank flows). However, they can also generate different types of vulnerabilities and risks—particularly if the equity exposures are held by entities that are less able to withstand market adjustments, as discussed in recent work (Shin, 2026) and the scenario analysis in Section VI.

Figure 5
Change in NIIP and Selected Components over 2010-25



Notes: Panel A shows the change in each economy's NIIP over 2010-25 as a percent of 2025 domestic GDP, with countries and corresponding codes in Appendix Table 1. The euro area (EA) is also included as one entity. The bar for Norway is parsed, as its change of 323% of GDP in the NIIP distorts the scale. Panel B shows the share of NIIP changes in each period by asset category, calculated by aggregating the absolute value of NIIP changes by asset category across the sample in each window. The category labelled Bank loans (other) is "other investment flows", which is largely banks.

D. Data Caveats: Reliability of International Balance of Payments Statistics

An important consideration for any analysis of international investment positions is the reliability of the underlying data. In that context, there are several important cautions and caveats associated with the International Balance of Payments (BoP) Statistics used in this paper. **Appendix A** provides more information on the most important of these issues, all of which have been discussed in detail in Avdjiev et al. (2016), Guvenen et al. (2022), Chari and Milesi-Ferretti (2025), Milesi-Ferretti (2024, 2026), Bayoumi and Gagnon (2025, 2026), and Bruno et al. (2026). Some of these concerns reflect challenges associated with measuring bilateral flows, returns and exposures—including around profit-shifting and using residence-based (as opposed to a nationality-based) accounting methodology. Some of these issues are partially mitigated in our analysis through our focus on each country's exposure to the rest of the world (in contrast to other papers that analyse bilateral exposures) and the exclusion of major financial centres from our baseline sample.

One of these data issues, however, merits special consideration: the valuation of US FDI liabilities. The international liability positions of the United States were overstated in the officially reported IMF data (used in earlier versions of this paper) because the market values of these positions were estimated based on U.S. stock prices, which overweight "new economy" equities that had outsized valuation gains. This concern was discussed by the US Bureau of Economic Analysis (BEA) in April 2026 and then incorporated in subsequent data releases and then the official IMF statistics.[19] The adjustments reduce estimates for US FDI liabilities in 2025 by about 30% (from $20.3 trillion to $14.5 trillion) and improve the US NIIP position at end-2025 (from -90% to -71% of GDP). These updated US FDI valuations are incorporated in our baseline analysis.

III. Decomposing Changes in the NIIP and its Components: Methodology

This section lays out a methodology for two sets of decompositions that help us understand the drivers of the levels and changes in the NIIPs documented above. The first decomposes the NIIP into contributions from (i) trade flows, (ii) valuation effects, and (iii) income flows (for both investment income and other income). The second delves deeper by decomposing these valuation effects and investment income flows into contributions from (i) the initial stock of asset holdings, (ii) exchange rates, (iii) relative returns, and (iv) composition effects. To perform both decompositions, we closely follow the framework developed by Forbes, Hjortsoe and Nenova (2017)—henceforth FHN—with three deviations. First, we incorporate data on official reserve assets in addition to the four categories of private investment captured in FHN—reflecting the broader country sample studied here that includes emerging markets more reliant on official foreign investment. Second, we express all imbalances in a common unit (the US dollar) rather than national currencies to allow us to sum imbalances across countries and describe global

[19] For details of this update, see Hoang and Oka (2026). This adjustment is in line with corrections suggested in previous research, e.g., Bayoumi and Gagnon (2026) and Milesi-Ferretti (2026).

dynamics.[20] Third, we separate investment income flows from other sources of income, rather than rely on the broader primary income entry in balance of payments statistics as a proxy.

A. Decomposition of Changes in the NIIP: Trade, Valuations and Income

First, we use an accounting decomposition to understand the evolution of global imbalances—as captured by countries' NIIPs—by separating the contributions of trade, investment and other income flows, and valuation effects. This approach has several advantages relative to recent work on global imbalances. First, instead of focusing on the current account in aggregate, it decomposes this measure into three very distinct types of flows—thereby better isolating different channels and mechanisms affecting imbalances.[21] Second, instead of focusing solely on the "flow" component of imbalances through current accounts, it focuses on the change in the stock of imbalances—thereby allowing us to incorporate all financial channels—including those working through international valuation effects, and not just income flows (as well as feedback effects from the stocks into the annual flows). Finally, this framework can easily be extended to provide more detailed decomposition of the drivers of valuation effects and income flows (for example, the role of exchange rate movements, relative returns, portfolio composition, and stock effects)—as done in the next sub-section.

We begin with standard balance-of-payments accounting to decompose a country *i*'s net international investment position (NIIP) at time *t* –defined as its holdings of foreign assets (*A*) net of foreign liabilities (*L*), for all asset/liability classes (c), including FDI, portfolio equity (PIE), portfolio debt (PID), other investment (OI, which includes bank lending), and foreign exchange reserves (FX)[22]. As highlighted earlier, all variables are expressed in US dollars:

$$NIIP_{i,t} = \sum_c \left(A_{i,t}^c - L_{i,t}^c \right). \quad (1)$$

Changes in *NIIP* can come from three broad sources: the current account balance (*CA*) over the relevant window; changes in the valuation of existing investment positions (ΔVAL); and any other adjustments to the value of international assets or liabilities (*OAdj*), including the (usually small) capital account, net errors and omissions, data revisions, and adjustments related to the relocation of headquarters: [23]

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[20] Milesi-Ferretti (2024) discusses the circumstances under which NIIP returns expressed in different currencies can diverge and also reports these in a common unit (the US dollar), for comparability across countries.

[21] For example, Atkeson et al. (2025) does not decompose the current account into trade and investment income. This could be justified for their analysis of the United States (as the investment income component is relatively small), but this disaggregation is important for many other countries where the investment income flows can be volatile, significant, and in some cases even larger than trade flows.

[22] Since FX reserves only appear as an asset in BOP / IIP statistics (in other words, debt liabilities vis-à-vis the foreign official sector are not reported separately), there are five classes of assets but only four of liabilities.

[23] An alternative NIIP decomposition could be performed entirely from the perspective of cross-border investment by using the financial account, which should mirror the current account and provide information on the capital flows financing trade-related or factor income outflows. In our sample, current and financial accounts are indeed closely related (correlation of 0.94 for all country-year observations) and NIIP decompositions into cumulated net capital flows and valuation changes complement Section V's country case studies (see **Appendix Figures 5 – 6**).

$$\Delta NIIP_{i,t} = CA_{i,t} + \Delta VAL_{i,t} + OAdj_{i,t} \,. \quad (2)$$

As flagged above, the current account itself is a function of trade and non-trade net flows—namely, the trade balance (*TB*) and a financial component, the latter of which can be decomposed into net primary investment income (*INVINC*) and other income (*OTHINC*):[24]

$$CA_{i,t} = TB_{i,t} + INVINC_{i,t} + OTHINC_{i,t} \,. \quad (3)$$

Combining equations (2) and (3) yields a more detailed accounting decomposition of NIIP changes:

$$\Delta NIIP_{i,t} = TB_{i,t} + INVINC_{i,t} + OTHINC_{i,t} + \Delta VAL_{i,t} + OAdj_{i,t} \,. \quad (4)$$

This shows that analysis of changes in a country's international investment position can be broken into four main components (excluding the smaller components in $OAdj_{i,t}$): (1) the trade balance; (2) international investment income flows; (3) other income flows; and (4) valuation effects on preexisting investment positions. Equation (4) is the focus of our first set of decompositions of changes in the NIIP.

B. Detailed Decompositions of Valuation Effects and Investment Income Flows: Stocks, Exchange Rates, Relative Returns and Composition Effects

To better understand how financial channels can affect the NIIP, it is also possible to provide a more detailed decomposition of the determinants of the valuation changes and investment income flows in equation (4). Valuation changes can be related to underlying stocks and rates of return as follows:

$$\Delta VAL_{i,t} = \sum_c \left[A^c_{i,t-1} \left(\frac{kg^{A,c}_{i,t} ER^{A,c}_{i,t-1}}{ER^{A,c}_{i,t}} - \left(\frac{ER^{A,c}_{i,t} - ER^{A,c}_{i,t-1}}{ER^{A,c}_{i,t}} \right) \right) - L^c_{i,t-1} \left(\frac{kg^{L,c}_{i,t} ER^{L,c}_{i,t-1}}{ER^{L,c}_{i,t}} - \left(\frac{ER^{L,c}_{i,t} - ER^{L,c}_{i,t-1}}{ER^{L,c}_{i,t}} \right) \right) \right]$$

$$= \sum_c \left[\frac{A^c_{i,t-1}}{\Delta ER^{A,c}_{i,t}} \left(kg^{A,c}_{i,t} - \left(\Delta ER^{A,c}_{i,t} - 1 \right) \right) \right] - \sum_c \left[\frac{L^c_{i,t-1}}{\Delta ER^{L,c}_{i,t}} \left(kg^{L,c}_{i,t} - \left(\Delta ER^{L,c}_{i,t} - 1 \right) \right) \right], \quad (5)$$

where $kg^{A,c}_{i,t}$ ($kg^{L,c}_{i,t}$) denotes the capital gain on external assets (liabilities), $ER^{A,c}_{i,t}$ ($ER^{L,c}_{i,t}$) is the exchange rate index, which reflects the currency composition of country *i*'s asset (liability) holdings of class *c*, and $\Delta ER^{A,c}_{i,t} \equiv \frac{ER^{A,c}_{i,t}}{ER^{A,c}_{i,t-1}}$ and $\Delta ER^{L,c}_{i,t} \equiv \frac{ER^{L,c}_{i,t}}{ER^{L,c}_{i,t-1}}$. For consistency with the previous sub-section, where all NIIP components were expressed in USD terms, the exchange rate is defined as the units of each currency in which assets or liabilities are denominated (foreign or domestic to country *i*) per one US dollar, so that the exchange rate falls (increases) when the US dollar depreciates (appreciates). Equation (5) shows how valuation effects reflect the initial stocks of each type of

[24] The trade balance includes trade in goods and services. Net primary investment income is defined as the return from past investment in financial assets and production processes (largely dividends and interest). Other income is defined to include all other sources of income, such as: employee compensation, personal transfers, international assistance, charities and some inter-government payments. We separate investment income from total primary income (which also includes employee compensation) to isolate the role of financial assets and decompose the sources of relative returns (as explored in more detail below).

asset and liability, as well as capital gains resulting from changes in asset prices (in the asset's currency of denomination), exchange rate movements and the composition of these assets and liabilities. In practice, we impute the capital gain on each category of assets and liabilities using the change in the respective stock, net of any capital flow and exchange rate movements over the given year.

We perform a similar decomposition of the international investment income balance into the initial stocks of each type of asset and liability, exchange rate movements, and the relative returns on assets from abroad (compared to the returns paid on liabilities owed to foreigners):

$$INVINC_{i,t} = \sum_c \left[A^c_{i,t-1} \left(\frac{r^{A,c}_{i,t} ER^{A,c}_{i,t-1}}{ER^{A,c}_{i,t}} \right) - L^c_{i,t-1} \left(\frac{r^{L,c}_{i,t} ER^{L,c}_{i,t-1}}{ER^{L,c}_{i,t}} \right) \right], \quad (6)$$

with $r^{A,c}_{i,t}$ denoting country *i*'s nominal rate of return on last period's stock of *A* (foreign assets) or *L (*foreign liabilities), excluding exchange rate effects. Rates of return on countries' assets and liabilities by asset class can be approximated based on balance of payment statistics by dividing the gross asset-class-specific investment income flow for a given period by the previous period's stock, after correcting for any change in the exchange rate of the currency of these income flows.

Inserting the decompositions in equation (5) for valuation changes and in equation (6) for investment income into the definition of changes in the NIIP in equation (4) provides more detail on the sources of NIIP changes:

$$\Delta NIIP_{i,t} = TB_{i,t} + E_{i,t}$$

$$+ \sum_c \left[\frac{A^c_{i,t-1}}{\Delta ER^{A,c}_{i,t}} \left(r^{A,c}_{i,t} + kg^{A,c}_{i,t} - \left(\Delta ER^{A,c}_{i,t} - 1 \right) \right) \right] - \sum_c \left[\frac{L^c_{i,t-1}}{\Delta ER^{L,c}_{i,t}} \left(r^{L,c}_{i,t} + kg^{L,c}_{i,t} - \left(\Delta ER^{L,c}_{i,t} - 1 \right) \right) \right], \quad (7)$$

where $E_{i,t} = OINC_{i,t} + OAdj_{i,t}$.

This series of equations shows that changes in the NIIP can be decomposed into the trade balance, other small effects (which we will largely ignore in the analysis below), and a term capturing how specific financial variables relate to international financial exposures. In turn, the financial components of a country's NIIP depend on four sets of variables: last period's stock of international assets and liabilities, the nominal rate of return and capital gains on these international assets and liabilities in the currency of denomination terms, the composition of these assets and liabilities by asset class, and exchange rate movements interacted with any mismatch in the currency composition of the country's assets and liabilities. Each of these four sets of variables merits brief discussion.

First, the larger the initial net stock of international exposures – measured by the difference between assets and liabilities at the start of the relevant period – the larger the associated changes in the NIIP through international investment income and valuation effects. A larger stock of assets (liabilities) amplifies the impact of any change in the rates of capital gains, rates of return, or exchange rates.

Second, the difference between the nominal rates of return on assets versus liabilities in the respective currencies of denomination, $\left(r_{i,t}^{A,c}\right) - \left(r_{i,t}^{L,c}\right)$ can contribute to net investment income through a so-called "return effect" even if stocks of assets and liabilities were balanced and had a similar asset class and currency composition. Similarly, if capital gains on assets exceed those on liabilities within the same asset class, $\left(kg_{i,t}^{A,c}\right) - \left(kg_{i,t}^{L,c}\right)$, that would generate positive valuation effects (and vice versa when gains on liabilities exceed those on assets).

Third, if assets have a different asset class composition than liabilities (such as holding more risky and high-yielding equity, while owing safer and low-yielding debt), net investment income or valuation effects could change (in this example, improve) the NIIP—even if returns and exchange rates are identical within each asset class, the currency composition of assets and liabilities is symmetric, and the aggregate of assets and liabilities net out to zero. The impact of such an asymmetric composition by asset class on the NIIP is often referred to as a "composition effect".

Finally, exchange rate movements can impact both valuation effects and investment income when the currency composition of a country's assets differs from that of its liabilities. For instance, a common feature of many advanced economies' external balance sheets is that a greater share of their liabilities is denominated in their domestic currency, compared to their assets. A domestic currency depreciation thus shrinks their liabilities relative to their assets, improving the NIIP. It is important to note that exchange rate movements can affect the NIIP even without a currency mismatch of assets and liabilities: e.g. an exchange rate appreciation vis-à-vis the US dollar would exacerbate existing NIIP surpluses/deficits when expressed in USD terms. However, this mechanical effect of symmetric exchange rate movements on assets and liabilities is already reflected in the stock effect discussed earlier.

This decomposition of the financial determinants of changes in NIIPs into four components unifies two distinct approaches from the earlier literature: (1) decomposing different countries' net foreign returns into a return effect and a composition effect (both broadly defined to include asset returns expressed in the currencies of denomination, as well as any exchange rate effects); or (2) focusing on the role of exchange rate adjustments and how they can determine valuation changes based on the currency composition of assets and liabilities. Our methodology follows FHN and provides a more detailed breakdown of the drivers of investment income balances and valuation changes. **Appendix B**[25] provides a more formal exposition of this framework with precise definitions of each of the four components into which we decompose net investment income and valuation changes.

IV. A Bird's Eye View of Global Imbalances: Common Drivers

In order to understand the drivers of changes in global imbalances over time, this section applies the framework in Section III to the data and sample discussed in Section II. It begins by decomposing changes in the NIIP into trade, valuation effects and income flows, and then estimates the more detailed breakdowns of the financial channels into the role of stocks, relative

[25] This is mostly borrowed from FHN's Appendix A, with two exceptions: (i) we need additional assumptions to incorporate official reserve assets (which can only be separated on the asset side of countries' external balance sheets) and (ii) all variables are now expressed in US dollar terms rather than in national currencies.

returns, exchange rate movements, and composition effects. For each set of decompositions, we estimate the absolute value of the contributions of the relevant components over each decade.[26] The section closes with a comparison of how the drivers of global imbalances vary across time horizons. Throughout this section, we take a "bird's eye view" by summarizing the common drivers across the full sample of 28 economies, leaving a discussion of the results for individual countries and a "deep dive" into the financial channels for specific economies to Section V.

A. Decomposing Changes in the NIIP: Trade, Valuation Effects and Income Flows

To begin, we use the framework in equation (4) to decompose each country's NIIP (scaled by domestic GDP) per year into the four components: (1) trade; (2) investment income flows; (3) other income flows; and (4) valuation effects.[27] We calculate the absolute value of these annual contributions in order to capture the overall magnitudes, independent of sign. **Figure 6A** shows the resulting medians for the baseline sample of 28 economies over the full period from 1980-2025, as well as by decade (with the underlying results for individual countries discussed in Section V and shown in **Table 1** and **Figures 8 and 9**).

Trade has made fairly steady contributions to NIIP changes over most of our sample, accounting for 1.7 percentage points (pp) to 2.4pp of the annual changes relative to GDP over each decade after the 1980s. This is equivalent to about 30-40 percent of the overall NIIP changes in each period. However, the role of the financial factors (i.e., sum of investment income flows and valuation effects) is even larger than the role of trade in each decade. More specifically, financial channels contributed 2.4 pp to 4.3 pp in each decade since the 1990s, with this share steadily increasing from the 1990s through 2010s. This is equivalent to roughly half of the overall changes in the NIIP over most decades—and 61% of the changes over 2010-19. The contribution of both types of financial channels has also increased from the 1990s through the 2010s—with a particularly large jump (more than fourfold) in the contribution of valuation effects from the 1980s through the 2010s. Investment income flows played a greater role than valuation effects in the 1980s and 1990s, while the role of valuation effects became larger starting in the 2000s. [28]

In addition to these decompositions of NIIP changes, we also perform a variance analysis by estimating a cross-country regression of the 5-year rolling changes in NIIPs on the contributions of the same four components. The results are similar but show an even sharper increase in the role of the financial components over time—particularly valuation effects.

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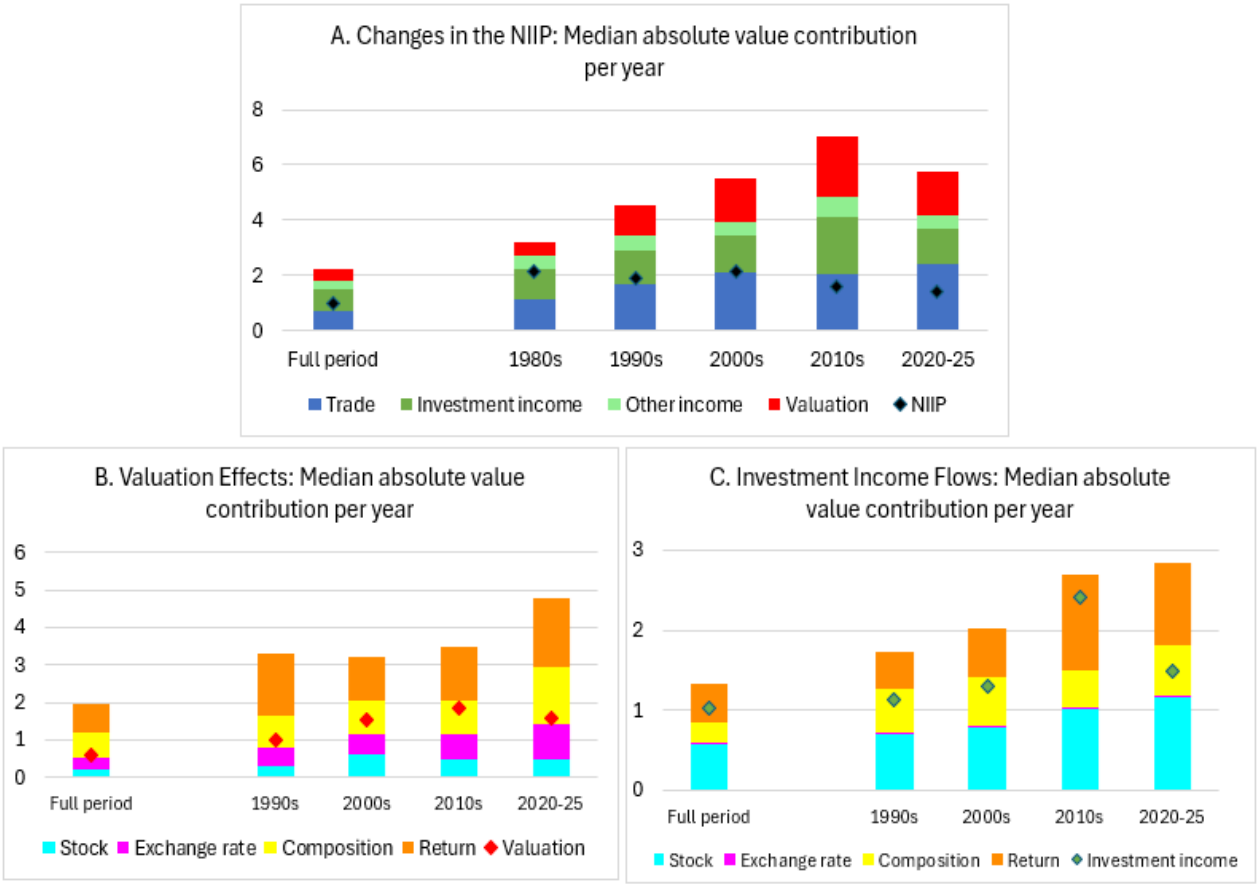
[26] Instead of focusing on decades, early drafts used periods delineated by major global economic events that may have impacted imbalances. Results are similar and available in Figure 14 in Forbes (2026).

[27] In addition to trade, income flows and valuation effects, there is a residual "other" category that reflects changes in the capital account and errors and omissions and can also contribute to NIIP changes. This component is generally small, so we abstract from it in the subsequent analysis. Also, there are substantial challenges in estimating valuation effects, such that these can also contribute to the "other" effects, including inconsistent treatment of data revisions (Curcuru et al., 2008; Lane and Milesi-Ferretti, 2009).

[28] As discussed in Section II, our sample appears to be representative of aggregate global imbalances due to the large size of the included economies (in terms of GDP and external positions). However, the NIIPs of smaller countries excluded due to data constraints may be more closely linked to their trade balances.

Figure 6
Decomposing Changes in the NIIP, Valuation Effects and Investment Income Flows



Notes: Each panel shows the sample median changes or flows (marked by a diamond) and the absolute value contribution per year of each of the underlying components (in the colored bars) over the given window. Panel A decomposes changes in the overall NIIP, while panels B and C decompose changes in the two financial components of the NIIP: valuation effects and investment income flows, respectively. Each panel is based on the sample of 28 countries listed in Appendix Table 1, although sample may differ slightly in panels B and C depending on data availability. See Appendix B for details on framework for decompositions.

B. Decomposing the Financial Components of the NIIP: Stocks, Exchange Rates, Relative Returns and Composition Effects

These results from decomposing changes in the NIIP highlight the important role of financial factors—and particularly valuation effects since 2000. This section drills into the drivers of these financial factors in order to understand the implications for international spillovers and individual country vulnerabilities. We use the same methodology as in **Figure 6A**, but now decompose the valuation effects and investment income flows (as a percent of GDP) into four drivers: (1) a stock effect (generated by the relative size of asset and liability positions); (2) an exchange rate effect; (3) a composition effect (e.g., from holding more high-return assets, such as equities, relative to liabilities); and (4) a return effect (capturing different rates of return on assets versus liabilities

within each investment class). These decompositions are based on equations (5) and (6), with additional details in **Appendix B**.[29]

Figure 6B shows the median decompositions of the valuation changes for the sample over the full period and each decade. Valuation changes in NIIPs are primarily driven by relative returns, with contributions larger than those of each of the other three components in each window. The composition of positions plays the second most important role in each window and exchange rate movements can make a meaningful contribution for some countries (relationships which we explore in the individual country examples in Section V), but have a more modest impact in the median economy. The stock of existing positions is the least important driver of valuation effects in most windows. While the role of exchange rates and stock effects has historically been smaller than that of the other channels for the median economy, these two channels have been gaining relative importance over time; the contribution of exchange rates and stock effects to valuation changes has roughly doubled from the 1990s through the 2020s (in contrast to the role of relative returns, which remained roughly constant between the 1990s and the 2020-25 window).

Figure 6C shows the corresponding decompositions for investment income flows. While relative returns and the composition of investment positions continue to play an important role, stock effects are now more important in most periods, while exchange rates play almost no role. More specifically, stock effects make the largest median contribution to investment income flows in all periods except one (the 2010s), and the absolute contribution of these effects has increased from 0.7 pp a year in the 1990s to 1.2 pp in the 2020s. Relative returns made the second largest contribution over the full period, with their role doubling from 0.5 pp in the 1990s to 1.0 pp in the 2020s. The role of composition effects has been steadier and remained at 0.6 pp in the 1990s and 2020s (with modest moves between). In contrast to the meaningful role exchange rates have in explaining valuation effects, their role in explaining investment income flows is negligible.

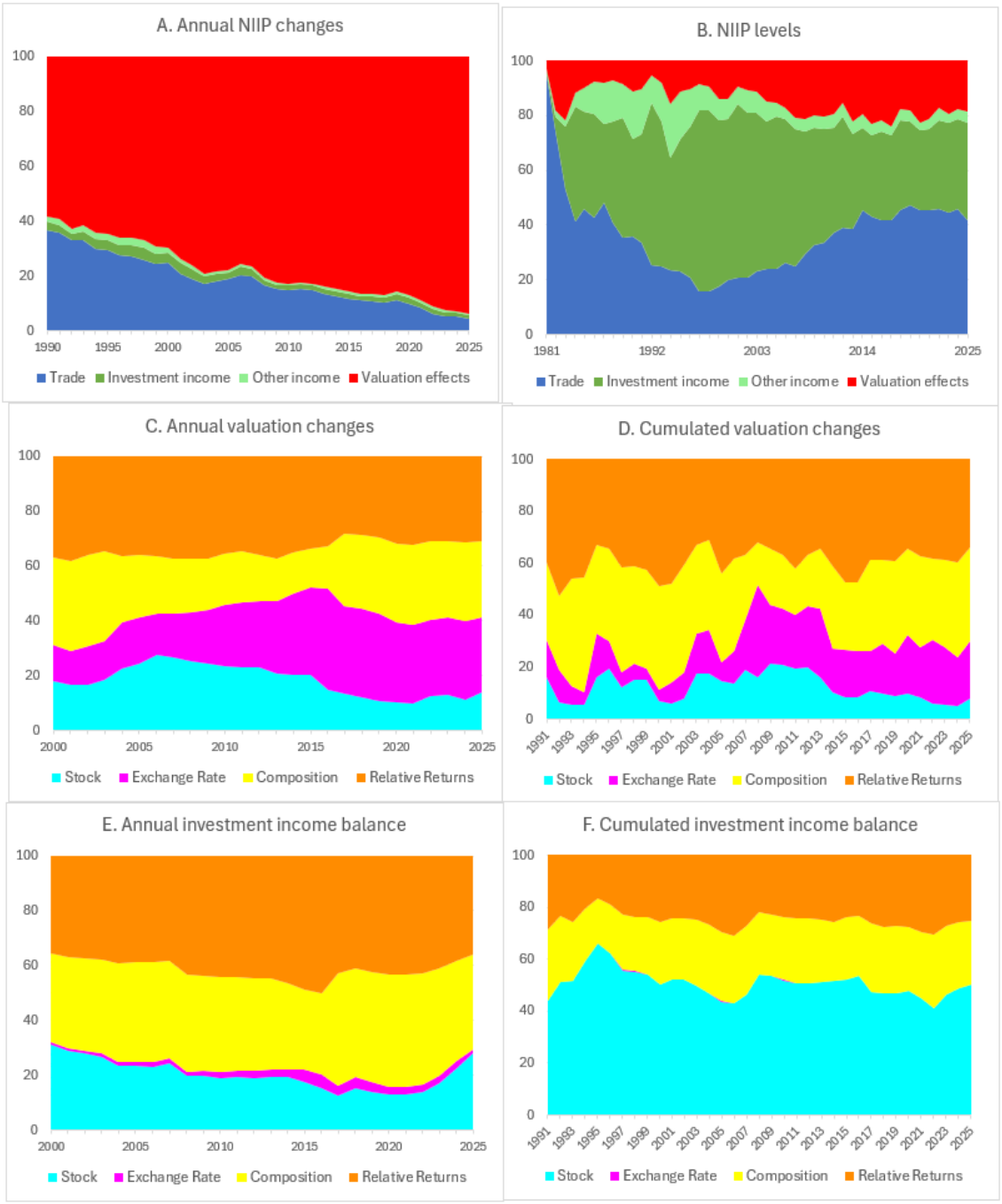
To summarize, relative returns (working through valuation effects as well as investment income flows) are the most important factor contributing to the financial channels explaining recent changes in NIIPs, and exchange rates can also have a large impact on valuation effects.[30] This suggests that global imbalances are increasingly vulnerable to swings in asset prices. Mismatches in the composition of assets versus liabilities also affect the financial channels driving external imbalances, and the existing stock of positions plays the most important role in driving international investment income flows (and an increasing role for both valuation effects as well as investment income flows). This important role for the preexisting size and structure of existing international positions suggests that these positions could be persistent and difficult to adjust. Each of these conclusions, however, is based on medians in our sample and there is substantial heterogeneity in these relationships across countries (explored in the country analysis in Section V.)

[29] Results start in 1990 (rather than 1980) due to the shorter historical data on capital and income flows by asset class to perform these decompositions. In addition, Saudi Arabia is excluded in the decompositions of valuation changes and investment income in Figures 6B and 6C due to lack of data on currency weights.

[30] When these decompositions are estimated separately for just AEs or just EMs, there are several noteworthy differences. The stock effects for emerging markets are generally smaller, which is not surprising as they were generally later to open their financial accounts to international investment (BIS, 2017). The composition effects are also more important for emerging markets during the period from the GFC to 2019, likely reflecting a greater share of asset holdings in bonds (which tended to yield lower returns during this period).

Figure 7: Short-Run Changes versus Levels:
Sources of Variation in the NIIP, Valuation Changes and Investment Income

Partial sum of squared errors attributable to each component (scaled to 100%)



Notes: Graphs based on variance decomposition of annual changes in levels of the NIIP (top row) and its two financial components—valuation changes and investment income flows (middle and bottom row) based on the framework in Appendix B. The variance analysis for annual changes (left column) is based on rolling regressions over 10-year windows on demeaned variables (across all countries and years), with each point corresponding to the trailing partial sum of squares (i.e. for the last year of each 10-year window). The variance analysis for the levels (right column) uses the actual value in each year or cumulated changes/flows since the first year of the sample, with each point corresponding to annual cross-sectional country regressions of the cumulated changes/flows on the components.

C. Decomposing Change in the NIIP and Financial Channels at Different Frequencies

The decompositions of changes in NIIPs and the underlying financial channels reported above focused on explaining changes over decades—a window chosen to place less weight on temporary fluctuations and instead highlight a frequency at which most macroeconomic policies could have an impact. The drivers of changes in NIIPs, however, could vary over different horizons—with very different factors explaining short-run changes in NIIPs versus long-run changes in the levels.

To better understand any such differences across horizons, we extend the analysis in **Figure 6** to explore if these effects vary over shorter and longer windows. We estimate the partial sum of squares over different horizons attributable to each of the underlying components from a variance analysis of the determinants of changes in the NIIP, valuation effects, and investment income flows. **Figure 7** reports the results of these variance decompositions from regressions of the shortest window (year-on-year changes[31]) and longest window (the levels of the respective variables[32]). The results show that the drivers of the annual fluctuations in imbalances and their financial components are very different from the drivers of the respective levels. (Results based on five-year changes generally lie somewhere between.)

More specifically, **Figure 7A** shows that very short-term fluctuations in NIIPs are dominated by valuation effects (particularly in recent years)—the most volatile component of the NIIP and a component which has grown over time. Trade, which accounted for an average of 30% of the cross-country variation in annual NIIP changes in the 1980s, has become less important over time such that it explains only 4% of annual changes over 2016-2025 (corresponding to the 2025 data point in **Figure 7A**). Investment income flows play almost no role in explaining annual changes during any window. In sharp contrast, the relative importance of these different components largely reverses when estimating the cumulated effects over a longer time frame—i.e. in terms of *levels* (shown in **Figure 7B**). NIIP levels are primarily determined by trade, and investment income flows (with the relative importance of each fluctuating across the sample), with only a small role for valuation effects. For example, at the end of our sample (in 2025) valuation effects contributed only 18% to the cross-country variation in NIIP levels, while investment income contributed 35% and trade 42%. The greater importance of trade and investment income to NIIP levels instead of short-term fluctuations partly reflects the persistence of these components over time. Valuation effects can be large over short windows, but can also reverse or unwind relatively quickly, while trade imbalances and investment income flows tend to be more autocorrelated.

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[31] The greater volatility of annual changes in the NIIP results in low-precision estimates if regressions are only performed in the cross-section of countries (as the degrees of freedom is the number of countries in our sample with available data, which is at most 28). To make better use of available data, we estimate rolling regressions over 10-year windows, with all annual change variables demeaned across countries and time—which is essentially a rolling, fixed-effects panel regression.

[32] We match the levels of NIIP stocks to accumulated underlying flows and valuation changes by using 1980 as a base year (or the first year with available data for each country's NIIP decomposition). In the initial period, the NIIP level is allocated to previously accrued trade flows (while investment, other income flows and valuation changes prior to that are assumed zero). This approach will misallocate to trade any international holdings accumulated from non-trade sources before 1980, but the initial positions were generally very small relative to the subsequent changes and this assumption allows us to exactly track reported NIIP levels on the left-hand side of equation (4).

The bottom panels of **Figure 7** provide more information on what drives the two financial components of NIIPs (valuation effects and investment income) over the same two horizons. Return effects continue to be the largest single driver in most years of valuation effects (in annual changes in **panel C** and in levels in **panel D**) throughout the sample (as found for the results based on decades)—but since the mid-2010s there has been a roughly similar contribution of composition effects and exchange rates. Exchange rates have a larger effect over the shorter horizon, and a growing role over time (for explaining annual changes as well as levels). The more persistent investment income flows show more noticeable (albeit expected) differences across the two horizons, with a larger role for relative returns and composition effects in driving annual changes (**panel E**) and larger role for stock effects in driving levels (**panel F**). Exchange rates continue to play almost no role in explaining investment income flows (albeit a small impact for annual changes). In other words, relative asset price movements and a country's vulnerability to them through mismatches in the composition of its assets and liabilities drive the volatility in NIIPs and the valuation effects which explain an increasing share of medium-term changes in global imbalances. In contrast, the existing stock of imbalances is more important to the level of investment income flows (and thereby the current account), which makes a persistent and important contribution to the level of NIIPs over longer periods of time.

To summarize, persistent imbalances in trade and investment income flows (driven by return, composition and stock effects) account for the majority of the divergence in NIIP *levels* across countries, while valuation changes (driven by return, composition and exchange rate effects) explain the majority of the variance in annual NIIP *changes*. This role of valuation changes has grown steadily over time to recently account for almost all the variance in NIIPs towards the end of our sample. Therefore, financial components (i.e. income flows and valuation effects) —and not just trade flows—are key to understand the current divergence in global imbalances, as well as whether they present vulnerabilities for individual economies and how they are affected by various shocks. Understanding global imbalances requires studying both the persistent trade and investment income imbalances, while understanding the risks of sudden corrections in these imbalances requires incorporating the large and volatile valuation changes. Each of these components requires mapping the web of connections across countries, as changes in trade balances, international income flows, and the valuation of international portfolios that occur in one country will spill over to others.

V. A Closer Look: Decompositions across Countries and Digging Deeper into the Financial Channels

The decompositions identifying the main drivers of the changes and levels of NIIPs at the global level mask substantial heterogeneity across individual countries as well as across time. To understand this heterogeneity, this section uses the same methodology as Section IV to analyse NIIPs and the factors driving changes in these positions for each country in our sample. To better understand the substantial differences, we also provide a more in-depth analysis of countries with contrasting patterns for valuation effects (the United States and United Kingdom) and investment income flows (Japan and Brazil). These comparisons highlight the importance of understanding each country's exposures by asset class in order to understand their specific vulnerabilities. The analysis of the United States—and how its path has diverged from that of the United Kingdom—is useful to understand how shocks reducing global imbalances and affecting the dominant US

debtor position could spill over to the rest of the world. The comparison between Japan and Brazil also highlights how the increased size of imbalances generates more persistence in the current account flows linked to these imbalances—and how these imbalances could continue to grow even if trade imbalances decline.

A. Patterns across Individual Countries

The decompositions estimating the drivers of global imbalances in **Figures 6 and 7** report medians for our sample of 28 countries and mask substantial heterogeneity over time. The graphs also show that these relationships have changed over time, particularly after the Global Financial Crisis when the US NIIP began to consistently deteriorate. Therefore, to better understand the web of imbalances, this section focuses on decompositions and relationships for individual countries from 2010 through the end of our sample in 2025.

To begin, **Table 1** reports the decompositions of changes in NIIPs used for **Figure 6A** (from equation 4) for the *per annum* contributions of trade, income flows, valuation effects and "other" for country-specific changes in NIIPs, focusing on the actual (instead of absolute) values averaged over 2010-2025 (instead of decades). The corresponding results for the full sample period from 1980-2025 are in **Appendix Table 2**. Trade makes meaningful (positive or negative) contributions to NIIPs in many countries, with a large median impact for both AEs (1.9 percent of GDP per year) and EMs (1.5 percent per year) over 2010-25. Valuation effects can also make large contributions in both directions—particularly in advanced economies. In contrast, the contribution of investment income flows to changes in NIIPs has been more consistently negative and much larger in EMs than AEs (with an even larger absolute value contribution than that of trade). Other income flows, which include the compensation of cross-border workers and remittances, also make an important contribution to changes in investment positions for several economies—including Switzerland, Saudi Arabia, Mexico and India.

Much of the discussion around global imbalances focuses on the role of trade, particularly since 2020 as trade imbalances increased and countries more frequently adopted trade restrictions and industrial policies to support domestic production (Bayoumi and Gagnon 2026; Cesa-Bianchi et al. 2026a and 2026b; IMF 2026). Therefore, we begin our closer look at these individual country estimates by focusing on the role of trade surpluses and deficits in driving changes in NIIPs. **Figure 8** shows accumulated trade flows over 2010-25 (as a share of 2025 GDP) for each of the 28 countries in our sample (plus the euro area as one entity) in blue bars, with the corresponding changes in NIIPs (from **Figure 5**) in black squares.

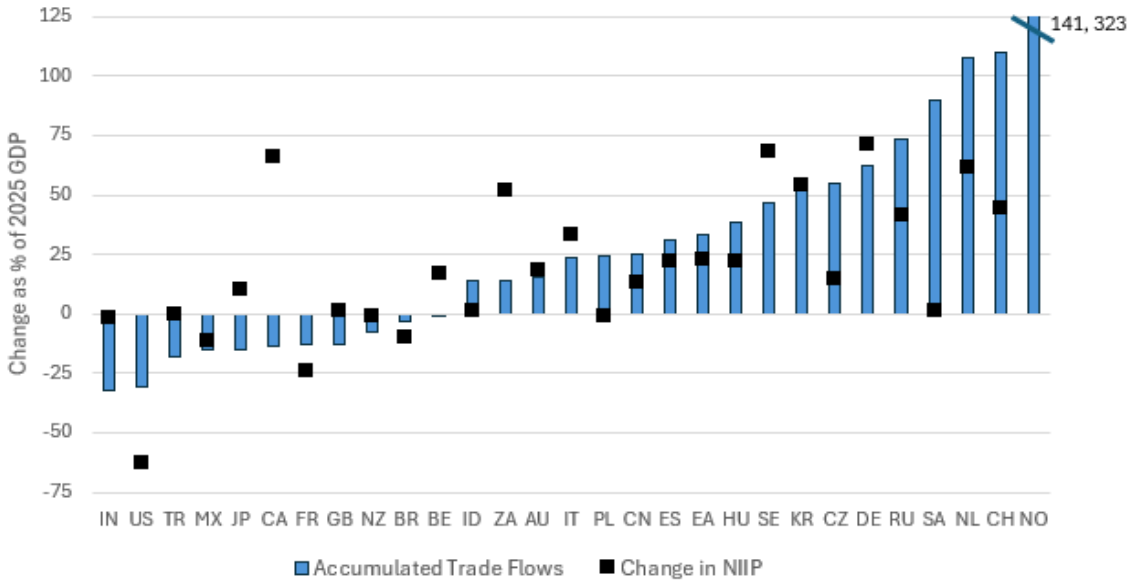
Table 1: Decomposing Changes in the NIIP over 2010-2025: Annualized Contributions of Trade, Income Flows and Valuation Effects by Country

Country	NIIP	Trade	Investment income	Other income	Valuation effects	Other
Australia	1.14	0.95	-2.02	-0.37	2.58	0.00
Belgium	1.03	-0.03	0.07	-0.07	0.88	0.18
Canada	4.10	-0.86	-0.24	-0.33	5.47	0.06
Czech Republic	0.91	3.41	-3.53	0.02	0.28	0.74
France	-1.51	-0.82	0.90	-0.60	-0.89	-0.10
Germany	4.46	3.89	2.16	-1.04	-0.21	-0.34
Italy	2.07	1.48	-0.11	-0.46	0.78	0.38
Japan	0.64	-0.95	4.45	-0.45	-2.40	-0.01
Korea	3.40	3.26	0.70	-0.35	-0.26	0.05
Netherlands	3.85	6.75	0.15	-1.60	-1.42	-0.03
New Zealand	-0.07	-0.49	-2.44	-0.20	1.76	1.29
Norway	20.16	8.84	2.97	-1.92	11.12	-0.85
Spain	1.37	1.95	-0.47	-0.32	-0.30	0.50
Sweden	4.24	2.90	2.06	-1.18	1.58	-1.10
Switzerland	2.76	6.86	1.32	-3.31	-2.30	0.19
United Kingdom	0.08	-0.78	-0.81	-0.77	2.57	-0.12
United States	-3.93	-1.91	0.50	-0.46	-1.98	-0.09
AE median of absolute values:	***2.07***	***1.91***	***0.90***	***0.46***	***1.58***	***0.18***
Brazil	-0.60	-0.19	-2.36	0.15	1.82	-0.02
China	0.83	1.57	-0.42	0.09	0.02	-0.44
Hungary	1.39	2.40	-3.58	1.19	1.03	0.34
India	-0.10	-2.02	-0.87	2.00	0.81	-0.01
Indonesia	0.08	0.85	-1.95	0.27	0.99	-0.09
Mexico	-0.71	-0.95	-1.93	2.12	0.28	-0.24
Poland	-0.05	1.51	-2.47	0.30	0.29	0.32
Russia	2.60	4.60	-1.45	-0.46	0.18	-0.27
Saudi Arabia	0.08	5.62	1.03	-3.15	-2.37	-1.05
South Africa	3.22	0.86	-1.90	-0.59	4.91	-0.05
Türkiye	0.01	-1.15	-0.63	0.03	1.75	0.00
EM median of absolute values:	***0.60***	***1.51***	***1.90***	***0.46***	***0.99***	***0.24***

Notes: Table reports annualized changes in the NIIP and the corresponding contributions of its components over 2010-2025, all expressed as a percent of 2025 domestic GDP. "Other" is the sum of the capital account and errors and omissions. AE and EM medians are calculated based on the absolute values of the contributions for each country.

For a few countries (e.g., Korea, Australia and Germany), changes in NIIPs largely correspond to accumulated trade balances. In most cases, however, trade flows are only weakly correlated with these changes in imbalances, suggesting financial effects likely played an important role. For example, in the United States, trade deficits contributed to only about half of the deterioration in its NIIP,[33] and in Canada the striking improvement of 66pp in its NIIP entirely reflected financial effects; accumulated trade balances alone would have generated an NIIP deficit.[34] In some countries, accumulated trade flows would have generated much larger changes in imbalances than actually occurred if they were not offset by financial channels. For example, in China accumulated trade surpluses would have improved the NIIP by 25% of 2025 GDP—almost twice as much as the reported 13% (with the difference primarily explained by financial losses and unexplained errors and omissions). Similarly, for Russia the NIIP only increased by just over half of what would have occurred from simply accumulated trade surpluses over 2010-25.[35] It is noteworthy that many countries criticized for large trade surpluses contributing to global imbalances would have much larger creditor positions—corresponding to larger global imbalances—if not for financial channels partially mitigating the accumulated gains from trade surpluses.

Figure 8
Accumulated Trade Flows and Change in NIIP over 2010-25



Notes: Graph shows accumulated trade flows and changes in NIIPs over 2010-25, with both measures scaled by domestic GDP in 2025. Countries and codes are listed in Appendix Table 1, with the euro area added as one entity. The information for Norway is parsed as its values (323% for the NIIP change and 141% for accumulated trade flows) would distort the scale.

[33] For the United States, the large contribution of trade to changes in the NIIP over 1980-2025 masks substantial shifts over this time frame. Specifically, over 1980-1990, accumulated trade deficits were close to (and slightly larger) than the modest deterioration in the NIIP. Since 2000, trade's contribution has been steadily falling in absolute terms, while the contribution of valuation effects and investment income has increased in absolute terms. These relationships are discussed in more detail in Section V.B.
[34] It is also worth noting that for Norway (which is truncated in the graph) accumulated trade surpluses (141% of 2025 GDP) only account for less than half of the overall increase in its NIIP (323% of 2025 GDP).
[35] Particularly striking is Saudi Arabia—where trade surpluses would have boosted the NIIP by 90% of GDP, but other effects balanced these gains so that the NIIP increased by only 1% over 2010-25.

These comparisons support the results from the aggregate statistics reported in the last section; to understand the evolution of imbalances in individual countries, it is necessary to look beyond just trade. Therefore, we next calculate the NIIP changes from the two financial channels highlighted above—international investment income flows and the valuation gains on international positions—continuing to use the decomposition in equation 4. **Figure 9A** shows the accumulated international investment income over 2010-25 (in aggregate and just for interest income) as a percentage of 2025 domestic GDP for individual countries.[36] Investment income has made large and meaningful contributions to NIIPs over the last fifteen years for many economies, such as increasing the NIIP of Japan by 71pp (of which 31pp is interest income), and by 20pp to 50pp in Norway, Germany, Sweden and Switzerland. Working in the other direction, investment income payments have also reduced the NIIPs in 10 countries by more than 20% of GDP, with the largest net payments (relative to GDP) in Hungary, the Czech Republic, Poland, New Zealand, and Brazil. Emerging markets experienced net losses in international investment income on average (contributing to an average decline in their NIIPs of 27pp over this period, with 8pp from interest income). By contrast, advanced economies experienced net gains on average from international investment income (5pp), even though they also suffered losses (on average) on interest income (-4pp).[37]

Figure 9B shows the other important financial component of NIIP changes: international valuation effects. These are measured as the total valuation change on either all international holdings or just for international portfolio equity and FDI from 2010 through 2025 (as a percentage of 2025 domestic GDP). The range and magnitude of these effects on the NIIP is even larger than for international investment income— particularly on the right side of the distribution showing large valuation gains. Starting with the losses, Japan, Saudi Arabia, Switzerland, and the United States have experienced the largest valuation losses over 2010-25 – all over 30% of GDP. Balancing these valuation losses, however, about two-thirds of the sample experienced valuation gains—and in many cases these gains were large. For example, 9 countries experienced valuation gains (on their international positions) amounting to over 20% of their respective GDPs. Gains for the UK and Australia are 41pp each, while for South Africa, Canada and Norway are 79pp, 88pp and 178pp, respectively. Unlike for investment income flows, the mean valuation gains over this period were roughly similar for advanced economies and emerging markets (when scaled by each country's GDP).

To put the magnitude of these international investment income flows and valuation effects in the context of aggregate changes in NIIPs over 2010-25, **Figure 9C** shows international investment income flows (from panel A) and international valuation changes (from panel B) compared to the total change in the NIIP for each economy (shown by the black square), with all values accumulated over 2010-25 and scaled by 2025 domestic GDP. For many countries, accumulated investment income has the opposite sign to accumulated valuation changes—suggesting that these financial effects could partially net out in terms of their combined effect on NIIPs. In many cases, however, the aggregate financial effects on NIIPs are large and explain a meaningful share of

[36] More specifically, this is measured as the sum of the net IIP flows for all investment income (defined as primary income less employment income) or for just the interest income on portfolio bonds and "other", with the "other" category dominated by bank loans. Each measure nets out the interest income on foreign assets less the interest payments on the corresponding foreign liabilities.

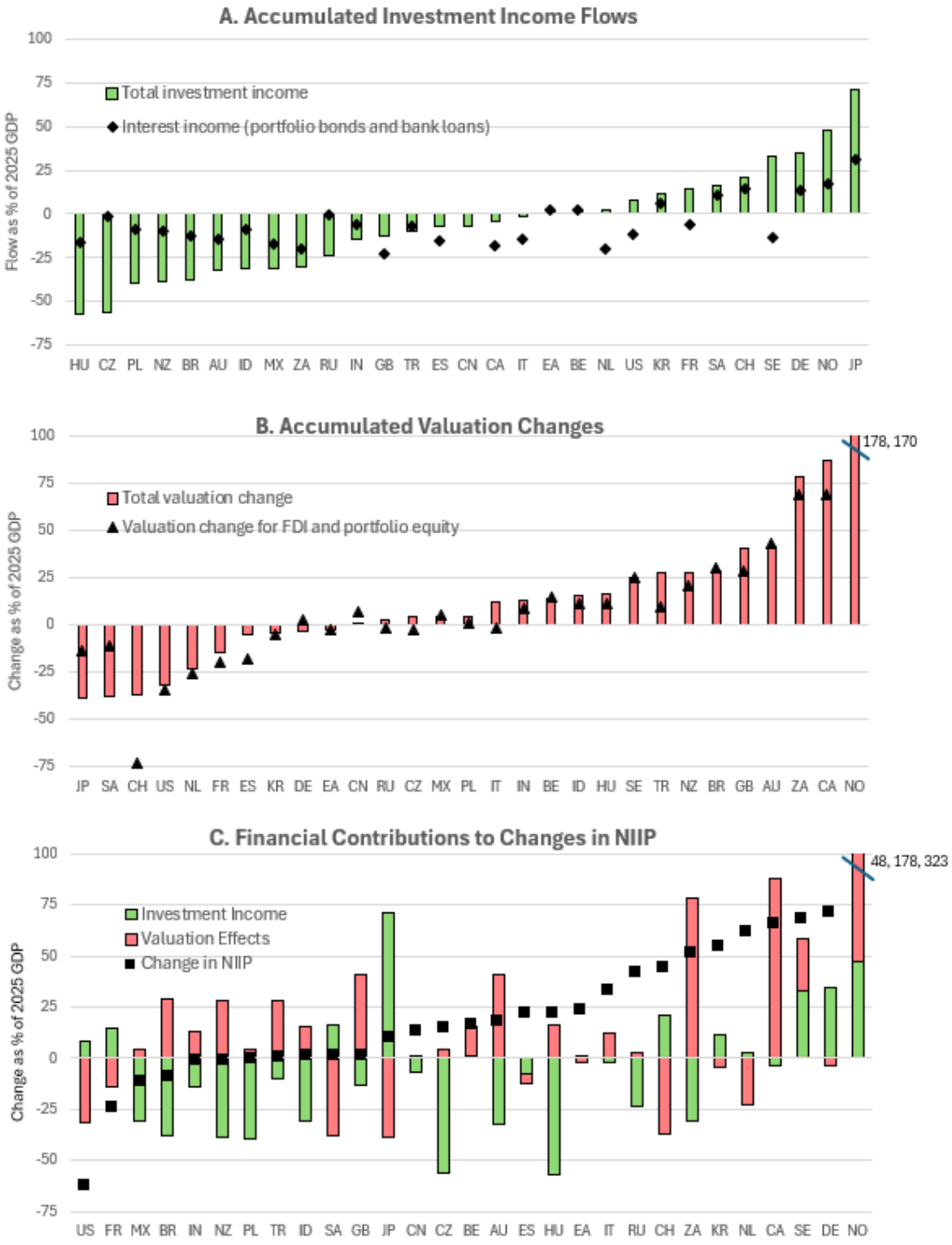
[37] These calculations include China for the calculations of investment income in aggregate, but not for the decompositions of interest income. The data for China is not available, but likely to be large and positive.

changes in NIIPs. In fact, and supporting the discussion of the more limited role of trade in **Figure 8**, these financial effects could explain a majority of the changes in imbalances in many cases.

For example, in the United States, large valuation losses explain half of the deterioration in its NIIP. In contrast, for Canada, the sharp improvement in its NIIP of 66% of GDP is more than explained by valuation gains on its international investment. Moreover, even for countries for which these financial effects through valuation changes and investment flows have largely balanced out over 2010-25, it is important to understand these mechanisms when assessing the corresponding vulnerabilities to various shocks. For example, Brazil's NIIP was fairly constant over 2010-25, but this reflected payments in investment income of 38% of 2025 GDP partially counterbalanced by net valuation gains on its international investments of 29% (an example discussed in detail in Section V.C.). Changes in relative interest rates (or relative equity returns) could quickly cause one of these contributions to adjust, leading to a sharp improvement or deterioration in its NIIP in the future.

To conclude, while trade flows have made a meaningful contribution to NIIPs in many countries, this is only part of the story. In many cases, financial effects working through international flows of investment income and valuation effects have contributed to changes in imbalances that are as large—and often larger. In some cases (such as China), much of the accumulated gains from these trade surpluses is offset by losses through financial channels, leading to a smaller increase in imbalances than trade alone would have implied. The important role of these financial channels in specific countries also highlights the importance of understanding these channels to assess vulnerabilities and financial risks under different scenarios. For example, any unwinding of the substantial valuation gains in equities and FDI in most non-US economies could generate a sudden deterioration in their NIIPs and have a negative macroeconomic impact (primarily through financial channels). The scenario analysis in Section VI will explore the impact of these types of shocks and how they work through international investment positions, an analysis necessary to understand the potential spillovers and vulnerabilities in individual countries and the global economy.

Figure 9: Contribution of Financial Components to Changes in NIIP: 2010-25



Notes: Panels show the cumulated financial effects on the NIIP over 2010-25 as a percent of 2025 domestic GDP. Panel C includes the accumulated investment income flows and valuation changes from the top two panels, placing them in the context of total changes in the NIIP over the same period. The values for Norway in the bottom two panels are truncated; Norway's change in the NIIP is 323pp, including an accumulated valuation change of 178pp and change for FDI and portfolio equity of 170pp.

B. A Closer Look at Valuation Effects: Exorbitant Privilege Lost in the US and Maintained in the UK?

Valuation effects are an important driver of changes in global imbalances—by far the most important factor contributing to annual changes since 1980 (**Figure 7A)**. Valuation effects are also the dominant driver of many of the largest changes in international investment positions since 2010 (both positive and negative) (**Figure 9 and Table 1**)—and a key factor in the sharp deterioration in the US debtor position, which has generated the sharp increase in global imbalances (**Figures 1 and 4**). Therefore, this section examines these valuation effects in more detail. It contrasts the experience of the United States, given its outsized role in explaining global imbalances, with that of the United Kingdom, which has maintained its positive valuation effects throughout the sample period (unlike for the United States).[38]

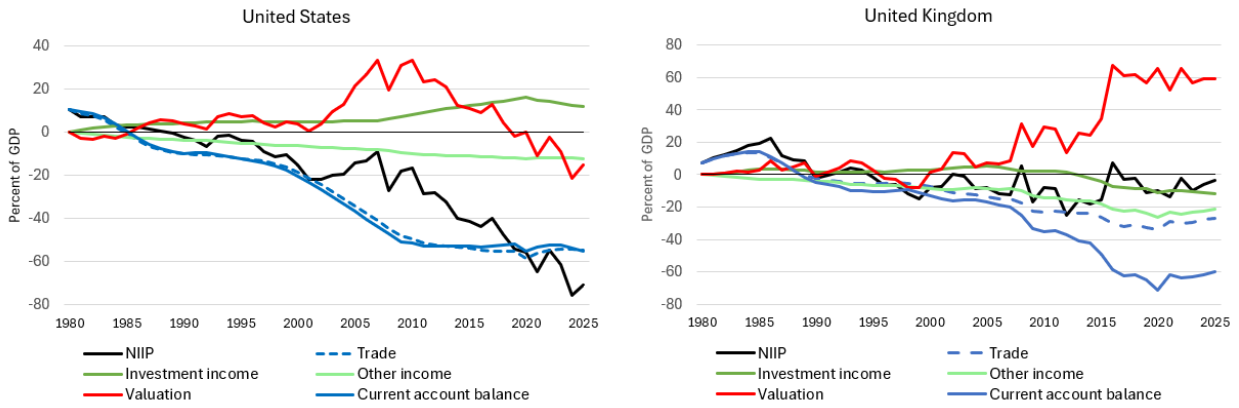
We begin with the many similarities between the US and UK international investment positions. Both are net debtor countries with large external financial positions structured in a way that had historically insulated them from the cumulative impact of persistent trade deficits. **Figure 10** depicts the evolution of their NIIPs, as well as the four underlying components (trade, investment income, other income, and valuation changes), based on the decomposition in equation (4). For each country, the accumulated trade balances (which have been in deficit for most years) would have generated large negative net external positions (dashed blue lines). For much of the sample, however, positive contributions from the financial components of the NIIP largely balanced the negative contributions from trade, helping stabilize the NIIP. This "exorbitant privilege" has continued through 2025 for the UK, with the NIIP remaining remarkably low and stable (-4% of GDP in 2025), primarily due to its accumulated valuation gains of 60% of GDP that more than compensated for the accumulated trade deficits of –27% of GDP since 1980. For the US, however, this "exorbitant privilege" has reversed, with the NIIP deteriorating even faster since around 2011 than would have occurred from simply accumulating trade deficits. This structural shift has not only erased earlier financial gains in the US NIIP, but caused its international debtor position to become even larger since 2021 than it would have been from simply accumulating trade deficits. This US transfer of wealth abroad is referred to as the "generous giveaway" in Forbes (2026).

What accounts for the recent divergence in the (financial) fortunes of the two countries? Given the importance of valuation changes, the top of **Figure 11** begins by decomposing these gains into the various drivers based on equation (5)**.** The dollar appreciation that started in 2012 inflated the value of US liabilities relative to assets and contributed to negative valuation effects.[39] However, relative returns (i.e., the returns on US investments abroad relative to what the US pays on its liabilities) were even more important in explaining the shifts from the US earning large positive valuation effects early in the sample, to earning smaller gains, and then experiencing relative valuation losses from 2019 onwards. **Appendix Figure 5E** provides further details on the asset composition behind these changes. The recent valuation losses were primarily driven by losses in portfolio equity (with a

[38] For detailed analysis on the UK's position see Mann (2026), and for the US see Obstfeld (2025), Bayoumi and Gagnon (2025), Chari and Milesi-Ferretti (2025), Tabova and Warnock (2025), and Bruno et al. (2026).
[39] Most US liabilities are denominated in US dollars (and therefore not affected by fluctuations in the US dollar exchange rate), while a large share of US external assets are denominated in other (non-dollar) currencies (so that their USD value declines when the dollar appreciates).

small contribution from FDI). In other words, the recent boom in US stock prices reduced the relative capital gains on the US external portfolio and drove the loss of its "exorbitant privilege".

Figure 10
Contrasting the Evolution of the NIIP in Two Net Debtors:
United States and United Kingdom

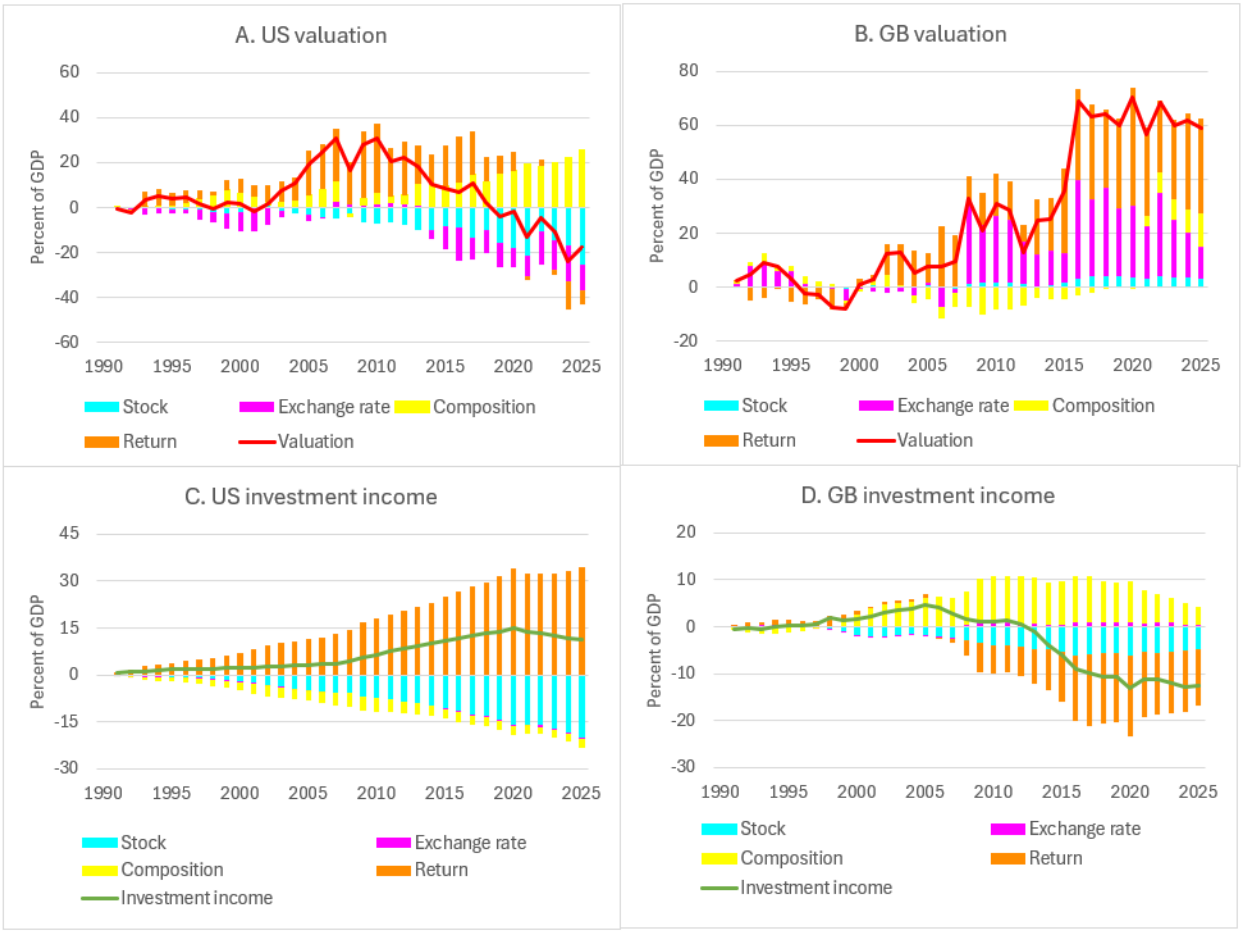


Notes: Graphs show evolution of NIIPs and underlying components as a share of GDP. The current account balance includes trade balances (for goods and services) as well as investment income flows (primarily interest and dividends) and other income (including employee compensation, personal transfers, international assistance and some inter-government payments). Underlying data from the IMF's BOP and IIP database and for GDP from the IMF's World Economic Outlook database. The US data incorporates the April 2026 BEA revisions to US FDI (as explained in Section II.D.)

In contrast, **Figure 11B** shows how the United Kingdom was able to maintain its "exorbitant privilege" after 2010. The United Kingdom maintained large positive valuation effects—which increased since 2008—through two channels. First, sterling depreciated sharply around the GFC (2008-2009) and Brexit referendum (2016-2017)—in contrast to the US dollar appreciation.[40] Second, relative returns were not only consistently positive but large (in contrast to the negative relative returns for the United States). **Appendix Figure 5F** shows that these stronger relative returns reflected the underperformance of both UK portfolio equity investments and portfolio debt (denominated predominantly in pounds)—unlike in the United States where return effects occurred primarily in equities. These comparisons highlight the natural risk sharing properties inherent in global imbalances. Stronger US macroeconomic performance (which corresponded to dollar appreciation and stronger relative returns in US markets) led to negative US valuation effects, while weaker UK macroeconomic performance (which translated into sterling depreciation and weaker relative returns in UK markets) led to positive valuation effects supporting the UK economy.

[40] The UK, similar to most advanced economies (including the United States), has a currency mismatch in which a larger share of external liabilities are denominated in local currency (British pounds for the United Kingdom) than for overseas assets (with a larger share in foreign currency).

Figure 11
Decomposing Valuation Effects and Investment Income Flows in Two Net Debtors: United States and United Kingdom



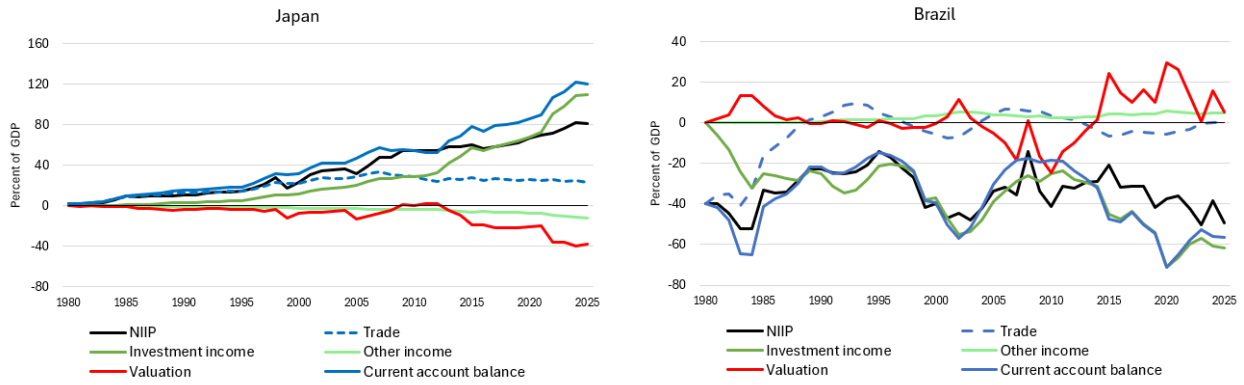
Notes: Each panel shows accumulated valuation changes (red lines in top panels) or investment income flows (green lines in bottom panels) and the corresponding cumulated contribution of each of the underlying components (in the colored bars). All variables are expressed as a share of GDP and calculations are based on framework in Appendix B. The US data incorporates the April 2026 BEA revisions to US FDI (as explained in Section II.D.)

C. A Closer Look at Investment Income Flows: Japan vs Brazil

Investment income flows are another financial channel that can meaningfully affect NIIPs in some countries. Although they have played a less important role than valuation changes in the United States and United Kingdom, they are the dominant driver of changes in international investment positions in many countries, and the role of investment income flows is even larger on average than that of accumulated trade flows or valuation effects in our sample of emerging markets over 2010-2025. Therefore, this section examines these flows in more detail, focusing on Japan and Brazil, two countries with large investment income flows that have moved in opposite directions and been more important in driving current account imbalances and NIIPs than trade and valuation effects.

Japan is a large net creditor, while Brazil is a net debtor, with NIIPs of 81% and -49% of GDP in 2025, respectively. **Figure 12** depicts the evolution of their NIIPs over 1980-2025, as well as of the four underlying components (as done for the United States and United Kingdom in **Figure 10**). In each country, there appears to be little relationship between the accumulated trade balance and the accumulated current account balance or NIIP. More specifically, Japan ran trade surpluses for most years until 2010, followed by intermittent (and generally modest) trade deficits since 2011, all of which accumulated to +23% of GDP in 2025. These accumulated trade flows therefore account for roughly one-quarter of its creditor position in 2025 and less than one-fifth of its accumulated current account flows (120% of GDP). Brazil has had a mix of trade deficits and surpluses since 1980, a combination which largely balanced out so that its accumulated trade balance over the same window was less than 1% of 2025 GDP. This made minimal contribution to its large international debtor position and accumulated current account balance of -57% of GDP.

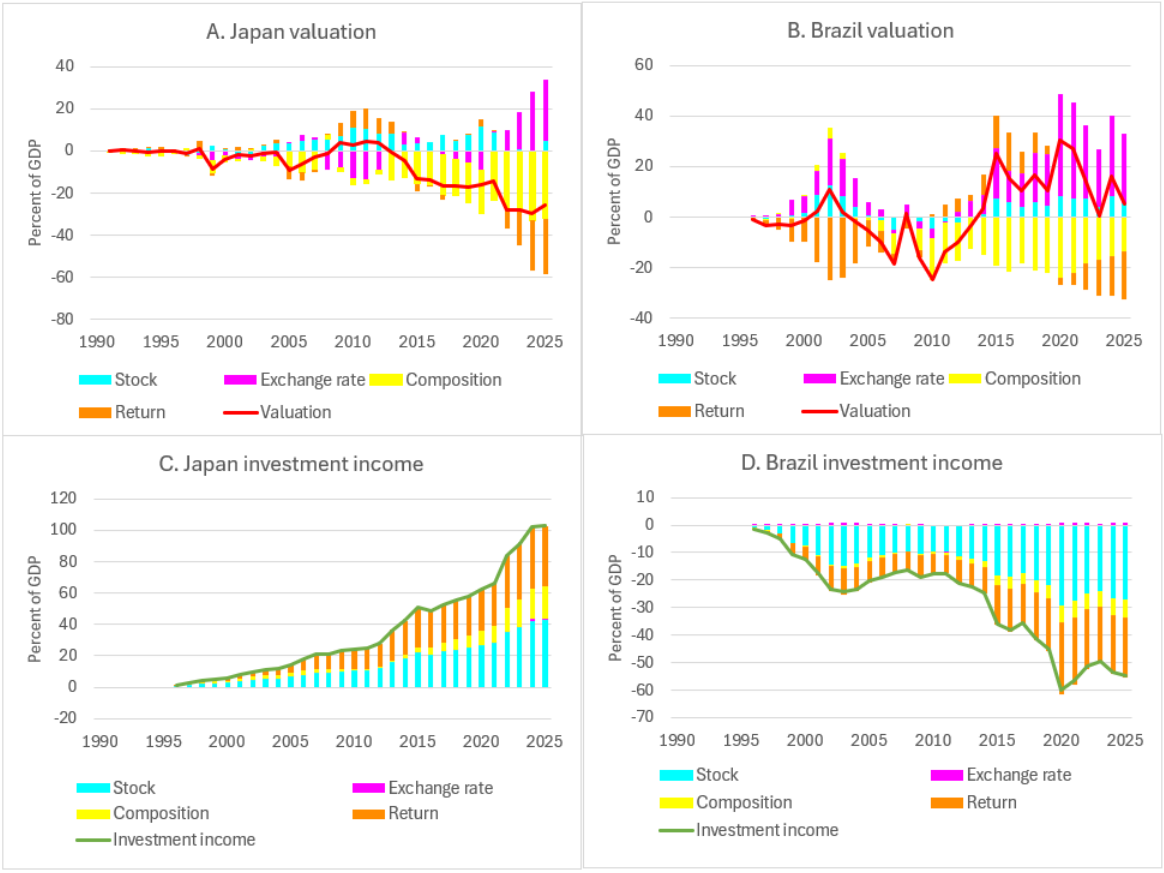
Figure 12
Contrasting the Evolution of the NIIP in Countries with Large Investment Income: Japan and Brazil



Notes: Graphs show evolution of NIIPs and underlying components as a share of GDP. The current account balance includes trade balances (for goods and services) as well as investment income flows (primarily interest and dividends) and other income (including employee compensation, personal transfers, international assistance and some inter-government payments). Underlying data from the IMF's BOP and IIP database and for GDP from the IMF's World Economic Outlook database.

What explains these differences between the accumulated trade balances with that of the accumulated current accounts and overall NIIP? For each country, the primary explanation is large international investment income flows—positive for Japan and negative for Brazil. In Japan, accumulated investment income over 1980-2025 accounted for 109% of GDP in 2025—almost all of the accumulated current account balance and even larger than the increase in the NIIP. In Brazil, accumulated investment income equaled -62% of GDP in 2025, also explaining most of the accumulated current account and even larger than the deterioration in the NIIP. In each case, the remaining differential between the accumulated income flows and NIIPs primarily reflected valuation effects (which have been negative for Japan and positive for Brazil since about 2013).

Figure 13
Decomposing Valuation Effects and Investment Income Flows:
Japan and Brazil



Notes: Each panel shows accumulated valuation changes (red lines in top panels) or investment income flows (green lines in bottom panels) and the cumulated contribution of each of the underlying components (in the colored bars). All variables are expressed as a share of GDP and calculations are based on framework in Appendix B.

What explains this dominant role of investment income flows in driving current accounts, and more modest impact of valuation effects on NIIPs in Japan and Brazil? **Figure 13** shows the decomposition of these two financial channels (as in **Figure 11**). The bottom two panels highlight the prominent role of the stock of outstanding positions in driving investment income flows in each country—with a creditor position for Japan and debtor position for Brazil. In each case, the stock of holdings explains roughly one-half of investment income flows. **Appendix Figure 6** (panels G and H) shows which assets are generating these flows. In Japan, it is primarily FDI and portfolio debt (i.e. foreign bond holdings) that earn these positive income flows, while in Brazil it is primarily interest and dividends on FDI (with a smaller role for payment on portfolio debt and bank loans). Over time, relative returns have also played a larger role—also working in opposite directions in the two economies. In Japan, the growing investment income gains reflect the lower interest rates Japan pays on its bonds (partly due to its large asset purchase program) as compared to the higher interest rates and dividends it earns on its large holdings of foreign bonds and FDI. In Brazil, the growing investment losses reflect the higher payments on its bonds and FDI.

This closer analysis of the investment income flows driving Japan's and Brazil's current account balances and international investment positions is useful to understand how these imbalances could evolve in the future. Even though Japan had a trade deficit (-0.6% of GDP) in 2025, it still had a sizable current account surplus of 4.9% of GDP that will likely persist (as it largely reflects Japan's sizable creditor position) and therefore continue to add to Japan's positive NIIP and contribute to the divergence in global imbalances. Similarly (albeit in the opposite direction), even though Brazil had a trade surplus in 2025 (0.4% of GDP), it still had a sizable current account deficit of -2.9% of GDP that will likely persist as it is largely driven by Brazil's sizable debtor position and higher interest rates and other payments on its FDI and portfolio debt. This persistence will likely lead to a continued worsening of Brazil's negative NIIP, and thus also contribute to a widening of imbalances. This highlights why global imbalances can be persistent—and hard to reduce without large changes in financial markets. These examples also highlight the limited role of trade restrictions in affecting current account imbalances in some economies.

VI. Shocks and Scenarios for Reducing Global Imbalances

While some degree of imbalances in international investment positions is part of a well-functioning global economy, the recent growth and record highs of global imbalances (Section II) are hard to justify with macroeconomic fundamentals (IMF 2025). Moreover, as the size of NIIPs and their sensitivity to financial channels has increased (Sections IV and V), a range of shocks could have larger and faster international spillovers through the corresponding valuation effects and investment flows. The dominant role of the US as the largest international debtor in the global financial system, combined with its shift from having an "exorbitant privilege" to providing a "generous giveaway" since 2010, also increases the risk that any reduction in global imbalances (which would most likely involve a reduction in the US debtor position) would generate substantial financial losses and negative wealth effects in other countries. Therefore, this section examines several scenarios assessing how various shocks and proposals to reduce imbalances would spill over through international investment positions to affect country-specific NIIPs and aggregate global imbalances.

There are a range of shocks that could affect global imbalances and generate considerable international spillovers. We evaluate four sets of scenarios, focusing largely on the financial factors that have recently had considerable effects on NIIPs. More specifically, the four sets of scenarios are: (1) a large depreciation of the US dollar; (2) a sharp correction in just US or global equity markets (with the largest adjustment in the United States in each case), possibly reflecting a reassessment of the valuation of AI-related stocks; (3) an increase in the interest rates paid on all external debt liabilities for high-debt countries or all countries; and (4) a considerable reduction in trade imbalances (as a proxy for the potential impact of large tariffs enacted around the world). For each scenario we evaluate the effects on individual economies (including any reduction in the US debtor position), as well as on aggregate global imbalances (including the corresponding adjustments for just creditors and just debtors).

In order to assess the impact of each of these scenarios, we use the framework and data described above to do a "back-of-the-envelope", partial equilibrium calculation of how each of these shocks would affect imbalances and the corresponding financial and/or trade flows. In practice, if any of these scenarios occurred, there would likely be concurrent adjustments in other financial markets

(such as in foreign exchange and fixed income), a rebalancing of countries' external portfolios, financial and monetary policy responses, and other effects on the real economy. As discussed below, some of these concurrent adjustments could even mitigate the initial effects of the shocks on imbalances. We only focus on the direct impact of the adjustment on the relevant variables, however, and leave an analysis of these second-round effects for future work. Although not capturing all general equilibrium effects, the analysis is useful to identify which economies, which investors, and which borrowers are more vulnerable to certain scenarios, as well as to evaluate how different shocks could generate more benign or severe scenarios for a given adjustment in global imbalances.

A. Scenario 1: Large Depreciation of the US Dollar

We begin by focusing on a scenario that has received substantial attention in current policy discussions of global imbalances (as well as during the last round of debates on imbalances and the US current account deficit in the mid-2000's)—a depreciation of the US dollar. Some type of currency adjustment is usually part of any discussion on how to reduce global imbalances, often with references to the role of exchange rates in reducing imbalances around the 1980s Plaza Accord (Bayoumi and Gagnon 2025; Hoshi 2026; Rey et al. 2026). These discussions have intensified with increased debate about whether the dominant role of the dollar and United States in the international monetary system will persist (Miran, 2024; Obstfeld, 2026). For this scenario, we model a 20% USD depreciation against all other currencies.[41] Our framework assumes linear relationships, so it is straightforward to calculate the impact of smaller or larger dollar depreciations, albeit much larger (or faster) currency adjustments would likely have nonlinear effects that will not be captured in our framework.

To estimate this dollar depreciation scenario, we take as fixed the currency composition of countries' external assets and liabilities and assume no change in other asset prices (such as interest rates).[42] Since the US dollar accounts for varying shares of countries' external assets and liabilities, the weighted financial exchange rates of different countries would appreciate to varying degrees.[43] The impact on different countries will depend on these weighted financial exchange rates, as well as the asymmetry in the currency composition of their assets and liabilities and the magnitudes of these positions. Expressed in the terminology of the financial effects' decomposition in Sections III and IV, we trace the effects of the exchange rate movement via not only the (currency-mismatch-driven) exchange rate effect, but also via the initial stock effect. Since we hold all else equal (implying no capital gains or losses on other assets), return and composition effects do not contribute to the resulting NIIP changes.

[41] To put this in context, Bayoumi and Gagnon (2025) estimate several scenarios that show that the US dollar would need to depreciate around 15%-29% to stabilize the US NIIP as a share of GDP.

[42] For a comprehensive assessment of the effect of a US dollar depreciation on the NIIP, one would also need to consider the elasticities of countries' trade in goods and services to exchange rate movements given the widespread use of the US dollar as an invoicing currency. This would likely contribute to some additional reduction in imbalances through trade channels, so our exercise focusing only on the financial channels can be seen as a conservative (lower bound) estimate of the effects.

[43] Information on the currency composition of countries' assets and liabilities necessary for this scenario is for 2020—the last year with available currency composition data from Allen et al. (2023).

Figure 14A shows the impact on countries' NIIP (as a percent of GDP in 2025) from this 20% USD depreciation, with actual values in 2025 in yellow bars and simulated values in red squares. The United States is the only debtor country to experience a reduction in its NIIP deficit, which is not surprising given the highly asymmetric currency composition of its assets and liabilities. More specifically, US external liabilities are primarily denominated in dollars (such that their USD value would only increase by 2.8pp in this scenario), while US external assets are primarily denominated in foreign currencies (such that their USD value would increase by 14pp).[44] Even though the US stock of liabilities exceeds that of assets, this differential effect due to currency exposures implies that a 20% USD depreciation would improve the US NIIP by roughly $5 trillion, thereby reducing its NIIP deficit from -71% to -54% of 2025 GDP.

In contrast to the United States, most other countries have more USD international assets than USD liabilities, such that a dollar depreciation increases the USD value of their external liabilities by more than the USD value of their external assets.[45] The countries with the most asymmetric currency composition (in terms of being adversely affected by a dollar depreciation) are: Korea (60% USD assets vs 19% USD liabilities), Mexico (79% USD assets vs 38% USD liabilities) and India (52% USD assets vs 17% USD liabilities). Even if these countries had balanced NIIPs, a dollar depreciation would generate net losses in their international positions. Moreover, countries' starting stocks of assets and liabilities are typically not balanced. The size of these imbalances, in conjunction with the currency mismatch on assets and liabilities, determines the sign and size of the resulting effects on the NIIP.

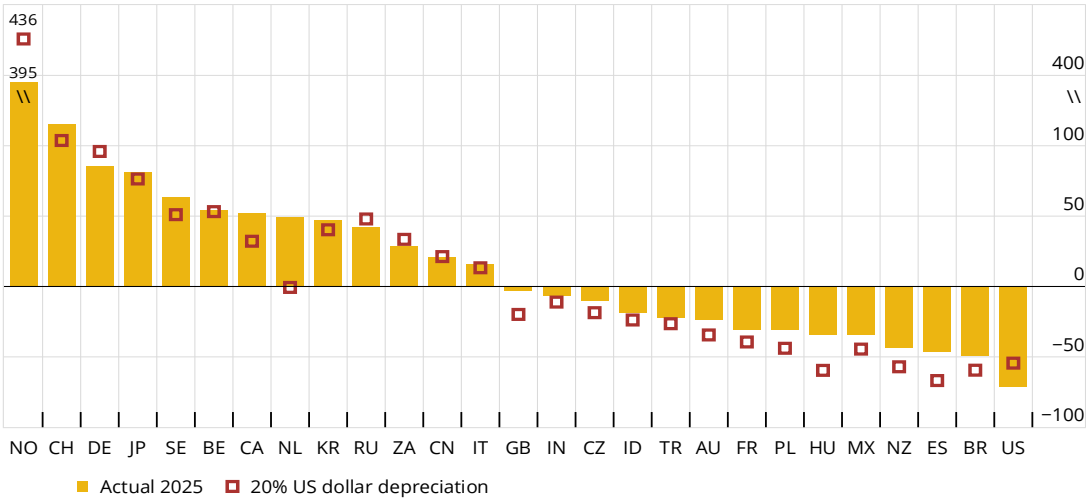
The combination of these effects generates a substantial deterioration in the NIIPs of a number of countries (**Figure 14A**). For example, the countries in our sample with the largest NIIP losses relative to their domestic GDP are: Netherlands (-50pp), Hungary (-25pp), Canada (-20pp), Spain (-20pp), UK (-16pp), and New Zealand (-14pp). In many cases, these FX-driven losses would wipe out a large share of the net wealth accumulated over decades. For example, the Netherlands' sizable surplus position of 49% of GDP would collapse to a negative 1% of GDP. In contrast, a few countries with large creditor positions would experience an improvement in their NIIPs (when expressed in USD terms) from this USD depreciation, primarily reflecting the mismatched gross size of their assets and liabilities. This includes Norway (+40pp),[46] Germany (+10pp), Russia (+6pp), South Africa (+5pp), and China (+1pp).

What do these adjustments imply for global imbalances overall? **Figure 15** shows the historical evolution of NIIPs for broadly defined regions from 2010 through 2025, along with the simulated adjustment in imbalances in 2025 from a 20% USD depreciation (the bar to the right of the latest measure of imbalances from 2025). Global imbalances are predicted to fall after this 20% USD depreciation, but the magnitude of the reduction is modest. More specifically, global imbalances (measured as the sum of the absolute value of creditor and debtor positions) are projected to only fall from 41% to 38% of global GDP. This reduction comes more from a reduction in debtor positions

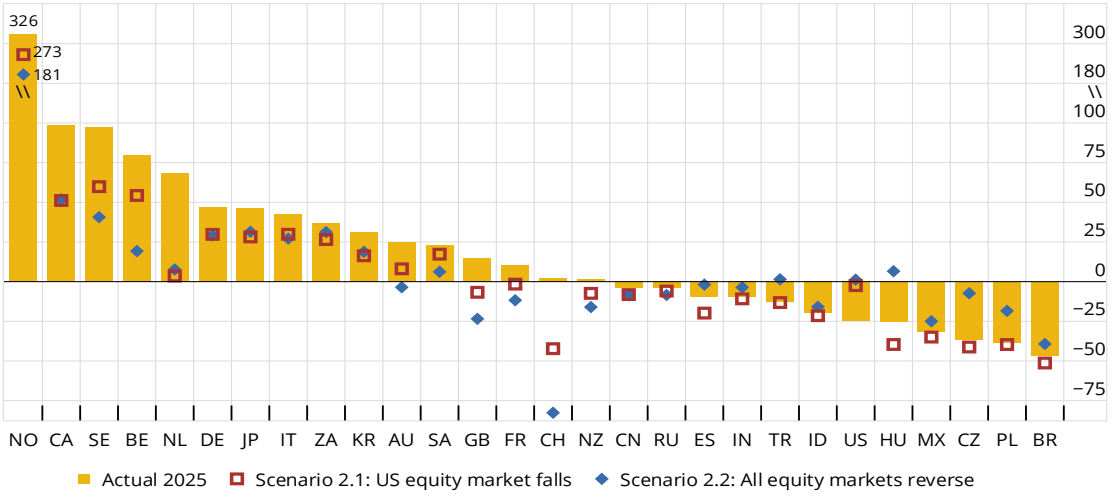
[44] About 86% of US external liabilities are denominated in USD and 70% of external assets are in foreign currencies as of 2020.
[45] The only exception is South Africa, with 30% of its assets versus 32% of its liabilities in USD (as of 2020).
[46] For example, in Norway, a larger share of assets are denominated in USD, such that the 20% USD depreciation causes a smaller appreciation in the value of its international assets (12%) than liabilities (16%). This effect, however, is outweighed by the 2.8 times larger size of its asset holdings relative to that of its liabilities.

(by just over 2pp) than from a shrinkage of NIIP creditor positions (by just under 1pp). These relatively modest effects, however, mask a more meaningful improvement in the US NIIP, which reduces the US position from -19% to -14% of global GDP.

Figure 14
Impact of 2025 Scenarios on Individual Countries:
US Dollar Depreciation and Equity Adjustments
A. Impact of US Dollar Depreciation on NIIP (as % of 2025 GDP)



B. Impact of Equity Market Adjustment on Portfolio Equity and FDI (as % of 2025 GDP)



Notes: Top panel shows the NIIP relative to domestic GDP in 2025, with the reported value in yellow and the hypothetical value in a scenario after a 20% US dollar depreciation (against all other currencies). The bottom panel shows the value of equity and FDI holdings in the NIIP relative to domestic GDP in 2025, with the reported value in yellow and the hypothetical value after either (a) a fall in the US equity market which reverses all of its outperformance over 2019-25 (24.5% decline) and no impact on other equity markets; or (b) an adjustment in all equity markets that reverses their gains/losses over 2019-2025. Currency composition data is not available to estimate the impact of the US dollar depreciation scenario for Saudi Arabia. Each scenario only models the impact through global imbalances, and not any effects on the domestic economy or through other asset prices or spillovers.

Overall, while the adjustment in global imbalances from a 20% USD depreciation is not trivial and could partially alleviate concerns around the dominant US debtor position, the impact is modest and unlikely to meaningfully change the vulnerabilities around global imbalances highlighted above. This is in contrast to policy debates and international macroeconomic theory, which tend to focus on exchange rates as central to adjustment and place little emphasis on the role played by fluctuations in risky asset prices. A large enough adjustment in the exchange rate to generate a more meaningful impact on imbalances—especially if it occurred quickly—could also generate additional financial vulnerabilities if unhedged exposures (which are not modelled here) triggered losses and fire sales. One important caveat, however, is that any exchange rate movements should also affect trade competitiveness, such that a dollar depreciation should also reduce the US trade deficit over time and thereby generate a larger reduction in imbalances than shown in **Figure 14A** and 15. Section VI.D models the effects of a reduction in trade imbalances (which could result from exchange rate movements, tariffs and other trade restrictions, or other policies), however, and shows that any such effects on NIIPs only accumulate slowly over time and are modest even when lasting several years. In other words, although a large USD depreciation could help reduce global imbalances somewhat, the aggregate effect is likely to be modest—even if accounting for the lagged effect on trade flows.

B. Scenario 2: A Sharp Repricing in Equity Markets

Next, we evaluate the immediate consequences of a sharp repricing in equity markets led by an outsized adjustment in US markets (potentially due to a correction of AI and technology-related stocks). More specifically, we consider two alternatives. In Scenario 2.1 the US stock market reverses its outperformance (relative to a global benchmark) between 2019 and 2025—implying a fall of 24.5%.[47] While it is unlikely that all other stock markets would remain stable amid such a major US repricing, this exercise is a useful benchmark. We also consider an alternative (Scenario 2.2) in which all international stock markets unwind any changes (mostly gains) that occurred over 2019-2025.[48] This scenario now involves a 53% decline in the US stock market as well as substantial, albeit in most cases smaller, declines in most other countries' equity indices. In each case we assume that the change in stock prices has the same impact on both portfolio equity and FDI liabilities in each country, as these two asset classes are dominated by underlying equity exposures and most affected by stock market valuations.[49]

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[47] This is calculated as the decline in the US equity index needed to reverse the relative outperformance of the US market relative to the global benchmark in the MSCI World Index over 2019-2025. In this scenario, we assume no change in other equity markets, but the MSCI World index falls 18.3% due to its 75% US weight. We assume the world stock market index adjustment applies to the equity liabilities of small financial centres (Ireland, Luxembourg, Cayman Islands, Hong Kong and Singapore), which are unlikely to be the final destination of equity investments, as well as to any residual equity assets with unknown destination country.
[48] 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 correspond to investment income in the NIIP).
[49] In addition, to the extent portfolio equity and FDI consist of traded securities, statistical authorities report these asset classes at market value. In the case of FDI, market valuation is recommended for listed securities, while several approximation methods are recommended for deriving a market value of the rest (see IMF BPM6, paragraph 7.16, and IMF CDIS Frequently Asked Questions). Thus, some heterogeneity is likely to exist in how closely FDI valuations in international statistics align with country stock market indices, with recent revisions of the US FDI position discussed in Section Appendix A being a prominent example. This scenario studies the effects of revaluation calibrated to recent gains in stock market indices, as this is a

To estimate the impact of these market adjustments, we calculate the mechanical gains and losses via valuation changes on countries' external portfolios from shifts in asset prices, while keeping the compositions of their assets and liabilities fixed. As discussed above, we ignore any second-round effects through other adjustments in financial markets, portfolio rebalancing, policy responses, or effects on the real economy. In practice, either of these scenarios simulating large adjustments in equity markets would likely trigger other adjustments—such as lower interest rates to support the economy—which could mitigate or exacerbate the effects on imbalances (with a scenario examining the impact of interest rate changes modelled in Section VI.C).[50]

Starting with the simplest hypothetical of a repricing in only the US equity market (Scenario 2.1), most countries experience a valuation loss and a deterioration in their NIIP (because most countries hold some US equity assets). In contrast, the United States experiences a valuation gain because the value of its liabilities declines while that of its foreign assets remains stable.[51] **Figure 14B** depicts the hypothetical impact on the net international equity (portfolio and FDI) positions of each country as a percent of domestic GDP at end-2025 (in red squares). The effect on the equity portion of NIIPs of many countries is quite significant. For example, the US net equity position improves from -25% to -3% of GDP, a net gain of nearly $7 trillion. In contrast, for almost all other countries the net equity position deteriorates, with the magnitude depending on the country's bilateral exposure to the US stock market. Countries with large negative valuation losses under this scenario (all relative to 2025 GDP) include the Netherlands (-65pp), Canada (-48pp), and Switzerland (-44pp). Norway experiences the second largest loss—shown on a separate scale due to its very large NIIP—with a decline in its international equity position from 326% to 273% of GDP. Each of these countries experiences a meaningful loss of net worth relative to the size of the economy—despite the scenario assuming no change in their domestic equity markets and entirely reflecting spillovers through their US exposures.

Next, we move to Scenario 2.2 in which all stock markets adjust and unwind any gains or losses that occurred from 2019 through 2025. The resulting impact on 2025 equity and FDI portfolios are shown in the blue diamonds in **Figure 14B**. Many countries continue to experience a deterioration in their net equity position, which is not surprising as the US stock market strongly outperformed most other stock markets over 2019-2025 and therefore experiences a larger reversal. In some countries (such as Canada, the Netherlands and Germany), the effects are similar to when only US equities repriced (Scenario 2.1). For several other countries, however, the valuation losses are significantly greater—including Norway, Belgium, and Switzerland. More specifically, in Norway the net international equity position falls from about 326% to 181% of GDP (versus 273% in Scenario 2.1) and in Switzerland, the equity position falls from +2% to -83% of GDP (versus -42% in Scenario 2.1). Conversely, in a few cases, such as Türkiye, Hungary, Poland and the Czech Republic, equity portfolios improve (relative to jus the US-equity-decline scenario), because their equity returns underperformed over this period, such that the hypothetical unwinding of those weak returns generated improvements in their external equity liabilities.

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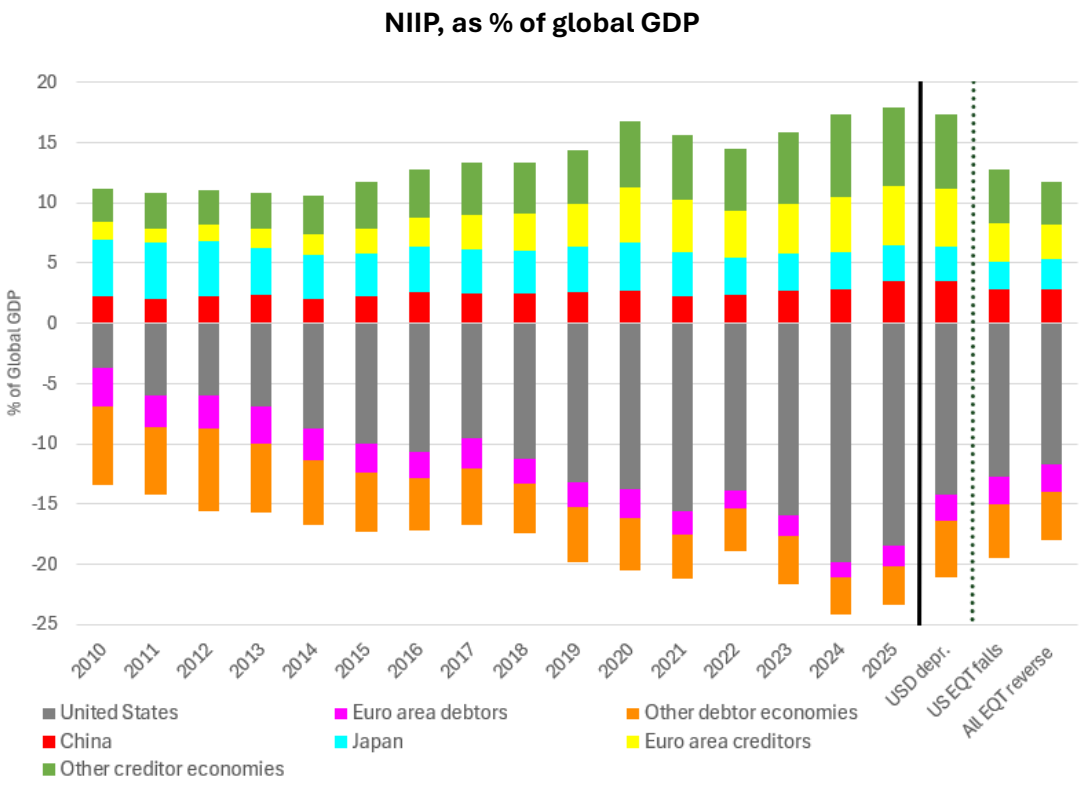
transparent assumption using data available across all countries in our sample. In reality, the transmission of stock market price swings to the value of FDI assets might vary across countries.

[50] For example, over 2010-25, valuation gains have been negatively correlated with investment income flows in most countries (as discussed in Section V.A. and shown in **Figure 9.C**).

[51] While a US stock market correction is a net gain in terms of the US foreign asset position, overall US wealth may well deteriorate since a significant portion of the US stock market is held domestically.

Figure 15
Impact of 2025 Scenarios on Global Imbalances:
US Dollar Depreciation and Equity Adjustments



Notes: Graph shows the aggregate NIIPs for different country groups relative to global GDP in each year from 2010-25. The bars on the right show the hypothetical NIIPs relative to 2025 global GDP under three scenarios: (a) a 20% dollar depreciation; (b) repricing in US equities to unwind outperformance since 2019; (c) an adjustment in all equity markets to unwind any gains/losses since 2019. See notes to Figure 14 for more details on these three scenarios. The country groupings are: Euro area = BE, DE, ES, FR, IT, NL and Other economies = GB, CH, NO, AU, CA, CZ, KR, NZ, SE, ID, IN, BR, MX, HU, PL, TR, RU, SA and ZA. See Appendix Table 1 for countries included in the sample and codes. When data is not available to calculate the impact of a scenario on a specific country (i.e., for Saudi Arabia in the USD depreciation scenario), we include it in the graph to maintain a constant sample, but assume no change in the country's NIIP.

The effects of these simulated equity market adjustments are not only large for the NIIPs of individual countries, but also imply a meaningful reduction in aggregate global imbalances. The two bars on the right of **Figure 15** show the impact on 2025 imbalances from these hypothetical scenarios of a repricing in just US equity and FDI (scenario 2.1) or an adjustment in global equity and FDI positions (scenario 2.2). In both cases, global imbalances and the US debtor position contract considerably. In the US-only repricing scenario, global imbalances fall by 9% of global GDP, with the adjustment borne slightly more by countries with creditor NIIPs (-5% of global GDP) and a sharp improvement in the US net equity position (of +6% of global GDP). In the global equity market correction scenario, imbalances fall by almost 12% of global GDP, with the deterioration of creditor positions (-6%) largely matching the improvement in the US position (+7% of global GDP).

To summarize, a sharp correction in global equity markets led by a decline in US stock prices could generate a sharp reduction in global imbalances—but also generate additional and potentially large negative macroeconomic effects. In our hypothetical scenario in which all equity gains/losses since 2019 are unwound, this corresponds to a reduction in global imbalances of about a quarter (from 41% to 30% of global GDP). On the debtors' side, this adjustment would be concentrated in one key country with a large negative NIIP—the United States—and overall international net debtor positions would shrink from -23% to -18% of global GDP.[52] While reducing the dominant US debtor position could reduce some risks around imbalances, this would correspond to a meaningful loss in international wealth and net worth for countries around the world. For example, the aggregate creditor position would fall by about one-third from 18% to 12% of global GDP—a substantial loss for many countries when assessed relative to the size of their domestic economies. This decline in the value of international asset holdings could generate substantial losses for internationally active financial institutions (potentially triggering financial stability concerns if this adjustment happened quickly) as well as negative wealth effects that also feed through to the domestic economy—an issue explored at the end of this section. These dynamics could be exacerbated if combined with sizable negative (financial and wealth) effects generated by adjustments in the respective domestic equity markets—including the negative effects in the United States from the decline in domestic wealth. Therefore, although a sharp correction in equity markets could reduce global imbalances, it would likely be a painful adjustment for most (if not all) of the world.

C. Scenario 3: Increases in Global Interest Rates

For a third scenario, we shift from focusing on shocks that mainly affect NIIPs through immediate valuation effects (i.e., through exchange rates or relative equity returns) to a shock that also generates persistent changes in international investment flows (while still generating immediate, one-time valuation effects). More specifically, we evaluate the impact of a 400 basis points (bps) increase in interest rates on all external debt liabilities (i.e., portfolio investment debt and "other investment" liabilities).[53] We examine two variants of this "higher rates" scenario: (i) these rates only increase in "high-debt" countries (defined as those with gross government debt exceeding 90% of GDP[54]); and (ii) these rates increase for all countries in our sample. The corresponding interest rates on countries' external assets will, in turn, depend on the respective bilateral external debt exposures, i.e., external lenders to high-debt countries will receive higher interest rate payments on their foreign assets[55]. We assume that rates stay at their new elevated level for five years (from the

[52] The US share of 2025 global imbalances would fall from 45% to (a still sizable) 39%.

[53] We use a 400bps increase in interest rates as a rough proxy for the increase that could occur if rates returned to historical averages from before the 2008 Global Financial Crisis. More specifically, based on OECD data on long-term interest rates for the advanced economies in our sample with a full series of historical data, bond yields would increase about 500bps from 2025 levels to reach the average over 1980-2007, or 300bps to reach the average over 1990-2007. We use the average (400bps), but it is straightforward to assess the impact of larger or smaller adjustments since our estimates are linear.

[54] This yields ten "high-debt" countries in our sample: Belgium, Brazil, Canada, China, France, Italy, Japan, Spain, United Kingdom and United States. The debt thresholds are calculated using 2025 data from the IMF WEO database, version April 2026.

[55] We estimate bilateral portfolio exposures using the latest available (2024) IMF CPIS portfolio debt matrices and 'other' investment exposures using the BIS Locational Banking Statistics. We assume debt held as reserve assets is issued by indebted countries (since major reserve currency issuers such as the US, Japan, UK, Canada and large euro members are all in our sample of high-debt countries) and thus pays the full 400bp increase in interest rates in all variants of the higher interest rate scenario.

end of 2025 through the end of 2030) and that rates of all maturities increase in lockstep, i.e. there are parallel shifts in all affected countries' yield curves.

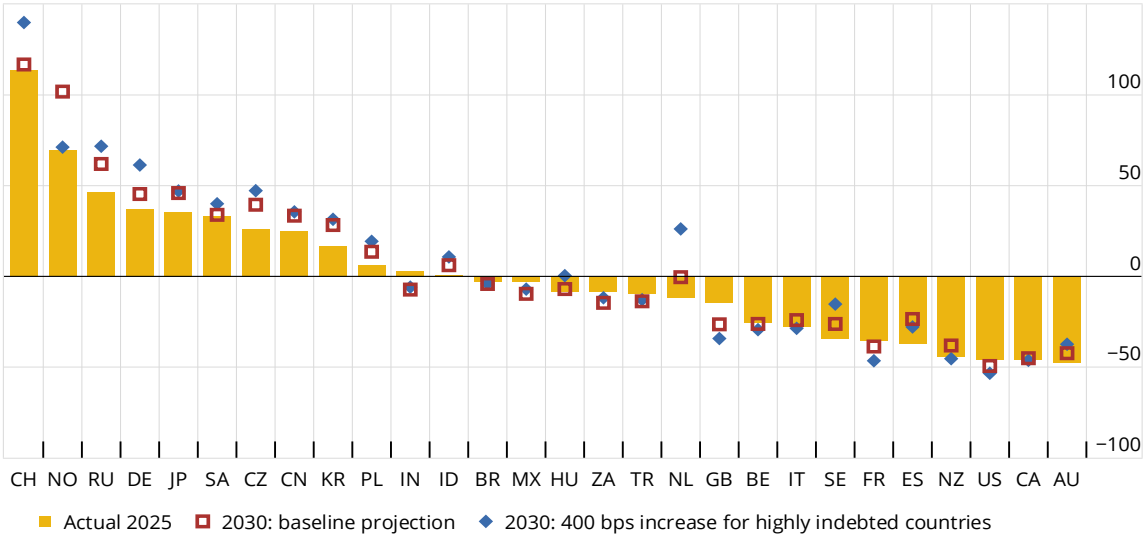
Before turning to the impact of this hypothetical increase in global interest rates, we calculate a benchmark of how NIIPs would have evolved over the scenario horizon through 2030 without any rate changes, since trade imbalances, investment income return differentials and the mechanical effects of the existing stock of imbalances are likely to persist even in the absence of shocks. For this benchmark scenario we make several assumptions based on patterns in the last year of our sample (2025): (i) non-debt external assets and liabilities continue to generate rates of return equal to those in 2025[56]; (ii) there are no additional valuation changes[57]; (iii) exchange rates are constant at their 2025 levels; (iv) trade balances as a percentage of GDP remain constant at their 2025 levels; (v) other income flows (i.e., unrelated to investment income) are zero; (vi) investment income flows are calculated each year as the product of the assumed rates of return and the stocks of assets and liabilities as of the end of the preceding year; (vii) any gross investment income flows are re-invested at the end of each year in the asset class that generated them; and (viii) any net trade flows are also re-invested annually, but allocated proportionately to each country's gross asset composition at the end of the previous year. In order to continue expressing NIIPs as a percent of current GDP, we use IMF WEO forecasts[58] of the evolution of countries' nominal GDP (expressed in current US dollar terms) in the denominator of the respective ratios.

The evolution of the stocks of imbalances across individual economies in this baseline case of no major changes after 2025 is shown in **Figure 16A**. It shows the hypothetical impact on the debt components of the NIIP ("NIIP-debt position") in red squares (with the actual 2025 values as the yellow bars), and all statistics reported as a percent of 2030 domestic GDP. NIIP-debt positions are projected to increase in most of the creditor countries (as expected due to the persistent mechanical effects of stocks on investment income flows discussed in Sections IV.C and V.C), but also in some net debtors. The most notable increases are in Norway (from 69% to 102% of GDP), Russia, Spain, the Czech Republic and the Netherlands (all with increases of between 11pp and 15pp). It is worth noting that China's NIIP-debt position increases under this baseline scenario from 25% to 33% of GDP. While this is less than the mean/median change in the sample (when scaled by domestic GDP), it corresponds to a meaningful increase in global imbalances given the size of China's economy. The changes in the NIIP-debt positions of debtor countries under the baseline 2026-2030 projections are generally smaller. For example, in the case of the US, this measure is projected to decline by 3% of GDP. The aggregate impact corresponding to this scenario is a widening in global imbalances, as shown in **Figure 17** (the first bar after 2025, labelled *'2030 baseline'*). More specifically, global imbalances would increase from 41% of global GDP in 2025 to 46% in 2030, driven by an increase in the aggregate creditor position (from 18% to 22% of global GDP) combined with roughly stable debtor position (at around -23% of global GDP).

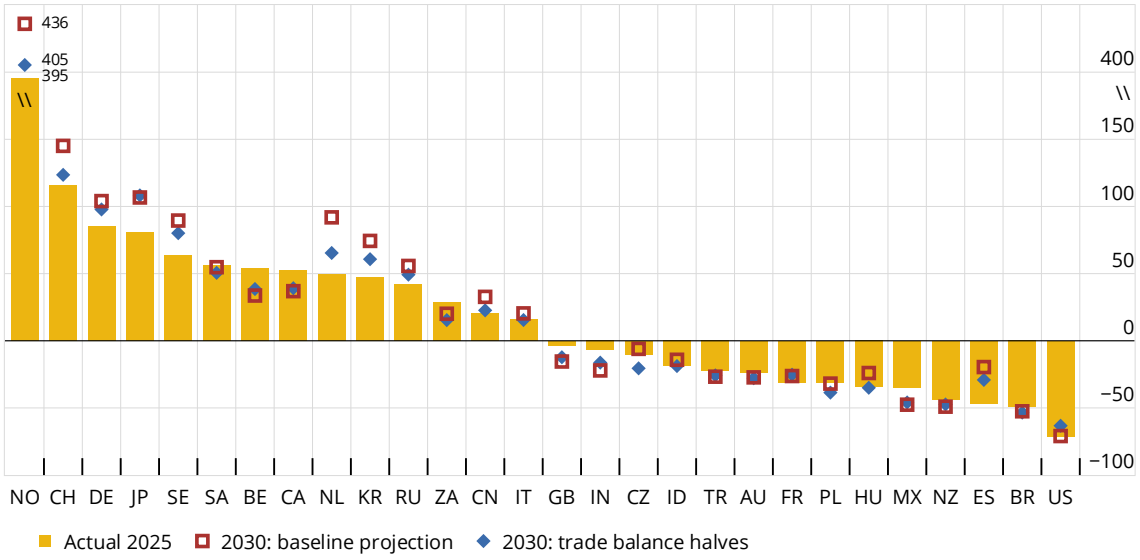
[56] If a country is missing data on investment income for a specific asset category, we assume the cross-country, asset-specific, average rate of return for 2025 applies.
[57] As shown in **Figure 7** and discussed in Section IV.C, valuation effects tend to be volatile and can reverse year-to-year, so we do not assume any valuation changes in 2025 continue over the forecast horizon.
[58] Nominal GDP forecasts from 2025 on are from the April 2026 version of the IMF WEO database.

Figure 16: Impact of 2030 Scenarios on Individual Countries: Higher Interest Rates and Reduced Trade Imbalances

A. Interest Rates Scenarios: NIIP-debt Position as % of Domestic GDP



B. Trade Scenarios: NIIP as % of Domestic GDP



Notes: In each panel, the yellow bars show actual 2025 levels of the debt component of NIIP (panel A) and total NIIP (panel B) relative to domestic GDP and the red squares show the respective estimated value in 2030 from the baseline projection (described in the text). The blue diamonds in panel A show projected NIIP-debt position (portfolio investment debt, "other investment" and reserve holdings) if interest rates increase by 400bp for those countries in our sample whose gross government debt exceed 90% of GDP in 2025 (based on the latest IMF WEO database). The blue diamonds in panel B show the hypothetical 2030 NIIP if trade imbalances halve in 2026 (relative to 2025 levels) and remain at this level through 2030. When returns data for 2025 are not available for any particular country, they are replaced by the cross-sectional mean for the corresponding asset class. Since data on the composition of debt holdings are missing for a few countries, we assume the capital allocation mimics that of the rest of the world. Each scenario models solely the impact through international investment positions and trade imbalances, and not through any effects on the domestic economy or through other asset prices or spillovers.

Now that we have a baseline projection for 2030, we turn to the effects of a 400bp increase in interest rates on external liabilities of "high-debt" countries. The projected impacts on countries' NIIP-debt position are plotted in the blue diamonds in **Figure 16A** and suggest an overall widening of imbalances.[59] The projected NIIP-debt positions of some economies are similar to the baseline 2030 scenario (i.e., with no rate increase). However, the position for many creditor economies becomes even more positive (in some cases by meaningful amounts), while for most debtor economies becomes slightly more negative. More specifically, the large increases (relative to 2030 GDP in the baseline projections) occur in the Netherlands (+26pp), Switzerland (+23pp) and Germany (+16pp). Most countries experiencing large deteriorations in their net debt positions are (not surprisingly) the high-debt countries, including the UK, France, Italy, US, and Spain. More noteworthy is the estimated impact on Norway—the country with the largest creditor position (relative to domestic GDP)—which experiences a substantial deterioration (-29% of GDP).

To better understand these effects of higher rate—and the heterogeneous impact across different countries—it is useful to look more closely at the two channels through which higher rates affect NIIP-debt positions and overall NIIPs.[60] First, the increase in interest rates generates an immediate repricing of assets and therefore capital gains (losses)[61] for net debtors (creditors), assuming external debt stocks are recorded at market value.[62] This results in a one-time valuation effect on international positions and is shown in **Appendix Figure 7** in the orange dots for each country. The fitted line for these valuation effects slopes down—showing that larger creditor countries generally experienced larger one-time losses, while countries with larger outstanding debt obligations experienced one-time gains (because the market value of their outstanding debt falls). Second, and counteracting this one-time valuation effect, is the change in investment income flows from the higher rates on outstanding debt that continue each subsequent year. The higher interest rates exacerbate the stock effect from the baseline scenario (when external positions generated net income flows through a purely mechanical effect), with a greater impact on countries with larger liabilities. These changes in international interest payments are shown in the green dots in

[59] While the set of "high-debt" countries whose interest rates increase in this scenario do not perfectly correlate with the set of net external debtors, there is significant overlap; our ten high-debt countries had an average net foreign debt position of -18% of their domestic GDP, compared to +10% of GDP for the countries that are not in the "high-debt" group.

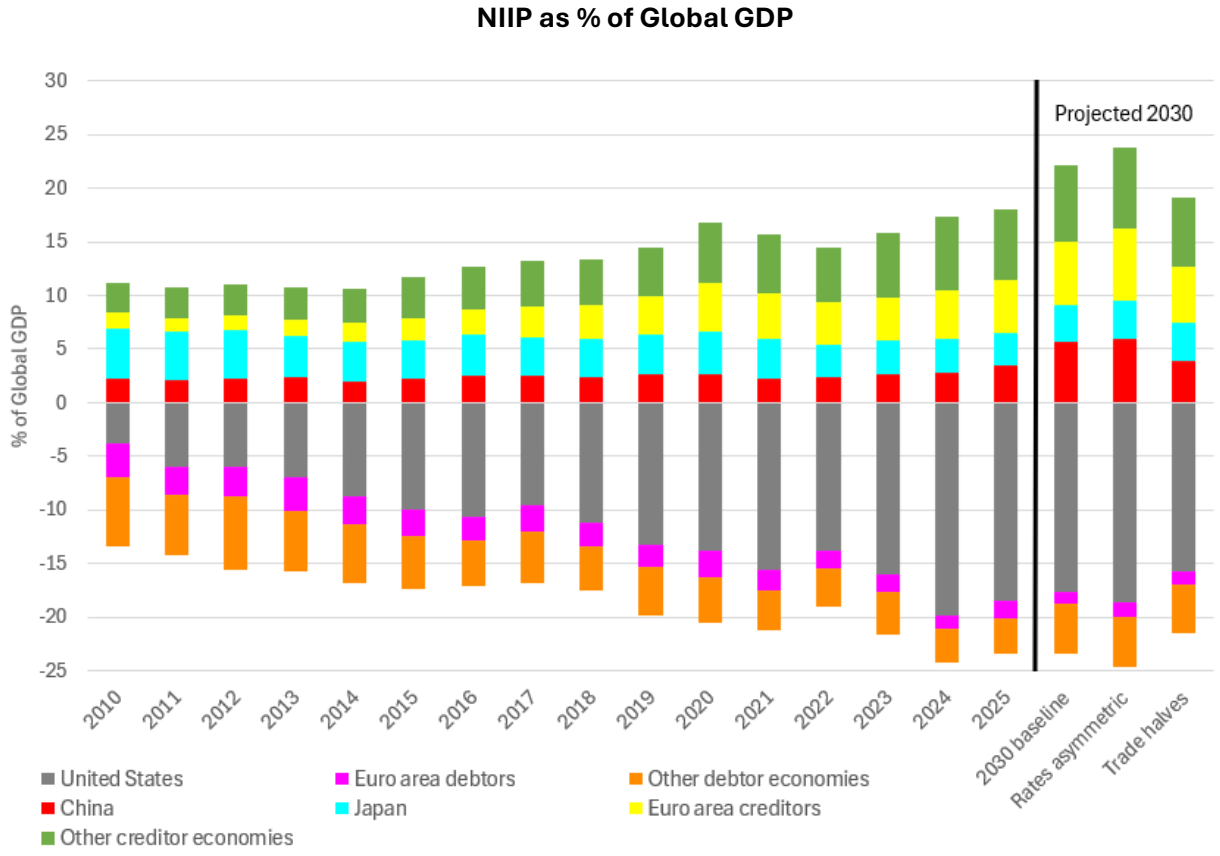
[60] In addition, it is useful to decompose the two channels because the mark-to-market losses may never realized – i.e. in the case of buy-to-hold investors who hold bonds to maturity and receive the face value (barring an outright default by the issuer). Without valuation changes on cross-border debt holdings, the effects of asymmetric interest rate increases would be more pronounced, as illustrated by the fact that the slope of the green line in **Appendix Figure 7** is steeper than the slope of the blue line.

[61] To calculate the capital gains, we assume debt instruments reprice in 2026 and portfolio debt has a longer average maturity (and consequently greater sensitivity to rate changes) than cross-border bank loans (which account for the majority of "other investment" flows), with the maturity of official reserves falling somewhere in between. Specifically, we use the simple relationship between the bond price and yield – that of a zero-coupon bond: $\log(P_c) = -m_c * y_c$, where y_c is the annual (continuously compounded) yield or interest rate paid on country *c* debt, and m_c is the residual maturity of country *c* debt, expressed in years. For other investment, we assume a maturity of 3 months such that a 400bps rise in the interest rate corresponds to a $-\frac{3}{12} * 4\% = -1\%$ price change, i.e. a capital loss of 1%. For portfolio debt, we assume a maturity of 5 years, implying a -20% price change for the same 400bps increase in the annual yield. For official reserves, we assume a maturity of 2.5 years, in line with the evidence in BCB (2021) and ECB (2023).

[62] See Balance of Payments and International Investment Position Manual - Sixth Edition (BPM6), Chapter 7, paragraph 7.30.

Appendix Figure 7, and the upward sloping regression line shows that international creditors (debtors) experience investment income gains (losses) over the subsequent five years. The aggregate impact of these two counteracting channels (through valuation effects and changes in investment income) on NIIP-debt positions relative to the baseline are netted out in the blue dots in **Appendix Figure 7**. The upward slope of the fitted linear regression line confirms that creditor (debtor) positions tend to improve (deteriorate), on average, such that the multi-year impact of interest income flows outweigh one-time valuation changes.[63]

Figure 17
Impact of 2030 Scenarios on Global Imbalances:
Higher Interest Rates and Reduced Trade Imbalances



Notes: Graph shows the aggregate NIIPs for different country groups relative to global GDP in each year over 2010-25. The separate bars on the right show the hypothetical aggregate NIIPs relative to 2030 global GDP under three scenarios: (a) a baseline scenario that assumes no changes from 2025 relationships; (b) "Rates asymmetric": a 400bps increase in interest rates only on the external debt liabilities of countries with gross government debt exceeding 90% of GDP in 2025; (c) a halving of 2025 trade imbalances that persists through 2030. See text and notes to Figure 16 for more details on the assumptions for each of these 2030 scenarios. See notes to Figure 15 for country groupings

[63] The notable exception is Norway—where the one-time valuation losses from higher interest rates are estimated to outweigh the subsequent increase in interest payments over the next five years. If the increase in rates lasts more than five years, however, the investment income effects will grow.

What is the aggregate effect on global imbalances from higher interest rates on the debt obligations of high-debt countries? The second to last bar of **Figure 17** shows the projected global impact. Because the gains from this asymmetric adjustment in interest rates are concentrated mostly in net creditors, and the losses largely in net debtors, global imbalances increase in 2030 relative to the baseline scenario. More specifically, the accumulation of five years of wider interest rate differentials hurts debtors' NIIPs (by 1.2pp) and improves creditors' NIIPs (by 1.7pp), generating an increase in global imbalances of roughly 3pp compared to the baseline 2030 projection and by 7pp compared to 2025 levels. The US contribution to global imbalances expands by 1% of global GDP (relative to the baseline 2030 projection), as its NIIP deteriorates from -71% to -75% of US GDP over the five-year horizon.

We also considered a scenario in which interest rates on outstanding debt obligations increase by the same 400bps for all countries in the sample—not just "high-debt" economies—which we will refer to as the "symmetric" rate increase scenario. In this scenario, there continue to be investment income flows (at the higher rates) based on the 2025 outstanding debt stock, but no change in the return differentials contributing to investment income flows. The projected changes in NIIP-debt positions have a 0.97 correlation with the projected changes under the baseline scenario—so these results are not shown separately in the figures. For comparison, the correlation between the 2030 baseline projection and our "asymmetric" rates increase (on only high-debt countries) was only 0.60. In the symmetric rate increase scenario, global imbalances increase by about half of that in the asymmetric rate increase scenario (both relative to the baseline 2030 projection), suggesting that the asymmetry of interest rate adjustment (when focused on more indebted economies) is as important in generating the increase in global imbalances as any general increase in rates.

In summary, global imbalances are likely to increase in the future if there are no adjustments, as shown in our baseline scenario. An increase in global interest rates from 2025 levels will further exacerbate this projected increase in global imbalances—especially if the increases are larger in more indebted economies (which tend to have more negative NIIPs). Granted, such rate increases are likely to coincide with other asset price movements which could counteract or aggravate these effects (such as the adjustments in exchange rates or equity prices modelled in the last two sections). Nevertheless, this scenario allows us to clarify the various channels through which higher interest rates affect imbalances and compare the potential magnitudes to other scenarios.

D. Scenario 4: Reduction in Trade Imbalances

In contrast to the previous three scenarios, which focus on the impact of financial shocks on NIIPs, our final scenario examines the impact of adjustments through trade flows. We assume a sharp reduction in trade imbalances—which could result from an increase in tariffs, an increase in other trade restrictions, any type of event which sharply reduces trade (i.e., military conflict, weather events, a pandemic, etc.), or movements in exchange rates (such as the USD depreciation scenario in **Section VI.A,** which would likely reduce the US trade deficit). We again compare the evolution of NIIPs through 2030 under two scenarios: (i) our baseline projection (described in **Section VI.C**), which assumes all trade balances (surpluses and deficits) remain at their 2025 levels; and (ii) a projection that assumes absolute trade balances as percent of domestic GDP contract to half of their 2025 levels in each country and remain at these lower levels over the following five years (2026-2030).

Figure 16B shows the projected NIIPs for each country in our sample at end-2030 under this scenario of reduced trade imbalances (in blue diamonds) — while continuing to report the baseline scenario in 2030 (red squares) and actual values for 2025 (yellow bars). This scenario has a minimal impact on the NIIPs of many countries, but substantial impact for several countries where external imbalances stem primarily from trade. For example, many of the countries whose NIIPs have benefited from large and positive accumulated trade flows over 2010-25 (**Figure 8**) are projected to suffer the largest deterioration in their NIIPs (all expressed relative to 2030 domestic GDP). This includes Norway (-31pp relative to baseline), Netherlands (-27pp) and Switzerland (-22pp). The countries with the largest projected improvements in their NIIPs are the United States (+8pp), India (+6pp) and Belgium (+5pp). For countries with large NIIP stocks in 2025 (positive or negative), however, the impact on NIIPs from a sharp decline in trade imbalances is often modest. For example, even if the US trade balance halves from 3% to 1½% of GDP for five years, the US NIIP would only improve from -71% to -63% of GDP—thereby remaining deep in negative territory.

The last bar of **Figure 17** shows the impact of this reduced trade scenario on aggregate global imbalances (as a percent of global GDP). Global imbalances would decline to 41% of global GDP in 2030, down from 46% of global GDP in the baseline scenario. Most of the adjustment for the NIIP debtors in the sample occurs from the improvement in the US NIIP (by nearly 2pp of global 2030 GDP) and most of the reduction in the NIIP creditors occurs from the decrease in China's NIIP (-1.7pp of global 2030 GDP). Despite this reduction in the overall imbalances, the US share of the sum of absolute NIIP positions would remain little changed compared to the baseline and interest rate scenarios—still constituting 39% of the sum of absolute imbalances in 2030.

This scenario modelling the impact of a sharp reduction in trade imbalances has important implications. First, it provides a useful benchmark of the impact of a real economy-driven adjustment to compare with the other three financial factor-driven scenarios. We expand on this comparison in the next subsection. Second, it highlights that a very large adjustment in trade imbalances (reduction of all imbalances by half) would be required to have even a modest impact on NIIPs and global imbalances overall. For an adjustment in trade balances to have a material impact on global exposures, the adjustment in trade imbalances would have to persist for a number of years. This implies that structural, not cyclical, forces contributing to any elevated levels of trade imbalances would need to shift for accumulated global imbalances to decline meaningfully.

E. Scenario Synopsis: Comparing Magnitudes and Potential Macroeconomic Impacts

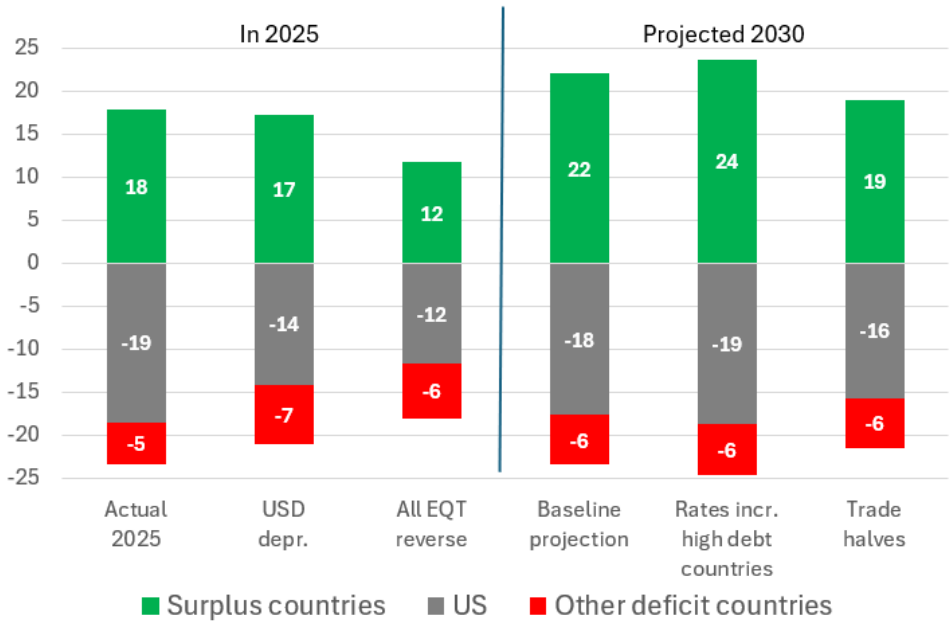
This section compares the impacts of the scenarios discussed above in order to assess the relative magnitudes and the potential contribution each could play towards any adjustment of global imbalances (and corresponding reduction in the US debtor position). It is worth reiterating the important point that if any of these scenarios actually occurred, there would likely be simultaneous adjustments through other channels—such as currencies and other asset prices—which could build on or counteract the initial effects. This comparison of individual adjustment mechanisms, however, highlights how each channel implies very different distributions of the adjustment across countries—with some countries much more negatively (or positively) affected based on the specific shock.

To begin, **Figure 18** compares the overall magnitude of global imbalances (as well as the roles of creditors, the United States and other debtors) for a subset of the scenarios outlined above: (1) a

20% USD depreciation; (2) a correction in global equity markets reversing any gains/losses since 2019; (3) a 400bps increase in the interest rates on outstanding debt obligations paid by high-debt countries over five years; (4) a reduction in trade imbalances by half over five years. For the first two scenarios, which involve an immediate adjustment in the stock of imbalances (i.e., to exchange rates and equity valuations), we compare the actual stock of imbalances in 2025 against that after the hypothetical shock. For the latter two scenarios, which involve changes in imbalances over five years (i.e., to interest rates and trade flows), we calculate the stock of imbalances that would accumulate after five years and compare this to the baseline (i.e., "no-shock") projections for 2030. Each of the six columns sums across the imbalances of a consistent sample of the 28 countries analysed.

The most striking result in **Figure 18** is the relative persistence of the existing stock of global imbalances in most scenarios. The hypothetical scenarios are all calibrated as major shocks, but in most cases there is little impact on aggregated imbalances. Moreover, if there are no major changes to current trade and income flows nor adjustments in asset prices (as modelled in the baseline scenario for 2030), imbalances are unlikely to decline—and forecast to continue to grow. Moreover, any interest rate increases (as have occurred since the sample ends in 2025), would generate a further widening in imbalances.

Figure 18
Comparing the Magnitudes of Adjustment Scenarios



Notes: The figure combines the results of the scenarios discussed in Sections VI.A—VI.D, with details on these scenarios in the text and notes to Figures 14-17. Aggregated NIIP levels for creditor and debtor countries are relative to global GDP in 2025 (left) or 2030 (right). "Baseline projection" corresponds to a scenario with no change in trade balances and investment income flows until 2030, discussed in Section VI.C. "All EQT reverse" corresponds to the scenario in Figures 14 and 15 for an adjustment in all equity markets that reverses their gains/losses over 2019-2025. The "Rates incr. high debt countries" scenario refers to the asymmetric case of interest rate increases only for high-debt country liabilities.

Table 2: Changes in NIIPs Across All Scenarios
% of Domestic GDP

	2025 scenarios relative to 2025 actual			2030 scenarios				
	US dollar depre-ciation	All equity markets reverse		Baseline scenario relative to 2025 actual	Rates increase for high debt countries relative to 2030 baseline	Trade halves scenario relative to 2030 baseline		2025 actual NIIP level
US	16.6	26.1		0.1	-4.0	7.7		-71
NZ	-13.5	-17.7		-5.5	-7.4	1.6		-44
AU	-11.0	-28.6		-3.8	4.9	-0.6		-23
CZ	-8.2	29.2		4.4	7.7	-14.5		-10
GB	-16.3	-39.0		-11.9	-7.8	3.2		-4
KR	-7.0	-11.2		27.1	3.3	-13.6		47
CA	-20.4	-47.3		-15.6	-1.2	2.2		53
SE	-12.5	-56.7		26.0	10.8	-9.4		64
JP	-4.6	-12.9		25.7	1.2	1.6		81
CH	-11.8	-84.9		29.6	23.2	-21.6		115
NO	40.4	-145.1		40.5	-29.1	-30.7		395
ES	-20.3	7.6		27.0	-4.4	-9.6		-47
FR	-8.5	-19.6		4.6	-7.9	1.0		-31
IT	-2.8	-15.5		4.3	-4.5	-4.9		16
NL	-49.9	-61.6		42.6	26.4	-26.5		49
BE	-1.0	-60.6		-20.5	-3.2	4.9		54
DE	10.3	-17.6		18.4	16.0	-6.2		86
BR	-10.1	7.2		-3.1	0.0	-1.0		-49
MX	-9.9	6.4		-13.0	2.6	1.7		-35
HU	-25.1	32.1		10.5	7.3	-11.0		-34
PL	-12.9	20.0		-0.9	5.7	-6.7		-31
TR	-3.8	13.6		-4.1	0.9	1.0		-23
ID	-4.9	3.7		4.8	4.4	-4.7		-19
IN	-4.3	6.2		-15.3	1.4	5.8		-7
CN	0.5	-4.1		12.0	2.0	-10.0		21
ZA	5.1	-5.6		-8.3	2.7	-4.7		28
RU	5.6	-4.1		13.3	9.7	-6.5		42
SA	N.A.	-16.7		-1.6	6.1	-4.2		56

Notes: This table combines a subset of the results from the scenarios in Figures 14-17. The first two columns show NIIP changes as a % of 2025 GDP relative to the actual value in 2025. The third column shows the NIIP change over 2025-2030 relative to 2030 GDP in the baseline scenario (described in the text), and the fourth and fifth columns show the NIIP changes relative to this 2030 baseline as a % of 2030 GDP. The "All equity markets reverse" is the scenario in Figures 14 and 15 for an adjustment in all equity markets that reverses their gains/losses over 2019-2025. The "Rates increase" scenario refers to the asymmetric case of interest rate increases for debt liabilities in high-debt countries only. See Appendix Table 1 for list of countries included in sample and corresponding codes.

Also striking is that the scenarios modelling the adjustments most often discussed in policy circles—e.g. a USD depreciation or reduction in trade imbalances—suggest these changes would only contribute to a small decrease in overall imbalances (especially if not combined with other policies). Even a halving of trade imbalances over five years—however accomplished—would only lead to a modest reduction in aggregate imbalances and the US debtor position. Instead, the impact of all these scenarios on global imbalances is overshadowed by the scenario most negative for the global economy—the scenario modelling a sharp correction in global equity markets. This shock would generate the largest reduction in global imbalances and the US debtor position, by far, but be painful for the US economy despite the improvement in its NIIP (through the corresponding losses from domestic equity holdings and revised growth prospects) as well as for much of the rest of the world. Creditor economies, in particular, would experience a sharp decline in their international net worth (on top of any losses in their domestic markets). Debtor countries other than the United States would experience no significant reduction in their negative NIIPs. Moreover, any such rapid correction in equity prices could trigger other financial vulnerabilities (as discussed in more detail below). It is not surprising this form of adjustment is not promoted as part of the policy discussion, albeit officials should be aware of the spillover implications of this type of shock for economic and financial stability, especially if any such adjustment occurred quickly.

These aggregate effects of each scenario on global imbalances—even those with modest effects—conceal important heterogeneity across individual economies. While **Figures 14** and **16** showed the effects of the different scenarios on the NIIP levels and their equity/debt components of the countries in our sample, **Table 2** shows the corresponding changes in NIIP projections to better highlight how the adjustment costs are distributed. The colour scale highlights countries with deteriorating (red) versus improving (green) NIIPs. As in **Figure 18**, we show the immediate re-pricing effects of the equity and USD depreciation scenarios relative to actual 2025 NIIP levels on the left, and the slower accumulated changes from higher interest rates and narrower trade imbalances up until 2030 relative to a 'no change' baseline on the right. Countries are listed in three blocks: (i) advanced economies outside of the euro area at the top; (ii) the six euro area members in the middle; and (iii) emerging markets at the bottom. Within each group, countries are listed based on their actual 2025 NIIPs, starting with the largest debtor positions (i.e., the United States at the top of the first group).

These changes in country-level NIIPs accentuate several key results from the series of analyses above. First, even scenarios that have a modest impact on global imbalances overall would have a considerable impact on many individual economies. For example, the 2025 scenario with the smaller impact—an immediate 20% USD depreciation—would immediately generate an improvement in Norway's NIIP of 40% of GDP and deterioration in that of the Netherlands of -50% of GDP. Second, scenarios that involve a meaningful improvement in the US NIIP correspond to large reductions in net worth in much of the rest of the world. More specifically, the largest improvements in the US NIIP are in the scenarios with an equity price decline and dollar depreciation (left two columns), where all countries other than the US are coloured red in at least one of these scenarios (and in many cases both).

Third, the impact of different adjustment mechanisms is highly heterogeneous—with some countries seeing an improvement in their NIIPs and others a deterioration for the same shock. For example (and sticking with the same two countries as above), the scenario of increased interest rates in high debt countries (which was the only scenario to increase rather than reduce imbalances)—would correspond to a loss of 29% of 2030 GDP in Norway and gain of 26% in the

Netherlands—a particularly striking contrast for two countries that both have large positive NIIPs in 2025. Fourth, scenarios generating a meaningful reduction in the US debtor position (a requirement for a meaningful reduction in global imbalances) can correspond to gains or losses in other countries depending on which shock causes the adjustment. For example, Norway's already substantial creditor position improves by 40 pp in response to the USD depreciation scenario, but deteriorates by 145pp in the equity reversal scenario (both relative to 2025 GDP). Or, moving in the opposite direction, Hungary's NIIP falls by 25pp in the dollar depreciation scenario, but improves by 32pp in the equity reversal scenario. Additional analysis (not shown) provides more insights on why the effects on NIIPs are heterogeneous across countries and scenarios. On the one hand, the non-US countries that are more likely to experience a positive impact from a USD depreciation (the cells in the first-column coloured in dark green, i.e., Norway, Germany and Russia) are those where a very large positive initial NIIP offsets the adverse impact of the depreciation via the currency mismatch on their external balance sheets (i.e., from more USD assets than USD liabilities).[64] On the other hand, a large net initial stock can create large losses when asset prices fall, and even more so when foreign (US) equity prices fall more than local equity prices.

A fifth noteworthy result from Table 2 is that for the "flow" scenarios based on projections through 2030 (i.e., for rates increasing and trade halving), the effects (and colours) are more muted and effects more evenly spread around the world. In some sense this is surprising, as these scenarios also involve large adjustments—and these adjustments are assumed to persist for five years—in contrast to the 2025 scenarios that involve a one-time adjustment in financial markets. This more muted effect, however, is less surprising when taking into account that the US NIIP is less affected in these five-year scenarios, such that the spillovers that need to be absorbed in other economies are not as large. Sixth, the distinct effects for most advanced economies versus emerging markets is starkest under the scenarios for higher interest rates and an equity market adjustment. An increase in interest rates causes the NIIPs of most emerging markets to improve and that of more than half of advanced economies to deteriorate; this reflects the higher debt levels of most advanced economies (despite the higher risk premia paid by many emerging markets). A global equity market correction causes much larger and more widespread losses in most advanced economies, with more muted (and more often even positive) initial effects in emerging markets; this reflects the greater equity exposures of most advanced economies—particularly to US markets.

Finally, the trade adjustment scenario (fifth column) is worth highlighting as it has received substantial attention in policy discussions. If some combination of policies could reduce trade imbalances by half, this would reverse the further widening of global imbalances forecast in our baseline scenario for 2030 (third baseline column), but fail to reduce imbalances relative to their 2025 levels. This accentuates the persistence implicit in these imbalances, particularly in countries where current account dynamics reflect financial factors more than trade flows (such as the role of investment income for Japan and Brazil as analysed in Section V.C.). For countries where current account imbalances largely reflect financial flows related to the existing large stock of imbalances, trade adjustments will do little to stem the further accumulation of these external imbalances.

[64] Note that this pattern depends on the currency chosen as a global numeraire being the US dollar and would reverse if imbalances were expressed in the different domestic currencies. Given that external wealth should be accumulated to support future external consumption (for an intertemporal budget constraint to hold), it seems reasonable to express that wealth in a currency dominant both in international goods and financial assets.

What could be the potential macroeconomic and financial stability effects of the different scenarios and corresponding adjustments in global imbalances? In particular, what are the implications of a reduction in the US debtor position and the associated declines in most countries' external net worth in the scenarios driven by a US equity market correction and US dollar depreciation—the scenarios which correspond to the largest immediate reduction in imbalances?

On the one hand, these types of financial market adjustments that correspond to automatic international risk sharing (particularly through equity markets) could be a smoother and more efficient adjustment mechanism than other alternatives. Similar to the financing of corporations, equity exposure (where costs are automatically shared) provides better protection against shocks than debt (which requires continued fixed payments). More broadly, any adjustment through exchange rates and relative returns that generates valuation effects (across any asset classes) can act as a shock absorber for some countries (such as the US and UK, as discussed in Section V), as wealth is automatically transferred from the country with stronger economic performance to that with weaker performance. In fact, this type of automatic risk sharing has been occurring and is central to the widening in imbalances since 2010—which corresponded to the stronger relative performance of the US economy and equity market (**Figures 5 and 9**).

On the other hand, these types of adjustments through equity prices and exchange rates could impact many economies negatively through several channels and occur quickly, generating additional negative consequences. When adjustments occur through asset prices (including exchange rates), they are often rapid and nonlinear. As a result, declines in the prices of assets issued by the residents of a given country (e.g. the US) are likely to have negative effects on the balance sheets of internationally active financial institutions in other countries, especially those with large cross-border asset holdings. Even if the magnitudes of the asset price adjustments appear manageable relative to the overall sizes of the economies hosting those financial institutions, they could still trigger fire sales and other amplification effects that generate financial stability risks, particularly if any losses accrue to financial institutions that are very price sensitive (e.g., due to high leverage and large degrees of maturity and liquidity mismatches).

These risks have likely grown as a result of structural changes that have taken place in the global financial system over the past few years—including the "rewiring" highlighted in **Figure 5B**.[65] Most critically, a larger share of international portfolios are held by more price-sensitive investors, including certain types of non-bank financial institutions (NBFIs), which tend to be less well regulated and rely on high leverage and flighty short-term funding.[66] Declines in the values of those institutions' foreign assets would decrease their net worth, which could impair their ability to provide credit to households and firms in their home countries.[67] This would, in turn, lead to a

[65] For excellent discussions of this shift in the structure of sovereign bond markets to a global system centered on non-bank financial institutions, US Treasuries, FX derivatives and repo-based leverage, see Shin (2026), Hernández de Cos (2025) and Bruno et al. (2026).
[66] The IMF Portfolio Investment Positions (PIP) data on the cross-border bond holdings of NBFIs suggests that NBFIs accounted for roughly two-thirds of all cross-border bond holdings (excluding official reserves) as of end-2023 (BIS, 2025). See OECD (2026) for information on changes in global debt markets, and Mann (2026) for analysis of how changes in the investors holding UK bonds could impact financial stability.
[67] See Adrian and Shin (2010), Gobbi and Sette (2015), Michelangeli and Sette (2016), and Gambacorta and Shin (2018).

decline in consumption and investment, as well as to a broader tightening of financial conditions, ultimately slowing overall macroeconomic activity in those countries.[68]

In addition to the above channels, which operate through the balance sheets of financial institutions, declines in US asset prices could also have negative effects on other economies through international wealth effects. A number of papers estimate the impact of exogenous shocks to financial wealth and find that such shocks have significant effects on consumption, demand, employment, output, and inflation, although the magnitudes of these estimated effects vary substantially.[69] Despite the large body of literature quantifying wealth effects in a domestic context, however, there is much more limited research on the impact of *international* wealth effects.[70] Shocks to international wealth would likely have a multiplier effect that is in the lower range of the estimates generated by the literature quantifying wealth effects in a domestic context. The majority of the international wealth effects triggered by a potential decline in US equity prices or a US dollar depreciation would materialize through valuation effects, which would generate primarily *unrealized* gains for non-US investors. These effects from such (unrealized) gains tend to be smaller than the wealth effects generated by realized gains. Furthermore, international wealth effects are more likely than domestic wealth effects to accrue to high net-worth individuals, who have a lower marginal propensity to consume. That said, the cross-country impact on the wealth of economic agents in many countries outside the US is projected to be very large in the above scenarios. Thus, even if the respective multipliers are smaller than for domestic wealth effects, they could still have a meaningful impact on the broader economy.

Overall, a better understanding of the impact and distribution of these types of international spillovers through financial conditions and wealth effects is critically important to understand the risks around global imbalances. The exposures, transmission mechanisms and vulnerabilities are likely to vary substantially across countries, and a more detailed understanding of these international exposures will be important to augment the different scenario analyses presented above and assess the overall implications for each country's specific vulnerabilities.

VII. Summary and Conclusions

As international exposures have grown, countries have become more vulnerable to spillovers through the cobweb of global imbalances. Since these exposures are increasingly driven by financial factors—such as relative returns and exchange rates—spillovers are becoming more

[68] See Bernanke and Blinder (1992); Gilchrist and Zakrajšek (2012), BIS (2025) and Lombardi et al. (2025).
[69] Estimates of the marginal propensity to consume out of a surprise wealth gain generally range from 3% to 16%, e.g., Dynan and Maki (2001), Chodorow-Reich, Nenov and Şimşek (2021), Di Maggio, Kermani and Majlesi (2020), and Andersen et al. (2024). McKinsey Global Institute (2026) analyses the growth in global household wealth, partly linked to larger equity market exposure.
[70] Atkeson et al. (2025) finds that recent valuation changes in US international equity positions generated a negative welfare impact on US households, primarily due to recent increases in the foreign ownership of US corporate equity, but do not analyse wealth effects for the rest of the world. Meyer (2025), assesses the rest-of-the-world welfare implications from US equity outperformance or a sustained dollar appreciation, but in a model where the only financial channel is through realized gains from portfolio rebalancing. Several other papers document the wealth effects that occur through NIIP adjustments, but do not examine their impact on domestic economies, such as Jiang et al. (2024) and Bertaut et al. (2024).

sensitive to asset price movements. At the same time, as the size of these exposures has grown, they have become more entrenched, partly due to the persistent and growing flows of international investment income on these existing stocks. Countries need to understand the risks around these imbalances as they are likely to persist for an extended period and interact with changes in the structure of financial markets that could magnify international spillovers.

The scenarios estimated in the last section of this paper provide an example of the types of analysis that individual countries could be doing to better understand their specific macroeconomic and financial vulnerabilities related to global imbalances. These scenarios are only rough, back-of-the-envelope calculations; a thorough analysis would require much more detailed country information (particularly on which sectors of the economy hold the international assets and liabilities and how they would respond to various shocks). These scenarios also only consider the impact of one type of adjustment at a time—and not the likely responses in other asset prices (e.g., the dollar depreciation scenario does not incorporate any adjustment in bond yields).[71] Nevertheless, they provide useful guidance on what types of risks countries should be assessing—and preparing for. For example, a correction in US equity markets (potentially around a repricing of AI and tech-related stocks), could have substantial negative effects in most countries, unwinding increases in net worth that have boosted growth and generating financial stability risks if the entities holding these equity exposures do not have strong balance sheets. A US dollar depreciation could also generate meaningful negative spillovers in a number of countries—albeit with more heterogeneous effects based on each country's currency exposures.

These scenarios also highlight the persistence of global imbalances—even in the face of substantial (hypothetical) shocks to asset prices and trade flows. If trade and international return differentials remain at their 2025 levels, and there are no changes in exchange rates or other asset price movements, global imbalances will continue to increase. If interest rates continue to increase—particularly for more highly indebted countries—this will further aggravate this growth in imbalances. Even the adjustments discussed in policy debates to reduce imbalances—including a sharp and persistent reduction in trade imbalances (through tariffs or other restrictions) or considerable US dollar depreciation—would only generate modest reductions in these imbalances.

Granted, some types of international imbalances are part of a well-functioning global economy, and there is no level of imbalances that necessarily merits an immediate policy response or that countries should target. Imbalances in international investment positions may also be less of an immediate concern than trade imbalances—which more directly affect employment and create more tangible challenges for adjustment and politics. Bruno et al. (2026) provides a nuanced discussion of the reasons why policymakers should—and should not—worry about various measures of global imbalances. Wherever one stands in this debate, the analysis above suggests that there are scenarios under which reducing imbalances could generate significant adjustments in cross-border financial exposures, international investors' net worth, and domestic economic growth.

[71] Itskhoki and Mukhin (2025) provide an example of the type of general equilibrium model that would be required. They analyse the optimal macro tariff and assume that an increase in US tariffs causes the US dollar to appreciate, reducing the US NIIP position and requiring an improvement in the US trade balance in order for the intertemporal budget constraint to hold.

Therefore, a top priority for future research should be to understand how the spillovers through imbalances impact individual economies. This paper shows that the immediate transmission of shocks varies widely across countries based on the nature of the shock and characteristics of the country's international exposures. But what happens next? Are the institutions holding international assets able to withstand a sharp decline in the value of their holdings—whether resulting from currency movements or an adjustment in equity or bond prices? Would any such developments trigger fire sales in other asset classes (e.g., if a financial institution needs to meet margin calls or regulatory requirements) or reduction in spending (e.g., if retirement accounts are depleted)? Can the institutions with foreign currency liabilities withstand a liquidity shock or higher payments on these liabilities (e.g., if interest rates increase)?[72] There are many more threads to the cobweb of imbalances that need to be mapped for each economy in order to fully unravel the corresponding vulnerabilities.

[72] Bruno et al. (2026) and Mann (2026) are examples of this type of analysis for the United States and United Kingdom, respectively. They show how the ownership of sovereign debt has shifted to more price elastic investors (i.e., non-bank financial institutions), corresponding to faster adjustments in portfolio holdings in response to various shocks, which can, in turn, amplify movements in yields and trigger deleveraging when funding conditions tighten or risk appetite deteriorates.

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Appendix A
Data Caveats: Reliability of International Balance of Payments Statistics

An important consideration for any analysis of international investment positions is the reliability of the underlying data. In that context, there are several important cautions and caveats associated with the International Balance of Payments (BoP) Statistics used in this paper. This appendix provides more information on seven of the issues that are most frequently raised in this literature, with additional information in Avdjiev et al. (2016), Guvenen et al. (2022), Chari and Milesi-Ferretti (2025), Milesi-Ferretti (2024, 2026), Bayoumi and Gagnon (2025, 2026), and Bruno et al. (2026).

First, there are important measurement issues for the international FDI (asset and liability) positions of the United States, as discussed in detail in Milesi-Ferretti (2026), Bayoumi and Gagnon (2026), and Bruno et al. (2026). Of particular concern recently is that the series on US FDI liabilities were likely overstated because US FDI positions were estimated using inputs based on the evolution of U.S. stock prices. The post-2019 run-up in US stock prices, however, has been mainly driven by tech ("new economy") companies, whereas US FDI liabilities tend to be much more heavily weighted towards more traditional ("old economy") sectors. In April 2026, however, the Bureau of Economic Analysis announced they would release revised estimates (in June 2026) of the market value of US FDI. These revisions appear to address the prior concerns and were subsequently incorporated into the IMF statistics used for this paper.[73] This reduces estimates for US FDI liabilities in 2025 by about 30% (from $20.3 trillion to $14.5 trillion) and improves the US NIIP position at end-2025 from -90% to -71% of GDP. This adjustment is in line with corrections suggested in previous research (e.g., Bayoumi and Gagnon, 2026; Milesi-Ferretti, 2026).

Second, and as discussed in the main text, many countries do not have sufficient data on the key series required for our NIIP decompositions. This is a major factor in our selection of the 28 economies that comprise our benchmark sample. The most common issue is the unavailability of data on the currency composition of external positions, on income flows by asset class (which constrains our decompositions of investment income flows) and on capital flows by asset class (which constrains our decompositions of valuation effects). Also, several countries do not differentiate between debt and equity in their portfolio investment positions.

Third, the rates of return on US international equity (asset and liability) positions are likely mismeasured because the measurement of income on foreign direct investment and portfolio equity is distorted by the profit-shifting of multinational corporations (Guvenen et al., 2022). Adjusting for such distortions reduces the rates of return on US FDI assets and liabilities, but the reduction is greater for US FDI assets, resulting in a smaller (but still positive) gap between the two series (Bayoumi and Gagnon, 2025).

Fourth, Setser (2025) shows that the official data understates China's trade surplus and primary investment income flows, both of which correspond to a higher current account surplus. Changes in the statistical method applied by China have increased the gap between the trade surplus as reported in their customs data since 2021 as compared to other sources. At the same time, China's reported primary income on its large foreign asset position is much lower than would occur given

[73] For details of this update, see Hoang and Oka (2026).

global returns. Setser calculates that adjusting for these two factors leads to a faster increase in China's current account surplus since 2020, such that it was 5.6% of GDP in 2025 instead of the reported 3.4% of GDP (according to official figures).

Fifth, Lane and Milesi-Ferretti (2001) have argued that monetary gold should not be included in international accounts because it does not constitute a claim on foreigners. According to the latest estimates, the inclusion of monetary gold improves the 2024 US NIIP by $682 billion (Bayoumi and Gagnon, 2025).

Sixth, countries have different methods of accounting for the treatment of overseas contract manufacturing, which creates an issue comparing components of the current account. This could lead to underreporting of the US trade and current accounts, but has little impact on reported rates of return on cross-border assets.

Last, but certainly not least, a well-known limitation of the classical International Balance of Payments (BoP) Statistics is that it is compiled using a residence-based (as opposed to a nationality-based) methodology.[74] While this assumption is reasonable in some instances, it is often violated in the modern highly interconnected global financial system, in which the activities of multinational corporations stretch across multiple national borders (Avdjiev et al., 2016). For example, when multinational corporations issue bonds through their subsidiaries located in offshore financial centres, this results in an underestimation of the external indebtedness of the countries in which these corporations are headquartered and an overestimation of the external indebtedness of offshore financial centres (Avdjiev et al., 2014; Coppola et al., 2021).

In contrast to the residence-based perspective, the nationality-based perspective allocates economic agents and entities based on the country of their headquarters (as a proxy for the main decision-making unit). There is now a large body of work that attempts to generate nationality-based counterparts to the classical residence-based BoP statistics (Coppola et al., 2021; Beck et al., 2024; Aldasoro et al., 2026; Tabova and Warnock, 2025). Nevertheless, there is still no comprehensive nationality-based counterpart to the BoP residence-based data that includes all major IIP components (FDI, PIE, PID and OID). The alternative is to focus on one country or a small set of countries with the requisite bilateral data and asset price information,[75] but this approach would not allow us to estimate the "cobweb" of global relationships needed for our analysis of the cross-country spillovers and vulnerabilities through imbalances.

These caveats and shortcomings with the BoP data are all important to understand and deserve serious consideration. Some of these adjustments will affect the magnitude of our descriptive statistics and some of our estimates, but the broader patterns, relationships and key results should remain unchanged. As discussed in Section II.D, the issue which would likely have the greatest impact on our analysis is the recent overstatement of US FDI liabilities and the corresponding NIIP debtor position—which we are able to adjust for directly with the newly revised US national data.

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[74] The residence-based perspective is based on the "triple coincidence" assumption, which stipulates that (i) the GDP area, (ii) location of decision-making units, and (iii) the currency area coincide.

[75] This approach requires good data on bilateral positions and assumptions about which asset price indices, interest rates and dividend payment schedules best represent these bilateral positions' valuation and associated income flows.

Appendix B
Decomposing Investment Income and Valuation Changes

The decomposition of investment income, valuation changes, and overall changes in the NIIP shown in equations (5) through (7) are based on the framework in Forbes, Hjortsoe and Nenova (2017), hereafter referred to as FHN. FHN shows that four sets of financial variables are important in understanding vulnerabilities related to current account deficits: the existing stock of international assets and liabilities, the exchange rate indices reflecting the currency composition of the country's assets and liabilities, the composition of each asset and liability class (*c*), and the nominal rate of return and capital gains on last period's foreign assets and liabilities. Using the framework in equations (5) through (7) to estimate the contribution of each of these variables, however, is not straightforward. Previous academic literature has taken two different directions, which FHN and the decomposition below unifies within the framework used in this paper. This decomposition differs from that in FHN as we estimate decompositions based on the USD as the numeraire (instead of local currencies) and we incorporate adjustments for official reserve assets (which were less of a concern in FHN as it focused only on advanced economies).

One strand of literature (including Gourinchas and Rey, 2007; Curcuru et al., 2008 and Forbes, 2010) has focused on decomposing different countries' net foreign returns into a return effect and a composition effect, (i.e. focusing on the $\left(r_{i,t}^{A,c}\right) - \left(r_{i,t}^{L,c}\right)$ for each asset/liability and composition c in equation (7)). The return effect captures whether a given country is paying more or less on its foreign liabilities than it receives on its assets of the same type. A positive net return effect has been described as a country's "exorbitant privilege". The composition effect, on the other hand, captures whether a country's international portfolio yields more based on the types of investments in its portfolio (and not the returns for each type). For example, a country could have a higher average yield on its international portfolio because it has a higher share of assets (than liabilities) in equities and FDI, which tend to yield more than bonds and cross-border bank loans and deposits.

The second strand of literature has focused on the role of exchange rate adjustments, and especially how they can determine valuation changes based on the currency composition of assets and liabilities. This literature, led by Lane and Shambaugh (2010) and Bénétrix , Lane and Shambaugh (2015), has pointed out that exchange rate movements play a role in valuation changes if a country has a nonzero initial net position or if the currency composition of its assets and liabilities differs. For instance, countries that issue much of their liabilities in their own currency (such as the US), but hold foreign assets denominated in other currencies, can benefit substantially from a depreciation. These exchange rate effects can exacerbate or mitigate the effects of certain shocks on a country's external position. Not explicitly accounting for these exchange rate effects when constructing measures of the composition and return effects can make the latter two very volatile and less informative about the underlying structure of a country's vulnerability.

For our analysis, we unify these different approaches and build more closely on the framework developed in equations (5) through (7). This allows us to provide a decomposition of investment income and valuation changes into all four of the different financial determinants simultaneously (i.e. the existing stock of international assets and liabilities, differences in exchange rates across assets and liabilities, differences in the composition of these portfolios, and differences in returns and capital gains—expressed in the currency of underlying assets' currency of denomination—on

these positions.) This more detailed decomposition, however, requires some additional calculations and assumptions.

First, we begin by calculating the effect of the initial international stocks on investment income and on valuation effects, the "stock effect". This effect captures any net income or valuation changes that the previous period net asset positions would have generated stripping out the impact resulting from assets and liabilities yielding different returns (both due to composition and return effects) and from exchange rate movements differing across assets and liabilities. The stock effect is thus computed assuming that rates of return and capital gains as well as exchange rate movements are identical across assets and liabilities. This yields an equation to derive the initial stock effect for the net investment income as:

$$INVINC\_stock_t \equiv (A_{t-1} - L_{t-1}) \left(\frac{r_t^A + r_t^L}{2}\right) \left(\frac{1}{2\Delta ER_{i,t}^A} + \frac{1}{2\Delta ER_{i,t}^L}\right). \quad \text{(B1)}$$

The initial stock effect for valuation changes can, in turn, be written as:

$$\Delta VAL_{stock_t} \equiv (A_{t-1} - L_{t-1}) * \left[\left(\frac{kg_t^A + kg_t^L}{2}\right) \left(\frac{1}{2\Delta ER_{i,t}^A} + \frac{1}{2\Delta ER_{i,t}^L}\right) + \left(\frac{1}{2\Delta ER_{i,t}^A} + \frac{1}{2\Delta ER_{i,t}^L} - 1\right)\right]. \quad \text{(B2)}$$

All the variables are defined as before[76]. The only notable difference is that, to simplify these calculations, we can use aggregated exchange rates and returns on assets and liabilities (which already incorporate any currency mismatch between both debt and equity assets versus liabilities), denoted with subscript *A* or *L*, rather than the asset-class specific *A,c* or *L,c*. ER_0 denotes the base period exchange rate.

Second, the exchange rate effects on net investment income and valuation changes can be expressed as:

$$INVINC\_er_t \equiv \left(\frac{A_{t-1} + L_{t-1}}{2}\right) * \left(\frac{r_t^A + r_t^L}{2}\right) * \left(\frac{1}{\Delta ER_t^A} - \frac{1}{\Delta ER_t^L}\right), \quad \text{(B3)}$$

$$\Delta VAL\_er_t \equiv \left(\frac{A_{t-1} + L_{t-1}}{2}\right) * \left\{\left(\frac{kg_t^A + kg_t^L}{2}\right) * \left(\frac{1}{\Delta ER_t^A} - \frac{1}{\Delta ER_t^L}\right) + \left(\frac{1}{\Delta ER_t^A} - \frac{1}{\Delta ER_t^L}\right)\right\}. \quad \text{(B4)}$$

[76] When applying these decompositions to each country, the foreign currency rates of return on assets are calculated from Balance of Payments and NIIP data as follows: $r_t^S = \frac{F_t^S * ER_t^S}{S_{t-1} * ER_{t-1}^S}$ and $kg_t^S = \frac{S_t * ER_t^S - S_{t-1} * ER_{t-1}^S - CF_t^S * ER_t^S}{S_{t-1} * ER_{t-1}^S}$, with the *S* superscript identifying the specific asset or liability which generate these returns. S_t is the stock of assets or liabilities in US dollars; F_t^S is the corresponding current account income flow and CF_t^S is the associated financial account capital flows. These definitions implicitly assume no hedging, i.e. every exchange rate movement is reflected fully in the stocks of foreign assets and liabilities and the exchange rate impact on different stocks only differs depending on their currency of denomination. In reality, it is likely that some asset holdings are hedged against exchange rate movements and the exchange rate effect is not full, at least in the short run. We are not aware of any data to quantify these hedging effects, but if they are substantive, the decompositions here might be overestimating the effect of the exchange rate and as a result underestimating the effects of the currency-of-denomination excess returns.

In line with previous literature, we also compute the effect from the currency-of-denomination excess yield and excess capital gain. These can be decomposed following the "exorbitant privilege" literature into return and composition effects. To do so, define $\alpha_{c,t}$ as the share of a given asset *c* in a country's total assets in period *t,* and $\lambda_{c,t}$ as the share of a given asset *c* in a country's total liabilities in period *t*, holding the exchange rates associated with all asset classes fixed, and starting from a counterfactual balanced net stock position.

The third channel, the composition effect, for net investment income and valuation changes is then:

$$INVINC\_comp_t \equiv \left(\frac{A_{t-1}+L_{t-1}}{2}\right) \sum_c [\left(\alpha_{c,t-1} - \lambda_{c,t-1}\right) * \frac{\left(r^A_{c,t}+r^L_{c,t}\right)}{2} \left(\frac{1}{2\Delta ER^{A,c}_{i,t}} + \frac{1}{2\Delta ER^{L,c}_{i,t}}\right)] \quad \text{(B5)}$$

$$\Delta VAL\_comp_t \equiv \left(\frac{A_{t-1}+L_{t-1}}{2}\right) \sum_c [\left(\alpha_{c,t-1} - \lambda_{c,t-1}\right) * \frac{\left(kg^A_{c,t}+kg^L_{c,t}\right)}{2} \left(\frac{1}{2\Delta ER^{A,c}_{i,t}} + \frac{1}{2\Delta ER^{L,c}_{i,t}}\right)] \quad \text{(B6)}$$

Finally, the return effects for net investment income and valuations changes are then:

$$INVINC\_ret_t \equiv \left(\frac{A_{t-1}+L_{t-1}}{2}\right) \sum_c [\left(r^A_{c,t} - r^L_{c,t}\right) * \frac{\left(\alpha_{c,t-1}+\lambda_{c,t-1}\right)}{2} \left(\frac{1}{2\Delta ER^{A,c}_{i,t}} + \frac{1}{2\Delta ER^{L,c}_{i,t}}\right)] \quad \text{(B7)}$$

$$\Delta VAL\_ret_t \equiv \left(\frac{A_{t-1}+L_{t-1}}{2}\right) \sum_c [\left(kg^A_{c,t} - kg^L_{c,t}\right) * \frac{\left(\alpha_{c,t-1}+\lambda_{c,t-1}\right)}{2} \left(\frac{1}{2\Delta ER^{A,c}_{i,t}} + \frac{1}{2\Delta ER^{L,c}_{i,t}}\right)] . \quad \text{(B8)}$$

Since official reserves are only reported separately for countries' assets and not for liabilities, we have five asset classes on the asset side of the IIP ($A, c \in$ *{FDI, portfolio equity, portfolio debt, other investment, reserves}*) and only four for liabilities IIP ($L, c \in$ *{FDI, portfolio equity, portfolio debt, other investment}*). Since asset-class-specific returns and variables only directly enter the return and composition effects above[77], this asymmetry in the asset classes only affects how we apply equations (B5) – (B8) to the data. We assume that reserve liabilities would have yielded the same returns as reserve assets for each country, but the share of reserves on the liabilities side ($\lambda_{c,t-1}$) is zero. This reflects the scarcity of data on the sectors (official versus private) owning each country's liabilities and would attribute the entire contribution of reserve assets to the excess returns of assets versus liabilities to the composition effects above (equations B5 and B6).

[77] Aggregate assets (A_{t-1}) as well as the exchange rates applied to the total stocks of assets (ΔER^A_t) already incorporate reserve assets, so no additional assumptions are necessary to perform the initial stock and exchange rate effect calculations in (B1) – (B4).

Appendix C
Additional Tables and Figures

Appendix Table 1
Baseline Sample and Country Codes

Group/Country	Code	Group/Country	Code
Advanced Economies	***AE***	***Emerging Markets***	***EM***
Australia	AU	Brazil	BR
Canada	CA	China	CN
Czech Republic	CZ	Hungary	HU
Japan	JP	India	IN
Korea	KR	Indonesia	ID
New Zealand	NZ	Mexico	MX
Norway	NO	Poland	PL
Sweden	SE	Russia	RU
Switzerland	CH	Saudi Arabia	SA
United Kingdom	GB	South Africa	ZA
United States	US	Türkiye	TR
Euro Area	***EA***		
Belgium	BE		
France	FR		
Germany	DE		
Italy	IT		
Netherlands	NL		
Spain	ES		

Notes: Table lists the 28 countries in the baseline sample and corresponding codes used in the graphs and tables. The six members of the euro area are included individually for most of the analysis (in the group of advanced economies), but results for the euro area as one entity are also reported in some results for comparison. Country groups are based on classification in the IMF's World Economic Outlook, April 2025.

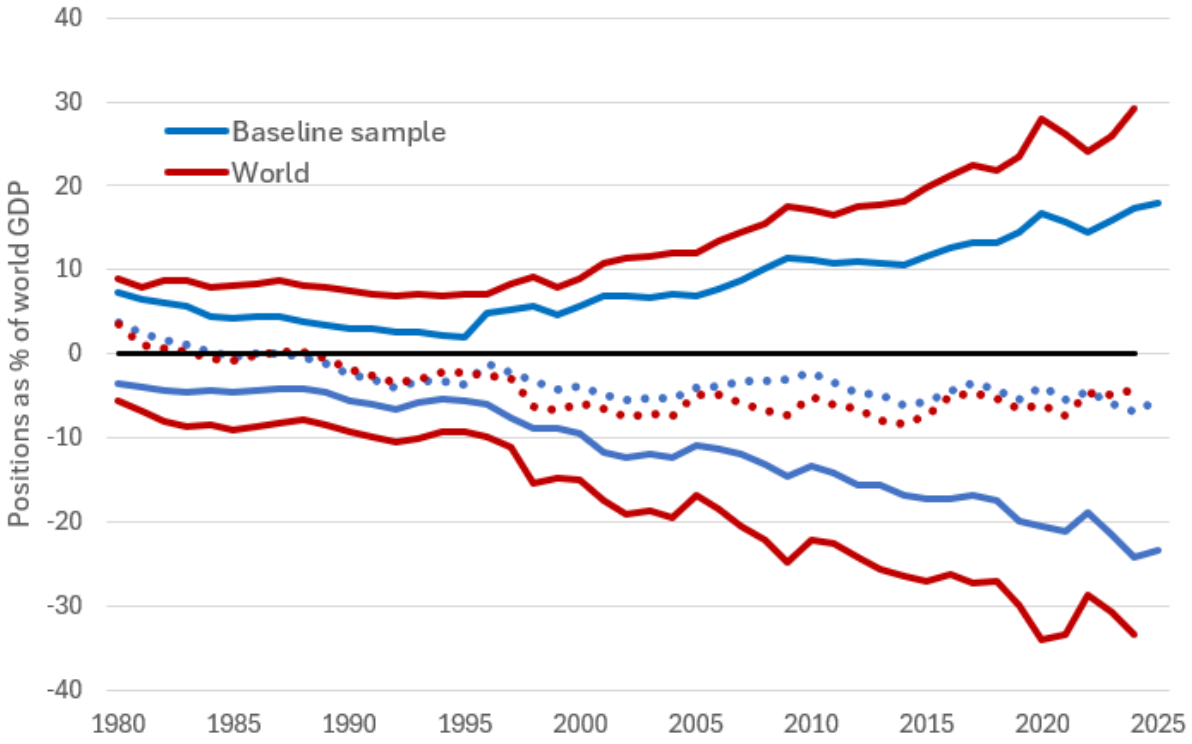
Appendix Table 2
Decomposing Changes in the NIIP over 1980-2025:
Annualized Contributions of Trade, Income Flows and Valuation Effects by Country

Country	NIIP	Trade	Investment income	Other income	Valuation effects	Other
Australia	-0.46	0.13	-1.25	-0.13	0.79	0.00
Belgium	1.11	0.55	0.27	-0.21	0.54	-0.04
Canada	1.23	0.11	-0.62	-0.15	1.89	0.00
Czech Republic	-0.33	1.84	-2.38	-0.01	-0.21	0.43
France	-0.73	-0.13	0.44	-0.40	-0.54	-0.09
Germany	1.85	2.15	0.88	-0.71	-0.30	-0.18
Italy	0.32	0.71	-0.28	-0.32	0.24	-0.03
Japan	1.75	0.48	2.37	-0.26	-0.83	-0.02
Korea	1.05	1.42	0.13	-0.13	-0.40	0.03
Netherlands	0.93	3.62	0.12	-0.96	-1.64	-0.21
New Zealand	-0.88	0.00	-1.77	-0.02	0.38	0.54
Norway	8.68	5.53	1.02	-1.00	3.91	-0.78
Spain	-0.99	0.10	-0.58	-0.12	-0.68	0.28
Sweden	1.41	2.24	0.65	-0.66	0.07	-0.88
Switzerland	2.24	3.28	1.51	-1.70	-1.27	0.42
United Kingdom	-0.10	-0.61	-0.26	-0.46	1.29	-0.07
United States	-1.57	-1.21	0.26	-0.27	-0.33	-0.02
AE median of absolute values:	***1.05***	***0.71***	***0.62***	***0.27***	***0.54***	***0.09***
Brazil	-1.02	0.07	-1.34	0.11	0.12	0.04
China	0.45	0.74	-0.17	0.07	-0.03	-0.17
Hungary	-0.77	0.74	-2.17	0.52	-0.06	0.21
India	-0.14	-0.99	-0.36	0.93	0.27	0.01
Indonesia	-0.39	0.60	-1.01	0.16	-0.08	-0.06
Mexico	-0.69	-0.56	-1.10	1.08	0.07	-0.19
Poland	-0.62	0.24	-1.22	0.28	-0.09	0.17
Russia	1.25	3.37	-0.96	-0.30	-0.55	-0.30
Saudi Arabia	1.08	3.27	0.69	-1.86	-0.49	-0.53
South Africa	0.71	0.69	-1.20	-0.43	1.63	0.00
Türkiye	-0.48	-0.69	-0.37	0.13	0.44	0.00
EM median of absolute values:	***0.69***	***0.69***	***1.01***	***0.30***	***0.12***	***0.17***

Notes: Table reports annualized changes in the NIIP and the corresponding contributions of its components over the full sample period from 1980-2025, all expressed as a percent of 2025 domestic GDP. "Other" is the sum of the capital account and errors and omissions. AE and EM medians are calculated based on the absolute values of the contributions for each country.

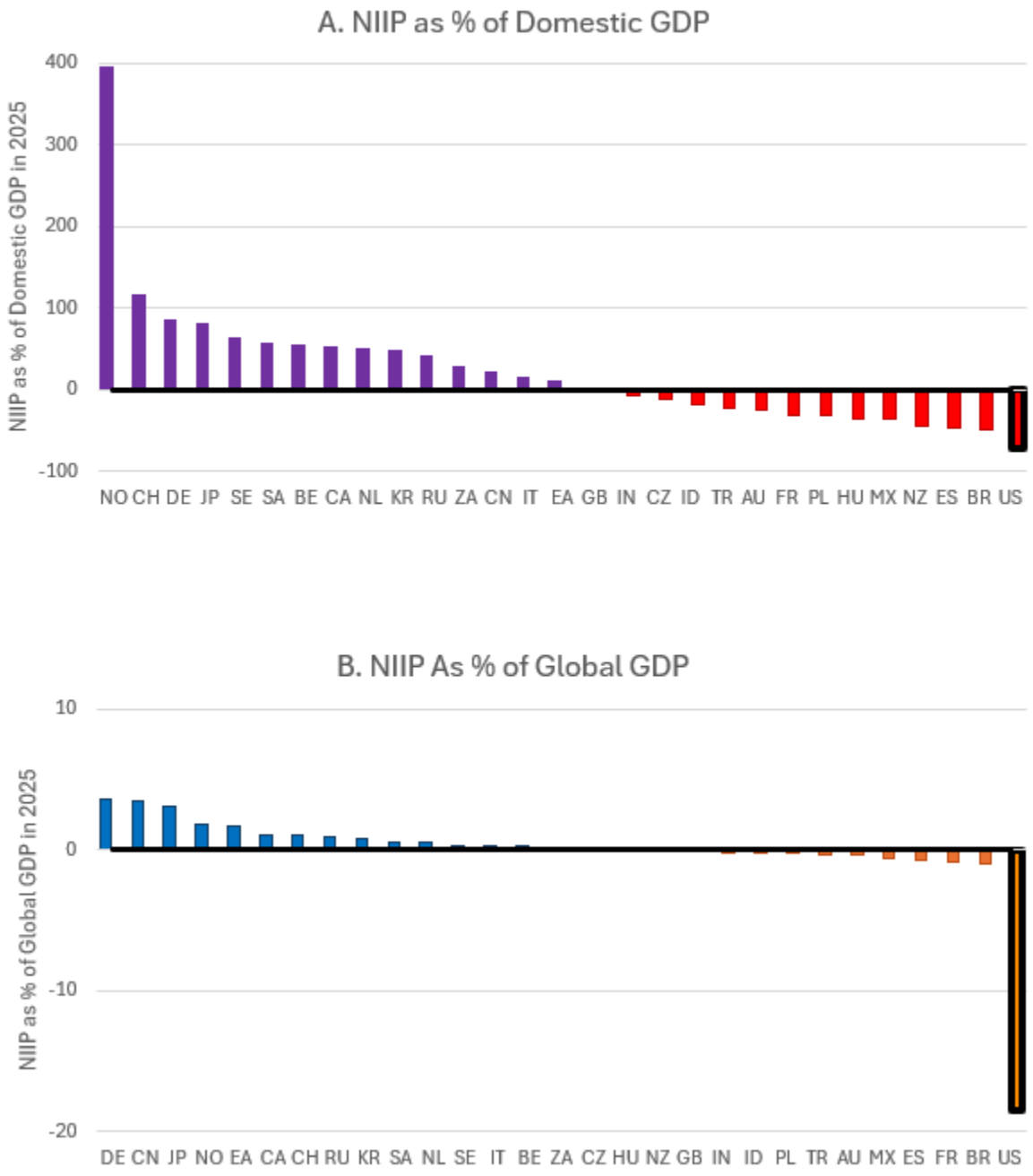
Appendix Figure 1

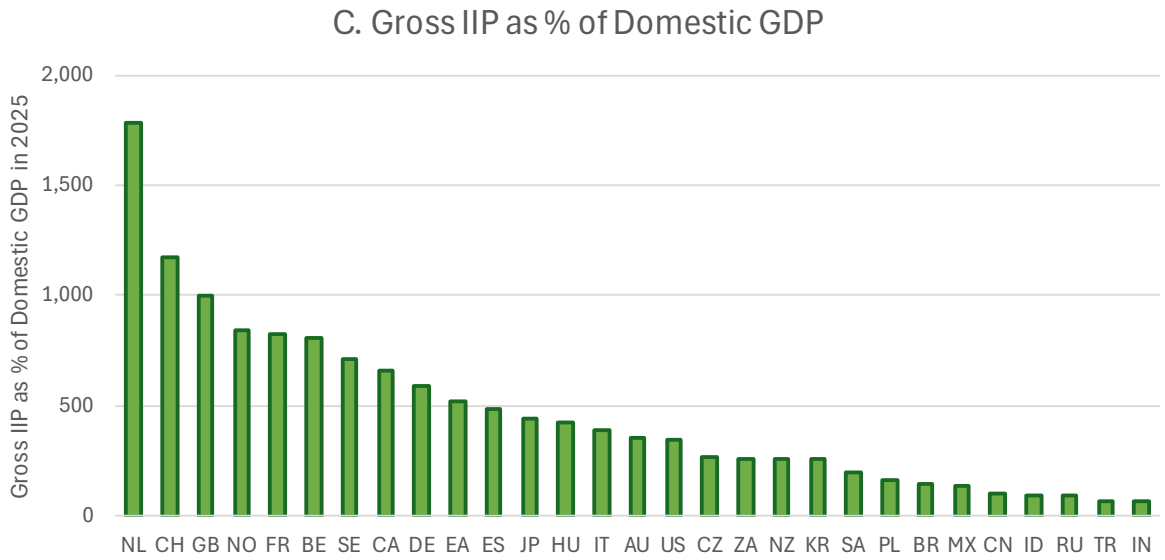
Aggregate NIIPs for Sample versus World
Creditor, Debtor and Net International Investment Positions

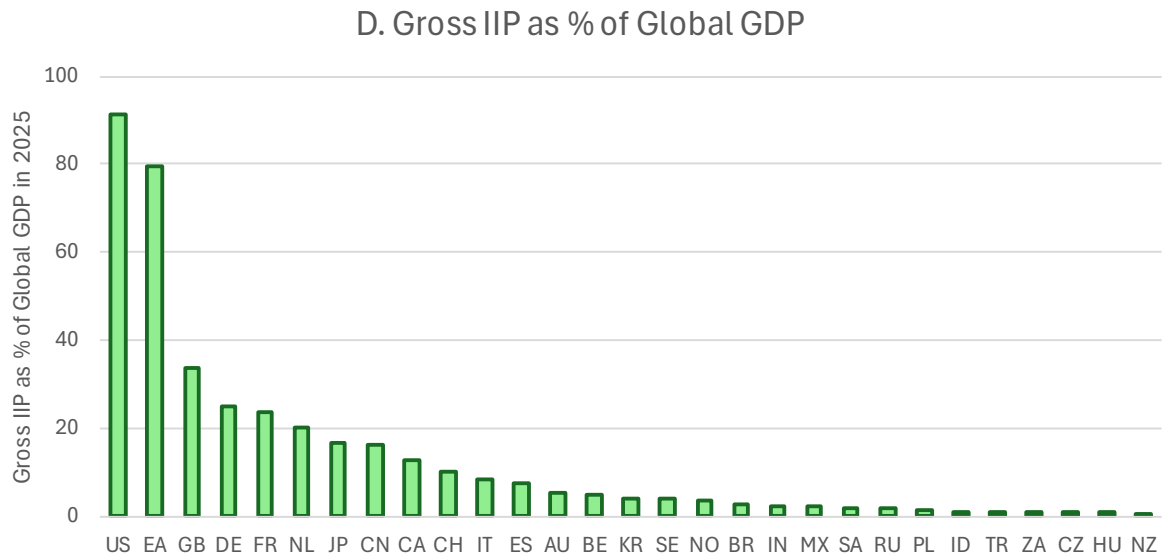


Notes: The "Baseline sample" is the 28 countries listed in Appendix Table 1, with data from the IMF's BOP and IIP database. The "World" is a larger sample of more than 200 countries, with data from the *External Wealth of Nations* April 2026 dataset**.** The dotted lines show the aggregate of the NIIPs for each sample and the solid lines show the corresponding aggregates calculated only for countries with creditor or debtor NIIPs. Each measure is calculated as percent of global GDP, with data from the IMF's World Economic Outlook database.

Appendix Figure 2
Net and Gross International Investment Positions in 2025

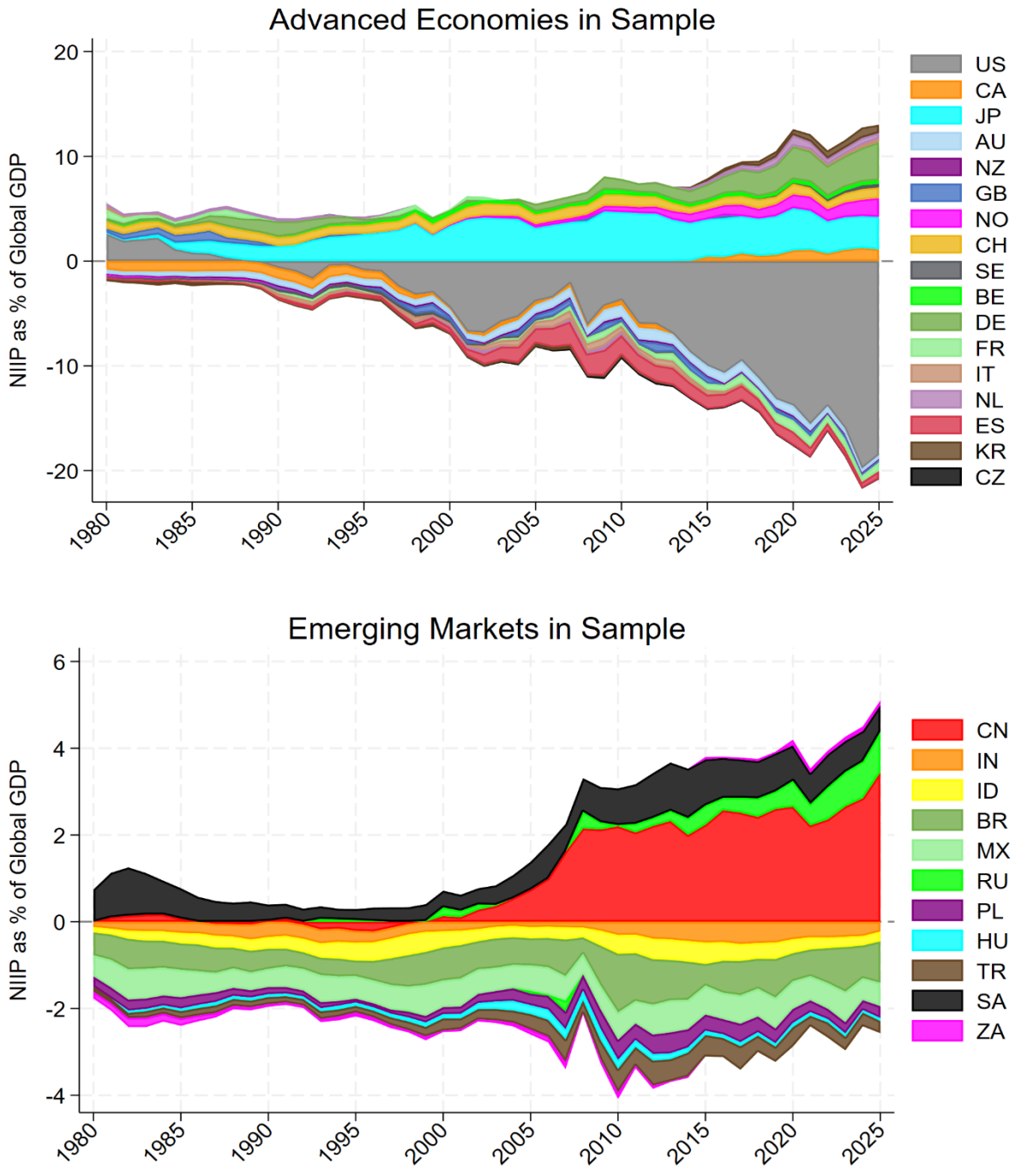






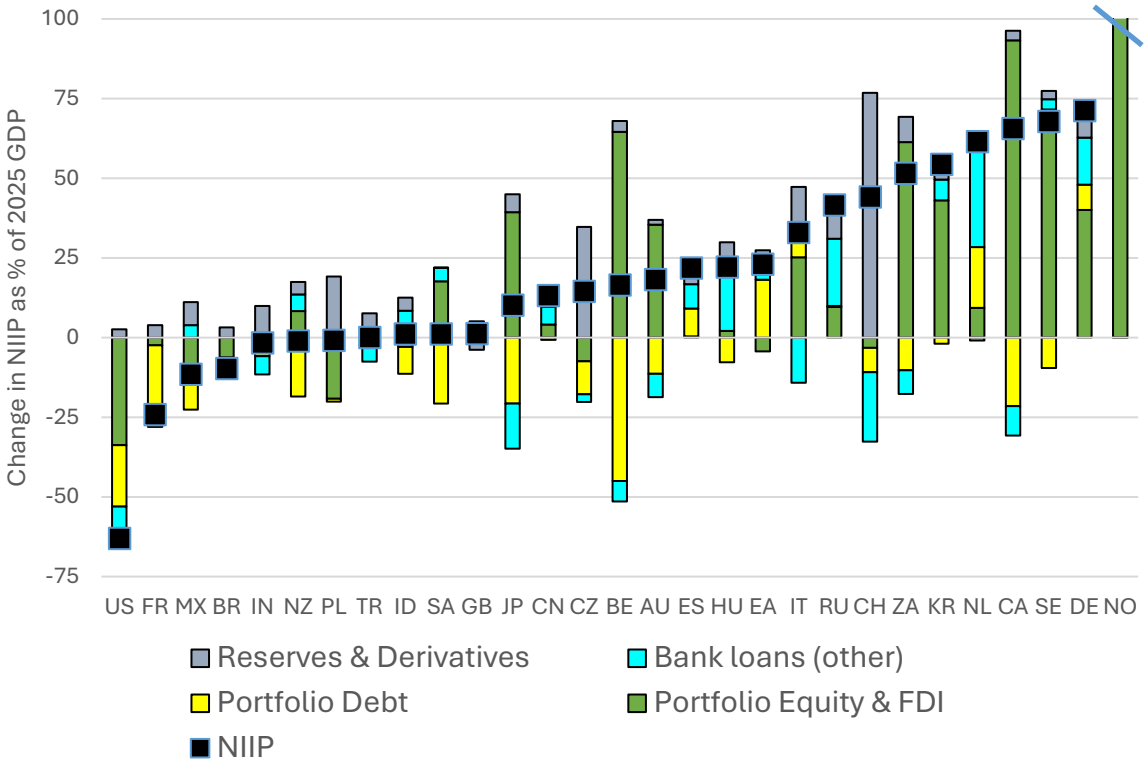
Notes: Graphs show net (Panels A and B) and gross (Panels C and D) international investment positions (IIPs) relative to domestic GDP (top panel on each page) and global GDP (bottom panel on each page) for each country in the baseline sample plus the euro area. Net (gross) positions calculated as the difference between (sum of) international assets and liabilities. Sample and country codes are in Appendix Table 1. When the euro area is reported as one entity, this nets out exposures between member countries. Data on IIPs from the IMF's BOP and IIP database and for GDP from the IMF's World Economic Outlook database. The US position incorporates April 2026 updates to US FDI valuations from the BEA.

Appendix Figure 3
NIIP Positions in Individual Advanced Economies and Emerging Markets Over Time



Notes: Panels show the evolution of individual NIIPs relative to global GDP for the advanced economies (top panel) and emerging markets (bottom panel) in the baseline sample relative to global GDP. See Appendix Table 1 for sample and country codes. Data on NIIP positions from the IMF's BOP and IIP database and for GDP from the IMF's World Economic Outlook database.

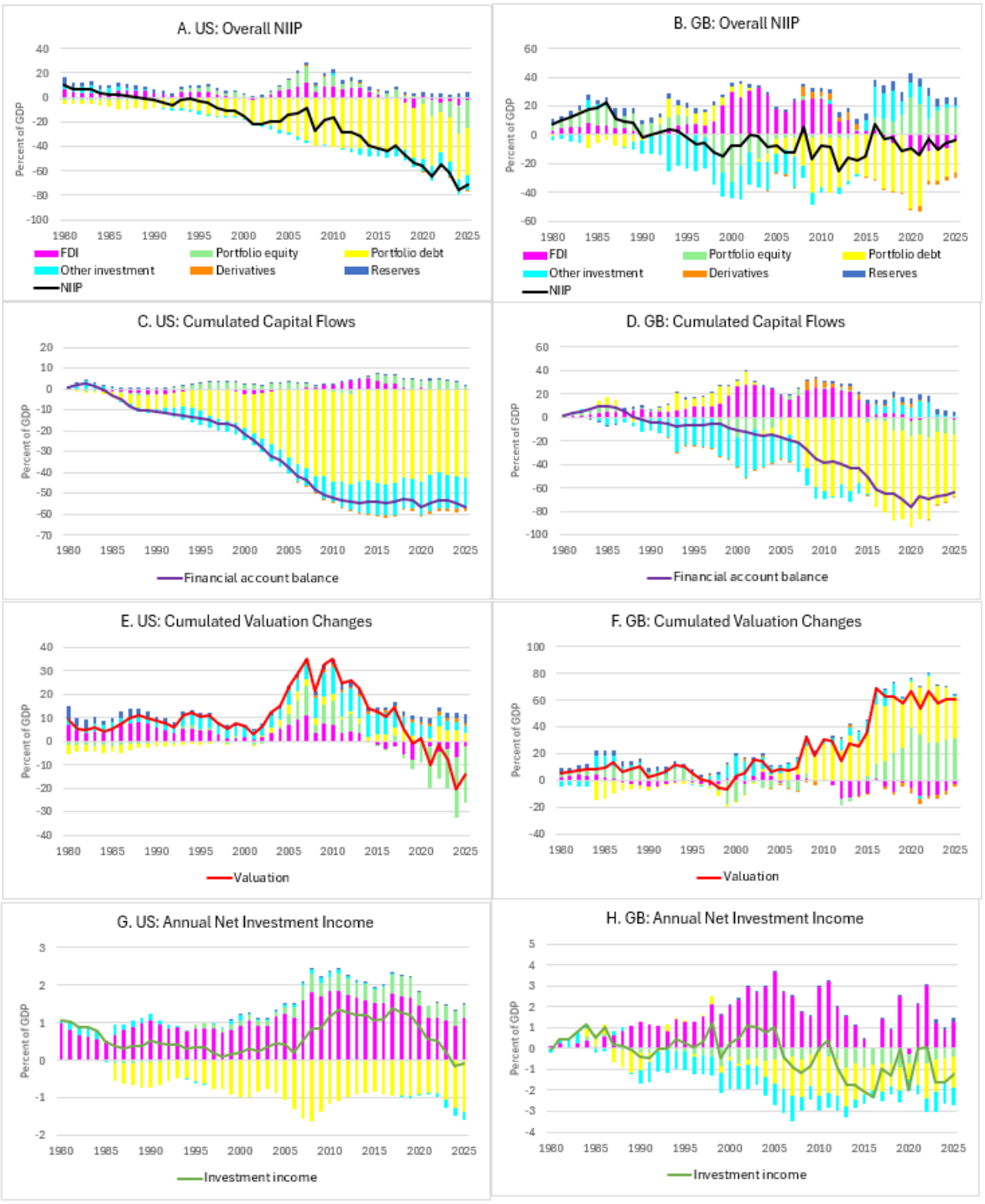
Appendix Figure 4
Change in NIIP by Asset Categories over 2010-25



Notes: Graph shows the change in each economy's NIIP over 2010-25 as a percent of 2025 domestic GDP in the black squares (corresponding to Figure 5). The colored bars show the contribution of four asset categories to this change: portfolio equity and FDI, portfolio debt, bank loans (i.e., "other" in the BOP data), and reserves (including derivatives). The bar for Norway is parsed, its values are: 323% for NIIP, 263% for Portfolio Equity and FDI, 54% for Portfolio Debt, 0% for Bank loans and 6% for Reserves & Derivatives (all expressed as the change as a % of 2025 GDP). US FDI valuations adjusted using the BEA's revision announced in April 2026.

Appendix Figure 5

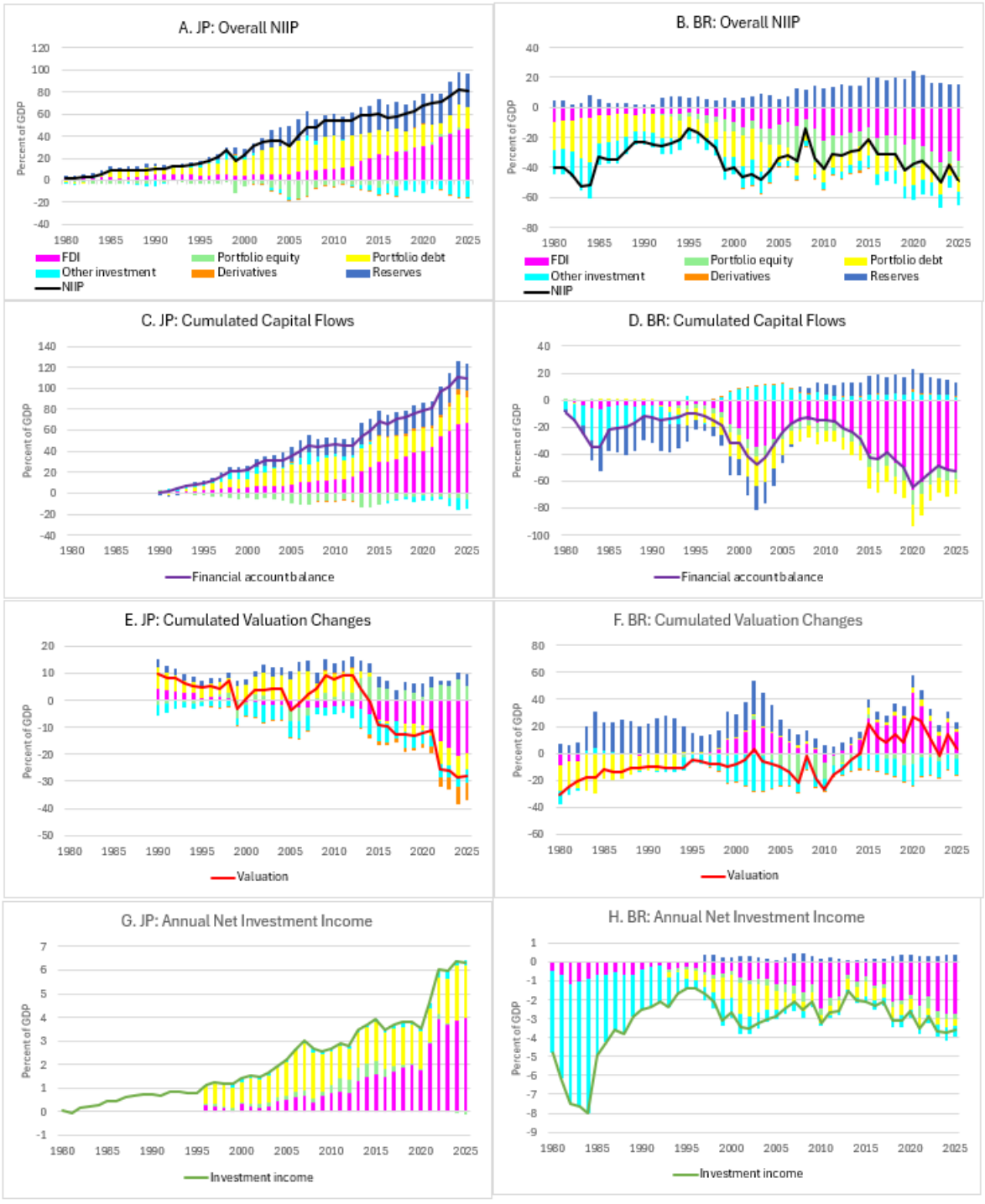
NIIP Composition by Asset Class in Two Net Debtors: US and UK



Notes: Graphs decompose the contribution of individual asset classes to the overall NIIP, cumulated financial account, cumulated valuation changes and annual net investment income relative to GDP each year. Underlying data from the IMF's BOP and IIP database, with US FDI valuations adjusted using the BEA's April 2026 revision. Flows and valuation changes are assumed to be zero in 1980 and accumulated in each subsequent year.

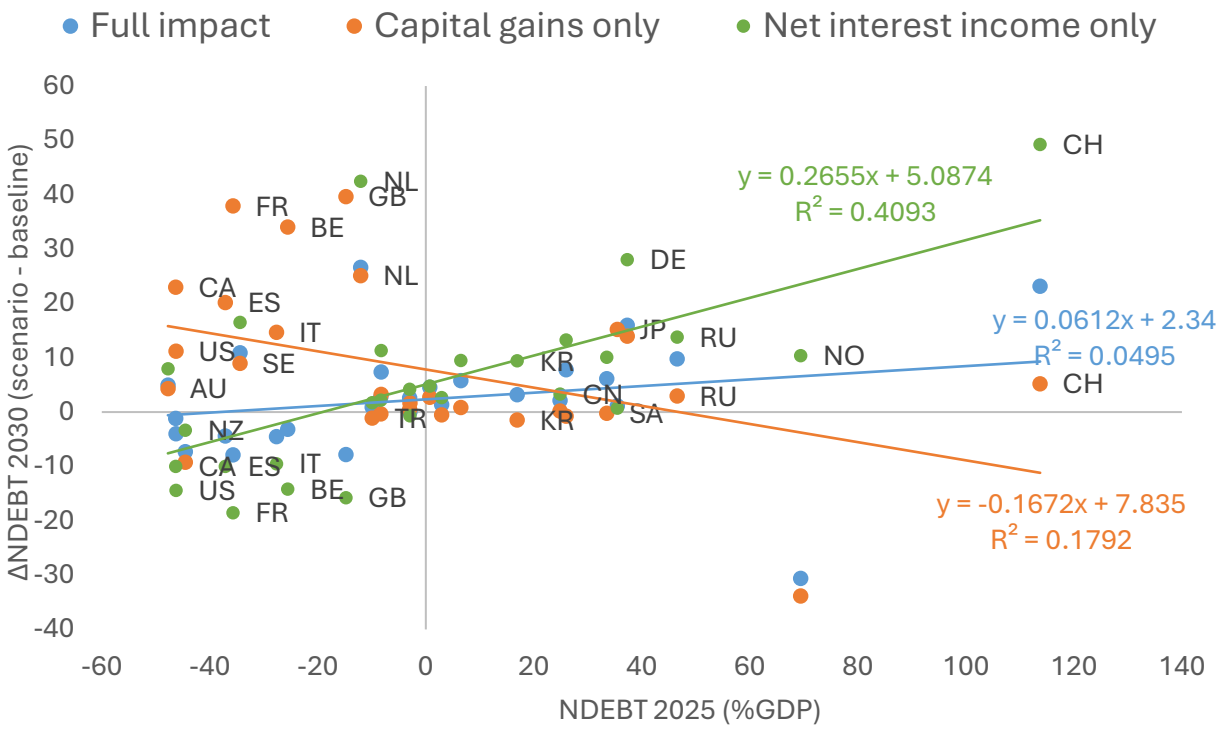
Appendix Figure 6

NIIP Composition by Asset Class in Countries with Large Investment Income: Japan and Brazil



Notes: Graphs decompose the contribution of individual asset classes to the overall NIIP, cumulated financial account, cumulated valuation changes and annual net investment income relative to GDP each year. Underlying data from the IMF's BOP and IIP database. Flows and valuation changes are assumed to be zero in 1980 and accumulated in each subsequent year.

Appendix Figure 7
Breakdown of "Rates Increase" Scenario:
Contribution of Changes in Debt Valuations versus Net Interest Payments



Notes: Scatterplot shows the contributions of different effects in the "rates increase" scenario on the initial NIIP-debt position of countries as of end-2025 (plotted on the x-axis as a percent of domestic GDP). In this scenario, interest rates on external debt liabilities (i.e., portfolio investment debt and 'other' investment) increase by 400bp for heavily indebted economies (defined as having gross government debt exceeding 90% of GDP in 2025). The y-axis captures the difference between three respective 2030 projections and the baseline 2030 projection (under unchanged interest rates on external assets and liabilities and zero capital gains on external net debt positions). The "Capital gains only" points are the immediate effects of this scenario on NIIP- debt positions (excluding any changes in the interest rates on assets or liabilities). The "Net interest income only" points ignore these net capital gains/losses and show the cumulative effect on net interest income flows. The "Full impact" points incorporate both effects to show the net effect of this scenario and correspond to the distance between the blue diamonds and red squares in Figure 16.A.