International investment income: patterns, drivers, and heterogeneous sensitivities

Giovanni Donato *& Cedric Tille [†]

November 2, 2024

Abstract

Financial globalization has led to a large increase in international asset holdings, which has not been mirrored in higher investment income flows of interest and dividends. Using a sample of 42 advanced and emerging economies since 2000, we show that this gap reflects the downward trend in yields on international debt and other (banking) investment, and is a feature specific to recent years. A panel analysis of the drivers of yields, allowing for heterogeneous effects across investment categories, shows a heterogeneous pattern. While interest rates unsurprisingly matter most for debt and other investment, exchange rate movements impact the yields on FDI and equity. Global risk conditions and macroeconomic conditions also matter. We then combine our panel estimates for yields with each country's specific structure of external assets and liabilities to compute the impact on income flows, relative to GDP. The effects are heterogeneous, not only across countries, but also across variables, with US short and long-term interest rates having offsetting impacts on emerging economies' income balance. Using actual values and forecasts for interest rates, the dollar exchange rate, and inflation, we estimate the paths of income flows in gross and net terms from 2021 to 2025. We find that the sum of income flows has grown, and will continue doing so, thereby bringing them more in line with the pattern of financial globalization, and that emerging economies overall experience an increase in their income balance. Contrasting our estimates for 2023 with the actual investment income data for that year shows a good fit.

Keywords: Financial integration, primary investment income flows, interest rates, exchange rates
JEL classification: F32, F36, F40

---

*Graduate Institute of International and Development Studies, Chemin Eugene-Rigot 2A,CH-1211 Geneva, Switzerland, email: *giovanni.donato@graduateinstitute.ch*

[†]Graduate Institute of International and Development Studies, and CEPR, Chemin Eugene-Rigot 2A,CH-1211 Geneva, Switzerland, email: *cedric.tille@graduateinstitute.ch* On behalf of all authors, the corresponding author states that there is no conflict of interest.

Contents

List of Tables

List of Figures

1. Introduction

Financial globalization has been a major development since the mid-1990s, leading to large increases in countries' external assets and liabilities (Lane and Milesi-Ferretti, 2018, Milesi-Ferretti, 2024a, Milesi-Ferretti, 2022a). While one would expect a similar rise in the associated dividend and interest streams (the primary investment income), such has not been the case. Figure 1 shows that while the total value of assets and liabilities has increased relative to GDP in both advanced and emerging economies (red lines), the sum of investment income receipts and payments (blue lines) has not moved in step, instead rising in early years, before falling back until recently. This pattern reflects offsetting trends between increasing assets and liabilities on the one hand, and falling yields on the other hand. Figure 2 shows the sum of investment income flows for the median advanced and emerging economy, contrasting the actual path (blue lines, as in Figure 1), the path that would have prevailed if yields had remained unchanged from 2000 (red lines), and the path that would have occurred if asset and liability holdings had remained at their 2000 values (black lines). Rising values of investment positions clearly pushed up the income flows, but this has been offset by decreasing yields.

The situation is more nuanced once we look at the net positions and income flows. Figure 3 is built along similar lines as figure 1, but presents the difference between assets and liabilities (red lines) and between investment income receipts and payments (blue lines). While the two lines show positive trends for the median advanced economy, the link is weaker among emerging countries. A counterfactual analysis in net terms along the line of Figure 2 (not shown for brevity) shows that movements in the net position alone should have led to a later increase in the net income flows in advanced economies, and a stabilization at a higher level for emerging economies. Taking a longer view since 1980, albeit with a narrower sample, shows that the dichotomy between gross positions and income flows of figure 1 is a recent development. Appendix figure 19 shows that the two moved in steps in advanced economies until the mid-2000s, the link being weaker for emerging economies with higher positions not leading to higher income flows until the mid-1990s. In net terms, positions and flows are also less closely linked than in gross terms since 1980 (appendix figure 20).[1]

---

[1]There are times of closer co-movements in net terms, namely since 2010 for advanced economies and until the early 1990's and from the early 2000's until the global financial crisis for emerging countries.

The recent inflation episode has led to a rapid and large increase in interest rates. Will this bring investment income flows more in line with positions? Will it lead debtor countries to face a rise in their income deficit? We shed light on these questions by analyzing what drives the yields on countries' external assets and liabilities - the ratio of interest and dividend streams in a year, in percent of the corresponding position at the end of the previous year. We undertake our assessment at the level of the usual categories of assets (FDI, portfolio equity and debt, other investment, and reserves) as contingent and non-contingent assets are likely to react differently to given variables. This, along with the structure of external balance sheets being different across countries, and changing (with for instance a sizable increase in foreign direct investment positions in emerging economies, as detailed by Milesi-Ferretti (2022b)), can leave the movements on income streams to be quite heterogeneous.

Using a panel of 42 countries since 1999, we show that the evolution of yields has been quite heterogeneous, with sharp declines for debt and other investment contrasting with a stability for FDI and equity. We undertake a panel analysis of the drivers of yields, allowing for different effects across categories, assets and liabilities within a category, and advanced vs. emerging economies. We then combine our estimates with the structure of individual countries' balance sheets to assess the impact of shocks on their investment income balance. Our final exercise takes the situation of 2021 as a starting point, and looks at the impact of actual and forecasted movements in interest rate, the exchange rate of the dollar, and inflation until 2025.

Our econometric analysis shows that the various drivers of yields have an heterogeneous impact across various categories of assets. Movements in US interest rates have the clearest impact, with an increase in the 10 year Treasury rate leading, as expected, to higher yields for portfolio debt and other investment. Changes in the US 3 months interest rate impact the return on other investment and reserves, but also raise the yield on FDI assets in advanced economies, as well as on FDI liabilities in emerging countries, suggesting that part of FDI consists of banks' holdings in their affiliates.

Movements in the dollar exchange rate matter. They do so first through a revaluation effects when the value of the dollar moves against the currencies in which financial positions are denominated, an effect that is clearest for portfolio debt and other investment. Fluctuations

of the dollar broad exchange rate also impacts yields on FDI and equity, which are reduced by an appreciation of the US currency. This is consistent with a strong dollar dampening international trade and economic activity.

Yields are sensitive to the VIX index, but in an unexpected way as a higher VIX reduces the yields, especially for portfolio debt and other investment. This effect is robust to several alternative specifications, and stands in contrast to the impact on capital flows that tend to contract when the global financial cycle tightens. Finally, macroeconomic conditions affect yields. Inflation raises them for other investment, pointing to a risk premium, and higher growth raises the yields on FDI and equity holdings.

Combining our panel results with the varied structure of countries' balance sheets shows that the impact of the various variables on investment income balances is highly heterogeneous. Higher short-term US interest rates have a positive effect, while higher long-term rates push the balance of emerging economies towards a deficit. A stronger dollar is associated with a more positive balance in emerging markets, with little effect in advanced economies. In both groups, a higher VIX has a positive effect on the income balance, through a reduction of the yields on liabilities.

Our final step focuses on the recent inflationary episode using movements in interest rates, inflation, and the exchange rate from 2021 to 2023 (based on actual data) and 2025 (based on forecasts). The higher interest rates lead to larger value of gross income flows relative to GDP. The stronger dollar however has an offsetting effects. Similarly, different variables push the income balance in different directions. This shows the need to take a broad look encompassing several drivers. Doing so shows that gross income flows are increasing, and are likely to keep doing so in the near future. The evolution of the income balance is contrasted among advanced economies, some seeing improvements and other facing a lower balance, but is overall positive for emerging economies, to a large extent for several of them. Contrasting our estimates for 2023 with the actual data shows a good fit, despite our focus on a handful of drivers.

Our analysis therefore allows us to address the two questions raised above. First, the recent increase in interest rates, and other drivers, boosts the income flows in gross terms, reducing the gap between the globalization of positions and income flows discussed above.

Second, emerging economies overall are not faced with a rise in their income deficits, with several benefiting from a more favorable balance. In addition to the impact of the variables we consider, some structural trends could lead to a higher role of investment income in the current account. An example is the growing use of profit shifting by multinational firms, and the associated dividend streams.

Our analysis contributes to a growing literature on primary investment income flows. Joyce (2021) documents the growing income deficit, driven by FDI, in 26 emerging economies. Behar and Hassan (2022) show the primary income balance is a sizable component of the current account for many countries, and displays dynamics that are quite different from trade flows. Adler and Garcia-Macia (2018), Alberola et al. (2020) and Behar and Hassan (2022) find that the income balance is not a contributor to turnarounds in the current account, such episodes being instead driven by trade. Behar and Hassan (2022) and Colacelli et al. (2021) show that a country's exchange rate matters for its gross income flows, but with only a small impact on its income balance. A large share of the impact of the exchange rate reflects the revaluation of earnings on assets denominated in other currencies. We contribute to the literature by considering a broad range of variables driving yields, and combining our panel estimates with countries' specific balance sheets to compute the impact on their specific gross and net income flows. We also use the estimates to shed light on the current episode of high interest rates.

The rest of the paper is structured as follows. Section 2. reviews the related literature. Section 3. presents the analytical framework, data, and stylized facts. The results from the econometric analysis are presented in section 4., and section 5. discusses the heterogeneous impact of selected variables on countries' investment income flows. Section 6. considers the impact of the current phase of higher inflation and interest rates, and section 7. concludes.

2. Literature review

Our analysis relates to several branches of the literature on the drivers of external accounts. The first is the analysis of determinants of "global imbalances". Before the global financial crisis, a large literature assessed the imbalances where the United States ran a large a persistent current account deficits mirrored by surpluses in emerging economies. Panel

analyses of current account balances found a role for public deficits, financial development, and the experience of financial crises (Chinn and Prasad, 2003; Gruber and Kamin, 2007). Asymmetries in the development of financial markets have been pointed as a source of the persistent US deficit (Caballero et al., 2008). Subsequent contributions to the literature have taken a more granular look. Alfaro et al. (2014) show that capital flows driven by sovereign investors behave differently than flows driven by private investors. Ito and McCauley (2019) point to the need to take account of the world's main currency zones, as imbalances within and across zone show different patterns. While the researchers' interest in global imbalances decreased in the eve of the 2008 crisis, as capital flows retrenched (IMF, 2014), recent contributions have provided additional angles on the topic. Chinn and Ito (2022) show that the pattern has evolved, with the role of China and oil exporters becoming less important, fiscal variables taking a relevant role, and financial development having a heterogeneous effect. Other contributions point to the role of determinants of portfolio choice by global investors (Devereux et al., 2020; Jiang et al., 2022). Finally, several contributions have taken a broader view in terms of both flows and stocks. While flow imbalances (in terms of current accounts) have stayed broadly steady, stock imbalances (in terms of international investment positions) remain on the rise (Alberola et al., 2020; Lane and Milesi-Ferretti, 2014; Milesi-Ferretti, 2022b). Several recent contributions, which we discuss below, have assessed the extent to which primary income flows contribute to the narrowing of imbalances (Adler and Garcia-Macia, 2018; Alberola et al., 2020; Behar and Hassan, 2022).

The second line of literature that we connect to covers the impact of major economic shocks on the current account. The exchange rate is a variable that has received a lot of attention, as models indicate that narrowing imbalances relies on exchange rate movements, with a focus on the impact on the trade balance. Obstfeld and Rogoff (2007) find that the US imbalances calls for a weakening of the dollar. The empirical evidence on the impact of exchange rate is however contrasted. Devereux and Genberg (2007) point that exchange rate movements are unlikely to play a sizable role for emerging Asian economics. Taking a medium run perspective, Chinn and Prasad (2003) find that exchange rates only play a role for industrial countries, and a small one. Gruber and Kamin (2007), Chinn and Ito (2007) and Chinn and Lee (2009) also find mixed results, and Beckmann and Czudaj (2017)

shows that the link between exchange rates and current accounts is ambiguous, especially at a shorter horizons. Cubeddu et al. (2019) estimate the REER-elasticity of the Current Account as part of the IMF's ESR using the so-called *CGER-inspired approach*, and find a moderate average elasticity with substantial heterogeneity. The limited impact of the exchange rate can be explained by a moderate transmission to import prices when these are set in currencies that are not the one of the importing country, as in the "dominant currency pricing" (Boz et al., 2022; Georgiadis et al., 2021; Gopinath et al., 2020). Behar and Hassan (2022) and Colacelli et al. (2021), which we discuss below, assess the impact of exchange rate movements in primary income flows.

Movements in interest rates are another important source of fluctuations. Antràs (2023) develops a framework where lower interest rates provides an incentive to invest in longer but more productive production processes, leading to larger trade flows. Schuler and Sun (2022) consider the co-movements of the current account and interest rates in Euro area countries. They show that these are specific to the shocks driving fluctuations. Shocks to consumption and investment financial frictions (which are shocks to domestic demand) move interest rates and the current account into the same direction, while shocks to foreign demand and TFP have the opposite effect.

Finally, we contribute to the literature on the determinants of the primary income, and especially the income from assets (investment income flows). While there has been an extensive literature on the drivers of trade flows, the analysis of primary income flows remains at a relatively early stage. Joyce (2021) analyzes the primary income flows in a sample of 26 emerging economies between 1990 and 2015. These countries show persistent deficits, that largely reflect the increase in their FDI and portfolio liabilities, characterized by higher yields than assets invested in safer bonds, in a "long debt - short equity" pattern. Higher openness to trade and financial flows is associated with larger income payments on FDI and portfolio liabilities, while deeper financial market reduce the portfolio payments. Behar and Hassan (2022) shows that primary income flows are a sizable component of the current account, with the income balance amounting to at least half the trade balance for half the countries in their sample.

Movements in the primary income balance are quite different from the fluctuations in net

trade flows. Behar and Hassan (2022) use a sample of 94 countries and show that the two balances are negatively correlated, and thus the primary income acts as a stabilizing force. Specifically, the net income flows dampens the current account volatility by half on average. However, this pattern does not translate in the primary income balance being a source of adjustment in crises, or of narrowing of imbalances. Using an event study approach, Behar and Hassan (2022) find that while the trade balance improves in crises, this is not the case for the primary income balance. If anything, it worsens in such times for advanced and emerging economies, possibly reflecting higher risk premia, and moderately improves in low income countries. Alberola et al. (2020) assess whether the various components of the current account help narrow imbalances in the net investment positions, in a sample of 39 countries between 1980 and 2015. While they find that this is the case for the trade balance, albeit solely for debtor countries that tend to see their trade balance improve in subsequent years, it is not so for the primary income balance. Instead, the net position tends to be worsened through the primary income, with deficit countries facing net payments on their higher liabilities. Based on a sample of 92 countries from 1998 to 2015, Adler and Garcia-Macia (2018) find that the primary income flows do not stabilize imbalances, while the valuation changes on the international investments stemming from exchange rate and asset price movements do, primarily through a reduction of the value of liabilities for debtor countries.

Recent contribution assess the impact of exchange rates on the primary income. Behar and Hassan (2022) finds a significant effect in gross terms, with a depreciation of the domestic currency increasing income flows on both assets and liabilities. This positive correlation between receipts and payments stands in contrast to trade flows, where a depreciation that raises exports tends to lower imports, leaving a small effect on the primary income balance. The exchange rate thus affects the current account primarily through the trade balance. Colacelli et al. (2021) consider the drivers of the primary income between 1999 and 2018 for a sample of over 40 countries. They also find that exchange rate movements have a sizable impact on receipts and payments flows, which are higher following a depreciation of the domestic currency. The effect on the primary income balance is however much more moderate, as the similar effects for primary income receipts and payments tend to offset each other.

An important element in the impact of exchange rates in Behar and Hassan (2022) and Colacelli et al. (2021) is a "mechanical" effect. As a country's assets and liabilities are often denominated in foreign currency, exchange rate movement affects the domestic currency value of the associated flow of earnings, even when the yield in terms of the currency of denomination is not changed. This effect is similar to the well-know valuation effect of exchange rate movements on the international investment position, with the difference that these valuation effects are capital gains that do not enter the current account (Bénétrix et al., 2015; Bénétrix et al., 2020; Gourinchas and Rey, 2007; Lane and Milesi-Ferretti, 2004; Tille, 2008). Behar and Hassan (2022) and Colacelli et al. (2021) show that this mechanical effect is a major aspect of the impact of exchange rates, and the residual "economic" effect is small and heterogeneous.

Eugster and Donato (2022) document the impact of exchange rate movements on the Swiss current account, focusing on movements that reflect the Swiss safe haven property. They confirm the offsetting movements of trade and trade and primary income balances of Behar and Hassan (2022), with a stronger Swiss franc reducing the trade surplus and improving the primary income balance. The later is driven by an improvement in the net FDI income, as expenses fall more that receipts.

While the previous studies focus on the impact of the exchange rate, Auer (2019) assesses the impact of monetary policy shocks in the United States and Canada. A tightening of monetary policy appreciates the currency, and has a J-curve effect on the trade balance. It leads to a reduction of both investment income receipts and payments, as well as the net receipts. The effect on income flows gradually builds up and reaches a peak after 1-2 years. A finer assessment shows that the higher interest rates temporarily raise the income flows for the "other" investment category (which are mostly banking holdings), leading to a positive net effect, but lower the income flows on FDI holdings, leading to a negative net effect.

3. Empirical framework

3.1 Primary income dynamics

3.1.1 General setting

This section presents the analytical framework underlying our empirical approach. We start with the primary income flows on a country's external assets (the flows on the liability side are computed similarly). As described below, we use the IMF data for the balance of payments, as well as the international assets and positions data from Milesi-Ferretti (2024b), which are measured in US dollar. The asset position is denominated in a currency basket D which is in general different from the country's own currency and the dollar.

We denote the exchange rate between the dollar and the currency of denomination of the asset by $S^{\$,D}$ with an increase representing a depreciation of the dollar. The primary investment income flows in the denomination currency reflects the effective return in that currency, $r^{eff,D}$, and is written as $P_t^D = r_t^{eff,D} A_{t-1}^D$ where A^D is the asset position expressed in the currency of denomination. The flows in dollar are given by $P_t^\$ = r_t^{eff,D} \left(S_t^{\$/D}/S_{t-1}^{\$/D} \right) A_{t-1}^\$ = r_t^{eff,\$} A_{t-1}^\$$.

The country's assets include fixed income assets, indexed by F, and assets with variable yield, indexed by V. A share α^F of fixed income assets mature in each period. The gross capital flows in period t consist of a purchase of assets replacing the maturing ones, and net capital flows $K_t^{net,\$}$ (measured in dollar).

3.1.2 Income flows and yields

At the beginning of period t, a share $1 - \alpha^F$ of fixed income assets has not matured and delivers the same yield (on the face value in the currency of denomination) in period t than in period $t-1$. The investment income flows on these assets in period t is the same as in the previous period. The newly purchased assets deliver a new yield $r_t^{new,F,D}$ in period t. The primary income in the currency of denomination is thus (see the appendix for details):

$$P_t^{F,D} = \left(1 - \alpha^F\right) P_{t-1}^{F,D} + r_t^{new,F,D} \left(\left(1 - \alpha^F\right) K_{t-1}^{net,F,D} + \alpha^F A_{t-1}^{F,D} \right)$$

where $K_{t-1}^{net,F,D}$ denotes the net capital flows. The expression for variables yield asset is similar, setting $\alpha^F = 1$. The overall investment income ($P_t^D = P_t^{F,D} + P_t^{V,D}$) is then, in currencies of denomination P_t^D and in dollar $P_t^\$$:

$$
\begin{aligned}
P_t^D &= \left(1 - \alpha^F\right) P_{t-1}^{F,D} + r_t^{new,F,D}\left(1 - \alpha^F\right) K_{t-1}^{net,F,D} + r_t^{new,F,D}\alpha^F A_{t-1}^{F,D} + r_t^{new,V,D} A_{t-1}^{V,D} \\
P_t^\$ &= \frac{S_t^{\$/D}}{S_{t-1}^{\$/D}}\left[\left(1 - \alpha^F\right) P_{t-1}^{F,\$} + r_t^{new,F,D}\left(1 - \alpha^F\right) K_{t-1}^{net,F,\$} + r_t^{new,F,D}\alpha^F A_{t-1}^{F,\$} + r_t^{new,V,D} A_{t-1}^{V,\$}\right]
\end{aligned}
$$

The yield on the overall asset position, $r_t^\$ = P_t^\$/A_{t-1}^\$$, is written as:

$$
\begin{aligned}
r_t^\$ &= \frac{S_t^{\$/D}}{S_{t-1}^{\$/D}}\frac{A_{t-1}^{F,\$}}{A_{t-1}^\$}\left[\left(1 - \alpha^F\right)\frac{A_{t-2}^{F,\$}}{A_{t-1}^{F,\$}}r_{t-1}^{F,\$} + \left(\alpha^F + \left(1 - \alpha^F\right)\frac{K_{t-1}^{net,F,\$}}{A_{t-1}^{F,\$}}\right)r_t^{new,F,D}\right] \\
&\quad + \frac{S_t^{\$/D}}{S_{t-1}^{\$/D}}\frac{A_{t-1}^{V,\$}}{A_{t-1}^\$}r_t^{new,V,D}
\end{aligned} \tag{1}
$$

3.1.3   Approximation

We express the yield (1) in terms of a linear approximation around a steady growth path, where asset prices and exchange rates are constant, all variables grow at a rate ρ_{ss}, and the fixed income assets represent a share δ_{ss}^F of the overall assets. Hatted variables denote log deviations from the growth path, while hatted yields are deviations in absolute value.[2] The linear approximation of (1) is given by:

$$
\begin{aligned}
\frac{\hat{r}_t^\$}{r_{ss}} &= \left(\widehat{S}_t^{\$/D} - \widehat{S}_{t-1}^{\$/D}\right) + \frac{\left(1 - \alpha^F\right)\delta_{ss}^F}{1 + \rho_{ss}}\frac{\hat{r}_{t-1}^{F,\$}}{r_{ss}} \\
&\quad + \left(1 - \frac{1 - \alpha^F}{1 + \rho_{ss}}\right)\delta_{ss}^F\frac{\hat{r}_t^{new,F,D}}{r_{ss}} + \left(1 - \delta_{ss}^F\right)\frac{\hat{r}_t^{new,V,D}}{r_{ss}} \\
&\quad - \frac{\left(1 - \alpha^F\right)\delta_{ss}^F}{1 + \rho_{ss}}\left(\widehat{S}_{t-1}^{\$/D} - \widehat{S}_{t-2}^{\$/D} + \widehat{Q}_{t-1}^{F,D} - \widehat{Q}_{t-2}^{F,D}\right)
\end{aligned} \tag{2}
$$

where $\widehat{Q}_t^{F,D}$ is asset price of fixed income assets in the currency of denomination, which enters

---

   [2]Specifically, $\hat{A}_t^\$ = \left(A_t^\$ - A_{ss,t}^\$\right)/A_{ss,t}^\$$, $\widehat{S}_t^{\$/D} = \left(S_t^{\$/D} - S_{ss}^{\$/D}\right)/S_{ss}^{\$/D}$, $\left(\hat{K}_{t-1}^{net,F,\$} = K_{t-1}^{net,F,\$} - \frac{\rho_{ss}}{1+\rho_{ss}}A_{ss,t-1}^{F,\$}\right)/\left(\frac{\rho_{ss}}{1+\rho_{ss}}A_{ss,t-1}^{F,\$}\right)$, $\widehat{r}_t^D = r_t^D - r_{ss}$, $\hat{Q}_t^{F,D} = \left(Q_t^{F,D} - Q_{ss}^{F,D}\right)/Q_{ss}^{F,D}$, where the *ss* subscript denotes the value of variables along the steady growth path.

because the fixed yield is in term of face value and not market value. $\hat{r}_t^{\$}/r_{ss}$ indicates the effect on the yield in percent, instead of percentage points.[3] (2) shows that the yield in the currency of measurement is affected by several factors. The first term is the valuation effect reflecting movement of the exchange rate between the currency of measurement (the dollar) and the currency in which the assets are denominated, with a dollar depreciation raising the primary income. This is the effect identified in Colacelli et al. (2021). Second, as shown by the last block in the first row, the yield is affected by the lagged yield to the extent that there are long maturity fixed income assets. The second row presents the impact of changing yields on specific assets market value in the currency of denomination. This applies to variable yield assets, as well as fixed income assets to the extent that their maturity is short (α^F is high). Finally, the lagged dynamics of the exchange rate between the currency of denomination and the dollar enter, as do the the lagged dynamics of the fixed income asset price, in the currency of denomination. These two terms indicate the lag of capital gains on fixed income assets in the currency of denomination, and their presence is linked to fixed assets that do not yet mature, and for which the market value changes relative to the face value, the later being the one on which the fixed yield applies. By contrast, movements in assets prices in the currency of denomination for assets with variables yields do not enter, as these are already reflected in the value of the positions included in the computation of yields.

3.1.4 Empirical specification

We estimate (2) for total assets, as well as at for specific investment categories: FDI, portfolio equity, portfolio debt, other investment excluding reserves (mostly banking), and foreign exchange reserves. For each category, the estimates are done separately for yields on external assets and on external liabilities. The specification is as follows:

$$
\begin{aligned}
ln\left(r_{i,t}^{\$}\right) \;=\; & \alpha + \beta_{lag}ln\left(r_{i,t-1}^{\$}\right) + \beta_{valS}\Delta ln\left(S_{i,t}^{\$,D}\right) \\
& +\beta_{valSL}\Delta ln\left(S_{i,t-1}^{\$,D}\right) + \beta_{valQL}\Delta ln\left(Q_{i,t-1}^{D}\right) \\
& +\delta_{glob}\boldsymbol{X}_{\boldsymbol{t}}^{\boldsymbol{global}} + \delta_{local}\boldsymbol{Z}_{\boldsymbol{i,t}}^{\boldsymbol{local}} + \eta_i + \epsilon_{i,t}
\end{aligned} \tag{3}
$$

---

[3]If for instance the steady state yield is 4% and a variable moves the yield to 4.5%, we have $\hat{r}_t^{\$} = 0.005$ (0.5 percentage points) and $\hat{r}_t^{\$}/r_{ss} = 0.005/0.04 = 0.125$ (12.5 percent of steady state value).

where $r_{i,t}^{\$}$ is the yield, measured in dollar (we take the log to correspond to $\hat{r}_t^{\$}/r_{ss}$ in (2)), $\Delta ln\left(S_{i,t}^{\$,D}\right)$ is the first difference of the log of the exchange rate between the dollar and the currency of denomination of assets (with an increase representing a depreciation of the dollar), $\Delta ln\left(Q_{t-1}^D\right)$ is the first difference between the log of the asset price in the currency of denomination ($\Delta ln\left(S_{i,t-1}^{\$,D}\right) + \Delta ln\left(Q_{t-1}^D\right)$ drive the valuation effect on the asset position, expressed in dollar), X_t^{global} is a vector of global controls and $Z_{i,t}^{local}$ is a vector of controls specific to the country. These two vectors include variables that can affect the yields on the currency of denomination.

The global controls X_t^{global} include:[4]

- First difference of the log of the broad trade-weighted exchange rate index of the US dollar, to capture its movements against all other currencies. A positive value denotes an appreciation of the US dollar.

- US short-term interest rate (3 months money market) to capture the short maturity funding cost (affected by monetary policy) in the major economy.

- US long-term interest rate (10 years Treasury yield) to capture the long maturity funding cost in the major economy.

- VIX index (normalized), to capture changing global risk perceptions and appetite.

- Excess Bond Premium (normalized) from Scheubel et al., 2024 and Gilchrist and Zakrajsek (2012) to capture the global risk premium on fixed income assets.

- Global stock market factor (inverted so that an increase represents a tightening of global financial conditions, and normalized) from Scheubel et al., 2024 and Habib and Venditti (2019) to capture global stock market risk.

- World inflation (first difference of the log CPI), for regressions of income receipts.

- World real GDP growth, for regressions of income receipts.

We include the broad dollar exchange rate for three reasons. First, the literature points to it as a global factor due to the dominant role of the dollar in international financial markets (Avdjiev et al., 2019), with a strong dollar leading to tighter funding conditions. This is a distinct channel than the revaluation of income flows on dollar-denominated financial holdings, which are captured by $\Delta ln\left(S_t^{\$,D}\right)$. Second, given the dominant use of the dollar in the invoicing of international trade (Boz et al., 2022; Gopinath et al., 2020), an appreciation

---

[4]We also considered specifications with the first difference of the log of the SP500 index, and the dividend yield on that index, but they proved not statistically significant.

of the US currency reduces all international trade activity. We can expect this to translate into lower profits and dividends for exporting firms. Third, movements in the dollar exchange rate can reflect fluctuations of risk appetite (switch from "risk on" and "risk off" periods) that also impact real investment activity.

The US interest rates proxy for interest rates in advanced economies, which we expect to directly impact earning on countries' assets, and possibly on their liabilities to the extent that they are dollar denominated, or that US interest rate affect yields in other currencies. We consider several standard measures of global risk conditions, which have been identified as major drivers of international capital flows, all being normalized and signed such that an increase represents a tightening of financial conditions. These are the VIX index of stock market volatility, the excess bond premium reflecting risk in bond markets, and a global stock market factor reflecting the global cycle in risky equity prices. World real growth and inflation differ are expected to impact the yield on assets abroad especially for investment categories that are state contingent.

The local controls $Z_{i,t}^{local}$ include (for regressions of income payments):

- Inflation (first difference of the log CPI).

- Real GDP growth.

- Domestic short-term interest rate (for advanced economies).

- Domestic long-term interest rate (for advanced economies).

Domestic inflation and real growth are expected to affect the yield of the country's liability to foreign investors, especially for contingent investments. Short and long-term interest rate impact the yield on the liabilities, to the extent that they are denominated in domestic currency.

In terms of the estimation method for (3), we compute panel OLS estimates for all countries, as well as for advanced and emerging economies separately. Errors are clustered at the country level, and we include country fixed effects η_i. The estimations are conducted both for the overall asset, as well as at the level of individual asset categories. We also test the robustness of our results to other econometric approaches in section 4.4.

Our estimates of the coefficients in (3) show the impact of each right-hand side variable on the log yield for the specific asset category. We can then combine them with the asset

and liability position to compute to express the effect on investment income flows expressed in percentage points of GDP, as explained in section 5.

3.2 Data sources and stylized fact

3.2.1 Data sources

We take our data from standard sources, as indicated in table 1. Values of investment income from the balance of payments (in US dollar), exchange rates, interest rates, GDP and inflation are from the IMF International Financial Statistics and World Economic Outlook.[5] Countries' external assets and liabilities (in US dollar) are taken from the External Wealth of Nations database (Milesi-Ferretti, 2024b).[6] The balance of payments and position data allow to conduct the analysis at the level of the usual categories of assets, namely foreign direct investment, portfolio investment (equity, and debt), other investment (excluding foreign reserves), and reserves. The US broad dollar exchange rate is from the Board of Governors. When data are missing, other sources are used as described in table 1.

The computation of the exchange rate between the currency of denomination and the dollar, $\Delta ln\left(S_t^{\$,D}\right)$, follows Colacelli et al. (2021), based on the currency composition data of Bénétrix et al. (2020). As detailed in the appendix, the data provide us with the weights of the US dollar, Euro, Pound, Yen, Renminbi and domestic currency for assets and liabilities. They include the currency weights for the overall assets (liabilities), as well as for "debt" positions (portfolio debt and other investment). Based on these weights and the investment position data, we consider three sets of currency weights: one for the total (from the data), one for portfolio debt and other (also from the data), and one for FDI, portfolio equity and reserves (computed based on the previous two).[7] As the data of Bénétrix et al. (2020) end

---

[5]The balance of payment data include the investment income streams converted into dollar, without any correction for the valuation effect stemming from exchange rate movements between the dollar and the currencies in which the assets are denominated.

A well known feature of balance of payments and international position data is that they show a global discrepancy. As our sample does not include all the countries in the world, as discussed below, we assess the extent of the global discrepancy by summing the investment income balance across our countries. This sum moves from -0.4% of GDP in 1980 to +0.2% in recent years. The discrepancy is positive for FDI and negative for portfolio debt, which is consistent with the growing FDI flows to financial centers (not in our sample) where multinationals operate funding affiliates.

[6]While the positions in banking and portfolio investment can be measured using asset prices, it is well known that FDI investment are harder to gauge as they entail holdings that are not publicly traded. We rely on the IFS data, with different approaches of measuring FDI, as they are the most widely available ones.

[7]While our approach of computing the non-debt yields as a residual likely overlooks heterogeneous currency

in 2017, we keep the 2017 composition for the debt and total positions in subsequent years.

We compute the price valuation effect ($\Delta ln\left(Q_{t-1}^D\right)$ in 3) by taking the first difference in the dollar value of positions from Milesi-Ferretti, 2024b, removing the associated capital flows to get a residual valuation adjustment, and express it in percentage of the corresponding position to get a rate of capital gain. Two observations are warranted. First, our measure of residual valuation includes the "other" valuations that are due to other factors than exchange rate and asset prices. This limits the precision of our measure, but a more precise decomposition are not available for a broad range of countries. Second, the dollar valuation change we compute includes the impact of both exchange rate and asset prices movements, and thus corresponds to ($\Delta ln\left(S_{t-1}^{\$,D}\right) + \Delta ln\left(Q_{t-1}^D\right)$). As we however directly control for $\Delta ln\left(S_{t-1}^{\$,D}\right)$ in our regressions, the coefficient on our residual valuation captures movement in asset prices that are orthogonal to the exchange rate.

We compile the data for a broad range of 42 countries, listed in table 2. We exclude financial centers, very small countries, and countries for which the data on the currency composition of assets and liabilities are missing. We split countries between an advanced group (20 countries) and an emerging economies group (22 countries), using the WEO classification.[8]

3.2.2   Stylized facts on yields

Before turning to our econometric estimates, we present stylized facts on the yields of the various components of assets and liabilities, computed as the investment income flows during a year in percent of the corresponding asset or liability position at the end of the previous year. Figure 4 shows the yields on all assets (red lines) and all liabilities (blue lines) for the median advanced and emerging economy (left and right panels respectively). We observe a clear downwards trend in advanced economies, as well as for the yield on assets in emerging countries. For this later group, the yield on liabilities is always higher, as can be expected for these riskier markets, and increased in the early part of the sample, before also starting a gradual decline.

---

composition of FDI and equity, for instance, the Bénétrix et al. (2020) are the standard references on the issue, and computing an additional detailed currency composition would go beyond the scope of this paper.

  [8]The coverage for some categories of assets is narrower among emerging economies.)

The pattern is quite heterogeneous across the various categories of investments. The yields on FDI show if anything a positive trend for assets (figure 5). The yield on liabilities has been steady in advanced economies since 2010, and shows a decrease for emerging economies in the decade to 2015. The yields on portfolio equity are broadly steady (figure 6). While there is a small trend for advanced economies, this is moderate and follows an increase in the first decade. No trend is seen in emerging economies.

The situation is sharply different for fixed income assets. Figure (7) shows a very clear decreasing trend of yields on portfolio debt for advanced economies, both for assets and liabilities, with an increase since 2021. A decrease is also seen for emerging economies, albeit more concentrated in the late 2000's for their assets, and with a more gradual pace for their liabilities. Other investments, with a large share of banking positions linked to short-term rates, also show decreasing trends until 2021 (figure 8). This is seen for both country groups, but more clearly among advanced economies. The periods of tightening cycle of monetary policy clearly translate in higher yields, as in the years before the global financial crisis, and the last two years.

Figures 21-26 in the appendix complement our review of yields by presenting investment income flows on assets, liabilities, and in net terms, as percentage of GDP.[9] Overall income flows on assets and liabilities in advanced economies show a steady increase until the global 2007-8 crises, followed by a decrease to a plateau at which they remained before increase sharply since 2021, especially in the upper tail of the distribution. The similar movements of both gross flows translate into a moderate upward trend in net terms. As seen for yields, the movements are driven by income on portfolio debt, other investment, and reserves. Income flows on FDI and equity by contrast show more regular upward trends. Turning to emerging economies, the income on assets follows a pattern broadly similar to advanced countries, but the flows are more stables for liabilities and in net terms. We also observe large gross income flows in the upper part of the distribution. Income on portfolio debt, other investment, and reserves are again the ones driving the cyclical pattern.

---

[9]To give a sense of dispersion, the figures present the median and bottom and top quartiles.

4. Econometric analysis of the drivers of investment income

This section presents our estimates of the drivers of the (log) yield on assets and liabilities following (3). We first present panel estimates for the entire sample, and for separately for advanced and emerging economies.[10][11] We then undertake a series of robustness tests. The final subsection takes stock of the most salient patterns and discusses the potential underlying economic mechanisms.

4.1 Overall sample

The coefficients of the panel regression (3) for the entire sample of 42 countries are in table 3. Columns (1) and (2) shows the estimates for the (log) yield for receipts (credits) and payments (debits) respectively for the overall asset and liability holdings. The subsequent columns show the results for specific categories of assets, namely FDI, portfolio equity, portfolio debt, other investment, and reserves.

We first see a clear inertia with the coefficient on the lag being significant in all specifications. Turning to the various drivers. we expect a coefficient of +1 for the exchange rate between the dollar and the currency of denomination following (2).[12] This is only the case for other investment and payments on portfolio equity and debt.[13]. The lack of significance for FDI could reflect the fact that our currency composition estimate for FDI and equity is a residual which could mask additional heterogeneity in the composition within this broad category. Our results are thus partially in line with the finding of Colacelli et al. (2021) who find a strong mechanical effect.

The broad exchange rate of the dollar has an impact concentrated on FDI payments, for which the yield is reduced by a dollar appreciation. US interest rate have a significant impact, especially for long rates.[14] The 3 months interest rates raises the yields on reserve

---

[10]For brevity, we focus on presenting the main results, leaving the discussion of economic mechanisms in the final part of the section.

[11]In an earlier version of our analysis, we also considered country-specific estimates of (3). As can be expected, these estimates are less precise than the ones from the panel.

[12]As exchange rates are measured as the first difference in logs, a 10% movements of the exchange rate is read as a change of 0.1 of the explanatory variable.

[13]The coefficient is close to 1 for equity receipts, but not significant

[14]Interest rates enters in levels, so an increase by 1 percentage point translate in a value of +1 for the explanatory variable.

and other liabilities, as well as the yield on FDI and equity assets. By contrast, an increase in the 10 years interest rate broadly translates into higher yields. As expected, this is the case for portfolio debt, but also for higher investment and reserves.

Turning to measure of the global financial cycle, we observe a contrasted pattern. An increase in the VIX index has a broad impact, but in an unexpected direction as a higher VIX reduces yields. The other measures of global financial cycle also matter, but to a narrower extent. An increase in the global stock market factor, which indicates a tighter phase of the financial cycle, raises the yields on portfolio equity, as well as on other investment payments and reserves. An increase in the excess bond premium has a negative impact concentrated on FDI yields.

We assess the impact of the business cycle through inflation and GDP growth, taking the values for the world in the regressions for receipts, and for the specific country in the regressions for payments. Higher inflation lowers the yields on FDI and equity assets, with an opposite effect for payments.[15] It also leads to higher yields on other investment receipts. Higher growth has a positive effect that is concentrated in FDI.

The presence of non-maturing fixed income assets implies that lagged movements in exchange rates and asset prices should have a negative coefficient. While there is no effect of the exchange rate is limited, the capital gains from prices have the expected effect. This is seen most clearly for portfolio debt, as expected, but also for portfolio equity and FDI payments, which is puzzling given the absence of fixed income in this category.

Overall our results show effects that are quite heterogeneous across drivers and categories of investments. Given this heterogeneity, we refine our results by considering advanced and emerging economies separately.

4.2   Advanced economies

Table 4 presents the results for the sample of advanced economies. For brevity, we focus on the salient dimensions of the results. [16] As for the overall sample, we observe a clear effect of the lagged yield. The exchange rate between the dollar and the currency of denomination

---

[15]Inflation enters as the first difference of the log CPI. An increase of inflation by 2 percentage points then implies an increase of 0.02 of the explanatory variable

[16]As foreign exchange reserves are quite small for most advanced countries, we take the results for that category with caution.

has the expected sign (+1) primarily for portfolio debt and other investment. There is not effect of FDI and equity, where our residual estimates of the currency composition are less precise.

The US broad dollar index has a effect across more categories than for the overall sample. An appreciation of the US currency now reduces yields for both receipts and payments of FDI and equity. The impact of US short term rates is somewhat narrower than for the overall sample, concentrated on FDI receipt and payments on other investments. US long term rates have a clear impact, but more concentrated that for the overall sample on portfolio debt and investment where all yields increase following a rise in interest rates.

A higher VIX again reduces yields, but the effect is more concentration on portfolio equity, debt, and other investment, with no effect on FDI. Tighter conditions as proxied by the global stock market factor raises yields for payments on portfolio equity and debt, and other investment. As for the overall sample, the excess bond premium plays little role.

Turning to macroeconomic condition, inflation has a narrower effect concentrated on other investment, while the impact of real growth remains concentrated on FDI. Capital gains from asset prices have the expected negative coefficient across all categories.

The focus on advanced economies allows us to include domestic interest rates. As expected, higher short term rate raise the yields for portfolio debt and liabilities, while higher long term rates do so only for other investment.

4.3   Emerging economies

We now turn to the evidence for emerging economies, presented in table 5. The impact of lagged yields is similar to the overall sample. The exchange rate between the dollar and the currency of denomination has a narrower impact than for advanced economies, and matters only for portfolio debt and other payments. The exchange rate has a positive effect for portfolio equity, but more than theory predicts. Given that the currency composition of equity is obtained as a residual, this effect should be taken with some caution.

A broad appreciation of the dollar has a very limited effect, being significant only for FDI payments. This stands in clear contrast to advanced economies. The impact of a higher US short-term interest rate is again concentrated in other investment payments and receipts

on reserves. An increase in the US long-term interest rate has a broader impact than for advanced economies. In addition to raising all yields on portfolio debt, other investment, and reserves, it raises yields on FDI and equity liabilities.

Turning to the global financial cycle, the VIX again reduces yields, with an effect concentrated on portfolio debt payments and other investment. The global stock market factor matters less than for advanced economies, and the excess bond premium reduces the yield on debt assets and raises it for debt liabilities, with marginal significance.

The effect of inflation is concentrated on FDI and portfolio equity payments, which increase when domestic inflation is higher. Unlike advanced economies, yields on other investment are impacted only for receipts. GDP growth has again a positive effect, concentrated on FDI.

Finally, the capital gains from asset price movements have the expected sign, but are mostly significant only for payments.

4.4   Robustness analysis

We assess the robustness of the results presented above by considering a broad range of alternative specifications. Overall, our results prove very robust.

While we exclude financial centers, our sample still includes the United States. Given the central and special role of that country in the international monetary system, in particular as the largest provider of the liquid and safe reserve assets, and the prominent role of the dollar, one may be concerned that our results are sensitive to its presence. We run our estimates excluding the United States from the sample, both for all countries and for advanced economies. Tables 8 and 9 shows that excluding the United States has no impact, the coefficients being essentially the same as in tables 3 and 4 respectively.

The most intriguing element of our results is the negative impact of the VIX index on yields. We assess the impact of the VIX by first considering a specification that does not include the index. Table 10 in the appendix shows that the results are broadly unchanged. The only differences from table 3 are that a broad dollar appreciation or an increase in the US short term interest rates now lead to a higher yield for receipts on other investment, and that a tightening of the global financial cycle measured through the excess bond premium

reduces yields on other investment (so the excess bond premium picks up the effect of the VIX).

We then consider whether the US interest rates that we consider do not fully capture the expansionary stance of US monetary policy since 2008, which could affect the results for the VIX if expansionary policy leads to a decrease of the VIX. We therefore add the growth rate of the monetary base of the Federal Reserve in tables 11 (overall sample) and 12 (emerging economies). An increase in the US monetary base reduces payment yields on other investment, and the coefficients for the other variables are essentially unchanged. Our next robustness check recognizes that the VIX went though very large movements in the global financial crisis of 2007-2008. This period is thus an outlier, and movements in the index at that time could dominate our estimates. We add a dummy for these two years in our specification. Tables 13 (overall sample) and 14 (emerging economies) shows that this does not alter our estimates, including the coefficients on the VIX. The coefficients on the crisis dummy itself show that overall 2007-2008 were associated with higher yields on FDI and portfolio equity (though less so for emerging economies, where only the coefficient on FDI payments is significant), lower yields on payments for other investment, and lower yields on reserves in emerging economies.

As already discussed, our approach to control for the currency composition of assets and liabilities, and the associated effect of movements of the exchange rate between the dollar and the denomination basket, relies on estimates and is computed in a residual way for FDI and portfolio equity. We therefore consider whether removing the associated exchange rate from our specification affects the results. Table 15 shows that this is not the case. Unsurprisingly, the variable where some coefficients are affected is the broad exchange rate of the dollar, which now shows a negative effect on portfolio debt payments.

Our analysis focuses on the pattern over the last 23 years. As indicated in the introduction, we can consider the pattern since 1980, albeit for a narrower sample. Taking a longer perspective also restricts the set of explanatory variables we can consider. In particular, we do not have long enough series for the currency composition of assets and liabilities, as well as for the measures of the global financial cycle. Bearing these caveats in mind, Appendix table 16 presents our estimates for the longer sample, which are broadly in line with those

of the shorter period. A broad appreciation of the US dollar lowers yields on portfolio debt and (more robustly) on other investment. It also has a negative effect for FDI payments and equity receipts. An increase in the US short-term interest rate raises the yields on other investments, and (unlike for the shorter sample) has no effect on equity and FDI. An increase in the long-term interest rates has a more moderate impact compared to the shorter sample, but still raises yields for equity and portfolio debt. A clear difference from the results on the shorter sample is that the long-term interest rate has a negative effect on yields on other investments, but this should be seen in the context of a significant positive effect of the short-term interest rate on these variables in the long sample.

Our final set of robustness analysis pertains to the econometrics of our specification, which includes the lag of the dependent variable. While all regressions use standard errors clustered at the country level to address issues of potential serial correlation, we nonetheless check for the presence of such correlation. We run the Inoue and Solo and the Bias-corrected Bron and Breitung tests to investigate the presence of first-order correlation in our main regression on yields on overall investment income, these tests being more appropriate for panel fixed-effects regressions. Both tests fail to reject the null of no auto-correlation[17], suggesting that our main estimates are not biased from serial correlation. Nevertheless, we undertake panel-corrected estimates for the yields on overall investment income as a robustness check. Columns (1) and (2) in Appendix table 17 report the results allowing for panel-specific AR(1) processes in the computation of standard errors. The results are largely unchanged except for the negative coefficients of the VIX and excess bond premium which are not significant any more for payments. An additional concern with the inclusion of the lag of the dependent variable is that it might bias the estimates due to endogeneity. We therefore use the Arellano-Bond estimator in first-difference (the absence of autocorrelation allows us to use this technique). Columns (3) and (4) in Appendix table 17 show that the results using this alternative approach are consistent with the one from our baseline approach, including for the effect of the VIX index.

---

[17]p-values equal to 0.2 and 0.6 for regressions on yield of Investment Income Receipts and p-values equal to 0.2 and 0.5 for Investment Income Payments respectively

4.5   Taking stock

Eight salient elements can be taken from our econometric results. First, there is a high degree of heterogeneity of the impact of various drivers across categories of investment and country groups. Second, yields display substantial inertia, with their lagged value being always significant, even in categories that do not include fixed income assets with long maturities. While equation (3) shows that this is to be expected for other investment and portfolio debt, the effect is also observed for FDI and portfolio equity. A possible explanation is the firms smooth the pace at which they pay dividends to investors or their parent company, instead of letting the yield fully fluctuate in line with the various variables driving them.

Third, interest rates are the drivers with the broadest impact. As expected, an increase in the US 10 years interest rates raises all yields in the categories with fixed income assets, namely portfolio debt, other investment, and reserves. These results are consistent with the relevance of dollar funding in international banking, as well as the dominant role played by dollar bonds in debt security markets. In addition, emerging economies face a higher yield on their FDI and portfolio equity liabilities. This indicates that foreign investors in emerging markets contingent assets require a higher yield when they face a more favorable return on a safe investment in US Treasury debt.

An increase in the US 3 months interest rate also raises yields, but the effect is concentrated on receipts on reserves and payments on other investment. The higher yield on reserves reflects the fact that they often invested in short-maturity liquid assets, with a large dollar share. The higher yield on other payments is consistent with global banks funding themselves to a large extent in dollar at short maturities. More puzzlingly, the increase in the US short term interest rate impact FDI yields, in a contrasted way between advanced economies (higher receipt yields) and emerging ones (lower payment yields). A possible explanation for advanced economies is that FDI includes investment by banks in foreign affiliates, with parents requiring a higher return from their affiliates when interest rates increase.

In terms of magnitude, the transmission of interest rates is sizable. For instance, the coefficient on the US 10 years interest rate for portfolio debt and other investment is around 0.1 in advanced economies. As our dependent variable is the ln of the yield, the coefficient implies that an increase by 1 percentage points in the US rate leads to a movement of 10

percent in the yields, moving for instance from 4% to 4.4%. The magnitude is smaller by one-half to one-quarter in emerging economies.

Domestic interest rates also matter for the yield on advanced economies' liabilities. As expected, higher interest rates raise yields in portfolio debt and other investment, also only in the latter when considering long-term yields.

The fourth salient point is that exchange rate matter. A first mechanical channel is through the currency of denomination of assets and liabilities. We find that this is indeed the case, but the effect is concentrated in portfolio debt and other investment, and more prominent among advanced economies. This can be due to the fact that while we have date on the currency composition of debt, we infer the composition of FDI and portfolio equity as a residual. If FDI are equity are not invested in a similar way across currencies, our estimation for these categories are less precise. The more limited evidence for emerging economies, including in debt investment, could reflect a higher dominance of the dollar (with the associated exchange rate set at unity) for this group. The movements of the exchange rate are then driven by currencies that play a marginal role in the composition of the investment basket. Emerging economies also show a large positive effect for portfolio equity, but as already indicated the limited precision of our estimates of currency composition imply that this should be viewed with some caution.

The exchange rate also impacts yields through movements in the broad value of the US dollar. An appreciation of the dollar leads to a reduction of all yields on FDI and portfolio equity, primarily among advanced economies. In emerging economies, the effect is only seen for FDI payments. This can reflect several mechanisms. First, large firms, including multinationals, are more active in international trade than others. As the dollar dominates the invoicing of international trade, an appreciation reduces trade flows and associated profits (Boz et al., 2022), with multinational firms being particularly affected. Second, a strong dollar can also be a sign of a "risk off" period in which investors are more cautious in funding real investment, leading to a contraction of economic activity. As investment goods account for a large share of trade, multinationals involved in international exchanges see a contraction of their sales and profits. While the pattern is similar to the dominant currency pricing, the mechanism differs as the strong dollar is more a consequence of a higher risk aversion

that also reduces economic activity than a direct cause of weaker trade. Another mechanism is that multinational firms may alter their internal allocation of profits following exchange rate movements. If a strong dollar puts pressure on profits, parent companies may opt to strengthen the financial resources of their foreign operations by limiting payments, leading to lower yields. An interesting pattern of the results is that among emerging economies the reduction in FDI yields is seen only for the payments side. This is consistent with parents in advanced economies being less demanding on their subsidiaries in emerging countries when economic conditions are more challenging. The absence of an impact on FDI receipts for emerging economies could be due to their multinational having subsidiaries primarily in advanced economies where activity is less sensitive to the dollar exchange rate (particularly for affiliates serving the US domestic market).

In terms of magnitude, the coefficients for the broad exchange rate of the dollar range between -1.2 to -2.2 for FDI and equity in advanced economies. This indicates that a 10 percent appreciation of the dollar (a change of 0.1 in the variable) reduces the yield by 12 to 22 percent, corresponding for instance to a change from 4% to 3.52% or 3.12%

The fifth salient point is the impact of variables linked to the global financial cycle. While we would expect times of tighter financial conditions to raise yields, the pattern is more nuanced. An increase in the VIX index leads to lower yields across the board (except for FDI) in advanced economies. In emerging economies, the effect is more concentrated on other investment and debt payments. This pattern is robust to alternative specifications. While we may be concerned that the VIX, US interest rates, the broad exchange rate of the dollar, global stock market factor and excess bond premium proxy for the same underlying factor, their correlation is limited.[18] The impact of the VIX is surprising, as the extensive literature on international capital flows has shown that they are reduced in times when the index is higher. A potential explanation could be that movements in risk aversion change the investor base. An increase in the VIX leads the more risk averse investors to retrench towards their domestic financial markets, leading to lower (or even negative) capital flows. This translates into a higher share of more risk tolerant investors, which accept a lower risk premium. As we control for interest rates, this leads to a negative coefficient for the VIX

---

[18]Appendix table 7 shows that correlations are overall limited, with the exception of the two US interest rates and the VIX - excesss bond premium.

index.

Other proxies for the global financial cycle however show a different pattern. A tightening of financial conditions measured through the global stock market factor raises the payment yields on portfolio equity, debt, and other investment in advanced economies, but has an effect limited on the latter among emerging countries. This can reflect a higher risk premium, and a higher yield on equity due to falling stock prices that reduce the value of the denominator. Movements in the excess bond premium have broadly no impact on yields.

The sixth salient finding is that macroeconomic conditions matter. Higher inflation raises the yields for other investment in advanced economies, suggesting that international banks require compensation that goes beyond the movements in short-term interest rates, possibly due to concerns that inflation abroad can lead to a depreciation of the foreign currency. While inflation also affects other investment receipts in emerging countries, the main effect is through higher payment yields on FDI and portfolio equity. This suggests that foreign investors in contingent assets are quite sensitive to inflation risk in emerging economies and demand a risk premium.

Higher GDP growth raises yields primarily on FDI investment (especially on the payment side), but also for equity payments in advanced economies. This is expected as times of higher growth in a country are associated with higher profits for multinational firms with operations in the country. The smaller effect on the receipt side could reflect the fact that we consider world growth instead of a finer weighting scheme based on the geographical composition of FDI assets.

Another salient point is that the capital gains have the expected negative effect, as higher asset prices raise the value of the denominator of yields. This effect is somewhat more clearly seen in advanced economies, possibly reflecting that our indirect estimates are more reliable for this group.

A final point is that many drivers, such as interest rates and the broad exchange rate of the dollar, impact both receipt and payment yields. This leaves the effect on the net income balance ambiguous, and dependent of the specific structure of a country's assets and liabilities on which the yields apply.

5. Impact on net investment income flows

This section assesses the extent to which the movements in yields translate into a material economic effect through changes in investment income flows, expressed as percentage of GDP. While our panel estimates provide us with the impact on yields, these translate into very different economic effects depending on the size of a country's external assets and liabilities, their composition across various categories of investment, and the country's net position as a debtor or a creditor. Our analysis combines the estimated impact on yields for the various assets and liabilities from the previous section with the corresponding asset and liabilities positions of each country. We first present the method, and then illustrate the impact of selected variables (VIX, US interest rates, and US dollar exchange rate).

5.1 Linking yields and income flows

We focus on the impact of selected drivers (the VIX, US interest rate, and US dollar exchange rate). Our estimates from section 4. provide us with fitted values of the (ln) yield in dollar for an asset category k, $\hat{r}_{k,t}^{\$}/r_{ss}$. We convert them into effects in terms of income flows relative to GDP for that asset category by taking the approximation of the relation between flows, GDP, yields and positions:

$$\hat{p}_{k,t}^{\$} \quad = \quad -p_{k,ss}^{\$}\left(\widehat{Y}_t^{\$} - \widehat{Y}_{t-1}^{\$}\right) + p_{k,s}^{\$}\frac{\hat{r}_t^{\$}}{r_{ss}} + \frac{r_{k,ss}}{1+g_{ss}}\hat{a}_{k,t-1}^{\$} \tag{4}$$

where lower-case letters denote ratios to GDP. [19] Starting from a period $t-1$, we compute the impact of a shock at time t through the yield $\hat{r}_{k,t}^{\$}/r_{ss}$ on the income flows $\hat{p}_{k,t}^{\$}$, in terms of percentage point to GDP.[20] We proxy $p_{k,ss}^{\$}$ by the value of primary income to GDP for the asset category, taking the average over several years. The effect on income flows (in percentage points of GDP) through the yield in period $t+h$ is then $\hat{p}_{k,t+h}^{\$} = p_{k,ss}^{\$}\left(\hat{r}_{k,t+h}^{\$}/r_{ss}\right)$ for $h \geq 0$, with $\hat{r}_{k,t+h}^{\$}/r_{ss}$ also including the effects through the lag of the yield. The impact on overall income flows is obtained by summing up across categories k of investments. In addition to the impact on yields, movements in the exchange rate between the dollar and the currency

---

[19]Specifically,$\hat{Y}_t^{\$} = \left(Y_t^{\$} - Y_{ss,t}^{\$}\right)/Y_{ss,t}^{\$}$, $\hat{p}_{k,t}^{\$} = p_{k,t}^{\$} - p_{k,ss}^{\$}$ and $\hat{a}_{k,t}^{\$} = a_{,kt}^{\$} - a_{k,ss}^{\$}$.

[20]For simplicity, we abstract from the impact on GDP growth, setting the term $\widehat{Y}_t^{\$} - \widehat{Y}_{t-1}^{\$}$ to zero.

of denomination affect the dollar value of assets, $\hat{a}_k^{\$}$.[21] The appendix presents more details on the computations for specific variables.

In the computations below, we assess the impact of a variable by taking the coefficient estimates irrespective of whether it is statistically significant or not. We proxy $p_{k,ss}^{\$}$ by the 2018-2022 average.

5.2   Results for investment income flows

We now turn to the impact of selected variables on the investment income balance. A pattern that emerges from all figures is that the effects are quite heterogeneous across countries, which highlights the need to translate the impact on yields into actual income flows.

We start with the impact of a 1 standard deviation increase in the VIX index. Figure 9 shows the effect on the primary investment income balance for advanced economies (left panel) and emerging countries (right panel).[22] Overall, an increase in the VIX shifts the income balance towards larger surpluses or smaller deficits, the effect being somewhat larger on average for advanced economies, where most countries see an impact of 0.2 percent of GDP, some with a larger effect.[23] This positive net effect shows that the primary impact of the VIX works through reducing the yield on liabilities.

Turning to US interest rates, figure 10 shows that a 1 percentage point increase in the short-term interest rate has a positive effect on the investment income balance. The impact is most pronounced for emerging economies, albeit still moderate with most experiencing a shift of a quarter percentage point of GDP.[24] By contrast, figure 11 shows that a 1 percentage point increase in the long-term interest rate has a detrimental impact on the investment income balance, especially for emerging economies.[25] Among advanced economies, the pat-

---

[21]Consider for instance a permanent appreciation of the dollar from year t inwards. It directly lowers the yield in that year, and also reduces the dollar value of the investment holdings from year t onwards. This translates into a lower dollar income stream in year $t+1$ on even though the exchange rate remains unchanged after year t. While our specification also includes a role for the lagged exchange rate between the dollar and the denomination currency, we abstract from it for brevity as the estimated coefficients are never significant.

[22]A value of 0.2 indicates 0.2% of GDP

[23]The unweighted median effect is 0.20 for advanced economies and 0.13 for emerging markets. Weighting by GDP gives average values of 0.17 and 0.14, respectively.

[24]The unweighted median effect is 0.16 for advanced economies and 0.28 for emerging markets. Weighting by GDP gives average values of 0.17 and 0.28, respectively.

[25]The unweighted median effect is -0.09 for advanced economies and -0.35 for emerging markets. Weighting

tern is heterogeneous, as several of them show an improvement in the income balance, while the majority see a deterioration, the magnitudes remaining however moderate overall. The situation is more homogeneous in emerging economies where the balance deteriorates with exceptions, and to a more material extent with several countries experiencing an effect exceeding a third of a percentage point of GDP. The overall impact of movements in interest rates is thus quite contrasted. The magnitudes of responses to short and long-term interest rates are larger among emerging economies, but the positive effect of short-term rates is offset by the impact through long-term rates, especially among emerging economies.

The impact of a dollar appreciation impacts the two country groups quite differently. Figure 12 considers the effect of a 10% appreciation of the dollar, operating both through the broad exchange rate of the dollar and through the exchange rate of the dollar vis-à-vis the basket currency in which the asset and liability positions are denominated. In advanced economies, the impact on the income balance can go either way. While most countries see a deterioration, many experience an improvement, with the magnitudes being sizable for some. By contrast, a stronger dollar has a positive effect on the income balance in emerging economies, with the magnitude exceeding half a percentage point of GDP for most of them. [26] As the impact of a stronger US currency is to reduce the yield of FDI and equity, the heterogeneous, and mostly negative, effect in advanced countries reflects the fact that most hold long positions in these categories. In emerging countries, by contrast, a broad appreciation of the dollar reduces the yield on FDI payment which improves the overall balance.

Overall, combining the estimated impacts on yields with the specific investment positions shows that the effects on the investment income balance are heterogeneous across country groups, as well as within them, and can lead to sizable movements in the income balance. The changes in the drivers that we consider are of course illustrative, so we complete them by considering an actual episode in the next section.

---

by GDP gives average values of -0.05 and -0.32, respectively.

[26]The unweighted median effect is -0.04 for advanced economies and 0.26 for emerging markets. Weighting by GDP gives average values of -0.11 and 0.27, respectively.

6. Investment income during the recent tightening cycle

Since 2021, the world economy experienced a rapid an unexpected surge in inflation, leading to equally rapid increases in interest rates. We assess how these developments have impacted investment income flows, both in gross and net terms, based on our estimates of their impact on yields, combined with the asset and investment positions (we proxy $p_{k,ss}^{\$}$ by the value of investment flows in 2021).[27] We first consider the impact of US rates, before adding the effect of higher domestic interest rates (for advanced economies), inflation, and movements in the exchange rate.

One pattern seen across the figures below is the high degree of heterogeneity across countries. We therefore complement our figures with table 6, which shows the median and GDP weighted averages of the various effects.

6.1 Impact of higher US interest rates

We start with the impact of higher US interest rates. We take actual rates until May 2024 from the FRED database, and subsequent forecasts from Statista for the US Fed Fund, the 3 months Treasury yield, and the 10 years Treasury yield.[28]. Combining these, we compute the paths of the 3 months and 10 years rates at an annual frequency from 2021 to 2025.

Figure 13 shows the impact of higher US short and long-term rates on the investment income balance for advanced economies (left panel) and emerging markets (right panel). We contrast our estimates for the balance in 2023 (blue bars) and that in 2025 (red bars). We present the pattern both for the sum of investment income flows on assets and liabilities (top panel), and their difference (income balance, bottom panel).

Higher interest rates lead to a clear increase in gross terms, which build up over time. In advanced economies, the median increase reaches 3.74 percent of GDP by 2025 (table 6). While gross flows also increase in emerging economies, the magnitude is smaller (median of 1.5 percent of GDP). This reflects the fact that financial globalization is more pronounced among advanced economies. as well as our estimates that higher long-term US rates reduce

---

[27]We consider the impact of the interest rates for all categories, even if the estimate is not statistically significant.

[28]These are found at https://econforecasting.com/forecast/ffr, https://econforecasting.com/forecast/t03m, and https://econforecasting.com/forecast/t10y, respectively

income flows in emerging countries. In net terms, most advanced economies see an increase in the investment income surplus (or a decrease in the deficit), reaching a median value of 0.86 percent of GDP in 2025. By contrast, a smaller share of emerging economies experience a higher surplus, even though several see a sizable increase with a median effect of 0.81 percent of GDP in 2025. Interestingly, higher US interest rates lead to larger investment income deficits only among a handful of emerging economies.

6.2   Impact of domestic interest rates

As the increase in interest rates is a global phenomenon that goes well beyond the United States, we expand our analysis to take account of the changes in interest rates in other advanced economies. Data limitations prevent us from doing so for emerging markets.

Specifically, we rely on 3 months and 10 years interest rates for the United Kingdom and the Euro area. The central bank rates are taken from Statista.[29]. The interest rates on 3 months and 10 year bonds are taken from FRED until May 2024, with forecasts for later values the World Government Bonds site.[30] These rates are used to compute paths of domestic rates for the United Kingdom and the Euro area at an annual frequency. For other advanced economies, we consider a 50-50 weighting of the path of US and Euro area rates starting from their 2021 values.

Figure 14 shows the impact on the sum of investment income flows on assets and liabilities (top panel), and the income balance (bottom panel). As we focus on advanced economies, the left panels present the impact of the countries' domestic interest rates while the right panels show the total effect of changes in US interest rates and domestic rates. We again see a clear increase in gross terms, that substantially builds over time (median effect equal to 0.73 percent in 2025).

The increase in countries' interest rates has an adverse impact on their investment income balance (bottom left panel), which mirrors the gross effect as domestic interest rates impact only the payments on liabilities. This net effect tends to offset the positive one from higher

---

[29]https://econforecasting.com/forecast/ukbankrate, and https://econforecasting.com/forecast/estr

[30]http://www.worldgovernmentbonds.com/bond-forecast/germany/10-years/ and http://www.worldgovernmentbonds.com/bond-forecast/united-kingdom/10-years/, respectively. The site gives forecasts for every third month until June 2025, and values for intermediate months are interpolated. As these forecasts end in June 2025, we assume that 10 year rates remain unchanged until the end of 2025, and 3 months rates parallel the evolution of the policy rates over the second half of 2025.

US interest rates, leading to a contrasted impact in the income balance when both rates are considered (bottom right panel). While a small majority of countries see an improvement, several are faced with a deterioration of a similar magnitude.

6.3   Impact of inflation

The large increase in interest rates since 2021 happened in the context of a broad surge of inflation, which itself impacts the investment income. We therefore assess the direct impact on inflation based on our estimates, using the actual values until 2023 and the forecasts of the IMF World Economic Outlook since then.

Figure 15 shows a contrasted pattern. In terms of the sum of investment income flows on assets and liabilities (top panel), higher inflation tends to raise income flows, but in a heterogeneous way as several advanced economies show a negative impact, and the magnitude across countries within a group displays marked differences. This translates to a low median impact, of 0.02 percent and 0.08 percent by 20025 for advanced and emerging economies, respectively.

Turning to the income balance (bottom panel), higher inflation has a negative effect for most advanced economies, especially in 2025 where the median decrease in the balance is 0.38 percent of GDP. Emerging economies also experience a negative effect, with some outliers, but of a smaller magnitude with a median decrease of 0.10 percent of GDP.

6.4   Impact of the dollar exchange rate

Since 2021, the exchange rate of the US dollar has moved substantially, with a 6.7 percent appreciation of the broad index between 2021 and 2022, followed by a stabilization. We assess the impact of the exchange rate using its actual values (bilateral and broad index) from the Board of Governors of the Federal Reserve until 2023, and assume that it remains constant from then on. The exchange rate impacts the income flows through several channels. The first is the broad exchange rate, and the second is the revaluation of income flows driven by the exchange rate between the dollar and the currency of denomination of holdings. In addition to its impact on the yield, the later exchange rate also affects the value of income flows through a change in the value of assets.

Figure 16 presents the impact of the exchange rate movements through the various channels. The strengthening of the dollar leads to a reduction of gross flows (top panel), especially for advanced economies. This is most pronounced in 2023 (median reduction of 0.70 percent of GDP) but then shrinks as the exchange rate is broadly stable since the end of 2022 (median reduction of 0.34 percent in 2025). While most emerging economies also see a reduction in gross income flows, the pattern is more contrasted as some experience an increase. In addition, the magnitude of the effect is smaller in emerging countries, with a median decrease of 0.05 percent by 2025. The larger effect in gross terms in advanced economies is consistent with the large banking position, predominantly in dollars, among these countries.

Turning to the income balance (bottom panel), the stronger dollar broadly leads to a negative effect in both advanced and emerging economies. The magnitude is however quite small, with a median decrease of the investment income balance in 2025 of 0.07 percent and 0.04 percent of GDP in advanced and emerging countries, respectively. The figure displays sizable heterogeneity, with several countries experiencing a positive effect.

6.5 Overall effect

Our analysis since 2021 shows that movements in interest rates, inflation, and exchange rates impact the income flows, both in net and gross terms. The effects are quite contrasted, especially in net terms, as for instance higher US interest rates have a positive impact while higher inflation and the stronger dollar have a negative one.

Figure 17 puts our previous analysis together and shows our estimates of the overall impact of the interest rates, inflation, and exchange rates. In terms of total income flows (top panel), the evolution since 2021 leads to higher flows, with the effect getting stronger over time. The effect is sizable, especially among advanced economies (median increase of 4.34 percent of GDP by 2025), with most seeing an increase by 3 percent of GDP. The effect is most pronounced among European countries, such as Austria, Belgium, Norway, Sweden, Finland and France. Emerging economies also experience an increase, albeit more moderate (median 1.64 by 2025), which is quite heterogeneous, the largest effects being seen in Malaysia, Hungary and Argentina.

The situation is quite contrasted in terms of the income balance (bottom panel of figure

17). Among advanced economies, the median effect is an increase by 0.27 percent of GDP by 2025, with broadly as many countries experiencing an increase as countries seeing an adverse impact on their balance. In addition, while the effect is sizable for some, reaching 1-2 percent of GDP in 2025, it remains much smaller for others. Emerging economies also display substantial heterogeneity, although most experience a positive impact on their income balance, especially in 2025 (median increase of 0.68 percent). The magnitude of the increase is quite varied, with outliers reaching 4 percent (Hungary and Malaysia).

Our overall estimates taking account of the evolution of the various drivers since 2021 show that they have led to higher gross income flows, especially among advanced countries. The impact on the income balance has been slightly positive for advanced economies, and more clearly so for emerging ones. Our estimates show that the situation can be very different from one country to the next. An interesting feature of figure 17 is that the United States does not stand out as having an exceptional situation, with increases in gross income flows and the balance that are well within the estimates for other countries.

6.6   Assessing the fit

Our scenario analysis computes estimates on investment income flows using our econometric results, paths of interest rates, inflation, and exchange rates (including forecasts), and the composition of assets and liabilities for each country. We can assess how well they fit the 2023 situation, as we have actual data for that year. In addition to the usual bands of confidence around our coefficients, which are not all statistically different from zero, our estimates do not take into account the path of other drivers for which we do not have forecasts, notably the measures of the global financial cycle such as the VIX.

These caveats notwithstanding, we contrast our estimates with the actual data by presenting scatter plots of the investment income flows in 2023. Figure 18 contrasts the 2021-2023 change in the investment income balance from our estimates (horizontal axis) and the actual values (vertical axis). The figure shows a good fit, especially in emerging economies (right panel) where the points are close to the 45-degree line, with some outliers. The pattern is more dispersed for advanced economies, although the points are centered around the 45-degree line. In terms of gross flows, appendix figure 27 shows that our estimates are more

concentrated than the actual data for advanced economies, but relatively close to the 45-degree line for emerging economies (with the exception of Russia), though we tend to find a larger effect than seen in the data.

Overall, our scenario exercise, despite imposing the same coefficients on all countries within a group, and only including a couple of drivers, provides a fairly good fit with the actual experience in the current phase of large interest rates and inflation movements.[31]

7.   Conclusion

Financial globalization has opened the door for a growing role of dividend and interest flows as channels of international transmission. While the downward trend of interest rates until 2021 has acted as an offsetting force, leaving income streams steady as a share of GDP, the current phase of rapid increases in interest rates and inflation has changed the pattern.

In this paper, we document the evolving pattern of the yields that countries earn and pay on their external financial positions, contrasting them across asset categories and advanced and emerging economies. The pattern is heterogeneous, with the decrease in yields concentrated among non-contingent assets. Our panel econometric exercise shows that yields are sensitive, albeit in a contrasted way, to movements in US interest rates, the external value of the dollar, global risk conditions (but in an unexpected direction), and macroeconomic conditions.

Combining the movements in yields with the specific structure of countries' assets and liabilities provides country-specific estimates of the impact on gross income flows, as well as the investment income balances. Applying these to the current episode of higher inflation and interest rates and a strong dollar shows that gross income flows have increased as a share of GDP, and can be expected to continue doing so in the near future. While we may expect higher interest rates to adversely affect the income balance of emerging economies, this is the case only for long-term rates. In addition, movements in interest rates coincide with changes in inflation and exchange rates. Taking these into account shows the median emerging economy has seen an improvement in its income balance, which should increase

---

[31]Of course, our fit assessment only relies on the 2023 pattern and will need to be expanded as more data become available.

further. The situation is however quite heterogeneous.

Looking forward, with investment income flows having gained prominence, analyses of the determinants of current accounts and global imbalances will have to take them more carefully into account, following the recent research contributions. For instance, movements in exchange rate impact the current account through the primary income in a different manner than they affect trade flows. Whether this growing presence of investment income flows will prove to be a turning point hinges on the future evolution of interest rates. While they have sharply increased since 2021, central banks are now engaged in an easing cycle. It remains to be seen how quickly this will translate into lower long-term rates, which for instance remain high in the United States. Should developments such as concerns on the fiscal outlook, or the need to fund green investments lead to persistently higher rates, the primary income will remain a larger component of the current account than it was in the years prior to the inflation surge. The growing use of profit shifting by multinationals represents another factor that can lead to a growing role of income flows, with profits booked in affiliates paid out as dividends, relative to trade flows.

A challenging dimension in assessing the sensitivity of investment income flows to various shocks for a specific country is the sizable extent of heterogeneity. A given driver, such as the interest rate, often impacts the yields for both receipts and payments. Assessing the impact on the current account then requires carefully taking into account the size and composition of a country's balance sheet. A global shock can then have very contrasted impacts on various countries' current accounts, even though it affects the yields they receive and pay on specific assets in the same way across countries.

Our analysis can be extended in several directions. Some of the findings of our panel regressions are puzzling, in particular a higher VIX reducing yields. Further research on how financial markets react to higher risk aversion through capital flows and the composition of investors can shed light on these dimensions. The impact of the exchange rate provides another rationale for improving our understanding of the currency composition of countries' assets and liabilities at the level of specific investment categories. Another avenue of work is to model the joint movements in interest rate, exchange rate, stock prices, and the other drivers to compute a broader view of the impact of specific underlying shocks through these

various channels. Future research can also take account of the global adding-up constraints of surpluses and deficits to conduct a joint estimation across countries. Finally, We have considered a linear setting, but movements in interest rates and exchange rates could have non-linear effects by triggering borrowing constraints and risk premia.

References

Adler, Gustavo and Mr. Daniel Garcia-Macia (Apr. 2018). *The Stabilizing Role of Net Foreign Asset Returns*. IMF Working Papers 2018/079. International Monetary Fund.

Alberola, Enrique, Ángel Estrada, and Francesca Viani (2020). "Global imbalances from a stock perspective: The asymmetry between creditors and debtors". In: *Journal of International Money and Finance* 107.C.

Alfaro, Laura, Sebnem Kalemli-Ozcan, and Vadym Volosovych (2014). "Sovereigns, Upstream Capital Flows, And Global Imbalances". In: *Journal of the European Economic Association* 12.5, pp. 1240–1284.

Antràs, Pol (Jan. 2023). *Interest Rates and World Trade: An 'Austrian' Perspective*. NBER Working Papers 30844. National Bureau of Economic Research, Inc.

Auer, Simone (2019). "Monetary policy shocks and foreign investment income: Evidence from a large Bayesian VAR". In: *Journal of International Money and Finance* 93.C, pp. 142–166.

Avdjiev, Stefan, Valentina Bruno, Catherine Koch, and Hyun Song Shin (2019). "The Dollar Exchange Rate as a Global Risk Factor: Evidence from Investment". In: *IMF Economic Review* 67.1, pp. 151–173.

Beckmann, Joscha and Robert Czudaj (2017). "Effective exchange rates, current accounts and global imbalances". In: *Review of International Economics* 25.3, pp. 500–533.

Behar, Mr. Alberto and Ramin Hassan (May 2022). *The Current Account Income Balance: External Adjustment Channel or Vulnerability Amplifier?* IMF Working Papers 2022/106. International Monetary Fund.

Bénétrix, Agustín S, Philip R Lane, and Jay C Shambaugh (2015). "International currency exposures, valuation effects and the global financial crisis". In: *Journal of International Economics* 96, S98–S109.

Boz, Emine et al. (2022). "Patterns of invoicing currency in global trade: New evidence". In: *Journal of International Economics* 136.C.

Bénétrix, Agustín S, Luciana Juvenal, Martin Schmitz, and Deepali Gautam (May 2020). *Cross-border currency exposures: new evidence based on an enhanced and updated dataset*. Working Paper Series 2417. European Central Bank.

Caballero, Ricardo J., Emmanuel Farhi, and Pierre-Olivier Gourinchas (2008). "An Equilibrium Model of Global Imbalances" and Low Interest Rates". In: *American Economic Review* 98.1, pp. 358–393.

Chinn, Menzie D and Hiro Ito (2007). "Current account balances, financial development and institutions: Assaying the world "saving glut"". In: *Journal of international money and Finance* 26.4, pp. 546–569.

Chinn, Menzie D. and Hiro Ito (2022). "A Requiem for "Blame It on Beijing" interpreting rotating global current account surpluses". In: *Journal of International Money and Finance* 121.C.

Chinn, Menzie D and Jaewoo Lee (2009). "Three current account balances: A "semi-structuralist" interpretation". In: *Japan and the World Economy* 21.2, pp. 202–212.

Chinn, Menzie D and Eswar S Prasad (2003). "Medium-term determinants of current accounts in industrial and developing countries: an empirical exploration". In: *Journal of international economics* 59.1, pp. 47–76.

Colacelli, Mariana, Deepali Gautam, and Cyril Rebillard (Feb. 2021). *Japan's Foreign Assets and Liabilities: Implications for the External Accounts*. IMF Working Papers 2021/026. International Monetary Fund.

Cubeddu, Mr Luis M et al. (2019). *The External Balance Assessment Methodology: 2018 Update*. International Monetary Fund.

Devereux, Michael B and Hans Genberg (2007). "Currency appreciation and current account adjustment". In: *Journal of International Money and Finance* 26.4, pp. 570–586.

Devereux, Michael B., Makoto Saito, and Changhua Yu (2020). "International capital flows, portfolio composition, and the stability of external imbalances". In: *Journal of International Economics* 127.C.

Eugster, Johannes and Giovanni Donato (2022). *The exchange rate elasticity of the Swiss current account*. Working Papers 2022-14. Swiss National Bank.

Georgiadis, Georgios, Arnaud Mehl, Helena Le Mezo, and Cédric Tille (June 2021). *Fundamentals vs. policies: can the US dollar's dominance in global trade be dented?* CEPR Discussion Papers 16303. C.E.P.R. Discussion Papers.

Gilchrist, Simon and Egon Zakrajsek (2012). "Credit Spreads and Business Cycle Fluctuations". In: *American Economic Review* 102.4, pp. 1692–1720.

Gopinath, Gita et al. (2020). "Dominant Currency Paradigm". In: *American Economic Review* 110.3, pp. 677–719.

Gourinchas, Pierre-Olivier and Helene Rey (2007). "International financial adjustment". In: *Journal of political economy* 115.4, pp. 665–703.

Gruber, Joseph W and Steven B Kamin (2007). "Explaining the global pattern of current account imbalances". In: *Journal of international money and Finance* 26.4, pp. 500–522.

Habib, Maurizio Michael and Fabrizio Venditti (May 2019). *The global capital flows cycle: structural drivers and transmission channels*. Working Paper Series 2280. European Central Bank.

IMF (2014). "Are Global Imbalances at a Turning Point?" In: *World Economic Outlook*.

Ito, Hiro and Robert N. McCauley (2019). "A key currency view of global imbalances". In: *Journal of International Money and Finance* 94.C, pp. 97–115.

Jiang, Zhengyang, Robert J. Richmond, and Tony Zhang (July 2022). *A Portfolio Approach to Global Imbalances*. NBER Working Papers 30253. National Bureau of Economic Research, Inc.

Joyce, Joseph P. (2021). "The sources of international investment income in emerging market economies". In: *Review of International Economics* 29.3, pp. 606–625.

Lane, Philip and Gian Maria Milesi-Ferretti (Aug. 2014). *Global Imbalances and External Adjustment after the Crisis*. IMF Working Papers 2014/151. International Monetary Fund.

Lane, Philip R and Gian Maria Milesi-Ferretti (2004). "Financial globalization and exchange rates". In: *Available at SSRN 654529*.

Lane, Philip R. and Gian Maria Milesi-Ferretti (2018). "The External Wealth of Nations Revisited: International Financial Integration in the Aftermath of the Global Financial Crisis". In: *IMF Economic Review* 66.1, pp. 189–222.

Milesi-Ferretti, Gian Maria (2022a). "2021 was a year of strong global capital flows: Updating External Wealth of Nations database with year-end 2021 data". In: *Brookings Institution*.

Milesi-Ferretti, Gian Maria (2022b). "Many Creditors, One Large Debtor: Understanding the Buildup of Global Stock Imbalances after the Global Financial Crisis". In: *IMF 23 Jacques Pollack research conference.*

Milesi-Ferretti, Gian Maria (2024a). "The decline in global cross-border holdings in 2022: Declining asset prices, weak financial flows". In: *Brookings Institution.*

Milesi-Ferretti, Gian Maria (2024b). "The external wealth of nations database". In: *Brookings Institution.*

Obstfeld, Maurice and Kenneth Rogoff (2007). "The unsustainable US current account position revisited". In: *G7 current account imbalances: Sustainability and adjustment.* University of Chicago Press, pp. 339–376.

Scheubel, Beatrice, Livio Stracca, and Cédric Tille (2024). "The global financial cycle and capital flows: Taking stock". In: *Journal of Economic Surveys*, pp. 1–27.

Schuler, Tobias and Yiqiao Sun (Aug. 2022). *The current account and monetary policy in the euro area.* Working Paper Series 2696. European Central Bank.

Tille, Cédric (2008). "Financial integration and the wealth effect of exchange rate fluctuations". In: *Journal of International Economics* 75.2, pp. 283–294.

Table 1: Data and Sources

Variable	Source	Time period / Frequency
Current Account Data in USD	IMF BOPS	1999-2023 / annual, quarterly
Exchange Rates	IMF IFS	1999-2023 / annual, quarterly
Nominal and Real GDP	IMF IFS IMF WEO UNCTAD	1999-2022 / annual, quarterly 2023 / annual 1999-2023 / annual
Monetary Base	FRED	1999-2023/ monthly
Currency of Invoicing of Assets and Liabilities	Bénétrix et al. (2020)	1999-2017 / annual
Assets and Liabilities, decomposition	External Wealth of Nation Database	1999-2022 / annual
Short-term interest rates (3-month Money Market & CB Policy rate)	IMF IFS OECD	1999-2023 / annual, quarterly 1999-2023 / annual, quarterly
Long-term interest rates (10-year Government Bond Yield)	IMF IFS OECD	1999-2023 / annual, quarterly 1999-2023 / annual, quarterly
VIX	FRED	1999-2023 / daily
Broad US Index	FED Board Author's calculation	2006-2023 / monthly 1999-2006 / monthly
CPI	IMF IFS UNCTAD OECD	1999-2023 / annual, quarterly 1999-2023 / annual, quarterly 1999-2023 / annual, quarterly
Bond Premium	Scheubel et al., 2024	1999-2023/ monthly
Global Stock Factor	Scheubel et al., 2024	1999-2023 / monthly

Table 2: List of Countries

Advanced Economies		Emerging Economies	
Australia	Japan	Argentina	Pakistan
Austria	Korea	Brazil	Peru
Belgium	New Zealand	Chile	Philippines
Canada	Norway	Colombia	Poland
Czech Rep.	Portugal	Egypt	Russia
Denmark	Spain	Guatemala	South Africa
Finland	Sweden	Hungary	Thailand
France	United States	India	Tunisia
Germany		Indonesia	Turkey
Greece		Malaysia	Uruguay
Israel		Mexico	
Italy		Morocco	

Table 3: Drivers of (ln) Yields - All Countries

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.640*** (0.0468)	0.727*** (0.0338)	0.505*** (0.0443)	0.615*** (0.0538)	0.592*** (0.0818)	0.563*** (0.0621)	0.658*** (0.0851)	0.742*** (0.0526)	0.834*** (0.0528)	0.660*** (0.0306)	0.635*** (0.0377)
Δln $-Denomination XR (increase = $ depreciation)	0.747*** (0.236)	0.252 (0.171)	0.437 (0.615)	-0.583** (0.245)	1.125 (0.815)	0.967** (0.391)	0.463 (0.357)	1.340*** (0.361)	0.735** (0.353)	1.028*** (0.319)	-0.163 (0.484)
L.Δln $-Denomination XR (increase = $ depreciation)	-0.145 (0.114)	-0.105 (0.0633)	-0.0905 (0.160)	0.125 (0.141)	-0.168 (0.154)	0.110 (0.203)	-0.268 (0.243)	0.00921 (0.138)	-0.210 (0.143)	-0.231 (0.157)	-0.103 (0.0904)
Δln $ Broad Index (increase = $ appreciation)	-0.396 (0.329)	-1.083*** (0.207)	-0.190 (0.727)	-2.045*** (0.332)	-0.451 (0.826)	-0.0409 (0.795)	-0.0426 (0.517)	0.178 (0.204)	0.193 (0.335)	0.258 (0.333)	0.333 (0.675)
US 3-month interest rate	0.0537*** (0.00962)	0.00605 (0.00496)	0.0631*** (0.0216)	-0.0269*** (0.00924)	0.0625** (0.0240)	-0.0295 (0.0187)	0.00716 (0.0170)	-0.00408 (0.0105)	0.0235 (0.0163)	0.106*** (0.00812)	0.143*** (0.0254)
US 10-year treasury yield	0.00919 (0.0102)	0.0403*** (0.00779)	0.00589 (0.0197)	0.0417*** (0.0125)	0.0621* (0.0330)	0.114*** (0.0310)	0.107*** (0.0216)	0.0841*** (0.0164)	0.0832*** (0.0190)	0.117*** (0.0251)	0.138*** (0.0300)
VIX (normalized)	-0.0173 (0.0144)	-0.0242*** (0.00576)	0.0787** (0.0321)	-0.0329*** (0.00923)	0.0487 (0.0464)	-0.0622** (0.0247)	-0.0310 (0.0259)	-0.0307*** (0.0106)	-0.167*** (0.0305)	-0.0338** (0.0133)	-0.0933*** (0.0269)
Global Stock Market Factor (normalized)	0.000835 (0.0167)	0.00454 (0.0106)	0.107*** (0.0291)	-0.00406 (0.0165)	0.165*** (0.0522)	0.0920* (0.0492)	-0.0296 (0.0262)	0.0245 (0.0166)	-0.0225 (0.0368)	0.0970*** (0.0234)	0.0778** (0.0332)
Excess Bond Premium (normalized)	-0.00796 (0.00803)	-0.0137* (0.00680)	-0.0539** (0.0219)	-0.0217** (0.0102)	-0.0110 (0.0276)	0.0175 (0.0232)	-0.0430* (0.0255)	0.0126 (0.0139)	0.00669 (0.0197)	-0.0171 (0.0130)	0.0255 (0.0234)
Inflation(Δln CPI)	-0.0485 (0.886)	0.710*** (0.242)	-4.343** (1.704)	1.110*** (0.343)	-5.476** (2.632)	1.214*** (0.305)	0.841 (1.442)	-0.0118 (0.205)	13.35*** (2.157)	0.257 (0.225)	4.034* (2.082)
Real GDP Growth	0.0313*** (0.00780)	1.047*** (0.249)	0.0928*** (0.0190)	1.622*** (0.357)	0.0351 (0.0235)	1.228** (0.541)	-0.0183* (0.0104)	0.132 (0.210)	-0.0457*** (0.0167)	0.147 (0.225)	-0.0167 (0.0110)
L. Capital Gains	-0.00346*** (0.000770)	-0.00571*** (0.000796)	-0.000103 (0.0000933)	-0.00389*** (0.000892)	-0.000893** (0.000399)	-0.00373*** (0.000727)	-0.000292*** (0.0000265)	-0.00400*** (0.00115)	-0.00218 (0.00200)	-0.00674*** (0.00143)	0.00346 (0.00381)
Constant	-1.520*** (0.165)	-1.070*** (0.112)	-1.810*** (0.154)	-1.240*** (0.160)	-1.893*** (0.362)	-1.981*** (0.302)	-1.381*** (0.263)	-1.085*** (0.175)	-1.305*** (0.216)	-1.918*** (0.177)	-2.377*** (0.204)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	984	987	944	977	791	819	850	909	953	952	494
Countries	42	42	42	42	39	38	40	41	41	41	28
Adjusted R^2	0.716	0.747	0.372	0.553	0.377	0.378	0.578	0.738	0.820	0.787	0.785

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 4: Drivers of (ln) Yields - Advanced Economies

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.598***	0.654***	0.442***	0.414***	0.653***	0.611***	0.758***	0.806***	0.752***	0.610***	0.688***
	(0.0546)	(0.0402)	(0.0365)	(0.0641)	(0.0738)	(0.0801)	(0.0491)	(0.0261)	(0.0298)	(0.0438)	(0.0329)
Δln $-Denomination XR (increase = $ depreciation)	0.747***	0.429**	0.122	-0.303	0.439	0.220	0.705**	1.567***	1.106***	1.277***	-1.246*
	(0.220)	(0.159)	(0.448)	(0.371)	(0.465)	(0.335)	(0.271)	(0.474)	(0.356)	(0.267)	(0.618)
L.Δln $-Denomination XR (increase = $ depreciation)	0.0875	-0.0950	-0.0816	0.0283	-0.0275	0.0980	-0.280	-0.256**	-0.127	-0.284*	-0.106
	(0.102)	(0.0688)	(0.132)	(0.148)	(0.0886)	(0.242)	(0.242)	(0.112)	(0.137)	(0.136)	(0.0814)
Δln $ Broad Index (increase = $ appreciation)	-0.667**	-1.049***	-1.348*	-2.139***	-1.318***	-1.157**	-0.218	0.300	-0.00486	0.709*	-1.221
	(0.267)	(0.217)	(0.718)	(0.509)	(0.347)	(0.435)	(0.394)	(0.291)	(0.460)	(0.409)	(1.085)
US 3-month interest rate	0.0263***	-0.00122	0.0577**	0.0167	0.0170	-0.00803	-0.00821	0.0120	0.0211	0.0752***	0.123***
	(0.00866)	(0.00748)	(0.0226)	(0.0183)	(0.0153)	(0.0121)	(0.0167)	(0.0121)	(0.0183)	(0.0139)	(0.0368)
US 10-year treasury yield	0.0302**	0.0550***	-0.0131	0.000886	0.00925	0.00317	0.0941***	0.0691***	0.109***	0.128**	0.145***
	(0.0110)	(0.0147)	(0.0214)	(0.0275)	(0.0187)	(0.0226)	(0.0182)	(0.0230)	(0.0239)	(0.0460)	(0.0320)
VIX (normalized)	-0.00755	-0.0290***	0.0550	-0.0263	-0.0367*	-0.0843***	-0.0432*	-0.0176	-0.125***	-0.0542**	-0.104**
	(0.0171)	(0.00990)	(0.0331)	(0.0209)	(0.0201)	(0.0200)	(0.0214)	(0.0126)	(0.0282)	(0.0237)	(0.0433)
Global Stock Market Factor (normalized)	0.00517	0.00473	0.0746*	0.0244	0.0309	0.0926***	0.0158	0.0456**	-0.0225	0.0484*	0.109*
	(0.0179)	(0.00906)	(0.0370)	(0.0225)	(0.0219)	(0.0252)	(0.0332)	(0.0197)	(0.0336)	(0.0262)	(0.0532)
Excess Bond Premium (normalized)	-0.0132	-0.00838	-0.0846***	-0.0153	-0.0150	0.0274	-0.00119	-0.0183	0.0107	-0.0253	0.0313
	(0.0118)	(0.00790)	(0.0285)	(0.0139)	(0.0284)	(0.0178)	(0.0119)	(0.0138)	(0.0180)	(0.0212)	(0.0390)
Inflation(Δln CPI)	-0.521	1.208**	-3.211	0.967	-1.957	-0.518	1.196	0.893	12.96***	5.181***	4.188
	(0.910)	(0.438)	(2.067)	(0.755)	(1.204)	(0.897)	(1.342)	(0.925)	(2.458)	(1.200)	(3.397)
Real GDP growth	0.0269***	1.832***	0.0691***	3.498***	0.00463	1.996***	-0.0140	0.545	-0.0378**	-0.433	-0.0154
	(0.00754)	(0.296)	(0.0171)	(0.548)	(0.00750)	(0.551)	(0.00994)	(0.622)	(0.0137)	(0.812)	(0.0167)
L. Capital Gains	-0.00484***	-0.00638***	-0.00479**	-0.00496***	-0.00583***	-0.00459***	-0.00281*	-0.00730***	-0.00503***	-0.00579***	-0.0000466
	(0.00127)	(0.000556)	(0.00196)	(0.00140)	(0.000570)	(0.00112)	(0.00142)	(0.000818)	(0.00134)	(0.00183)	(0.00320)
Domestic Long-term IR		-0.00694		0.0294*		0.00764		0.0187**		0.0140**	
		(0.00601)		(0.0141)		(0.00581)		(0.00862)		(0.00659)	
Domestic Short-term IR		0.0218***		-0.0144		0.0410**		0.00342		0.0418**	
		(0.00403)		(0.0176)		(0.0187)		(0.0121)		(0.0184)	
Constant	-1.603***	-1.451***	-1.800***	-1.900***	-1.305***	-1.499***	-1.127***	-1.043***	-1.708***	-2.404***	-2.159***
	(0.196)	(0.144)	(0.124)	(0.213)	(0.271)	(0.272)	(0.178)	(0.107)	(0.174)	(0.305)	(0.185)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	470	469	460	464	454	448	457	457	470	469	258
Countries	20	20	20	20	20	20	20	20	20	20	14
Adjusted R^2	0.787	0.860	0.381	0.406	0.516	0.549	0.787	0.862	0.874	0.856	0.810

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 5: Drivers of (ln) Yields - Emerging Economies

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.634***	0.736***	0.527***	0.690***	0.586***	0.530***	0.624***	0.660***	0.855***	0.660***	0.567***
	(0.0579)	(0.0438)	(0.0519)	(0.0595)	(0.101)	(0.0780)	(0.103)	(0.107)	(0.0626)	(0.0489)	(0.0440)
Δln $-Denomination XR	0.812	-0.184	1.001	-0.602	4.783*	2.432**	1.373	1.393**	0.547	0.728*	1.348
(increase = $ depreciation)	(0.581)	(0.253)	(1.371)	(0.401)	(2.539)	(1.127)	(1.778)	(0.496)	(1.254)	(0.411)	(1.549)
L.Δln $-Denomination XR	-0.495**	-0.0733	0.888	0.394**	0.448	0.552	0.327	0.751**	-0.0295	-0.0516	-0.188
(increase = $ depreciation)	(0.237)	(0.126)	(0.589)	(0.172)	(1.083)	(0.458)	(1.192)	(0.319)	(0.385)	(0.295)	(1.499)
Δln $ Broad Index	-0.327	-1.228***	0.179	-1.956***	0.873	1.576	0.412	0.129	0.240	0.0544	1.291
(increase = $ appreciation)	(0.463)	(0.308)	(1.147)	(0.468)	(1.499)	(1.599)	(0.891)	(0.277)	(0.548)	(0.391)	(0.795)
US 3-month interest rate	0.0767***	-0.00108	0.0526	-0.0404***	0.108*	-0.0475	0.0362	-0.0169	0.0210	0.0931***	0.168***
	(0.0146)	(0.00674)	(0.0387)	(0.0137)	(0.0536)	(0.0415)	(0.0360)	(0.0154)	(0.0272)	(0.0107)	(0.0417)
US 10-year treasury yield	-0.00643	0.0290***	0.0181	0.0544***	0.0880	0.214***	0.104**	0.0547**	0.0755**	0.0579***	0.133**
	(0.0166)	(0.00945)	(0.0321)	(0.0186)	(0.0773)	(0.0606)	(0.0403)	(0.0235)	(0.0282)	(0.0194)	(0.0539)
VIX	-0.0267	-0.0200**	0.0767	-0.0226*	0.158	-0.0144	-0.00116	-0.0453**	-0.194***	-0.0594***	-0.0831
(normalized)	(0.0250)	(0.00936)	(0.0519)	(0.0116)	(0.106)	(0.0445)	(0.0500)	(0.0171)	(0.0543)	(0.0145)	(0.0480)
Global Stock Market Factor	-0.0113	0.00270	0.110**	-0.0116	0.235*	0.124	-0.0752	0.00425	-0.0323	0.0785**	0.0419
(normalized)	(0.0263)	(0.0137)	(0.0467)	(0.0233)	(0.119)	(0.0963)	(0.0523)	(0.0241)	(0.0630)	(0.0351)	(0.0484)
Bond Premium	-0.00238	-0.0144	-0.0171	-0.0239	-0.0253	-0.0234	-0.112**	0.0405*	0.00136	0.0104	0.0296
(normalized)	(0.0115)	(0.0110)	(0.0329)	(0.0165)	(0.0551)	(0.0410)	(0.0499)	(0.0223)	(0.0358)	(0.0172)	(0.0303)
Inflation(Δln CPI)	0.512	0.515**	-3.828	0.818***	-7.502	1.096**	0.676	0.00704	12.82***	0.147	3.478
	(1.470)	(0.206)	(2.723)	(0.277)	(5.977)	(0.454)	(2.710)	(0.231)	(3.660)	(0.181)	(2.809)
Real GDP growth	0.0324**	0.792***	0.102***	1.186***	0.0703	1.147	-0.0180	0.188	-0.0535*	0.116	-0.0212
	(0.0127)	(0.226)	(0.0339)	(0.321)	(0.0521)	(0.821)	(0.0176)	(0.285)	(0.0304)	(0.169)	(0.0186)
L. Capital Gains	-0.00334***	-0.00518***	-0.000102	-0.00358***	-0.000730	-0.00329***	-0.000292***	-0.00356***	-0.00189	-0.00663***	0.00920
	(0.000938)	(0.00123)	(0.0000931)	(0.00101)	(0.000449)	(0.000860)	(0.0000331)	(0.000954)	(0.00212)	(0.00158)	(0.0121)
Constant	-1.602***	-0.924***	-1.889***	-1.001***	-2.269***	-2.470***	-1.356***	-1.090***	-1.160***	-1.619***	-2.629***
	(0.215)	(0.126)	(0.217)	(0.168)	(0.562)	(0.482)	(0.292)	(0.313)	(0.245)	(0.205)	(0.292)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	514	517	484	512	337	370	393	451	483	482	236
Countries	22	22	22	22	19	18	20	21	21	21	14
Adjusted R^2	0.709	0.656	0.378	0.642	0.364	0.351	0.536	0.572	0.796	0.703	0.757

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.
We do not include domestic interest rates for the Payments regressions due to data availability issues in EMEs.

Table 6: Impact of drivers on gross and net income flows in the 2021-2025 scenario (% of GDP)

	Gross investment income flows							
	Advanced economies				Emerging economies			
	Median		Average (GDP weighted)		Median		Average (GDP weighted)	
	2023	2025	2023	2025	2023	2025	2023	2025
US interest rates	2.48	3.74	2.31	3.44	0.92	1.50	1.09	1.67
Domestic interest rate	0.43	0.73	0.21	0.34				
Dollar exchange rate	-0.70	-0.34	-0.71	-0.34	-0.07	-0.05	-0.14	-0.08
Inflation	0.02	0.11	-0.07	0.02	0.08	0.07	0.06	0.10
Total	2.42	4.34	1.74	3.47	1.03	1.64	1.01	1.69

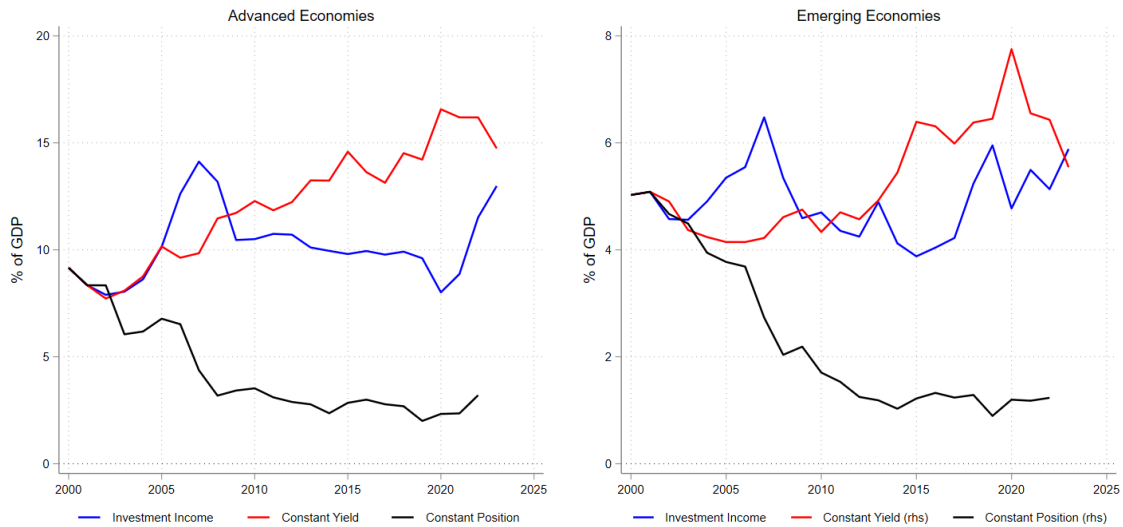| | Investment income balance | | | | | | | |
| | Advanced economies | | | | Emerging economies | | | |
| | Median | | Average (GDP weighted) | | Median | | Average (GDP weighted) | |
	2023	2025	2023	2025	2023	2025	2023	2025
US interest rates	0.66	0.86	0.72	0.85	0.57	0.81	0.58	0.76
Domestic interest rate	-0.43	-0.73	-0.21	-0.34				
Dollar exchange rate	-0.05	-0.07	0.00	-0.01	-0.01	-0.04	-0.01	-0.04
Inflation	-0.38	-0.07	-0.30	0.07	-0.10	-0.02	-0.23	-0.06
Total	-0.10	0.27	0.21	0.57	0.22	0.68	0.34	0.66

Notes: Estimated impact on the sum of investment income flows on assets and liabilities (top panel) and their difference (bottom panel).

Figure 1: Gross investment position and primary income flows (median values, % GDP)
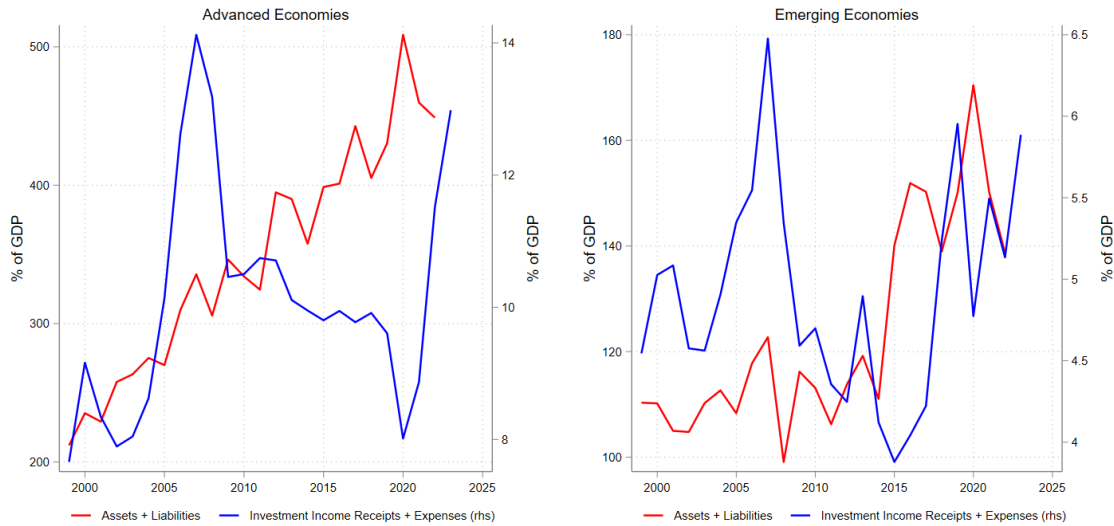
Note: The figure shows the median value across countries of the sum of international assets and liabilities (red line, left scale) and the median value of the sum of primary investment income receipt and payment flows (blue line, right scale).

Figure 2: Gross primary income flows: actual and counterfactual of constant positions or constant yields (median values, % GDP)

Note: The figure shows the median value across countries of the sum of primary investment income receipt and payment flows. The blue line shows the actual value (blue line in Figure 1), the value if yields had remained unchanged from 2000 on but positions had evolved as they did (red line), and the value if positions had remained unchanged from 2000 on but yields had evolved as they did (black line)

Figure 3: Net investment position and primary income flows (median values, % GDP)
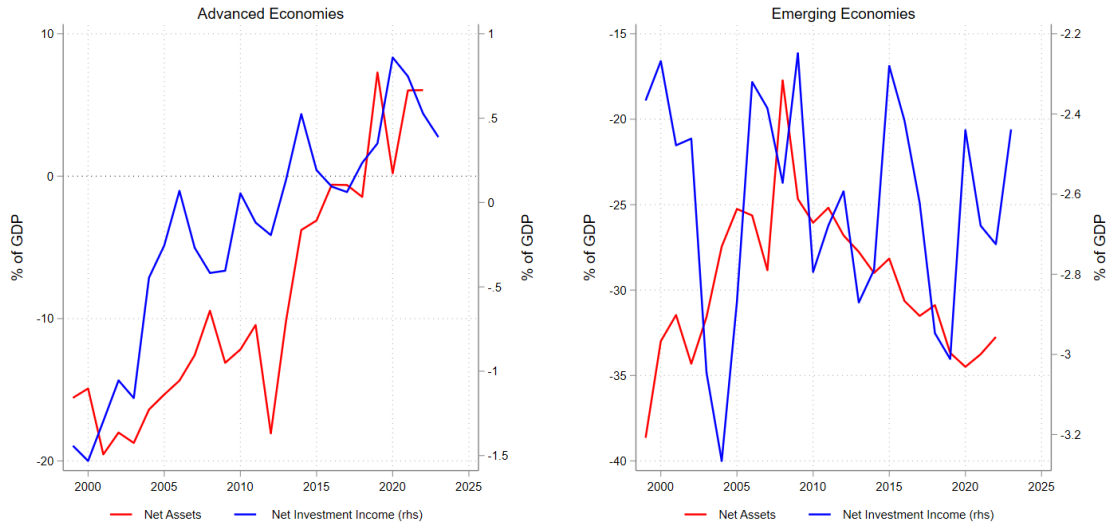

Note: The figure shows the median value across countries of the difference between international assets and liabilities (red line, left scale) and the median value of the difference between primary investment income receipt and payment flows (blue line, right scale).

Figure 4: Yield on asset and liabilities, total (% GDP)
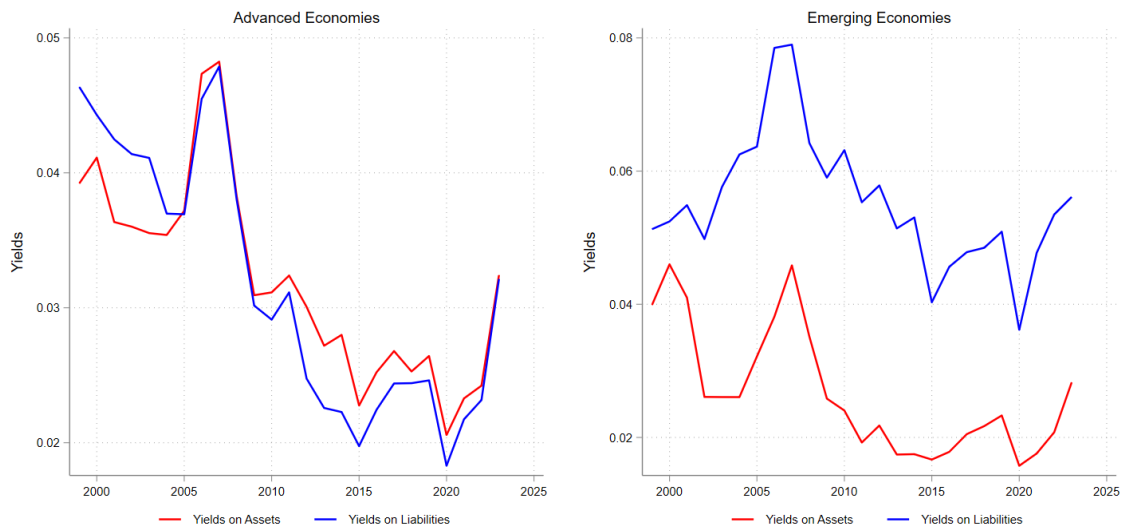
Note: The figure shows the median value of the yield on assets (red line) and liabilities (blue line).

Figure 5: Yield on asset and liabilities, FDI (% GDP)
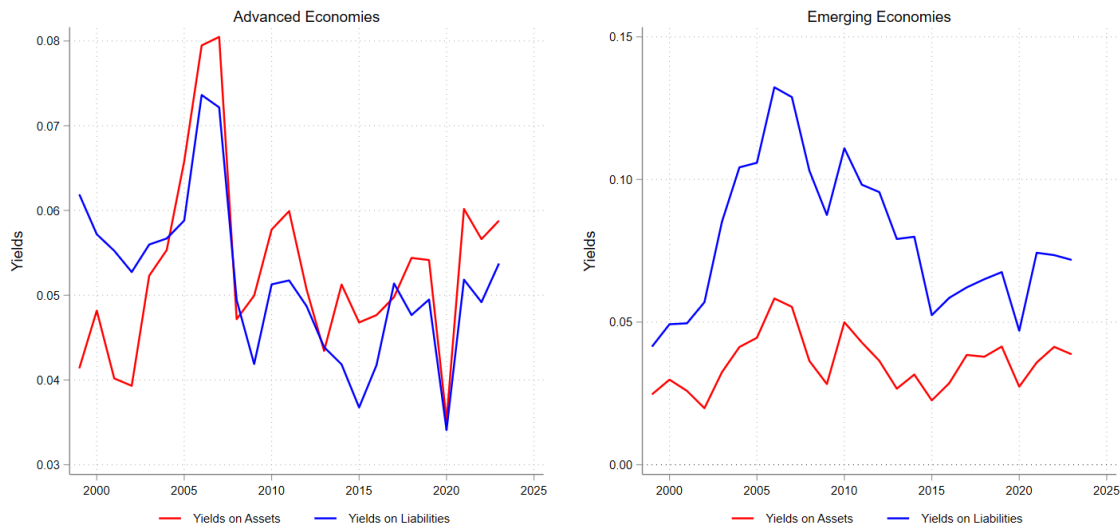
Note: The figure shows the median value of the yield on assets (red line) and liabilities (blue line).

Figure 6: Yield on asset and liabilities, portfolio equity (% GDP)

Note: The figure shows the median value of the yield on assets (red line) and liabilities (blue line).

Figure 7: Yield on asset and liabilities, portfolio debt (% GDP)
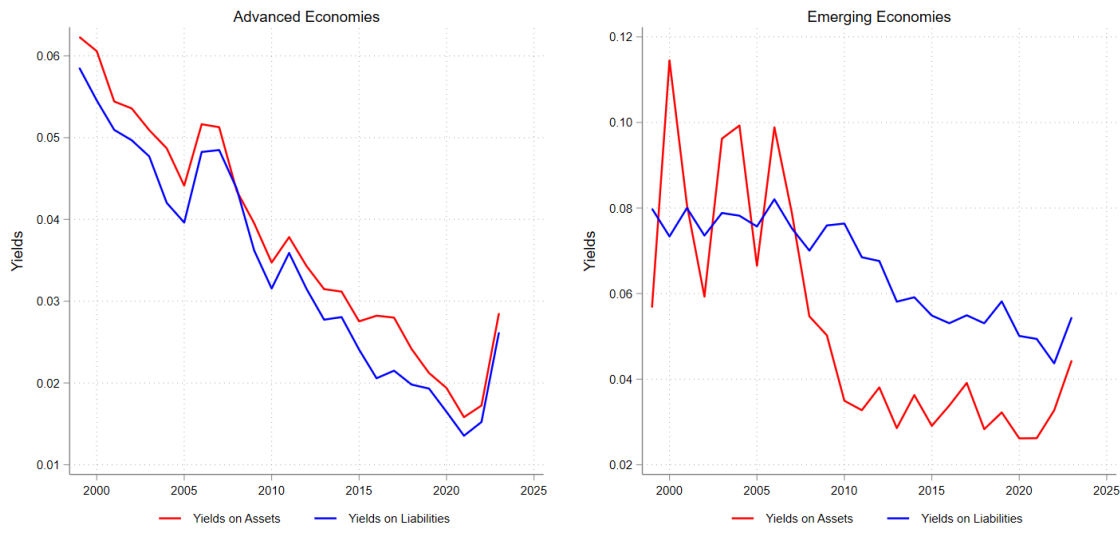
Note: The figure shows the median value of the yield on assets (red line) and liabilities (blue line).

Figure 8: Yield on asset and liabilities, other investment (% GDP)
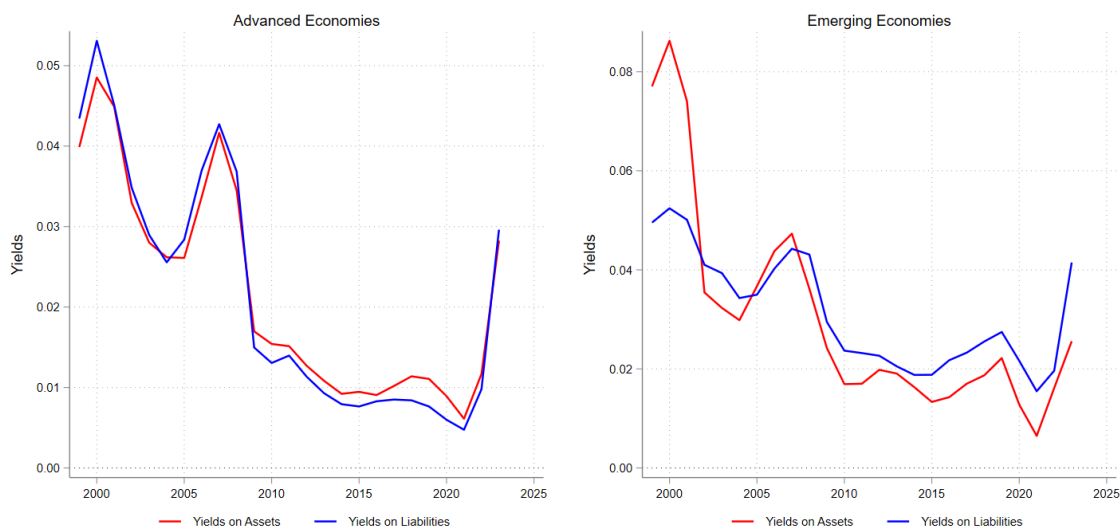
Note: The figure shows the median value of the yield on assets (red line) and liabilities (blue line).

Figure 9: Impact of a VIX increase on net investment income

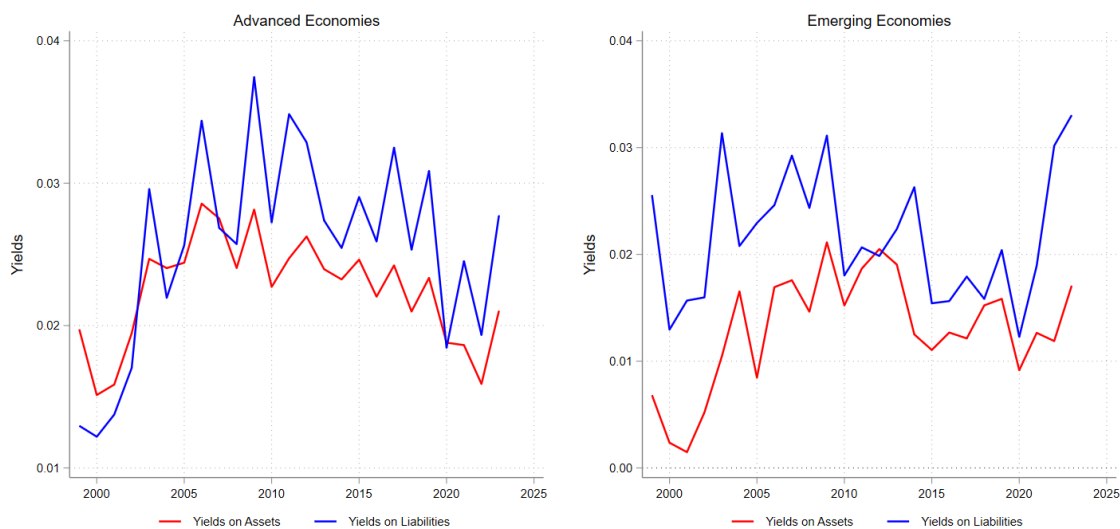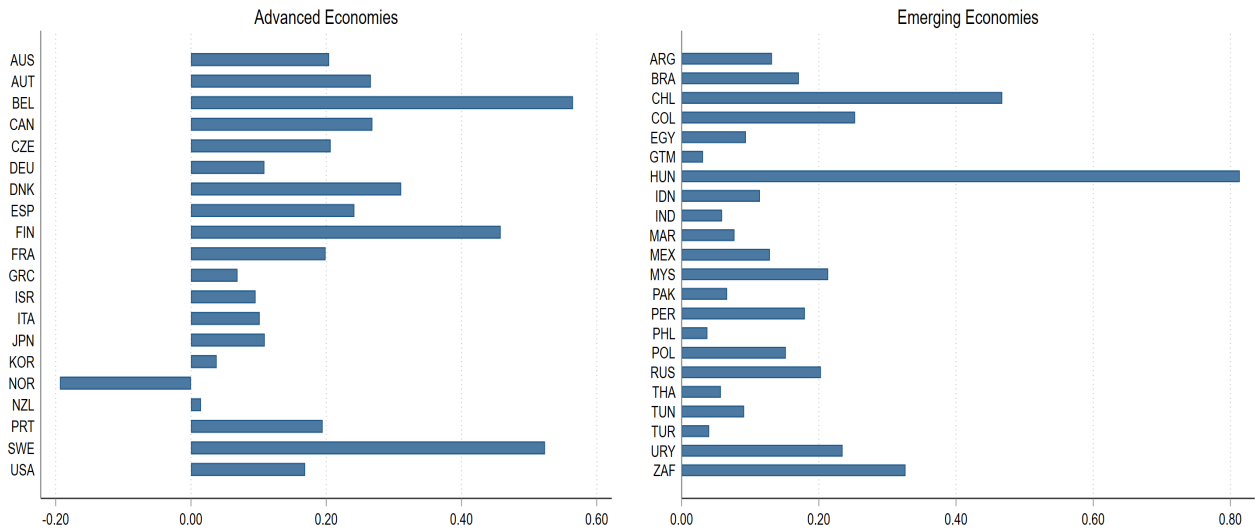*Note:*Impact of a 1 standard deviation increase in the VIX index on the net primary investment income (% of GDP). Median values: 0.1968 (advanced economies) and 0.1301 (emerging economies), dollar GDP weighted averages: 0.1664 (advanced economies) and 0.1419 (emerging economies).

Figure 10: Impact of a US short-term interest rate increase on net investment income
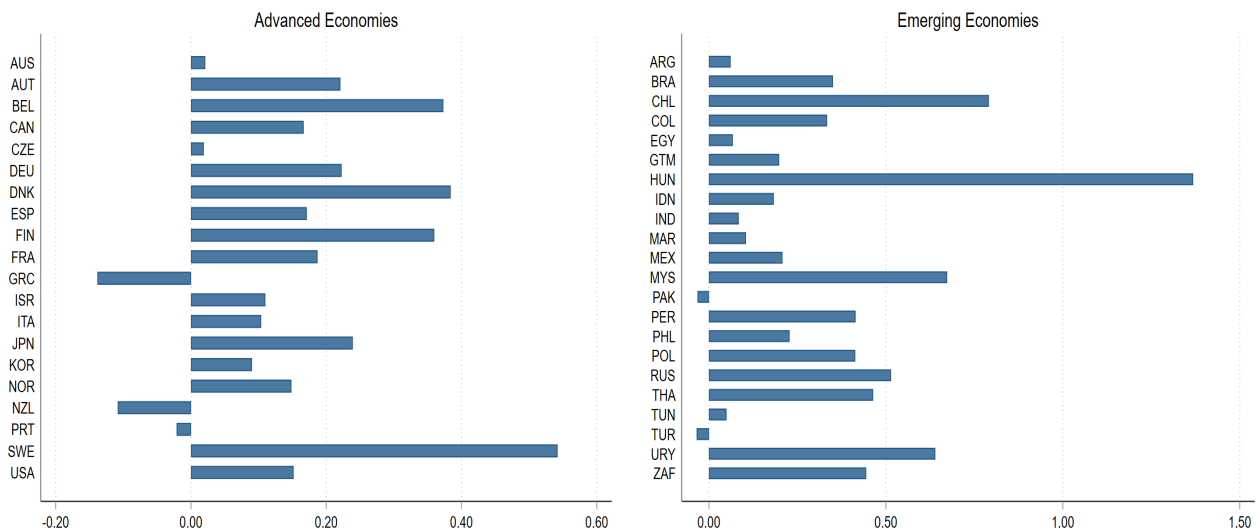
*Note:*Impact of a 1 percentage point increase in the US 3 months interest rate on the net primary investment income (% of GDP). Median values: 0.1593 (advanced economies) and 0.2807 (emerging economies), dollar GDP weighted averages: 0.1683 (advanced economies) and 0.2771 (emerging economies).

Figure 11: Impact of a US long-term interest rate increase on net investment income
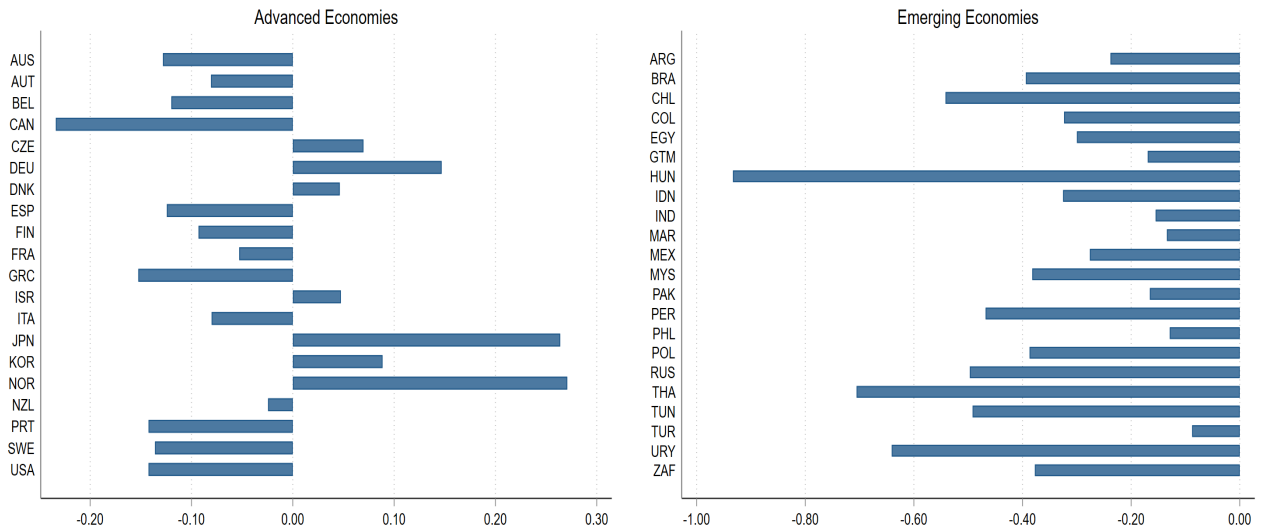
Note: Impact of a 1 percentage point increase in the US 10 year interest rate on the net primary investment income (% of GDP). Median values: -0.0805 (advanced economies) and -0.3514 (emerging economies), dollar GDP weighted averages: -0.0510 (advanced economies) and -0.3226 (emerging economies).

Figure 12: Impact of a dollar appreciation on net investment income
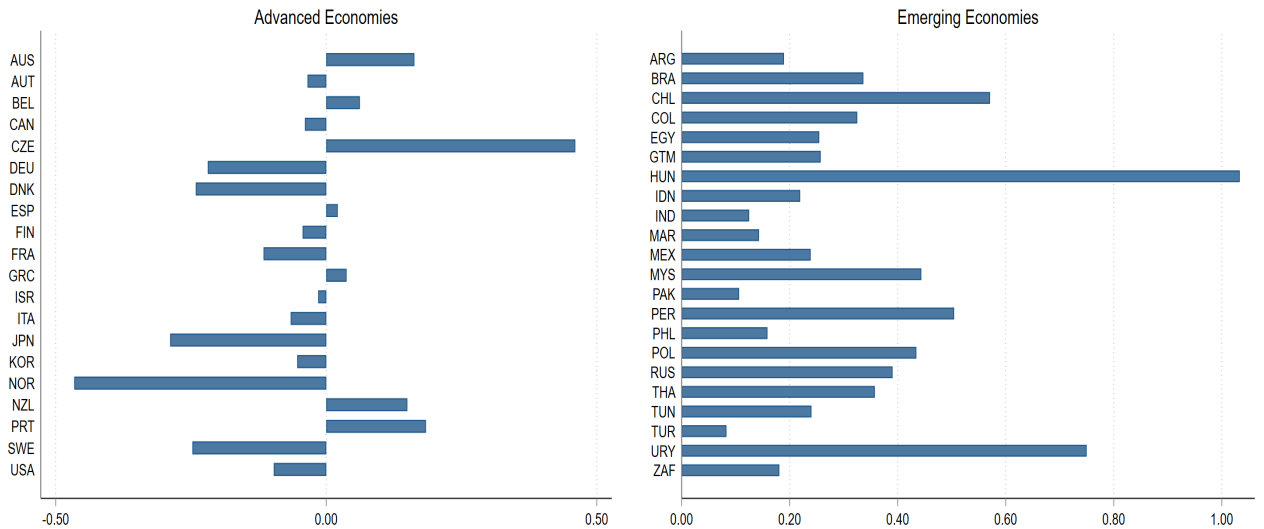
Note: Impact of a 10 percentage point appreciation of the US dollar against all currencies on the net primary investment income (% of GDP). Median values: -0.0415 (advanced economies) and 0.2560 (emerging economies), dollar GDP weighted averages: -0.1082 (advanced economies) and 0.2699(emerging economies).

Figure 13: Impact of rising US interest rates since 2021
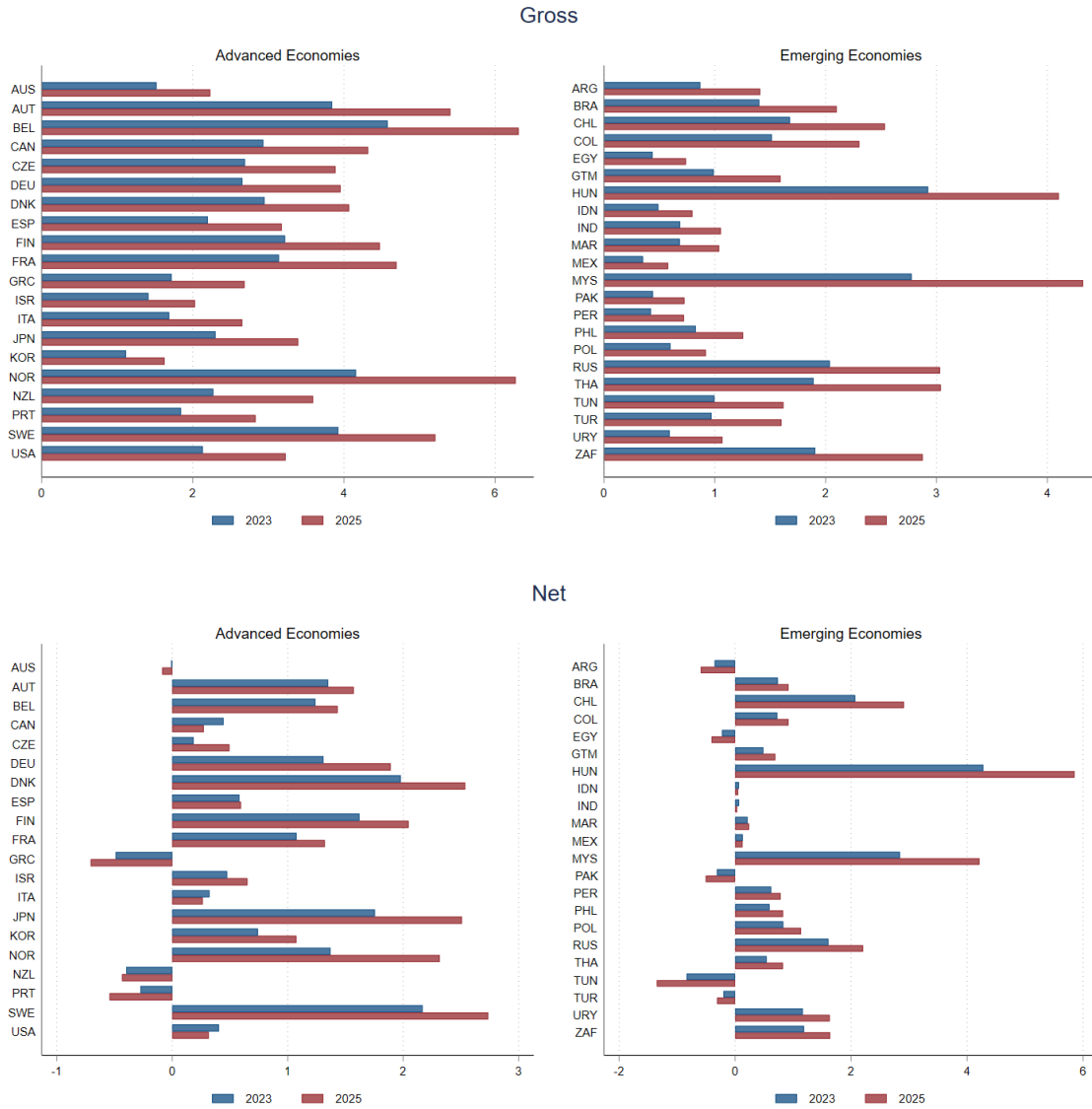
*Note:*Impact of the actual and expected increase of US short and long-term interest rates since 2021 on the gross (top panel) and net (bottom panel) primary investment income (% of GDP), in 2023 (blue bars) and 2025 (red bars).

Figure 14: Impact of rising US and domestic interest rates since 2021
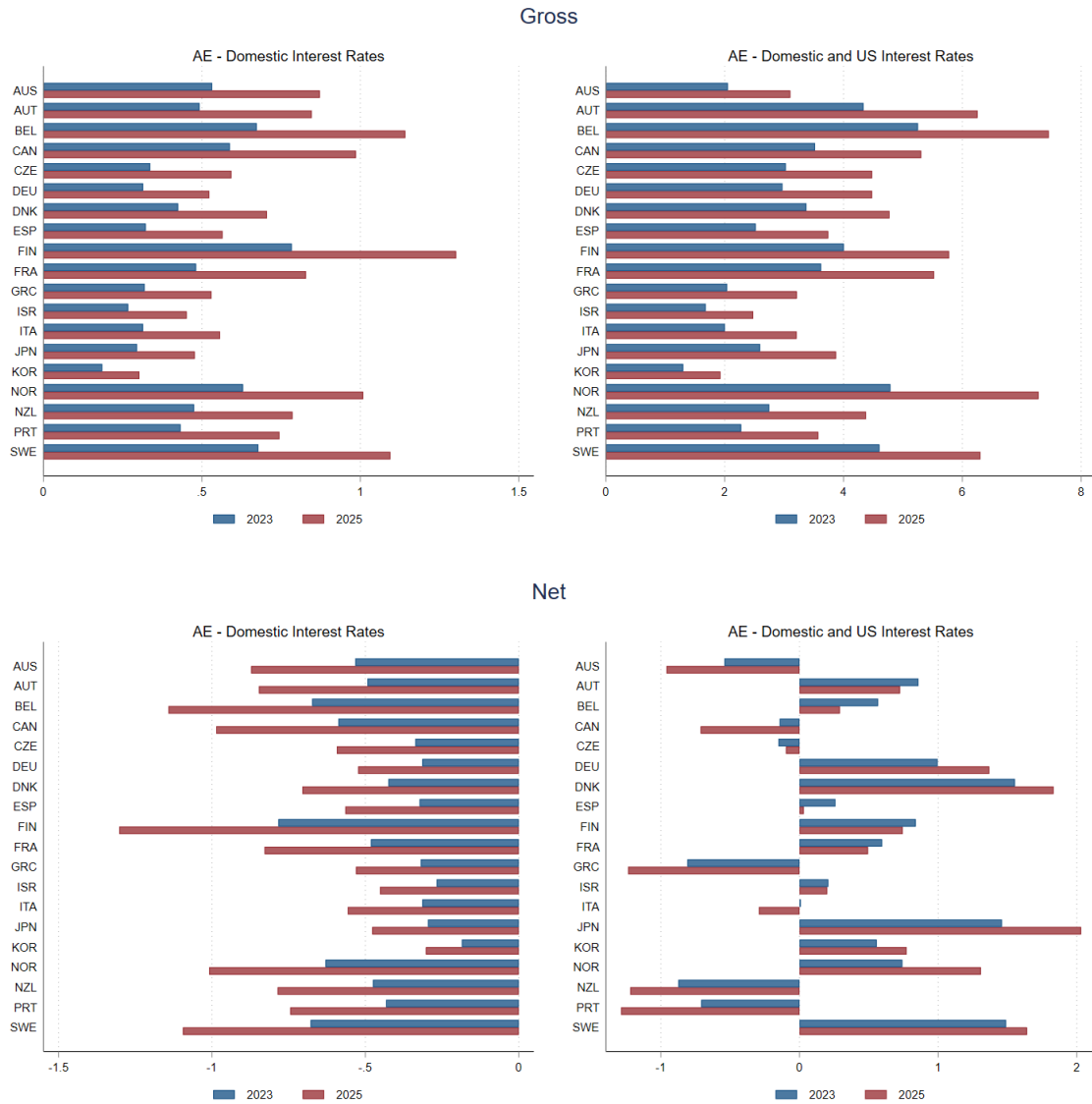
*Note:*Impact of the actual and expected increase of US and domestic short and long-term interest rates since 2021 on the gross (top panel) and net (bottom panel) primary investment income (% of GDP), in 2023 (blue bars) and 2025 (red bars). Effect of domestic interest rates (left panel) and total effect of US and domestic interest rates (right panel).

Figure 15: Impact of world and domestic inflation since 2021
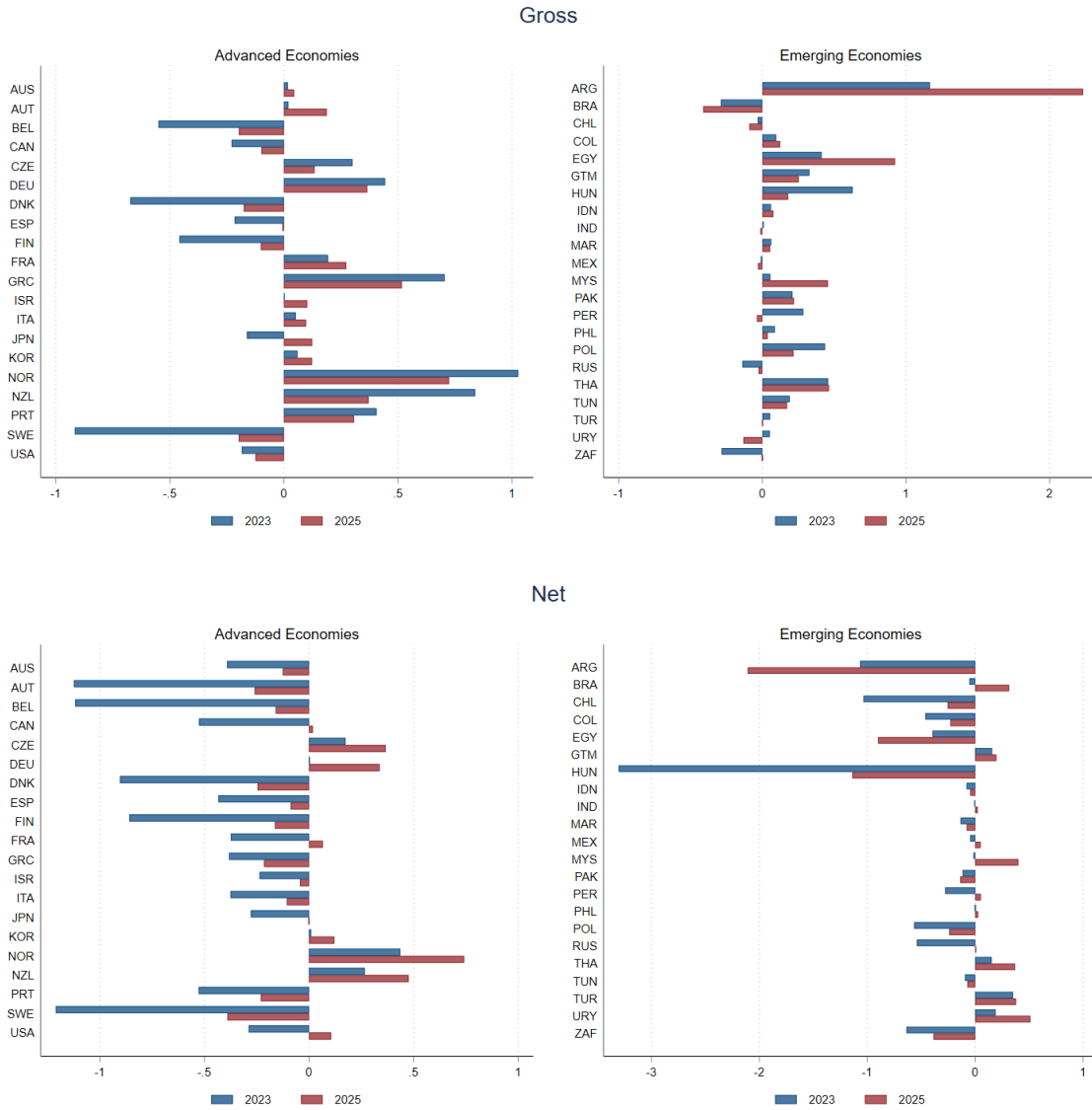
*Note:*Impact of the actual and expected increase of world and domestic inflation since 2021 on the gross (top panel) and net (bottom panel) primary investment income (% of GDP), in 2023 (blue bars) and 2025 (red bars).

Figure 16: Impact of US dollar appreciation since 2021
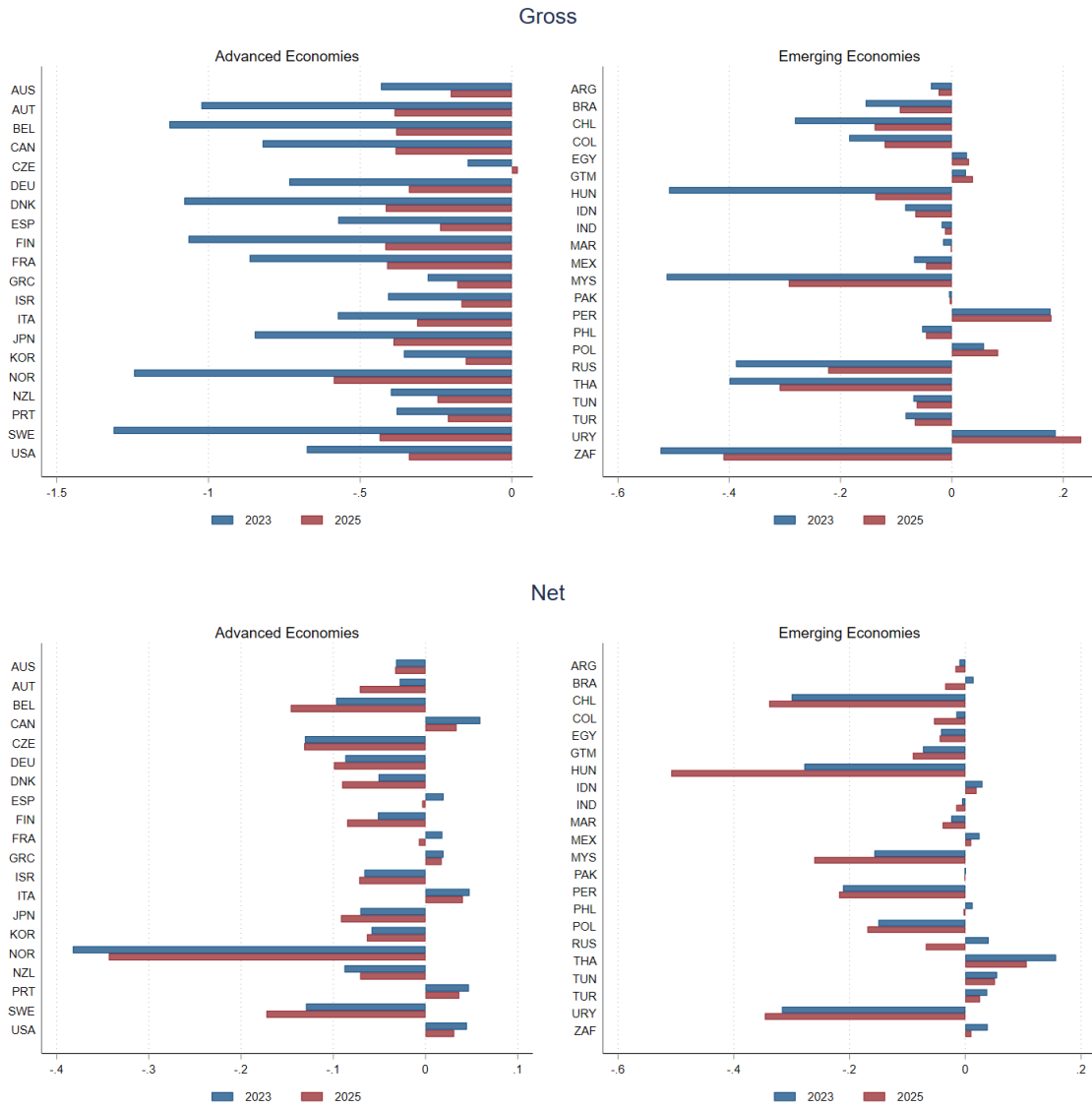
*Note:*Impact of the actual and expected appreciation of the US Dollar since 2021 on the gross (top panel) and net (bottom panel) primary investment income (% of GDP), in 2023 (blue bars) and 2025 (red bars).

Figure 17: Impact of combined scenarios since 2021
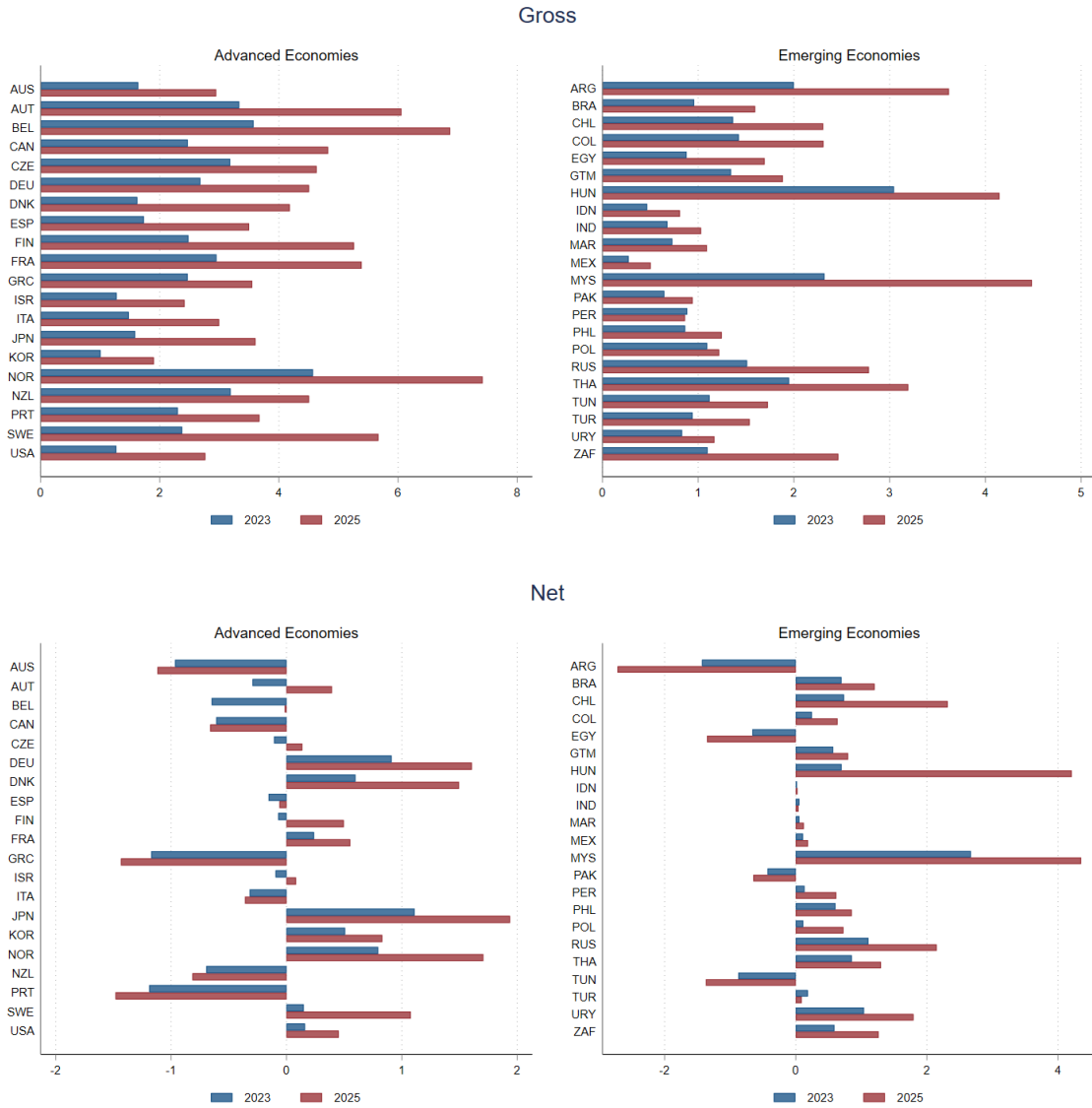
Note: Impact of the actual and expected changes of (US and domestic) interest rates, US dollar exchange rate, and world and domestic inflation since 2021 on the gross (top panel) and net (bottom panel) primary investment income (% of GDP), in 2023 (blue bars) and 2025 (red bars).

Figure 18: Fitted and actual values of income flows balance in 2023
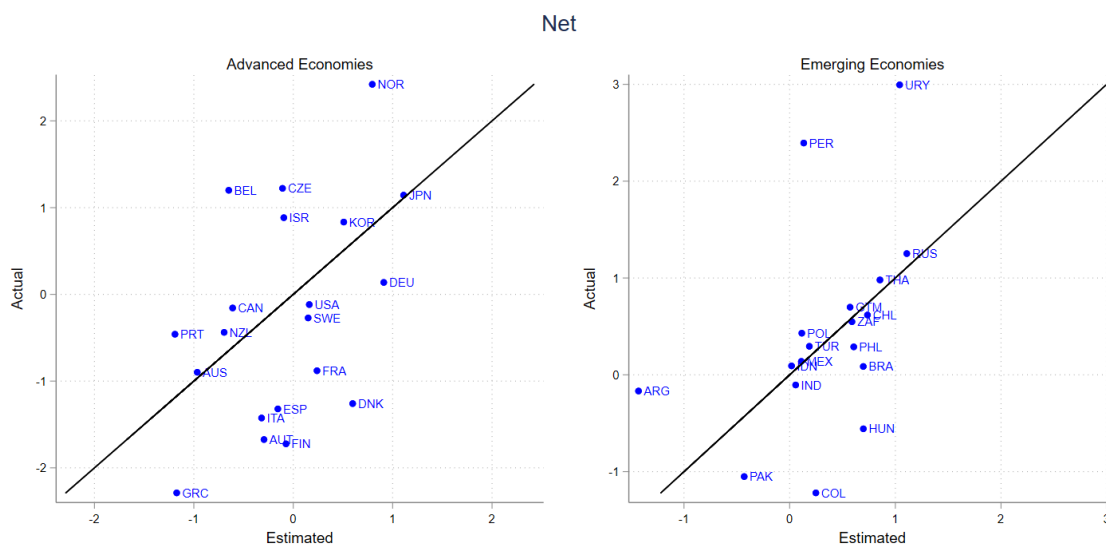
Note: Change in the net balance of investment income flows between 2021 and 2023 (% of GDP): estimated change based on interest rates, US dollar exchange rate, and inflation (horizontal axis), and actual change (vertical axis).

A Appendix: Dynamics of yields

1.1 Income flows and dynamics of assets

The income flow associated to the variable-yield asset in period t is simply the yield $r_t^{new,V,D}$ on the market value at the end of the previous period, $A_{t-1}^{V,D}$. The change in the asset position in the currency of denomination reflects net capital flows and capital gains from changes in asset prices in the currency of denomination, $Q_t^{V,D}$:

$$A_t^{V,D} \;=\; \frac{Q_t^{V,D}}{Q_{t-1}^{V,D}} A_{t-1}^{V,D} + K_t^{net,V,D} \qquad ; \qquad P_t^{V,D} = r_t^{new,V,D} A_{t-1}^{V,D}$$

Turning to fixed-income assets, we distinguish between the face value, $\tilde{A}_t^{F,D}$, on which the fixed yield applies, and the market value $A_t^{F,D} = Q_t^{F,D} \tilde{A}_t^{F,D}$ in the currency of denomination. The value of the asset position at the end of period t is the part of the previous position that has not matured, $1 - \alpha^F$, valuated at the new asset price, and the gross capital flows equal to the sum of net flows and replacement of the matured asset, $K_t^{gross,F,D} = K_t^{net,F,D} + \alpha^F Q_t^{F,D} \tilde{A}_{t-1}^{F,D}$:

$$A_t^{F,D} \;=\; \left(1 - \alpha^F\right) Q_t^{F,D} \tilde{A}_{t-1}^{F,D} + K_t^{gross,F,D}$$
$$A_t^{F,D} \;=\; \frac{Q_t^{F,D}}{Q_{t-1}^{F,D}} A_{t-1}^{F,D} + K_t^{net,F,D}$$

In period t, the assets purchased in the previous period, $K_{t-1}^{gross,F,D}$, earn a new yield $\tilde{r}_t^{new,F,D}$ on the face value. The asset that have not matured in period $t-1$ earn the old yield $\tilde{r}_{t-1}^{eff,F,D}$ on the face value $\left(1 - \alpha^F\right) \tilde{A}_{t-2}^{F,D}$. Using the fact that $P_{t-1}^{F,D} = \tilde{r}_{t-1}^{eff,F,D} \tilde{A}_{t-2}^{F,D}$, the income flow

is:

$$
P_t^{F,D} = \left(1 - \alpha^F\right) \widetilde{r}_{t-1}^{eff,F,D} \widetilde{A}_{t-2}^{F,D} + \widetilde{r}_t^{new,F,D} \left(\frac{K_{t-1}^{net,F,D}}{Q_{t-1}^{F,D}} + \alpha^F \widetilde{A}_{t-2}^{F,D} \right)
$$

$$
P_t^{F,D} = \left(1 - \alpha^F\right) P_{t-1}^{F,D} + \frac{\widetilde{r}_t^{new,F,D}}{Q_{t-1}^{F,D}} \left(K_{t-1}^{net,F,D} + \alpha^F \frac{Q_{t-1}^{F,D}}{Q_{t-2}^{F,D}} A_{t-2}^{F,D} \right)
$$

$$
P_t^{F,D} = \left(1 - \alpha^F\right) P_{t-1}^{F,D} + \frac{\widetilde{r}_t^{new,F,D}}{Q_{t-1}^{F,D}} \left(K_{t-1}^{net,F,D} + \alpha^F \left(A_{t-1}^{F,D} - K_{t-1}^{net,F,D} \right) \right)
$$

$$
P_t^{F,D} = \left(1 - \alpha^F\right) P_{t-1}^{F,D} + r_t^{new,F,D} \left(\left(1 - \alpha^F\right) K_{t-1}^{net,F,D} + \alpha^F A_{t-1}^{F,D} \right)
$$

1.2 Approximation

We approximate the relation around a steady growth path, where exchange rates and asset prices are constant and all variables grow at the same rate ρ_{ss}. Yields are equalized across all assets at r_{ss}. Asset holdings grow through net capital flows:

$$
K_{ss,t}^{net,F,D} = \rho_{ss} A_{ss,t-1}^{F,D} \qquad ; \qquad K_{ss,t}^{net,V,D} = \rho_{ss} A_{ss,t-1}^{V,D}
$$

$$
K_{ss,t}^{net,F,\$} = \rho_{ss} A_{ss,t-1}^{F,\$} \qquad ; \qquad K_{ss,t}^{net,V,\$} = \rho_{ss} A_{ss,t-1}^{V,\$}
$$

The linear approximation of income flows, measured in dollar, on variable yield assets, fixed yield assets and overall assets gives:

$$
\widehat{P}_t^{V,\$} = \left(\widehat{S}_t^{\$/D} - \widehat{S}_{t-1}^{\$/D} \right) + \frac{\hat{r}_t^{new,V,D}}{r_{ss}} + \widehat{A}_{t-1}^{V,\$}
$$

$$
\widehat{P}_t^{F,\$} = \left(\widehat{S}_t^{\$/D} - \widehat{S}_{t-1}^{\$/D} \right) + \frac{1 - \alpha^F}{1 + \rho_{ss}} \widehat{P}_{t-1}^{F,\$} + \frac{\left(1 - \alpha^F\right) \rho_{ss}}{1 + \rho_{ss}} \widehat{K}_{t-1}^{net,F,\$}
$$

$$
+ \left(1 - \frac{1 - \alpha^F}{1 + \rho_{ss}} \right) \frac{\hat{r}_t^{new,F,\$}}{\rho_{ss}} + \alpha^F \widehat{A}_{t-1}^{F,\$}
$$

$$
\widehat{P}_t^{\$} = \left(\widehat{S}_t^{\$/D} - \widehat{S}_{t-1}^{\$/D} \right) + \frac{\left(1 - \alpha^F\right) \delta_{ss}^F}{1 + \rho_{ss}} \widehat{P}_{t-1}^{F,\$} + \frac{\left(1 - \alpha^F\right) \delta_{ss}^F \rho_{ss}}{1 + \rho_{ss}} \widehat{K}_{t-1}^{net,F,\$}
$$

$$
+ \left(1 - \frac{1 - \alpha^F}{1 + \rho_{ss}} \right) \delta_{ss}^F \frac{\hat{r}_t^{new,F,D}}{r_{ss}} + \left(1 - \delta_{ss}^F\right) \frac{\hat{r}_t^{new,NF,D}}{r_{ss}}
$$

$$
+ \alpha^F \delta_{ss}^F \widehat{A}_{t-1}^{F,\$} + \left(1 - \delta_{ss}^F\right) \widehat{A}_{t-1}^{V,\$}
$$

The yield s given by $\hat{r}_t^{eff,\$} = r_{ss} \left(\hat{P}_t^{\$} - \hat{A}_{t-1}^{\$} \right)$. The linear approximation of (1) is then:

$$
\begin{aligned}
\frac{\hat{r}_t^{\$}}{r_{ss}} &= \left(\widehat{S}_t^{\$/D} - \widehat{S}_{t-1}^{\$/D} \right) + \frac{\left(1 - \alpha^F \right) \delta_{ss}^F}{1 + \rho_{ss}} \left(\frac{\hat{r}_{t-1}^{F,\$}}{r_{ss}} + \hat{A}_{t-2}^{F,\$} \right) - \left(1 - \alpha^F \right) \delta_{ss}^F \widehat{A}_{t-1}^{F,\$} \\
&+ \frac{\left(1 - \alpha^F \right) \delta_{ss}^F \rho_{ss}}{1 + \rho_{ss}} \widehat{K}_{t-1}^{net,F,\$} + \left(1 - \frac{1 - \alpha^F}{1 + \rho_{ss}} \right) \delta_{ss}^F \frac{\hat{r}_t^{new,F,D}}{r_{ss}} + \left(1 - \delta_{ss}^F \right) \frac{\hat{r}_t^{new,NF,D}}{r_{ss}} \\
&+ \delta_{ss}^F \left(\widehat{A}_{t-1}^{F,\$} - \hat{A}_{t-1}^{\$} \right) + \left(1 - \delta_{ss}^F \right) \left(\widehat{A}_{t-1}^{V,\$} - \hat{A}_{t-1}^{\$} \right)
\end{aligned}
$$

By definition $\hat{A}_{t-1}^{\$} = \delta_{ss}^F \widehat{A}_{t-1}^{F,\$} + \left(1 - \delta_{ss}^F \right) \widehat{A}_{t-1}^{V,\$}$. The dynamics of the asset position in fixed income assets is approximated as $(1 + \rho_{ss}) \hat{A}_{t-1}^{F,\$} = \left(\widehat{S}_{t-1}^{\$/D} - \widehat{S}_{t-2}^{\$/D} \right) + \left(\widehat{Q}_{t-1}^{FD} - \widehat{Q}_{t-2}^{FD} \right) + \hat{A}_{t-2}^{F,\$} + \rho_{ss} \hat{K}_{t-1}^{net,F,\$}$. Using that relation, we obtain (2). For a category without fixed income assets $(\delta_{ss}^F = 0)$ the yield simplifies to $\hat{r}_t^{\$}/r_{ss} = \left(\widehat{S}_t^{\$/D} - \widehat{S}_{t-1}^{\$/D} \right) + \hat{r}_t^{new,V,D}/r_{ss}$.

B   Appendix: Impact on income flows

2.0.1   General relations

The income flow expressed in dollar is given by $P_t^{\$} = r_t^{\$} A_{t-1}^{\$}$, which implies $p_t^{\$} = r_t^{\$} a_{t-1}^{\$} \left(Y_{t-1}^{\$}/Y_t^{\$} \right)$ that is approximated as:

$$
\hat{p}_t^{\$} = -p_{ss}^{\$} \left(\widehat{Y}_t^{\$} - \widehat{Y}_{t-1}^{\$} \right) + p_{ss}^{\$} \frac{\hat{r}_t^{\$}}{r_{ss}} + \frac{r_{ss}^{\$}}{1 + g_{ss}} \hat{a}_{t-1}^{\$}
$$

To compute the impact of movements in the exchange rate between the dollar and the currency of denomination affect on the last term, notice that (assuming that GDP and position in the currency of denomination grow along the steady growth path):

$$
\begin{aligned}
\frac{A_{t+h}^{\$}}{A_{t-1}^{\$}} &= \frac{S_{t+h}^{\$/D}}{S_{t-1}^{\$/D}} \frac{A_{ss,t+h}^{D}}{A_{ss,t-1}^{D}} \\
\frac{a_{t+h}^{\$}}{a_{t-1}^{\$}} &= \frac{S_{t+h}^{\$/D}}{S_{t-1}^{\$/D}} \frac{A_{ss,t+h}^{D}}{A_{ss,t-1}^{D}} \frac{Y_{ss,t-1}^{\$}}{Y_{ss,t+h}^{\$}} \\
\frac{a_{t+h}^{\$}}{a_{t-1}^{\$}} &= \frac{S_{t+h}^{\$/D}}{S_{t-1}^{\$/D}}
\end{aligned}
$$

which implies $\hat{a}_{t+h}^{\$} = a_{ss}^{\$}\left(\widehat{S}_{t+h}^{\$/D} - \widehat{S}_{t-1}^{\$/D}\right) + \hat{a}_{t-1}^{\$}$ (for $h \geq 0$), hence $\frac{r_{ss}^{\$}}{1+g_{ss}}\hat{a}_{t+h}^{\$} = p_{ss}^{\$}\left(\widehat{S}_{t+h}^{\$/D} - \widehat{S}_{t-1}^{\$/D}\right) + \frac{r_{ss}^{\$}}{1+g_{ss}}\hat{a}_{t-1}^{\$}$.

2.0.2 Effect of the VIX index

The impact of a VIX change $\widehat{Vix}_t = Vix_t - Vix_{t-1}$ between period $t-1$ and t ($\widehat{Vix}_t = 1$ indicates a 1 standard deviation increase) on the dollar yield in an asset category k (FDI, portfolio equity, portfolio debt, other, reserves) is obtained from the panel regression. For the yield on asset, the change in the Vix leads to the following change in the yield:

$$\left[\frac{\hat{r}_t^{\$}}{r_{ss}}\right]_{FIT-Vix,k}^{receipt} = \delta_{VIX,k}^{receipt}\left(\widehat{Vix}_t\right)$$

where $\delta_{VIX,k}^{receipt}$ is the coefficient on the VIX. This fitted value is the same for all countries. We compute a country-specific fit for the income to GDP for category k in country c following (4):

$$\left[\hat{p}_t^{\$}\right]_{FIT-Vix,k,c}^{receipt} = \overline{p}_{k,c}^{\$,asset}\left[\frac{\hat{r}_t^{\$}}{r_{ss}}\right]_{FIT-Vix,k}^{receipt} = \overline{p}_{k,c}^{\$,asset}\delta_{VIX,k}^{receipt}\left(\widehat{Vix}_t\right)$$

where $\overline{p}_{k,c}^{\$,asset}$ is the reference value of income flows to GDP for category k in country c. These values are then summed across categories to obtain the overall primary income receipts, relative to GDP (in terms of change from period $t-1$):

$$[PI_t/Y_t]_{FIT-Vix,c}^{receipt} = \sum_k \overline{p}_{k,c}^{\$,asset}\delta_{VIX,k}^{receipt}\left(\widehat{Vix}_t\right)$$

Similarly, the overall payments on liabilities are:

$$[PI_t/Y_t]_{FIT-Vix,c}^{payment} = \sum_k \overline{p}_{k,c}^{\$,liability}\delta_{VIX,k}^{payment}\left(\widehat{Vix}_t\right)$$

The primary income balance is computed as $[NPI_t/Y_t]_{FIT-Vix,c} = [PI_t/Y_t]_{FIT-Vix,c}^{receipt} - [PI_t/Y_t]_{FIT-Vix,c}^{payment}$.

2.0.3 Effect of US interest rates

Turning to the effect of US interest rates, we consider a change of $\widehat{USrate}_{t+h} = USrate_{t+h} - USrate_{t-1}$ for $h \geq 0$ ($\Delta USrate_{t+1} = 1$ indicates a a 1 percentage point increase). We compute both the immediate impact, as well as the impact on future periods period ahead that takes account of the persistence in the income to GDP ratio.

Start with the immediate impact of an increase in the US interest rate. [32] The effect on yield on assets in an category k is:

$$\left[\frac{\hat{r}_t^\$}{r_{ss}} \right]_{FIT-USrate,k}^{receipt} = \delta_{USrate,k}^{receipt} \left(\widehat{USrate}_t \right)$$

The impact on primary income flows to GDP is computed as for the Vix:

$$[PI_t/Y_t]_{FIT-USrate,c}^{receipt} = \sum_k \overline{p}_{k,c}^{\$,asset} \delta_{USrate,k}^{receipt} \left(\widehat{USrate}_t \right)$$

$$[PI_t/Y_t]_{FIT-USrate,c}^{payment} = \sum_k \overline{p}_{k,c}^{\$,liability} \delta_{USrate,k}^{payment} \left(\widehat{USrate}_t \right)$$

We now turn to the impact at a future period, which is used in our scenario analysis. $\widehat{USrate}_{t+h}$ is expressed relative to the pre-shock period $t-1$. The impact reflects the persistence through the lagged yield:

$$\left[\frac{\hat{r}_{t+h}^\$}{r_{ss}} \right]_{FIT-USrate,k}^{receipt} = \delta_{USrate,k}^{receipt} \left(\widehat{USrate}_{t+h} \right) + \beta_{lag} \left[\frac{\hat{r}_{t+h-1}^\$}{r_{ss}} \right]_{FIT-USrate,k}^{receipt}$$

The impact on primary income flows to GDP, relative to their value in period $t-1$, is computed as:

$$[PI_{t+h}/Y_{t+h}]_{FIT-USrate,c}^{receipt} = \sum_k \overline{p}_{k,c}^{\$,asset} \left[\delta_{USrate,k}^{receipt} \left(\widehat{USrate}_{t+h} \right) + \beta_{lag} \left[\frac{\hat{r}_{t+h-1}^\$}{r_{ss}} \right]_{FIT-USrate,k}^{receipt} \right]$$

$$[PI_{t+h}/Y_{t+h}]_{FIT-USrate,c}^{payment} = \sum_k \overline{p}_{k,c}^{\$,liability} \left[\delta_{USrate,k}^{payment} \left(\widehat{USrate}_{t+h} \right) + \beta_{lag} \left[\frac{\hat{r}_{t+h-1}^\$}{r_{ss}} \right]_{FIT-USrate,k}^{payment} \right]$$

---

[32]The computation proceeds along the same steps for short-term and long-term rates.

2.0.4 Effect of dollar exchange rate

We finally compute the effect of the dollar exchange rate. It first impact the yield, both through the broad dollar index and through the exchange rate between the dollar and the currency of denomination (this later effect being present also with a lag). The exchange rate also has an impact on the valuation of position (the last term in (4)), except in the initial period as $\hat{a}_{t-1}^{\$} = 0$.

$\Delta\$_t$ denotes the change in the dollar exchange rate between period $t - 1$ and period t ($\Delta\$_t = 0.1$ denotes a 10% appreciation of the dollar), considering its transmission through the Broad dollar index as well as through the dollar exchange rate against the currency of denomination. The change in the broad dollar index is $\Delta\$_t$, while the change between the dollar and the currency of denomination reflects the weight of the dollar in the basket for a category k in country c, $w_{t,k,c}^{\$}$, the effect being equal to $-\left(1 - w_{t,k,c}^{\$}\right)(\Delta\$_t)$. In our computations of effects, we take the average of $w_{t,k,c}$ over several years, denoted by $\overline{w}_{k,c}^{\$}$.

In period t, the effect on the dollar yield on assets in a category k in country c is (the presence $\overline{w}_{k,c}^{\$,asset}$ of makes the effect country specific):

$$\left[\frac{\hat{r}_t^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{receipt} = \left[\delta_{USDbroad,k}^{receipt} - \delta_{val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\right](\Delta\$_t)$$

The impact on primary income flows to GDP is given by:

$$[PI_t/Y_t]_{FIT-USD,c}^{receipt} = \sum_k \overline{p}_{k,c}^{\$,asset}\left[\delta_{USDbroad,k}^{receipt} - \delta_{val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\right](\Delta\$_t)$$

$$[PI_t/Y_t]_{FIT-USD,c}^{payment} = \sum_k \overline{p}_{k,c}^{\$,liability}\left[\delta_{USDbroad,k}^{payment} - \delta_{val,k}^{payment}\left(1 - \overline{w}_{k,c}^{\$,liability}\right)\right](\Delta\$_t)$$

We now turn to the impact at period $t + 1$. The effect of $\Delta\$_{t+1}$ (the change between period t and period $t+1$) on the yield combines various channels, namely the impact through the lagged yield, the direct impact of the exchange rate in period $t+1$, and the coefficient on

the lagged exchange rate between the dollar and the currency of denomination. Specifically:

$$
\left[\frac{\hat{r}_{t+1}^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{receipt} = \beta_{lag}\left[\frac{\hat{r}_{t}^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{receipt} + \left[\delta_{USDbroad,k}^{receipt} - \delta_{val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\right]\left(\Delta\$_{t+1}\right)
$$
$$
- \delta_{Lag-val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\left(\Delta\$_{t}\right)
$$

In addition to the effect through the yield, the primary income flows are also affected by the impact on the dollar value of asset $\hat{a}_t^{\$}$, that is $p_{ss}^{\$}\left(\widehat{S}_t^{\$/D} - \widehat{S}_{t-1}^{\$/D}\right) = p_{ss}^{\$}\left(\Delta\$_t\right)$. As this valuation should have the same coefficient that the direct effect on the yield, we adjust it as $-\overline{p}_{k,c}^{\$,asset}\delta_{val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\left(\Delta\$_t\right)$. The impact on primary income flows to GDP is therefore computed as:

$$
\begin{aligned}
[PI_{t+1}/Y_{t+1}]_{FIT-USD,c}^{receipt} = & \sum_k \overline{p}_{k,c}^{\$,asset}\beta_{lag}\left[\frac{\hat{r}_t^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{receipt} \\
& + \sum_k \overline{p}_{k,c}^{\$,asset}\left[\delta_{USDbroad,k}^{receipt} - \delta_{val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\right]\left(\Delta\$_{t+1}\right) \\
& - \sum_k \overline{p}_{k,c}^{\$,asset}\left[\delta_{Lag-val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\left(\Delta\$_t\right)\right] \\
& - \sum_k \overline{p}_{k,c}^{\$,asset}\left[\delta_{val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\left(\Delta\$_t\right)\right] \\
[PI_{t+1}/Y_{t+1}]_{FIT-USD,c}^{receipt} = & \sum_k \overline{p}_{k,c}^{\$,asset}\left[\beta_{lag}\left[\frac{\hat{r}_t^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{receipt} + \delta_{USDbroad,k}^{receipt}\left(\Delta\$_{t+1}\right)\right] \\
& - \sum_k \overline{p}_{k,c}^{\$,asset}\left[\delta_{val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\left(\Delta\$_{t+1} + \Delta\$_t\right)\right] \\
& - \sum_k \overline{p}_{k,c}^{\$,asset}\left[\delta_{Lag-val,k}^{receipt}\left(1 - \overline{w}_{k,c}^{\$,asset}\right)\left(\Delta\$_t\right)\right]
\end{aligned}
$$

Similarly:

$$
\begin{aligned}
[PI_{t+1}/Y_{t+1}]_{FIT-USD,c}^{payment} = & \sum_k \overline{p}_{k,c}^{\$,liability}\left[\beta_{lag}\left[\frac{\hat{r}_t^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{payment} + \delta_{USDbroad,k}^{payment}\left(\Delta\$_{t+1}\right)\right] \\
& - \sum_k \overline{p}_{k,c}^{\$,liability}\left[\delta_{val,k}^{payment}\left(1 - \overline{w}_{k,c}^{\$,liability}\right)\left(\Delta\$_{t+1} + \Delta\$_t\right)\right] \\
& - \sum_k \overline{p}_{k,c}^{\$,liability}\left[\delta_{Lag-val,k}^{payment}\left(1 - \overline{w}_{k,c}^{\$,liability}\right)\left(\Delta\$_t\right)\right]
\end{aligned}
$$

Consider now the impact at period $t+2$. The effect of $\Delta\$_{t+2}$ (the change between period $t+1$ and period $t+2$) on the yield is:

$$
\left[\frac{\hat{r}_{t+2}^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{receipt} = \beta_{lag}\left[\frac{\hat{r}_{t+1}^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{receipt} + \left[\delta_{USDbroad,k}^{receipt} - \delta_{val,k}^{receipt}\left(1-\overline{w}_{k,c}^{\$,asset}\right)\right](\Delta\$_{t+2})
$$
$$
- \delta_{Lag-val,k}^{receipt}\left(1-\overline{w}_{k,c}^{\$,asset}\right)(\Delta\$_{t+1})
$$

The impact on the dollar value of asset $\hat{a}_{t+1}^{\$}$ is equal to $p_{ss}^{\$}(\Delta\$_{t+1} + \Delta\$_t)$. Applying again the same coefficient that the direct effect on the yield, we adjust it as $-\overline{p}_{k,c}^{\$,asset}\delta_{val,k}^{receipt}\left(1-\overline{w}_{k,c}^{\$,asset}\right)(\Delta\$_{t+1})$. The impact on primary income flows to GDP is therefore computed as:

$$
[PI_{t+2}/Y_{t+2}]_{FIT-USD,c}^{receipt} = \sum_k \overline{p}_{k,c}^{\$,asset}\left[\beta_{lag}\left[\frac{\hat{r}_{t+1}^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{receipt} + \delta_{USDbroad,k}^{receipt}(\Delta\$_{t+2})\right]
$$
$$
- \sum_k \overline{p}_{k,c}^{\$,asset}\left[\delta_{val,k}^{receipt}\left(1-\overline{w}_{k,c}^{\$,asset}\right)(\Delta\$_{t+2} + \Delta\$_{t+1} + \Delta\$_t)\right]
$$
$$
- \sum_k \overline{p}_{k,c}^{\$,asset}\left[\delta_{Lag-val,k}^{receipt}\left(1-\overline{w}_{k,c}^{\$,asset}\right)(\Delta\$_{t+1})\right]
$$

$$
[PI_{t+2}/Y_{t+2}]_{FIT-USD,c}^{payment} = \sum_k \overline{p}_{k,c}^{\$,liability}\left[\beta_{lag}\left[\frac{\hat{r}_{t+1}^{\$}}{r_{ss}}\right]_{FIT-USD,k,c}^{payment} + \delta_{USDbroad,k}^{payment}(\Delta\$_{t+2})\right]
$$
$$
- \sum_k \overline{p}_{k,c}^{\$,liability}\left[\delta_{val,k}^{payment}\left(1-\overline{w}_{k,c}^{\$,liability}\right)(\Delta\$_{t+2} + \Delta\$_{t+1} + \Delta)\right]
$$
$$
- \sum_k \overline{p}_{k,c}^{\$,liability}\left[\delta_{Lag-val,k}^{payment}\left(1-\overline{w}_{k,c}^{\$,liability}\right)(\Delta\$_{t+1})\right]
$$

C Appendix: Construction of Currency-of-Investment (CIW) Weighted Exchange rate indices

This appendix presents the steps in constructing the exchange rate between the dollar and the currency of denomination of financial assets and liabilities. We rely on the Bénétrix et al. (2020) data on the currency of invoicing of Assets and Liabilities for 50 countries between 1990 and 2017. As the Bénétrix et al., 2020 data are available only until 2017, we keep the currency composition of that year unchanged until 2022. Our approach follows the steps of Colacelli et al., 2021, focusing on the period since 1999 to better handle the role of the euro.

As in Colacelli et al., 2021 indices are geometric averages of the ratios of bilateral exchange rates with respect to the US dollar around the base year 2010. Specifically, for country i, $R_{i,t}/R_{i,2010}$ is the exchange rate of currency i relative to the US dollar, set to 1 in 2010, with a value above units denoting a depreciation of the country's currency against the dollar. The ratio $(R_{i,t}/R_{i,2010})/(R_{j,t}/R_{j,2010})$ is exchange rate currency of i against the currency of j, with a value above unity denoting a depreciation of i. We weight this ratio by the share of the external assets (liabilities) of country i that are denominated in currency j, $W_{i,j,t}^{A,L}$. We have information of the weights of the USD, EUR, GBP, CNY and JPY, as well as domestic currency, with the balance consisting of other currencies (OTH). We assume that the OTH currency has the same composition across the currencies (other than the domestic one), and adjust the weights of USD, EUR, GBP, CNY and JPY accordingly,[33] leaving the share of domestic currency $S_{i,DC,t}^{A,L}$ unchanged.

These exchange rates are then weighted using the share of assets (and liabilities) invoiced in USD, EUR, GBP, CNY and JPY, as well as domestic currency, with the assumption that foreign assets (and domestic liabilities) invoiced in other (OTH) currencies are actually invoiced in the known currencies by re-weighting the other shares in a proportional way (leaving the share of domestic currency unchanged).

The weighted exchange rate between the dollar and the basket in which the assets of country i are denominated, $R_{i,t}^{\$,D,A,L}$ is as follows, with a value $R_t^{\$,Di} > 1$ indicating that since 2010 the dollar has depreciated against depreciated against the currencies in which country i's assets (liabilities) are denominated

The currency of investment weighted exchange rate for assets (and liabilities) is then of the following form, with a value of $\mathrm{ER}_{i,t}^{A,L} > 1$ indicating that since 2010 the currency of country i has depreciated against the currencies in which its assets (liabilities) are denominated:

$$
\mathrm{R}_{i,t}^{\$,D,A,L} = \Pi_j \left(\frac{1}{R_{j,t}/R_{j,2010}} \right)^{W_{i,j,t}^{A,L}}
$$

---

[33] $W_{i,j,t}^{A,L}$ are the weight after the adjustment, and $S_{i,j,t}^{A,L}$ are the weights before

where $R_{\$,t} = 1$ and:

$$W_{i,j,t}^{A,L} = S_{i,j,t}^{A,L} \times \frac{\sum_{k \in (\text{USD,EUR,GBP,CNY,JPY})} S_{i,k,t}^{A,L} + S_{i,OTH,t}^{A,L}}{\sum_{k \in (\text{USD,EUR,GBP,CNY,JPY})} S_{i,k,t}^{A,L}}$$

$$W_{i,j,t}^{A,L} + S_{i,DC,t}^{A,L} = 1$$

We consider a serie of weights across different categories of assets and liabilities, with each set of weight giving an different measure of $\text{ER}_{i,t}^{A,L}$. Specifically, we rely on Bénétrix et al. (2020) for weights for all assets, as well as weights for "debt" assets, which include portfolio debt and other investment. Combining these two sets of weights with the holdings from Milesi-Ferretti (2024b), we can compute the values of the "non-debt" assets (FDI, Portfolio equity, reserves) across the various currencies, as well as the corresponding weights. This gives us an exchange rate $\text{ER}_{i,t}^{A,L}$ for these specific categories. Finally, combining the weighted exchange rates of debt and non-debt assets, and the holdings of portfolio equity and portfolio debt, we constructs weights and the corresponding exchange rate for the overall protfolio category. Similar steps are done on the liability side.

D Appendix: Tables and figures

Table 7: Correlation of VIX and US variables

	VIX	USD broad	US long-term rate	US short-term rate	GSM Factor	Bond Premium
VIX	1					
USD Broad	0.011	1				
	(0.711)					
US long-term rate	0.128***	0.013	1			
	(0.000)	(0.679)				
US short-term rate	-0.001	0.181***	0.827***	1		
	(0.973)	(0.000)	(0.000)			
GSM Factor	-0.022	0.130***	-0.803***	-0.793***	1	
	(0.485)	(0.000)	(0.000)	(0.000)		
Bond Premium	0.715***	-0.047	0.262***	0.151***	-0.210***	1
	(0.000)	(0.126)	(0.000)	(0.000)	(0.000)	

Notes: p-values in parentheses. *, **, *** indicates significance at the 10, 5 and 1% level respectively.

Table 8: Drivers of (ln) Yields - All Countries, without the United States

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.638*** (0.0471)	0.728*** (0.0340)	0.504*** (0.0444)	0.615*** (0.0551)	0.592*** (0.0824)	0.562*** (0.0622)	0.657*** (0.0852)	0.742*** (0.0528)	0.835*** (0.0528)	0.661*** (0.0311)	0.634*** (0.0401)
Δln $-Denomination XR (increase = $ depreciation)	0.750*** (0.240)	0.246 (0.172)	0.445 (0.625)	-0.541** (0.247)	1.179 (0.832)	0.971** (0.406)	0.437 (0.368)	1.337*** (0.363)	0.715* (0.359)	1.026*** (0.323)	-0.205 (0.471)
L.Δln $-Denomination XR (increase = $ depreciation)	-0.151 (0.116)	-0.107 (0.0635)	-0.0912 (0.162)	0.117 (0.143)	-0.164 (0.157)	0.103 (0.205)	-0.270 (0.246)	0.00849 (0.139)	-0.213 (0.145)	-0.231 (0.158)	-0.108 (0.0917)
Δln $ Broad Index (increase = $ appreciation)	-0.395 (0.335)	-1.095*** (0.216)	-0.170 (0.738)	-1.946*** (0.332)	-0.437 (0.837)	-0.00434 (0.838)	-0.0718 (0.538)	0.171 (0.211)	0.150 (0.346)	0.237 (0.346)	0.486 (0.671)
US 3-month interest rate	0.0545*** (0.00983)	0.00557 (0.00507)	0.0637*** (0.0222)	-0.0259*** (0.00943)	0.0638** (0.0248)	-0.0302 (0.0192)	0.00662 (0.0175)	-0.00497 (0.0107)	0.0210 (0.0165)	0.104*** (0.00821)	0.147*** (0.0265)
US 10-year treasury yield	0.00890 (0.0105)	0.0407*** (0.00795)	0.00475 (0.0202)	0.0408*** (0.0128)	0.0636* (0.0341)	0.118*** (0.0318)	0.109*** (0.0221)	0.0861*** (0.0166)	0.0832*** (0.0195)	0.118*** (0.0258)	0.131*** (0.0304)
VIX (normalized)	-0.0167 (0.0147)	-0.0238*** (0.00588)	0.0802** (0.0329)	-0.0305*** (0.00917)	0.0524 (0.0479)	-0.0614** (0.0253)	-0.0311 (0.0268)	-0.0312*** (0.0109)	-0.168*** (0.0312)	-0.0332** (0.0137)	-0.0827*** (0.0261)
Global Stock Market Factor (normalized)	-0.000620 (0.0170)	0.00434 (0.0108)	0.104*** (0.0297)	-0.00805 (0.0164)	0.165*** (0.0542)	0.0923* (0.0508)	-0.0311 (0.0270)	0.0263 (0.0169)	-0.0275 (0.0373)	0.0964*** (0.0241)	0.0751** (0.0357)
Excess Bond Premium (normalized)	-0.00786 (0.00824)	-0.0137* (0.00696)	-0.0562** (0.0224)	-0.0244** (0.0101)	-0.0140 (0.0283)	0.0149 (0.0236)	-0.0441* (0.0262)	0.0136 (0.0142)	0.00779 (0.0202)	-0.0157 (0.0133)	0.0173 (0.0234)
Inflation(Δln CPI)	-0.0466 (0.904)	0.708*** (0.242)	-4.272** (1.749)	1.105*** (0.344)	-5.616** (2.710)	1.219*** (0.307)	0.881 (1.482)	-0.0159 (0.205)	13.58*** (2.201)	0.249 (0.223)	3.456 (2.084)
Real GDP Growth	0.0314*** (0.00798)	1.044*** (0.249)	0.0938*** (0.0194)	1.617*** (0.358)	0.0360 (0.0243)	1.235** (0.545)	-0.0190* (0.0108)	0.130 (0.211)	-0.0477*** (0.0170)	0.140 (0.225)	-0.0156 (0.0114)
L. Capital Gains	-0.00339*** (0.000782)	-0.00573*** (0.000812)	-0.000100 (0.0000921)	-0.00383*** (0.000896)	-0.000882** (0.000403)	-0.00373*** (0.000734)	-0.000292*** (0.0000265)	-0.00400*** (0.00115)	-0.00220 (0.00200)	-0.00681*** (0.00145)	0.00303 (0.00391)
Constant	-1.534*** (0.167)	-1.066*** (0.112)	-1.823*** (0.156)	-1.234*** (0.164)	-1.907*** (0.368)	-1.994*** (0.305)	-1.387*** (0.264)	-1.088*** (0.175)	-1.301*** (0.217)	-1.915*** (0.181)	-2.344*** (0.207)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	960	963	920	953	767	795	826	885	929	928	472
Countries	41	41	41	41	38	37	39	40	40	40	27
Adjusted R^2	0.717	0.744	0.373	0.553	0.377	0.378	0.577	0.735	0.819	0.784	0.778

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 9: Drivers of (ln) Yields - Advanced Economies, without the United States

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.590*** (0.0569)	0.653*** (0.0408)	0.436*** (0.0375)	0.381*** (0.0608)	0.650*** (0.0750)	0.607*** (0.0812)	0.758*** (0.0501)	0.806*** (0.0267)	0.755*** (0.0305)	0.609*** (0.0465)	0.691*** (0.0392)
Δln $-Denomination XR (increase = $ depreciation)	0.749*** (0.230)	0.416** (0.164)	0.122 (0.463)	-0.207 (0.389)	0.480 (0.489)	0.194 (0.347)	0.654** (0.293)	1.545*** (0.483)	1.048** (0.378)	1.268*** (0.274)	-1.041 (0.678)
L.Δln $-Denomination XR (increase = $ depreciation)	0.0794 (0.105)	-0.0989 (0.0694)	-0.0949 (0.134)	-0.00312 (0.148)	-0.0275 (0.0906)	0.0922 (0.241)	-0.283 (0.245)	-0.262** (0.115)	-0.131 (0.141)	-0.305** (0.138)	-0.0948 (0.0882)
Δln $ Broad Index (increase = $ appreciation)	-0.683** (0.287)	-1.088*** (0.246)	-1.279 (0.753)	-1.857*** (0.495)	-1.304*** (0.370)	-1.161** (0.474)	-0.293 (0.439)	0.262 (0.313)	-0.133 (0.504)	0.664 (0.459)	-0.634 (1.114)
US 3-month interest rate	0.0260** (0.00920)	-0.00167 (0.00789)	0.0616** (0.0235)	0.0218 (0.0187)	0.0183 (0.0160)	-0.00663 (0.0125)	-0.00970 (0.0176)	0.0120 (0.0124)	0.0148 (0.0184)	0.0734*** (0.0144)	0.132*** (0.0409)
US 10-year treasury yield	0.0311** (0.0117)	0.0570*** (0.0157)	-0.0160 (0.0228)	-0.00562 (0.0288)	0.0102 (0.0199)	-0.0000298 (0.0245)	0.0970*** (0.0191)	0.0756*** (0.0233)	0.110*** (0.0255)	0.134** (0.0493)	0.133*** (0.0325)
VIX (normalized)	-0.00592 (0.0181)	-0.0285** (0.0103)	0.0579 (0.0347)	-0.0217 (0.0221)	-0.0347 (0.0213)	-0.0869*** (0.0211)	-0.0449** (0.0228)	-0.0167 (0.0130)	-0.127*** (0.0297)	-0.0519** (0.0247)	-0.0771* (0.0416)
Global Stock Market Factor (normalized)	0.00211 (0.0187)	0.00433 (0.00975)	0.0735* (0.0389)	0.0182 (0.0233)	0.0309 (0.0232)	0.0964*** (0.0263)	0.0158 (0.0349)	0.0514** (0.0202)	-0.0321 (0.0341)	0.0421 (0.0279)	0.111* (0.0622)
Excess Bond Premium (normalized)	-0.0130 (0.0126)	-0.00840 (0.00838)	-0.0890*** (0.0297)	-0.0215 (0.0136)	-0.0183 (0.0301)	0.0237 (0.0185)	-0.000173 (0.0128)	-0.0185 (0.0147)	0.0136 (0.0187)	-0.0238 (0.0221)	0.0104 (0.0386)
Inflation(Δln CPI)	-0.547 (0.958)	1.218** (0.449)	-3.190 (2.166)	0.993 (0.790)	-2.153 (1.259)	-0.516 (0.897)	1.304 (1.420)	0.776 (0.944)	13.54*** (2.533)	5.246*** (1.231)	2.923 (3.545)
Real GDP Growth	0.0271*** (0.00807)	1.828*** (0.305)	0.0713*** (0.0177)	3.445*** (0.558)	0.00518 (0.00793)	2.059*** (0.569)	-0.0153 (0.0106)	0.563 (0.631)	-0.0417*** (0.0142)	-0.488 (0.840)	-0.00978 (0.0185)
L. Capital Gains	-0.00477*** (0.00137)	-0.00650*** (0.000562)	-0.00431* (0.00216)	-0.00465*** (0.00148)	-0.00577*** (0.000603)	-0.00461*** (0.00113)	-0.00277* (0.00140)	-0.00738*** (0.000810)	-0.00513*** (0.00139)	-0.00589*** (0.00195)	-0.000507 (0.00349)
Domestic Long-term IR		-0.00714 (0.00599)		0.0318** (0.0137)		0.00833 (0.00593)		0.0187** (0.00859)		0.0135* (0.00647)	
Domestic Short-term IR		0.0214*** (0.00450)		-0.0102 (0.0178)		0.0458** (0.0185)		0.00251 (0.0128)		0.0386* (0.0187)	
Constant	-1.640*** (0.205)	-1.456*** (0.147)	-1.835*** (0.127)	-1.983*** (0.206)	-1.324*** (0.277)	-1.512*** (0.272)	-1.138*** (0.183)	-1.063*** (0.109)	-1.699*** (0.182)	-2.420*** (0.325)	-2.083*** (0.181)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	446	445	436	440	430	424	433	433	446	445	236
Countries	19	19	19	19	19	19	19	19	19	19	13
Adjusted R^2	0.786	0.857	0.383	0.400	0.513	0.548	0.786	0.860	0.873	0.853	0.801

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 10: Drivers of (ln) Yields - All Countries, without VIX index

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.639*** (0.0461)	0.727*** (0.0341)	0.502*** (0.0453)	0.616*** (0.0539)	0.591*** (0.0813)	0.568*** (0.0602)	0.657*** (0.0850)	0.744*** (0.0525)	0.823*** (0.0565)	0.658*** (0.0303)	0.616*** (0.0410)
Δln $-Denomination XR (increase = $ depreciation)	0.808*** (0.238)	0.302* (0.170)	0.132 (0.580)	-0.526** (0.245)	0.947 (0.797)	1.075** (0.409)	0.569* (0.331)	1.406*** (0.368)	1.311*** (0.385)	1.117*** (0.318)	0.189 (0.486)
L.Δln $-Denomination XR (increase = $ depreciation)	-0.161 (0.114)	-0.119* (0.0651)	-0.0548 (0.165)	0.107 (0.142)	-0.144 (0.144)	0.0768 (0.205)	-0.280 (0.250)	-0.0233 (0.136)	-0.277 (0.174)	-0.253 (0.158)	-0.149 (0.0899)
Δln $ Broad Index (increase = $ appreciation)	-0.262 (0.357)	-0.913*** (0.201)	-0.849 (0.599)	-1.807*** (0.323)	-0.862 (0.813)	0.425 (0.830)	0.199 (0.499)	0.410* (0.228)	1.446*** (0.445)	0.502 (0.339)	0.973 (0.686)
US 3-month interest rate	0.0606*** (0.00895)	0.00669 (0.00490)	0.0309* (0.0165)	-0.0259** (0.00918)	0.0423* (0.0231)	-0.0280 (0.0184)	0.0197 (0.0142)	-0.00288 (0.0106)	0.0895*** (0.0167)	0.106*** (0.00803)	0.179*** (0.0249)
US 10-year treasury yield	0.00721 (0.0100)	0.0403*** (0.00778)	0.0156 (0.0201)	0.0418*** (0.0125)	0.0670** (0.0324)	0.116*** (0.0311)	0.103*** (0.0218)	0.0841*** (0.0162)	0.0669*** (0.0188)	0.118*** (0.0249)	0.134*** (0.0295)
Global Stock Market Factor (normalized)	0.00857 (0.0155)	-0.00343 (0.0105)	0.0696** (0.0263)	-0.0144 (0.0158)	0.140** (0.0605)	0.0724 (0.0466)	-0.0149 (0.0281)	0.0154 (0.0171)	0.0543 (0.0370)	0.0856*** (0.0239)	0.115*** (0.0329)
Excess Bond Premium (normalized)	-0.0164** (0.00722)	-0.0337*** (0.00504)	-0.0156 (0.0183)	-0.0489*** (0.0100)	0.0124 (0.0229)	-0.0343** (0.0128)	-0.0583*** (0.0204)	-0.0129 (0.0103)	-0.0751*** (0.0125)	-0.0446*** (0.00990)	-0.0156 (0.0174)
Inflation(Δln CPI)	-0.783 (0.566)	0.693*** (0.242)	-0.967 (1.045)	1.085*** (0.347)	-3.355 (2.218)	1.151*** (0.303)	-0.494 (1.163)	-0.0311 (0.198)	6.144*** (1.533)	0.228 (0.232)	-0.182 (1.341)
Real GDP Growth	0.0371*** (0.00671)	1.050*** (0.246)	0.0655*** (0.0138)	1.623*** (0.355)	0.0182 (0.0143)	1.240** (0.560)	-0.00783 (0.00805)	0.139 (0.202)	0.00959 (0.0148)	0.145 (0.230)	0.0132 (0.00927)
L. Capital Gains	-0.00346*** (0.000771)	-0.00581*** (0.000803)	-0.000104 (0.0000952)	-0.00392*** (0.000901)	-0.000909** (0.000389)	-0.00378*** (0.000730)	-0.000291*** (0.0000266)	-0.00401*** (0.00116)	-0.00216 (0.00197)	-0.00692*** (0.00143)	0.00240 (0.00358)
Constant	-1.525*** (0.164)	-1.073*** (0.113)	-1.821*** (0.157)	-1.239*** (0.160)	-1.895*** (0.360)	-1.969*** (0.299)	-1.383*** (0.263)	-1.080*** (0.174)	-1.341*** (0.232)	-1.932*** (0.175)	-2.461*** (0.216)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	984	987	944	977	791	819	850	909	953	952	494
Countries	42	42	42	42	39	38	40	41	41	41	28
Adjusted R^2	0.716	0.745	0.369	0.551	0.377	0.376	0.578	0.736	0.814	0.786	0.783

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 11: Drivers of (ln) Yields - All Countries, US monetary base

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.642*** (0.0461)	0.733*** (0.0328)	0.505*** (0.0444)	0.626*** (0.0523)	0.590*** (0.0821)	0.563*** (0.0623)	0.658*** (0.0852)	0.741*** (0.0528)	0.840*** (0.0526)	0.662*** (0.0302)	0.649*** (0.0335)
Δln $-Denomination XR (increase = $ depreciation)	0.745*** (0.236)	0.272 (0.174)	0.444 (0.610)	-0.541** (0.258)	1.193 (0.807)	0.984** (0.390)	0.465 (0.353)	1.310*** (0.366)	0.692* (0.351)	1.052*** (0.327)	-0.206 (0.478)
L.Δln $-Denomination XR (increase = $ depreciation)	-0.127 (0.115)	-0.107* (0.0637)	-0.0946 (0.158)	0.127 (0.144)	-0.200 (0.166)	0.108 (0.204)	-0.269 (0.242)	0.00865 (0.138)	-0.165 (0.129)	-0.229 (0.157)	-0.0798 (0.0857)
Δln $ Broad Index (increase = $ appreciation)	-0.678 (0.412)	-1.370*** (0.241)	0.00183 (0.745)	-2.837*** (0.414)	1.445 (1.067)	-0.289 (0.885)	0.00293 (0.436)	0.458* (0.254)	-1.227*** (0.420)	0.0705 (0.300)	-1.145* (0.650)
US 3-month interest rate	0.0481*** (0.0102)	0.00757 (0.00481)	0.0669*** (0.0193)	-0.0239** (0.00936)	0.0984** (0.0381)	-0.0284 (0.0187)	0.00805 (0.0204)	-0.00556 (0.0105)	-0.00458 (0.0189)	0.107*** (0.00837)	0.112*** (0.0279)
US 10-year treasury yield	0.00242 (0.0108)	0.0274*** (0.00910)	0.0102 (0.0247)	0.00876 (0.0163)	0.105*** (0.0299)	0.103*** (0.0331)	0.108*** (0.0253)	0.0963*** (0.0166)	0.0475** (0.0213)	0.109*** (0.0238)	0.101*** (0.0282)
VIX (normalized)	-0.0260* (0.0149)	-0.0227*** (0.00582)	0.0845*** (0.0301)	-0.0283*** (0.00929)	0.104 (0.0687)	-0.0607** (0.0254)	-0.0296 (0.0301)	-0.0324*** (0.0108)	-0.211*** (0.0367)	-0.0327** (0.0134)	-0.138*** (0.0395)
Global Stock Market Factor (normalized)	-0.0114 (0.0201)	0.00240 (0.0106)	0.115*** (0.0277)	-0.0116 (0.0157)	0.243*** (0.0529)	0.0898* (0.0497)	-0.0276 (0.0296)	0.0270 (0.0163)	-0.0851** (0.0421)	0.0954*** (0.0230)	0.0176 (0.0513)
Excess Bond Premium (normalized)	0.00399 (0.0112)	0.000660 (0.00775)	-0.0621** (0.0282)	0.0167 (0.0138)	-0.0911 (0.0580)	0.0298 (0.0229)	-0.0450 (0.0307)	-0.00122 (0.0139)	0.0675** (0.0278)	-0.00810 (0.0137)	0.0881** (0.0409)
Fed Monetary Base growth rate	-0.0884 (0.0583)	-0.127*** (0.0385)	0.0596 (0.132)	-0.338*** (0.0843)	0.589* (0.324)	-0.107 (0.117)	0.0143 (0.120)	0.122** (0.0561)	-0.455*** (0.139)	-0.0814 (0.0729)	-0.478** (0.223)
Inflation(Δln CPI)	0.612 (1.047)	0.690*** (0.237)	-4.781*** (1.649)	1.050*** (0.324)	-9.715** (4.282)	1.195*** (0.315)	0.736 (1.996)	0.00791 (0.202)	16.79*** (2.763)	0.246 (0.225)	7.675** (3.240)
Real GDP Growth	0.0247** (0.00935)	1.015*** (0.243)	0.0972*** (0.0190)	1.524*** (0.333)	0.0776** (0.0404)	1.198** (0.558)	-0.0173 (0.0115)	0.163 (0.212)	-0.0790*** (0.0195)	0.129 (0.228)	-0.0502** (0.0219)
L. Capital Gains	-0.00353*** (0.000773)	-0.00563*** (0.000777)	-0.000101 (0.0000934)	-0.00383*** (0.000852)	-0.000884** (0.000399)	-0.00371*** (0.000726)	-0.000291*** (0.0000275)	-0.00403*** (0.00115)	-0.00228 (0.00205)	-0.00681*** (0.00143)	0.00288 (0.00374)
Constant	-1.478*** (0.154)	-0.997*** (0.109)	-1.836*** (0.176)	-1.071*** (0.157)	-2.148*** (0.429)	-1.936*** (0.321)	-1.387*** (0.302)	-1.138*** (0.177)	-1.088*** (0.217)	-1.878*** (0.166)	-2.119*** (0.126)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	984	987	944	977	791	819	850	909	953	952	494
Countries	42	42	42	42	39	38	40	41	41	41	28
Adjusted R^2	0.716	0.749	0.372	0.560	0.381	0.378	0.577	0.738	0.822	0.787	0.788

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 12: Drivers of (ln) Yields - Emerging Countries, US monetary base

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.636*** (0.0567)	0.746*** (0.0421)	0.527*** (0.0519)	0.698*** (0.0591)	0.584*** (0.102)	0.531*** (0.0786)	0.624*** (0.103)	0.660*** (0.107)	0.859*** (0.0628)	0.662*** (0.0490)	0.598*** (0.0378)
Δln $-Denomination XR (increase = $ depreciation)	0.811 (0.584)	-0.171 (0.262)	1.010 (1.368)	-0.570 (0.394)	4.940* (2.517)	2.446** (1.140)	1.371 (1.785)	1.394** (0.508)	0.476 (1.249)	0.731* (0.418)	1.166 (1.425)
L.Δln $-Denomination XR (increase = $ depreciation)	-0.457* (0.241)	-0.0679 (0.126)	0.871 (0.607)	0.405** (0.172)	0.258 (1.149)	0.550 (0.455)	0.330 (1.180)	0.751** (0.319)	0.144 (0.420)	-0.0511 (0.295)	0.00178 (1.505)
Δln $ Broad Index (increase = $ appreciation)	-0.720 (0.635)	-1.605*** (0.351)	0.424 (1.246)	-2.577*** (0.560)	3.671 (2.297)	1.092 (1.828)	0.358 (0.950)	0.317 (0.384)	-1.320* (0.762)	-0.124 (0.323)	-1.383 (0.795)
US 3-month interest rate	0.0687*** (0.0160)	0.000352 (0.00661)	0.0575 (0.0344)	-0.0385*** (0.0136)	0.160* (0.0846)	-0.0457 (0.0418)	0.0351 (0.0487)	-0.0176 (0.0152)	-0.0115 (0.0322)	0.0937*** (0.0110)	0.107** (0.0452)
US 10-year treasury yield	-0.0161 (0.0177)	0.0128 (0.0108)	0.0236 (0.0422)	0.0288 (0.0231)	0.153** (0.0708)	0.193** (0.0687)	0.103** (0.0442)	0.0623*** (0.0211)	0.0364 (0.0331)	0.0502** (0.0186)	0.0685 (0.0457)
VIX (normalized)	-0.0389 (0.0257)	-0.0181* (0.00949)	0.0842 (0.0500)	-0.0190 (0.0116)	0.232 (0.154)	-0.0111 (0.0460)	-0.00274 (0.0637)	-0.0464** (0.0178)	-0.242*** (0.0681)	-0.0585*** (0.0147)	-0.169** (0.0742)
Global Stock Market Factor (normalized)	-0.0291 (0.0331)	-0.000724 (0.0135)	0.121** (0.0433)	-0.0181 (0.0229)	0.349*** (0.118)	0.120 (0.0972)	-0.0775 (0.0731)	0.00594 (0.0238)	-0.104 (0.0734)	0.0768** (0.0344)	-0.0699 (0.0799)
Excess Bond Premium (normalized)	0.0144 (0.0183)	0.00376 (0.0125)	-0.0276 (0.0483)	0.00610 (0.0215)	-0.143 (0.130)	0.000000957 (0.0399)	-0.110 (0.0662)	0.0317 (0.0205)	0.0678 (0.0513)	0.0188 (0.0154)	0.143* (0.0722)
Fed Monetary Base growth rate	-0.124 (0.109)	-0.160*** (0.0511)	0.0763 (0.242)	-0.261** (0.103)	0.874 (0.727)	-0.204 (0.219)	-0.0169 (0.255)	0.0761 (0.0819)	-0.501** (0.250)	-0.0738 (0.0784)	-0.866** (0.396)
Inflation(Δln CPI)	1.436 (1.804)	0.500** (0.200)	-4.390 (2.680)	0.790*** (0.265)	-13.49 (9.615)	1.081** (0.464)	0.800 (3.951)	0.0152 (0.230)	16.61*** (4.844)	0.142 (0.181)	10.33* (5.511)
Real GDP Growth	0.0232 (0.0157)	0.765*** (0.215)	0.107*** (0.0344)	1.135*** (0.306)	0.131 (0.0909)	1.122 (0.841)	-0.0192 (0.0250)	0.202 (0.288)	-0.0906** (0.0367)	0.106 (0.168)	-0.0833** (0.0383)
L. Capital Gains	-0.00344*** (0.000948)	-0.00510*** (0.00118)	-0.0000998 (0.0000938)	-0.00353*** (0.000974)	-0.000743 (0.000446)	-0.00326*** (0.000856)	-0.000293*** (0.0000352)	-0.00357*** (0.000953)	-0.00193 (0.00216)	-0.00663*** (0.00158)	0.00807 (0.0113)
Constant	-1.543*** (0.189)	-0.829*** (0.120)	-1.922*** (0.260)	-0.872*** (0.179)	-2.648*** (0.701)	-2.384*** (0.530)	-1.349*** (0.378)	-1.122*** (0.313)	-0.928*** (0.238)	-1.580*** (0.203)	-2.144*** (0.149)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	514	517	484	512	337	370	393	451	483	482	236
Countries	22	22	22	22	19	18	20	21	21	21	14
Adjusted R^2	0.709	0.660	0.377	0.644	0.367	0.349	0.534	0.571	0.798	0.703	0.770

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 13: Drivers of (ln) Yields - All Countries, Dummy for the 2007-2008 Crisis

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.636*** (0.0464)	0.718*** (0.0353)	0.493*** (0.0493)	0.596*** (0.0562)	0.580*** (0.0817)	0.557*** (0.0638)	0.656*** (0.0853)	0.742*** (0.0528)	0.835*** (0.0528)	0.667*** (0.0321)	0.640*** (0.0384)
Δln \$-Denomination XR (increase = \$ depreciation)	0.745*** (0.239)	0.231 (0.173)	0.427 (0.623)	-0.643** (0.253)	1.164 (0.804)	0.907** (0.388)	0.497 (0.357)	1.323*** (0.365)	0.724** (0.356)	1.072*** (0.312)	-0.192 (0.483)
L.Δln \$-Denomination XR (increase = \$ depreciation)	-0.205 (0.128)	-0.150** (0.0652)	-0.143 (0.137)	0.0197 (0.141)	-0.234 (0.173)	-0.00161 (0.226)	-0.476 (0.319)	-0.0355 (0.145)	-0.173 (0.142)	-0.119 (0.145)	-0.0958 (0.0956)
Δln \$ Broad Index (increase = \$ appreciation)	-0.297 (0.338)	-0.966*** (0.201)	0.227 (0.647)	-1.721*** (0.318)	0.382 (0.873)	0.348 (0.834)	0.409 (0.439)	0.268 (0.217)	0.110 (0.404)	-0.0189 (0.381)	0.213 (0.665)
US 3-month interest rate	0.0526*** (0.00938)	0.00488 (0.00511)	0.0596*** (0.0220)	-0.0286*** (0.00948)	0.0564** (0.0232)	-0.0316* (0.0182)	0.00189 (0.0158)	-0.00475 (0.0105)	0.0246 (0.0162)	0.109*** (0.00797)	0.144*** (0.0254)
US 10-year treasury yield	0.0118 (0.0103)	0.0439*** (0.00775)	0.0133 (0.0195)	0.0490*** (0.0133)	0.0750** (0.0317)	0.123*** (0.0306)	0.115*** (0.0228)	0.0861*** (0.0160)	0.0813*** (0.0198)	0.108*** (0.0261)	0.137*** (0.0301)
VIX (normalized)	-0.0168 (0.0144)	-0.0237*** (0.00577)	0.0764** (0.0327)	-0.0320*** (0.00921)	0.0458 (0.0457)	-0.0618*** (0.0249)	-0.0325 (0.0256)	-0.0303*** (0.0106)	-0.167*** (0.0305)	-0.0354** (0.0133)	-0.0922*** (0.0270)
Global Stock Market Factor (normalized)	-0.00515 (0.0150)	-0.00201 (0.0112)	0.0866*** (0.0317)	-0.0200 (0.0171)	0.127** (0.0555)	0.0746 (0.0490)	-0.0523 (0.0331)	0.0198 (0.0167)	-0.0184 (0.0374)	0.113*** (0.0210)	0.0885** (0.0345)
Excess Bond Premium (normalized)	-0.0209** (0.0101)	-0.0305*** (0.00872)	-0.111*** (0.0293)	-0.0694*** (0.0158)	-0.123* (0.0625)	-0.0389 (0.0370)	-0.104** (0.0512)	-0.000652 (0.0169)	0.0169 (0.0236)	0.0252 (0.0151)	0.0574* (0.0306)
Global Financial Crisis Dummy	0.0596* (0.0328)	0.0772*** (0.0249)	0.263** (0.127)	0.217*** (0.0592)	0.507** (0.212)	0.258* (0.151)	0.275 (0.168)	0.0590 (0.0361)	-0.0470 (0.0677)	-0.193*** (0.0563)	-0.143* (0.0747)
Inflation(Δln CPI)	0.00647 (0.873)	0.710*** (0.237)	-3.940** (1.753)	1.122*** (0.328)	-4.938* (2.491)	1.206*** (0.308)	1.234 (1.363)	-0.00451 (0.208)	13.30*** (2.170)	0.254 (0.241)	3.943* (2.090)
Real GDP Growth	0.0312*** (0.00779)	1.036*** (0.246)	0.0918*** (0.0189)	1.613*** (0.351)	0.0330 (0.0230)	1.176** (0.537)	-0.0190* (0.0106)	0.133 (0.212)	-0.0457*** (0.0167)	0.171 (0.239)	-0.0153 (0.0110)
L. Capital Gains	-0.00346*** (0.000783)	-0.00568*** (0.000804)	-0.0000917 (0.0000912)	-0.00381*** (0.000904)	-0.000959** (0.000403)	-0.00365*** (0.000726)	-0.000293*** (0.0000259)	-0.00403*** (0.00116)	-0.00217 (0.00201)	-0.00653*** (0.00132)	0.00456 (0.00405)
Constant	-1.550*** (0.163)	-1.113*** (0.117)	-1.895*** (0.178)	-1.328*** (0.169)	-2.024*** (0.371)	-2.048*** (0.318)	-1.436*** (0.281)	-1.095*** (0.174)	-1.293*** (0.218)	-1.856*** (0.188)	-2.345*** (0.206)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	984	987	944	977	791	819	850	909	953	952	494
Countries	42	42	42	42	39	38	40	41	41	41	28
Adjusted R^2	0.717	0.749	0.378	0.560	0.386	0.381	0.582	0.738	0.820	0.789	0.785

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 14: Drivers of (ln) Yields - Emerging Countries, Dummy for the 2007-2008 Crisis

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.630*** (0.0569)	0.717*** (0.0488)	0.524*** (0.0557)	0.661*** (0.0664)	0.570*** (0.0992)	0.530*** (0.0781)	0.621*** (0.103)	0.662*** (0.108)	0.854*** (0.0626)	0.669*** (0.0536)	0.577*** (0.0427)
Δln $-Denomination XR (increase = $ depreciation)	0.797 (0.584)	-0.277 (0.260)	0.938 (1.413)	-0.845* (0.443)	4.347 (2.572)	2.384** (1.120)	1.425 (1.726)	1.361** (0.512)	0.546 (1.268)	0.808* (0.392)	1.453 (1.444)
L.Δln $-Denomination XR (increase = $ depreciation)	-0.601** (0.270)	-0.172 (0.136)	0.772 (0.654)	0.153 (0.177)	-0.317 (1.307)	0.502 (0.474)	-0.344 (1.221)	0.687** (0.327)	-0.170 (0.398)	0.0367 (0.276)	0.150 (1.363)
Δln $ Broad Index (increase = $ appreciation)	-0.179 (0.482)	-1.010*** (0.293)	0.329 (1.042)	-1.554*** (0.428)	2.055 (1.527)	1.687 (1.639)	1.244 (0.798)	0.222 (0.313)	0.406 (0.705)	-0.186 (0.498)	1.164 (0.804)
US 3-month interest rate	0.0752*** (0.0142)	-0.00320 (0.00690)	0.0509 (0.0395)	-0.0439*** (0.0141)	0.101* (0.0528)	-0.0483 (0.0403)	0.0316 (0.0331)	-0.0174 (0.0152)	0.0195 (0.0273)	0.0956*** (0.0105)	0.169*** (0.0417)
US 10-year treasury yield	-0.00267 (0.0168)	0.0357*** (0.00915)	0.0219 (0.0317)	0.0653*** (0.0191)	0.108 (0.0742)	0.217*** (0.0593)	0.114** (0.0409)	0.0568** (0.0229)	0.0793** (0.0303)	0.0494** (0.0230)	0.135** (0.0557)
VIX (normalized)	-0.0260 (0.0252)	-0.0194* (0.00933)	0.0764 (0.0522)	-0.0227* (0.0115)	0.153 (0.105)	-0.0142 (0.0445)	-0.00303 (0.0485)	-0.0450** (0.0171)	-0.193*** (0.0540)	-0.0606*** (0.0145)	-0.0780 (0.0443)
Global Stock Market Factor (normalized)	-0.0192 (0.0228)	-0.00817 (0.0145)	0.102* (0.0522)	-0.0325 (0.0245)	0.171 (0.128)	0.118 (0.0968)	-0.115* (0.0580)	-0.000191 (0.0244)	-0.0405 (0.0633)	0.0925*** (0.0293)	0.0671 (0.0489)
Excess Bond Premium (normalized)	-0.0212 (0.0162)	-0.0467*** (0.0152)	-0.0412 (0.0461)	-0.0924*** (0.0220)	-0.233 (0.150)	-0.0424 (0.0759)	-0.234* (0.114)	0.0257 (0.0306)	-0.0189 (0.0358)	0.0501** (0.0183)	0.0974* (0.0470)
Global Financial Crisis Dummy	0.0868 (0.0571)	0.148*** (0.0408)	0.109 (0.214)	0.314*** (0.0833)	0.913 (0.528)	0.0873 (0.302)	0.545 (0.392)	0.0652 (0.0647)	0.0931 (0.111)	-0.182 (0.109)	-0.297*** (0.0809)
Inflation(Δln CPI)	0.595 (1.449)	0.508** (0.196)	-3.705 (2.774)	0.817*** (0.247)	-6.886 (5.701)	1.089** (0.453)	1.211 (2.549)	0.0112 (0.238)	12.90*** (3.687)	0.155 (0.199)	3.198 (2.734)
Real GDP Growth	0.0324** (0.0128)	0.762*** (0.216)	0.102*** (0.0339)	1.147*** (0.306)	0.0642 (0.0503)	1.121 (0.806)	-0.0191 (0.0180)	0.182 (0.293)	-0.0533* (0.0305)	0.153 (0.191)	-0.0169 (0.0176)
L. Capital Gains	-0.00330*** (0.000972)	-0.00497*** (0.00124)	-0.0000970 (0.0000956)	-0.00332*** (0.000997)	-0.000901* (0.000479)	-0.00330*** (0.000867)	-0.000295*** (0.0000313)	-0.00358*** (0.000960)	-0.00191 (0.00209)	-0.00633*** (0.00147)	0.0118 (0.0119)
Constant	-1.636*** (0.207)	-1.007*** (0.144)	-1.919*** (0.244)	-1.129*** (0.192)	-2.461*** (0.561)	-2.484*** (0.497)	-1.446*** (0.325)	-1.095*** (0.312)	-1.181*** (0.251)	-1.555*** (0.240)	-2.576*** (0.288)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	514	517	484	512	337	370	393	451	483	482	236
Countries	22	22	22	22	19	18	20	21	21	21	14
Adjusted R^2	0.709	0.664	0.378	0.651	0.375	0.349	0.543	0.571	0.796	0.706	0.759

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 15: Drivers of (ln) Yields - All Countries, without mechanical exchange rate valuation

	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.637*** (0.0474)	0.727*** (0.0334)	0.504*** (0.0441)	0.614*** (0.0537)	0.590*** (0.0813)	0.563*** (0.0624)	0.655*** (0.0843)	0.743*** (0.0532)	0.834*** (0.0527)	0.665*** (0.0299)	0.638*** (0.0371)
Δln $ Broad Index (increase = $ appreciation)	-0.928*** (0.272)	-1.260*** (0.184)	-0.544 (0.435)	-1.628*** (0.282)	-1.395*** (0.485)	-0.792 (0.637)	-0.370 (0.350)	-0.673*** (0.234)	-0.296 (0.260)	-0.367 (0.280)	0.428 (0.498)
US 3-month interest rate	0.0485*** (0.00972)	0.00591 (0.00492)	0.0589*** (0.0205)	-0.0262*** (0.00912)	0.0508** (0.0250)	-0.0311 (0.0186)	0.00500 (0.0170)	-0.00443 (0.0110)	0.0198 (0.0161)	0.106*** (0.00821)	0.142*** (0.0243)
US 10-year treasury yield	0.0134 (0.0101)	0.0406*** (0.00785)	0.00824 (0.0196)	0.0404*** (0.0124)	0.0693* (0.0343)	0.116*** (0.0312)	0.109*** (0.0215)	0.0856*** (0.0168)	0.0860*** (0.0190)	0.116*** (0.0248)	0.137*** (0.0297)
VIX (normalized)	-0.0300** (0.0143)	-0.0267*** (0.00580)	0.0696** (0.0288)	-0.0280*** (0.00888)	0.0262 (0.0431)	-0.0677*** (0.0256)	-0.0393 (0.0248)	-0.0380*** (0.0110)	-0.179*** (0.0316)	-0.0426*** (0.0125)	-0.0954*** (0.0277)
Global Stock Market Factor (normalized)	0.000210 (0.0168)	0.00905 (0.0114)	0.106*** (0.0286)	-0.0131 (0.0155)	0.163*** (0.0507)	0.0981* (0.0486)	-0.0286 (0.0255)	0.0343* (0.0184)	-0.0228 (0.0369)	0.113*** (0.0242)	0.0811** (0.0323)
Excess Bond Premium (normalized)	-0.00229 (0.00810)	-0.0108 (0.00676)	-0.0506** (0.0217)	-0.0281*** (0.00987)	-0.00314 (0.0259)	0.0269 (0.0239)	-0.0384 (0.0256)	0.0235 (0.0144)	0.0125 (0.0200)	-0.00751 (0.0130)	0.0252 (0.0240)
Inflation(Δln CPI)	0.325 (0.894)	0.693*** (0.236)	-4.036** (1.631)	1.146*** (0.356)	-4.718* (2.676)	1.161*** (0.305)	1.045 (1.458)	-0.0790 (0.220)	13.68*** (2.185)	0.207 (0.213)	4.164* (2.119)
Real GDP Growth	0.0241*** (0.00781)	1.020*** (0.245)	0.0878*** (0.0173)	1.683*** (0.363)	0.0225 (0.0229)	1.154** (0.534)	-0.0225** (0.00945)	0.0248 (0.210)	-0.0520*** (0.0166)	0.0648 (0.226)	-0.0167 (0.0102)
L. Capital Gains	-0.00324*** (0.000757)	-0.00566*** (0.000800)	-0.000103 (0.0000930)	-0.00404*** (0.000909)	-0.000891** (0.000388)	-0.00374*** (0.000730)	-0.000291*** (0.0000263)	-0.00395*** (0.00115)	-0.00210 (0.00191)	-0.00570*** (0.00134)	0.00346 (0.00398)
Constant	-1.526*** (0.168)	-1.069*** (0.110)	-1.807*** (0.154)	-1.243*** (0.160)	-1.889*** (0.362)	-1.980*** (0.302)	-1.384*** (0.262)	-1.075*** (0.177)	-1.300*** (0.216)	-1.893*** (0.175)	-2.368*** (0.202)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	984	987	944	977	791	819	850	909	953	952	494
Countries	42	42	42	42	39	38	40	41	41	41	28
Adjusted R^2	0.714	0.746	0.373	0.551	0.377	0.377	0.578	0.731	0.820	0.785	0.785

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 16: Drivers of (ln) Yields - All Countries, since 1980

|	Investment Income		FDI		Portfolio Equity		Portfolio Debt		Other Investment		Reserves
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)	Receipts (5)	Payments (6)	Receipts (7)	Payments (8)	Receipts (9)	Payments (10)	Receipts (11)
L.ln Yield	0.754*** (0.0300)	0.842*** (0.0185)	0.652*** (0.0454)	0.764*** (0.0231)	0.624*** (0.0788)	0.589*** (0.0650)	0.738*** (0.0502)	0.701*** (0.0597)	0.855*** (0.0367)	0.795*** (0.0187)	0.687*** (0.0205)
Δln $ Broad Index (increase = $ appreciation)	-0.861*** (0.106)	-0.882*** (0.118)	-0.518 (0.311)	-1.477*** (0.198)	-1.553*** (0.475)	0.0412 (0.466)	-0.934* (0.481)	-0.566* (0.279)	-0.712*** (0.231)	-0.672*** (0.203)	-0.549 (0.649)
US 3-month interest rate	0.0589*** (0.00655)	0.0250*** (0.00330)	0.0156 (0.00984)	0.0151* (0.00789)	0.00755 (0.0150)	-0.0137 (0.0160)	0.0466*** (0.0120)	0.00358 (0.0133)	0.126*** (0.0124)	0.111*** (0.00806)	0.185*** (0.0276)
US 10-year treasury yield	-0.0246*** (0.00808)	0.00252 (0.00360)	-0.000323 (0.0176)	-0.00254 (0.0105)	0.0425* (0.0209)	0.0594** (0.0264)	0.0374* (0.0186)	0.0485** (0.0182)	-0.0658*** (0.00867)	-0.0325*** (0.00788)	0.00922 (0.0321)
Inflation(Δln CPI)	0.185*** (0.0551)	-0.00959 (0.0106)	-0.0124 (0.225)	-0.0461 (0.0517)	0.126 (0.179)	0.226 (0.395)	-0.160 (0.307)	0.0255 (0.134)	0.241*** (0.0727)	-0.0390 (0.0254)	-1.152 (2.420)
Real GDP Growth	0.0275 (0.0277)	0.0510*** (0.0139)	0.299 (0.191)	-0.00298 (0.0615)	-0.402 (0.264)	0.106*** (0.0245)	-0.0548 (0.357)	0.0775 (0.0509)	0.0883** (0.0244)	0.0688 (0.0489)	-0.803** (0.297)
L. Capital Gains	-0.00296*** (0.000613)	-0.00468*** (0.000647)	-0.000241** (0.000103)	-0.00381*** (0.000706)	-0.000914** (0.000335)	-0.000241*** (0.0000825)	-0.000292*** (0.0000349)	-0.000191 (0.00170)	-0.00297** (0.00119)	-0.00553*** (0.000598)	0.00571 (0.00506)
Constant	-0.927*** (0.127)	-0.559*** (0.0654)	-1.127*** (0.147)	-0.685*** (0.0859)	-1.704*** (0.380)	-1.740*** (0.298)	-0.995*** (0.192)	-1.085*** (0.210)	-0.613*** (0.155)	-0.897*** (0.0886)	-1.638*** (0.166)
Country Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1394	1469	1183	1396	799	855	832	952	1135	1161	379
Countries	35	35	35	35	33	33	33	35	34	34	22
Adjusted R^2	0.779	0.858	0.514	0.611	0.437	0.439	0.719	0.641	0.866	0.876	0.699

Notes: OLS panel estimates, errors clustered at the country level. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Table 17: Drivers of (ln) Investment Income Yields - All countries, AR(1) & Dynamic Panel

	Panel-corrected Standard Errors		Arellano-Bond First Difference	
	Receipts (1)	Payments (2)	Receipts (3)	Payments (4)
L.ln Yield Investment Income	0.617*** (0.0420)	0.720*** (0.0376)	0.583*** (0.0681)	0.639*** (0.0361)
Δln $-Denomination XR (increase = $ depreciation)	0.779*** (0.221)	0.273 (0.215)	0.675*** (0.251)	0.270* (0.161)
L.Δln $-Denomination XR (increase = $ depreciation)	-0.113 (0.107)	-0.0855 (0.0960)	-0.0341 (0.116)	-0.0730 (0.0610)
Δln $ Broad Index (increase = $ appreciation)	-0.319 (0.256)	-1.025*** (0.303)	-0.589 (0.400)	-1.243*** (0.196)
US 3-month interest rate	0.0563*** (0.00962)	0.00497 (0.00850)	0.0527*** (0.00950)	0.00200 (0.00470)
US 10-year treasury yield	0.0113 (0.00950)	0.0408*** (0.0133)	0.0124 (0.00980)	0.0442*** (0.00930)
VIX (normalized)	-0.00882 (0.0144)	-0.0214 (0.0135)	-0.0174 (0.0149)	-0.0241*** (0.00570)
Global Stock Market Factor (normalized)	0.00303 (0.0175)	0.00389 (0.0175)	-0.00801 (0.0169)	-0.00606 (0.00954)
Excess Bond Premium (normalized)	-0.0117 (0.0106)	-0.0151 (0.0145)	-0.00478 (0.00845)	-0.00929 (0.00693)
Inflation(Δln CPI)	-0.124 (0.841)	0.742*** (0.133)	-0.125 (0.868)	0.811*** (0.261)
Real GDP Growth	0.0300*** (0.00725)	1.009*** (0.143)	0.0274*** (0.00782)	1.052*** (0.250)
L. Capital Gains	-0.00350*** (0.000672)	-0.00556*** (0.000652)	-0.00370*** (0.000710)	-0.00634*** (0.000841)
Constant	-1.451*** (0.142)	-1.191*** (0.149)	-1.720*** (0.236)	-1.362*** (0.131)
Country Fixed Effects	Y	Y	n.a.	n.a
Observations	984	987	941	943
Countries	42	42	42	42
Instruments	n.a.	n.a.	288	288

Notes: Dependent variable is Investment Income (Receipts and Expenses). (1) and (2) present the results of fixed effects regression with panel-corrected s.e. (AR(1) structure). (3) and (4) present dynamic panel regressions using Arellano-Bond in First Difference. *, **, *** indicates significance at the 10, 5 and 1% level respectively. Inflation and real GDP growth are values for the rest of the world in the Receipt regressions, and values for the country in the Payment regressions.

Figure 19: Gross investment position and primary income flows: long sample (median values, % GDP)
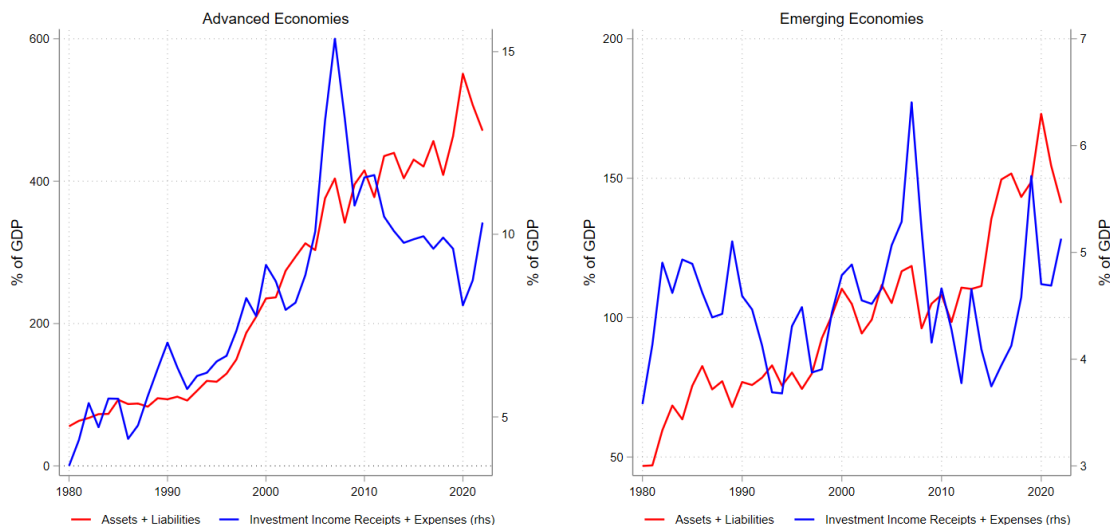
Note: The figure shows the median value across countries of the sum of international assets and liabilities (red line, left scale) and the median value of the sum of primary investment income receipt and payment flows (blue line, right scale).

Figure 20: Net investment position and primary income flows long sample (median values, % GDP)

Note: The figure shows the median value across countries of the difference between international assets and liabilities (red line, left scale) and the median value of the difference between primary investment income receipt and payment flows (blue line, right scale).

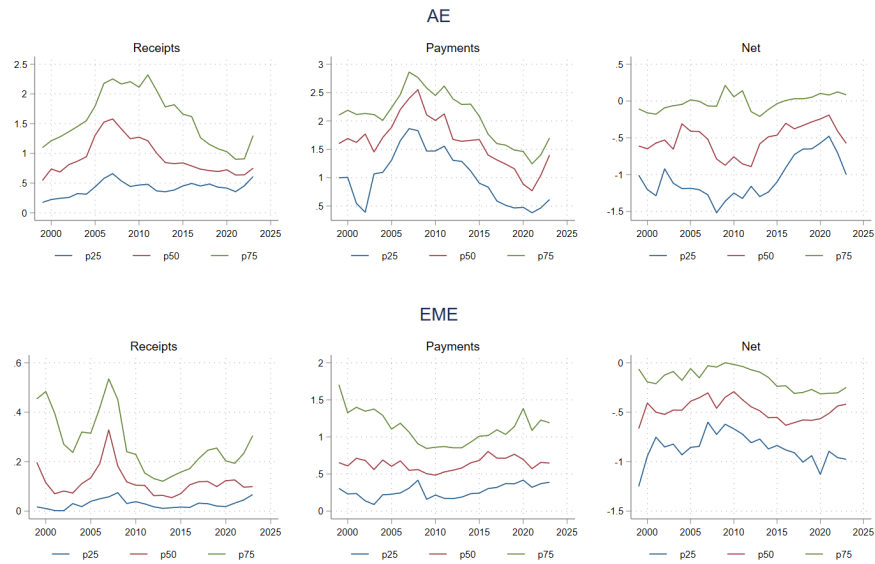Figure 21: Gross and net income flows, total (% GDP)
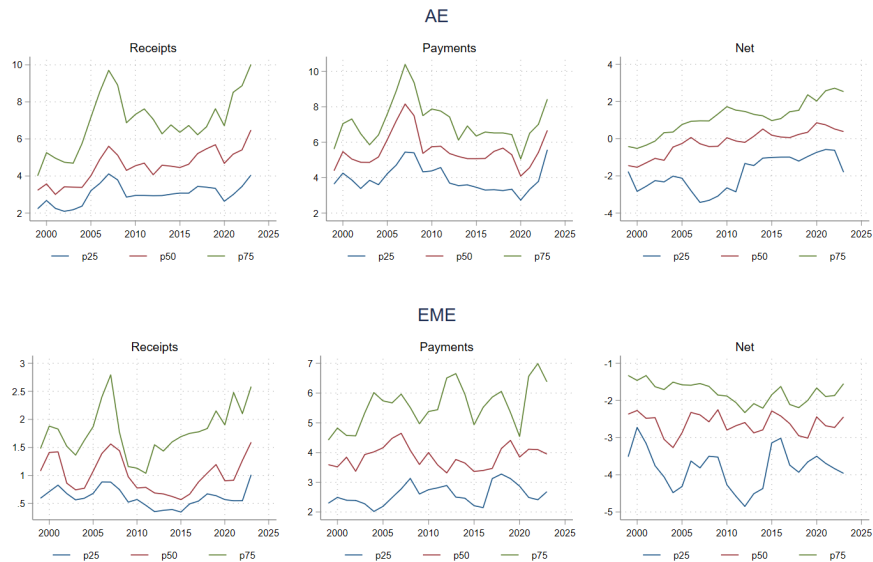
Note: The figure shows the investment income streams on assets (left panel), liabilities (middle panel) and in net terms (right panel), presenting the bottom quartile (blue line), median (red line) and top quartile (green line) of countries in the group. AE and EME and denote advanced and emerging economies.

Figure 22: Gross and net income flows, FDI (% GDP)
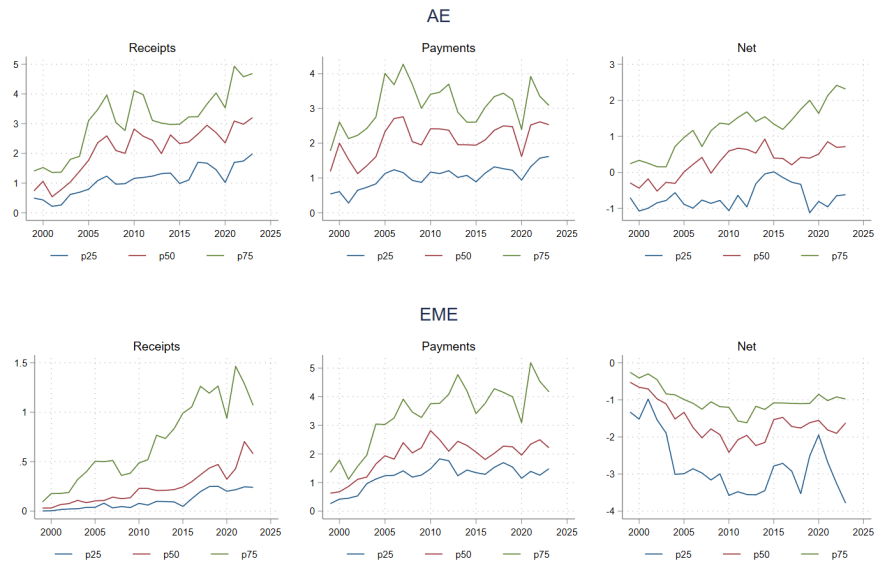
*Note:*The figure shows the investment income streams on assets (left panel), liabilities (middle panel) and in net terms (right panel), presenting the bottom quartile (blue line), median (red line) and top quartile (green line) of countries in the group. AE and EME and denote advanced and emerging economies.

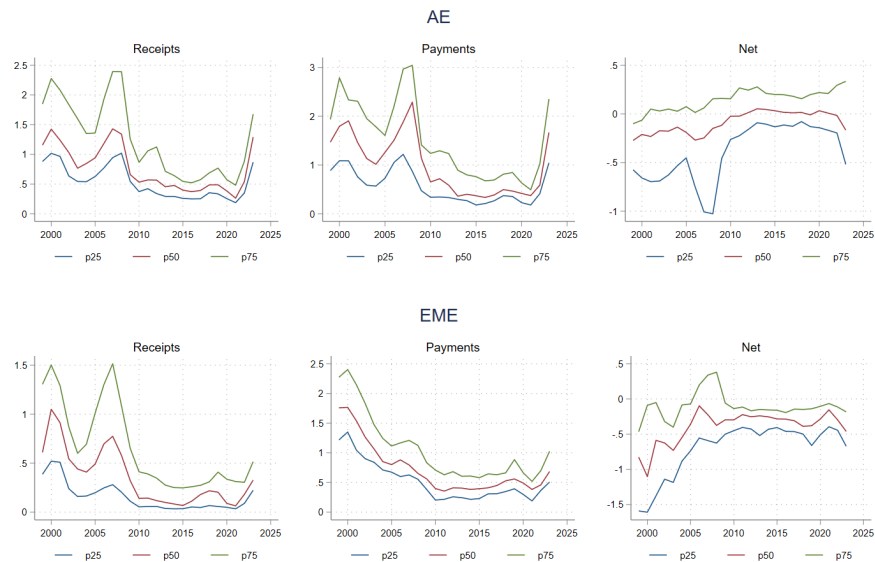Figure 23: Gross and net income flows, Portfolio equity (% GDP)
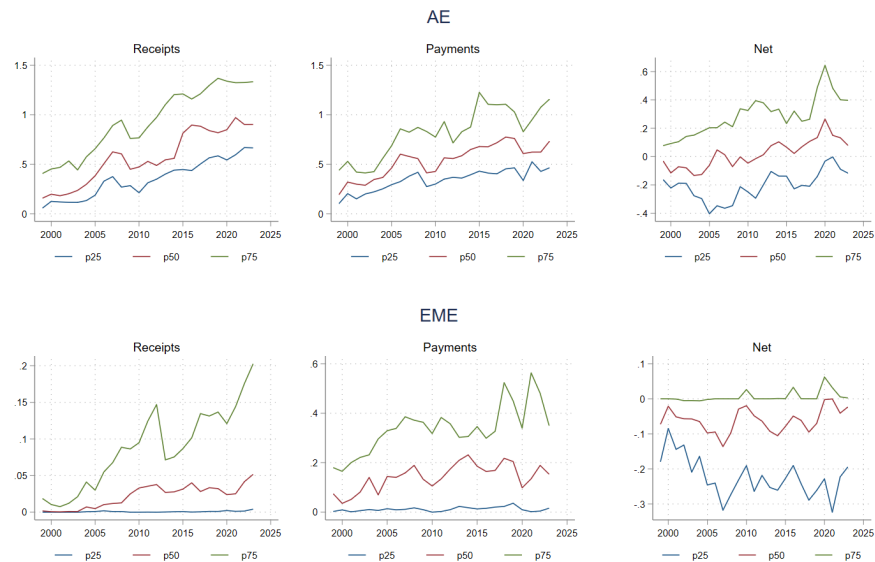
*Note:*The figure shows the investment income streams on assets (left panel), liabilities (middle panel) and in net terms (right panel), presenting the bottom quartile (blue line), median (red line) and top quartile (green line) of countries in the group. AE and EME and denote advanced and emerging economies.

Figure 24: Gross and net income flows, Portfolio debt (% GDP)

Note: The figure shows the investment income streams on assets (left panel), liabilities (middle panel) and in net terms (right panel), presenting the bottom quartile (blue line), median (red line) and top quartile (green line) of countries in the group. AE and EME and denote advanced and emerging economies.

Figure 25: Gross and net income flows, Other investment (% GDP)


Note: The figure shows the investment income streams on assets (left panel), liabilities (middle panel) and in net terms (right panel), presenting the bottom quartile (blue line), median (red line) and top quartile (green line) of countries in the group. AE and EME and denote advanced and emerging economies.

Figure 26: Gross (also net) income flows, Reserves (% GDP)
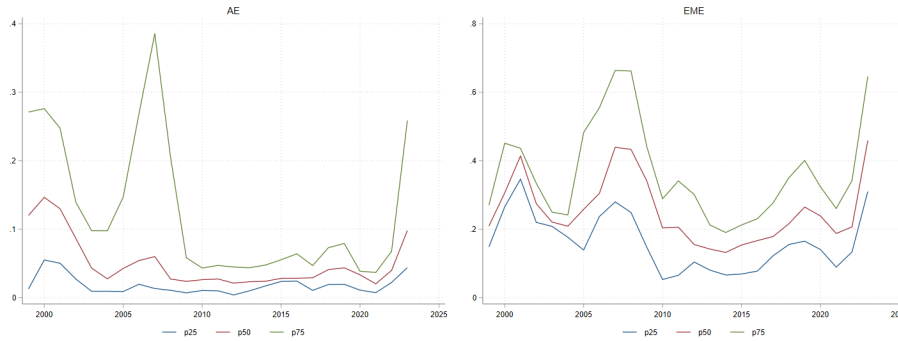
*Note:*The figure shows the investment income streams on assets, presenting the bottom quartile (blue line), median (red line) and top quartile (green line) of countries in the group. AE and EME and denote advanced and emerging economies.

Figure 27: Fitted and actual values of gross income flows in 2023
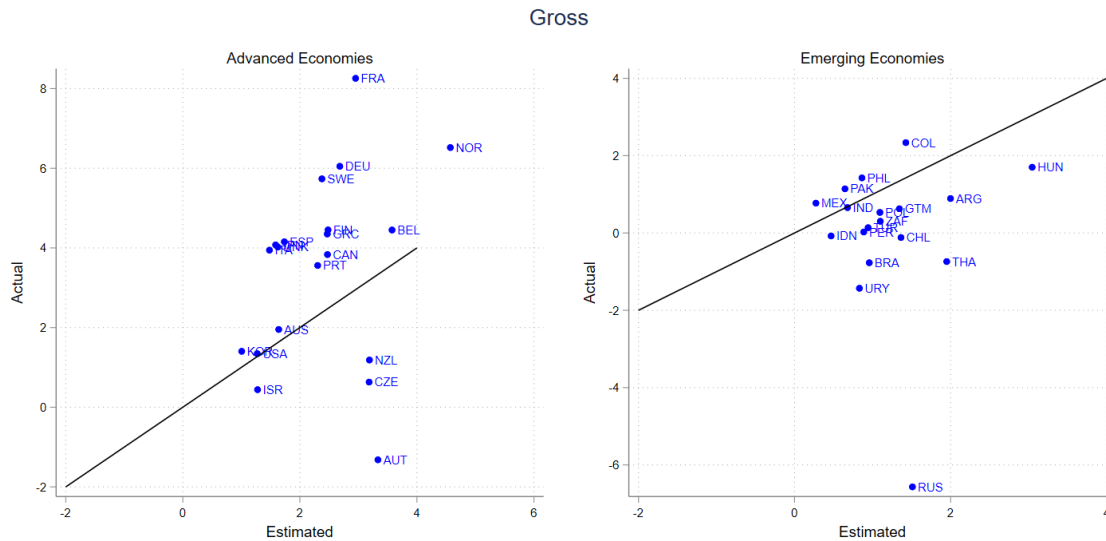
*Note:*Change in gross investment income flows between 2021 and 2023 (% of GDP): estimated change based on interest rates, US dollar exchange rate, and inflation (vertical axis), and actual change (horizontal axis).