

Has the exorbitant privilege become a rich world privilege?

Rates of return and foreign assets from a global perspective, 1970-2020

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Abstract

How have rates of return on foreign assets and liabilities impacted different groups of countries across time? I address this question by putting together a novel database encompassing the entire world (216 economies) for the period 1970-2020. I find that returns on foreign assets have decreased for everyone. On the contrary, returns on foreign liabilities have only decreased for the top 20% richest countries. This differential between returns on assets and returns on liabilities has extended the exorbitant privilege of the US to become a rich world privilege. The richest countries have become the bankers of the world, attracting the excess savings by providing low-yield safe assets and investing these inflows in riskier ventures. Such a privilege is translated in net income transfers from the poorest to the richest equivalent to 1% of the GDP of top 20% countries (and 2% of GDP for top 10% countries), alleviating the current account balance of the latter while deteriorating that of the bottom 80% by about 2-3% of their GDP. My results have implications for the international monetary and financial system and the unequal paths to development.

Keywords: Rate of return, capital income, exorbitant privilege, foreign wealth, international monetary system

JEL classification: F30, F33, F60

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1 Introduction

Over the past decades the world has experienced a process of financial integration and capital liberalisation that has permitted an increase in foreign capital accumulation, especially since the 1990s. Gross foreign assets and liabilities have become larger almost everywhere, but particularly in rich countries, and foreign wealth has reached 2,5 times the size of the global GDP, or a quarter of the global wealth. The composition of the external balance sheet is heterogeneous among countries, with rich countries tending to be long in risky assets while poor countries are short in risky assets.

This has accentuated the differential effects on the returns that economies can get from their foreign assets and its relation with the returns they must pay on their foreign liabilities. Even if the difference between these two rates is small, large gross foreign asset and liabilities positions magnifies its impact on the current account of a country.

Economists have written a proliferated literature around global current account (CA) imbalances, motivated by the large external deficits of the largest economy in the world, the US. If these deficits are large and persistent enough, they may have consequences on currency devaluation, competitiveness and stability. They have pushed the US to become a net capital importer since the 80s, largely financed by fast growing emerging economies. However, if one were to check the US cumulative CA and compare it with its international investment position (IIP), then its IIP would be better than expected. This is what has been called the *positions puzzle*.

Another well documented puzzle related to the US current account is the *income puzzle*: despite having a negative external position, its net flow of capital income remains positive. This is explained by the fact that the US residents pay lower returns on their liabilities to foreigners, than the returns that they earn from their foreign assets. It is argued that the income puzzle is the result of the central role of the US in the international monetary system as issuer of the main international currency. As such, the US is able to issue relatively safe, low yield dollar liabilities to foreigners -mainly in the form of debt securities- while investing in riskier high yield assets abroad. The combination of these two puzzles is what has been called the *exorbitant privilege* (Gourinchas and Rey, 2007a) of issuing an international currency and being the main financial centre of the world. The term was first coined by the French Finance Minister Valéry Giscard d'Estaing in the 1960s -under the presidency of Charles de Gaulle- and it refers to the central, privileged and dominant position in the international monetary system that allows the US to transform savings from the rest of the world in risky capital and earn a premium in its intermediary role, behaving as the banker of the world.

Although related, each puzzle implies different dynamics of foreign capital accumulation. On the one hand, the position puzzle is explained by valuation effects, which are capital gains and losses on gross external assets and liabilities that arise from exchange rate or asset prices changes. On the other hand, the income puzzle is explained by yields differentials. As valuation effects are very volatile and period specific, yields differentials will better portray the long-term dynamics of foreign capital accumulation and the divergent patterns across countries.

My contribution in this paper is twofold, I first put together a comprehensive data-set involving the whole world (216 economies) for the past 50 years and accounting for all of the world's foreign wealth, officially recorded and hidden in tax havens, as well as all of the capital income accrued from it (again, officially recorded or tax evaded). The correction follows the hidden wealth literature started by Zucman (2013) and addresses the *dark matter* concerns of Hausmann and Sturzenegger (2006). The latter study argues that the exorbitant privilege is actually driven by the fact that U.S. foreign assets are miss-measured and, therefore, its true value would suggest a smaller rate of return on foreign assets. Although imperfectly, these issues are accounted for when estimating return rates.

My second contribution is more substantial, I use this data-set to explore the unequal return rates from a

global perspective, shedding light across different income groups. Moreover, I study the drivers of these returns differentials focusing on the excess yield (the difference between return on assets and return on liabilities). My main objective is to answer if other rich countries or issuers of international reserve currencies have contested the US role at the center of the international monetary and financial system, and earned a privilege in doing so.

I find that, although return rates on foreign assets have decreased globally, return rates on foreign liabilities have only decreased for the top 20% richest countries. This has allowed them to experience a persistent privilege that resulted in net capital income transfers from the rest of the world of around 1% of their combined GDP. This implies that the rich countries can consistently record trade deficits equal to 1% of their GDP without deteriorating their IIP, and forces the bottom 80% to record trade surpluses or seek for financing to pay the interest accrued from their foreign liabilities. The inequality between the top 10% and the rest of the world is even higher, as the richest countries receive net capital income transfers of almost 2% of their combined GDP as a result of their excess yield. Importantly, if the income related to the differential return rates was not taken into account, the net foreign capital income of the richest countries would be close to zero, with substantial improvements for the rest of the world. In such a scenario, the 4th quintile (60-80%) would revert its situation and record net positive income.

The rest of the paper is structured as follows: the following subsection summarizes the existing literature. Section 2 presents the data and methodology used to estimate the return differentials. Section 3 shows stylized facts of the net foreign assets (NFA) evolution. Section 4 presents the results on the unequal rates of return, providing a decomposition and comparing different regions. Section 5 concludes.

1.1 Related literature

The *exorbitant privilege* refers to the phenomenon where total returns on assets surpass total returns on liabilities. This privilege enables the United States to generate net positive investment income from abroad, despite having relatively low foreign assets and high liabilities and, until recently, to run large run CA deficits without proportionally deteriorating the IIP (Atkeson, Heathcote, and Perri, 2022)¹.

This literature was initiated by Gourinchas and Rey (2007a), who observed that the United States maintained a positive income balance despite its increasing net liabilities due to a return differential, which in turn allowed them to borrow at a discount in global financial markets.

The authors emphasize the role of the United States as the world's venture capitalist and primary global lender. They highlight the ability of the U.S. to borrow short-term due to foreign demand for liquid dollar assets and simultaneously provide long-term loans and investment funds to foreign firms, which are riskier assets. They note that "the U.S. balance sheet increasingly resembles that of a venture capitalist with high-return risky investments on the asset side" (Gourinchas & Rey, 2007a, p.22). The intermediation margin, defined as the return differential between assets and liabilities, plays a significant role in this context.

Additionally, they underscore the importance of currency denomination, highlighting that being the issuer of the international currency allows the U.S. to denominate its entire stock of liabilities in dollars. Although it is not the scope of this paper, it is worth noting that this factor becomes particularly significant when analyzing valuation adjustments of U.S. foreign assets, where a depreciation of the dollar, all else being equal, generates capital gains on U.S. asset holdings (valuation channel), increases the return on the net foreign portfolio, and helps boost net exports (trade adjustment channel). In contrast, for emerging markets with dollarized liabilities, a depreciation of the dollar can be destabilizing.

Finally, the authors identified the return differential could arise from either a *return effect* (higher returns within

¹Nevertheless, the study also demonstrates that the specific privilege relating to the higher returns on assets compared to returns on liabilities, still persists.

each asset class) or a *composition effect* (an asymmetric balance sheet with more low-yielding liabilities)²

Since this seminal paper, most of the literature has focused on the U.S. and, in particular, the debate revolved around how to measure valuation gains to have more accurate estimates of the capital gains, which can be quite contradictory (results on excess yields tend to be more robust across studies).

Curcuro, Thomas, and Warnock (2013) classify this literature into three waves. The first wave emerged during the pre-crisis Great Moderation period and featured prominent papers such as Lane and Milesi-Ferretti (2007), Meissner and Taylor (2006) and Obstfeld and Rogoff (2005). This set of papers estimated a return differential that indicated U.S. investors abroad were able to outperform foreign investors in the U.S., with a significant portion of the differential stemming from higher capital gains rates. However, Curcuro et al. (2013) argue that the results obtained in this wave are overestimated due to an incorrect calculation of the valuation gains, primarily attributed to including “other changes” (OC) in the calculation³. One potential takeaway from the first wave of papers is that the U.S. net debt position, while negative, was less detrimental than previously thought because the U.S. earned substantial returns on its foreign positions while paying relatively little to foreigners on their U.S. positions.

The second wave of papers emerged during the pre-crisis period when concerns about a potential U.S. balance of payments (BOP) crisis were prevalent. This wave focused on correcting the inclusion of OC in valuation adjustments to avoid overestimating U.S. returns differentials. Key contributions from this wave include Lane and Milesi-Ferretti (2009), Curcuro, Dvorak, and Warnock (2008), Curcuro, Thomas, and Warnock (2009) and Gourinchas and Rey (2007b). By excluding OC from the calculation of capital gains, these studies estimated significantly lower return differentials and even suggested that the exorbitant privilege may not exist after all.

Finally, the third wave, best represented by Forbes (2010), Habib (2010) and Gourinchas and Rey (2022), brings back the discussion on return differentials. Habib (2010) calculated valuation gains similarly to the first wave, possibly overestimating them, Forbes (2010) analyzed a relatively short period characterized by a depreciating dollar that favored the U.S., and Gourinchas and Rey (2022) reported more modest estimates. Moreover, Atkeson et al. (2022) argues that the position puzzle does not hold anymore.

Despite all of the efforts devoted toward better understanding the U.S. exorbitant privilege, there is still no comprehensive study comparing returns differentials involving the whole world and accounting for all of the foreign wealth stock and income, including the ones hidden from tax offices in tax havens.

Main contributions are summarized in Rogoff and Tashiro (2015), who document an exorbitant privilege for Japan. Darvas and Hüttl (2017) who, using data for 56 countries and over a limited country-specific period, confirm the Japanese privilege and finds a similar one for Switzerland, although does not find such a privilege for the EU. Habib (2010) uses 49 countries between 1981-2007, finding similar results for Japan, Switzerland and the euro area. Adler and Garcia-Macia (2018) study NFA dynamics of 52 economies and provide a decomposition of return differentials into yields, asset price valuation changes, and exchange rate valuation changes over 1990-2015 without taking into account offshore wealth. Importantly, they find evidence that, besides the US, Japan and Switzerland, other reserve-currency countries such as the Euro area and UK have a -low and non significant-positive yield differential. Finally, Meissner and Taylor (2006) turn their attention to the excess returns of other major G7 economies, finding that the UK, France and Japan enjoy a positive return differential (although statistically insignificant for the UK). They also find that Canada and Italy are exposed to a negative return differential.

²Curcuro, Dvorak, and Warnock (2010) proposes a third effect: the timing effect, which is driven by re allocations among different asset classes, where foreigners’ returns in the US are harmed when switching between bonds and equities, due to the timing.

³“Other changes” refer to changes in position that cannot be attributed to price changes, exchange rate changes, or financial flows (Gohrband and Howell, 2013).

2 Data and methodology

2.1 Data

By synthesizing and improving upon various sources, I constructed a comprehensive dataset, encompassing 216 economies worldwide and spanning the period from 1970 to 2020. This dataset ensures complete coverage of GDP, price indices, US dollar market value exchange rates, foreign wealth, and foreign capital income. Appendix A provides a detailed description of the data coverage. While abundant information was available, the process of harmonizing and integrating these diverse data sources, along with ensuring temporal coverage, required several assumptions and entailed meticulous work. Although specific estimated figures are not exempt of imperfections, whenever in doubt, a conservative estimate was selected.

GDP, price index, and exchange rate data were sourced from Wid.world. In cases where any of these variables were missing, such as for the Former Soviet countries prior to the dissolution of the USSR, it was assumed that the variables followed the trajectory of the parent economy. Furthermore, for certain small territories that constitute tax havens (such as Bonaire, St Eustatius, and Saba) the figures were obtained from regional statistics offices (such as CBS Netherlands).

The data on foreign wealth is sourced from “The External Wealth of Nations” (Milesi-Ferretti, 2022), which provides a standard breakdown of external assets and liabilities based on the Balance of Payments (BOP) Statistics Manual 6. External financial assets and liabilities encompass various components, such as foreign direct investment, portfolio equity, portfolio debt, other investment, and financial derivatives. Notably, foreign exchange reserves are included as financial assets, while gold holdings are excluded. In cases where data coverage is incomplete, countries are assumed to follow the regional trend. Only six countries have been completely imputed using a regional average.⁴

The data on foreign capital income primarily originates from the IMF BOP. In cases where IMF data is unavailable, alternative sources such as the United Nations System of National Accounts (SNA) or OECD statistics are utilized. For missing values, predictions are made based on foreign capital stocks, GDP in USD, exchange rates, and inflation rates. An Ordinary Least Squares (OLS) regression model is employed, incorporating country-specific fixed effects to account for time-invariant characteristics of each economy, as well as region-year fixed effects to capture unobserved shocks affecting the region uniformly.

Foreign capital income comprises various components, including portfolio and other income received and paid, income received from tax havens, and reinvested earnings on portfolio investment. Foreign direct investment income consists of both, officially recorded income and corrections made for underreported FDI income resulting from profit shifting (Tørsløv, Wier, and Zucman, 2018).

2.2 Corrections

Adjustments were made to ensure that net foreign capital income and net foreign wealth sum up to precisely zero at the global level, which is conditional on the presence of all 216 economies. Corrections followed the principles outlined in the hidden wealth literature, started by Zucman (2013). Including these correction address the *dark matter* critique of Hausmann and Sturzenegger (2006), who argue that the exorbitant privilege is actually driven by the fact that U.S. foreign assets are mismeasured. They suggest that taking into account the *true value* of the U.S. gross foreign assets will provide a lower return differential.

Hidden wealth: One well-documented anomaly in balance of payment statistics is that when summing up net foreign assets or incomes at the global level, the result tends to consistently be negative rather than zero. This

⁴Bonaire, Cuba, Kosovo, Monaco, North Korea, Puerto Rico

implies that the world as a whole would be a net debtor, which is impossible. The explanation offered in the literature is that negative imbalances are primarily caused by assets hidden in offshore tax havens, which are recorded as liabilities but never as assets.

To correct this discrepancy, the mismatch was addressed by assigning assets hidden in tax havens, along with their respective foreign income, to each individual country. This allocation methodology follows the approach outlined in [Alstadsæter, Johannesen, and Zucman \(2018\)](#). The list of 41 tax havens is taken from [Tørsløv et al. \(2018\)](#), which builds upon [Hines Jr and Rice \(1994\)](#), and can be seen in Appendix A.2. For countries not included in [Tørsløv et al. \(2018\)](#), the value was completed using the regional average of the offshore wealth-to-GDP ratio. It is important to note that tax havens, with the exception of Belgium, Ireland, and the Netherlands, were not assigned any offshore wealth.

Missing portfolio income: The same methodology as that used for hidden wealth is applied. Importantly, global net wealth and global net portfolio income figures before correction are not proportional, meaning that rate of return on missing assets is not constant throughout the period.

Retained earnings on portfolio investment: The concept of retained earnings on portfolio investment refers to the income that a company retains after paying its suppliers, employees, shareholders, and corporate taxes. This income is also known as "undistributed profits" or "retained earnings." If a company with undistributed profits has foreign ownership, this flow should be accounted for as part of the national income of the country where the company is located, as well as in the countries of residence of all the owners in proportion to their ownership. However, the System of National Accounts (SNA) only considers this aspect in the context of FDI income, and assumes that the entire flow of undistributed profits belongs to the country where the firm is located in the case of portfolio income. To correct this limitation, I follow the approach outlined in [Blanchet et al. \(2021\)](#), which redistributes the corresponding share of undistributed profits to foreign countries. This correction estimates both the flow of foreign retained earnings that accrue to residents and the flow of domestic retained earnings that accrue to foreigners.

Shifted profits: In contrast to the deficit observed in portfolio income, the world experiences a surplus in FDI income ([Tørsløv et al.](#); [Wier and Zucman, 2018](#); [2022](#)). This surplus can be attributed to profit shifting practices, particularly towards tax havens. In tax havens, foreign firms tend to exhibit significantly higher profits-to-wage ratios compared to local firms, indicating that parent companies from high-tax countries may be shifting profits to them to mitigate their corporate tax liabilities. It is estimated that approximately 40% of multinational profits are shifted through mechanisms such as royalty payments, management fees, and interest payments. Furthermore, profits generated in tax havens often go unrecorded or are under-counted, while tax havens report lower levels of FDI income than what their partner countries record as receiving. Hence, I correct for this discrepancy and I also correct the estimates for the economies that are under-reporting FDI income received following [Tørsløv et al. \(2018\)](#), for the last decade of the period since it is when some of the years show negative aggregate values.

2.3 Methodology

The BOP equation is a fundamental accounting identity that summarizes the economic transactions between a country and the rest of the world and it is supposed to ensure that all international transactions are accounted for. The latter means that inflows and outflows balance each other and that, if an economy reports a deficit in one account it must be compensated by a surplus in another account. It is typically represented as follows:

$$CA_t + KA_t + FA_t = 0 \tag{1}$$

Where CA_t is the current account, KA_t is the capital account and FA_t the financial account. The capital account tracks the movements of non-financial (land, copyrights, patents, trademarks, and other intangible assets) and non-produced assets (those that are needed for production but were not produced) between residents and non-residents of an economy. The financial account reports the flow of financial assets and liabilities between an economy and the rest of the world (RoW). It includes items such as direct investment (physical assets and equity stakes in business), portfolio investment (stocks and bonds), other investment (loans, currency and deposits and trade credits). Zooming in into the current account, we can express it as:

$$CA_t = TB_t + NY_t + NCT_t \quad (2)$$

Where TB_t refers to the trade balance, the exports of goods and services minus the imports of goods and services, NCT_t is the net current transfers (workers' remittances, donations, tax payments, foreign aid, and grants) and NY_t is the net primary income, which can be further decomposed into capital (NKI_t) and labor income (NLI_t). One could further portray the change in net foreign assets as

$$NFA_t - NFA_{t-1} = CA_t + KG_t + (KA_t + EO_t) \quad (3)$$

Where EO_t is commonly referred as the errors and omission term, and KG_t is the result of capital gain or losses at time t , which can occur due to asset prices changes or exchange rate changes, and are usually estimated as the difference between net financial flows and changes in net positions. It is straightforward to see the role of the CA on the dynamics of NFA by replacing Equation 2 into 3

$$NFA_t - NFA_{t-1} = TB_t + NKI_t + NLI_t + NCT_t + KG_t + (KA_t + EO_t) \quad (4)$$

With

$$NKI_t + KG_t = (i_t^A \times A_{t-1} - i_t^L \times L_{t-1}) + (k_t^A \times A_{t-1} - k_t^L \times L_{t-1}) \quad (5)$$

Where the implied nominal rates of return are i_t^B (yield) and k_t^B (rate of capital gain), with B referring to assets or liabilities. Hence, the implied total return rates can be expressed as

$$\underbrace{r_t^B}_{\text{total rate of return}} = \underbrace{\frac{FKI_t^B}{B_{t-1}}}_{i_t^B : \text{yield}} + \underbrace{\frac{KG_t^B}{B_{t-1}}}_{k_t^B : \text{rate of capital gain}} \quad (6)$$

The excess returns will simply be the difference from the returns on assets and the returns on liabilities:

$$r_t^A - r_t^L = (i_t^A - i_t^L) + (k_t^A - k_t^L) \quad (7)$$

Replacing Equation 5 and 6 into Equation 4 shows how excess returns and gross assets/liabilities are components of the net foreign assets dynamics. For instance, countries with positive excess returns will be able to stabilise their net foreign assets in the long-run. This is a very well documented case for the U.S., which is able to run large trade deficits without having a proportional impact in its NFA position.

$$NFA_t - NFA_{t-1} = TB_t + (i_t^A \times A_{t-1} - i_t^L \times L_{t-1}) + (k_t^A \times A_{t-1} - k_t^L \times L_{t-1}) + NLI_t + NCT_t + (KA_t + EO_t) \quad (8)$$

While the exorbitant privilege refers to the premium the US has in both, excess yields and excess capital gains, in this paper I will focus on studying the differentials in excess yields for the whole world. The main reason for focusing on excess yields is that they are more stable than capital gains, allowing for a long run comparison.

Capital gains are very volatile as they depend on asset prices changes and exchange rate changes, which are period specific and, in some cases, can even be offset the subsequent period. However, capital gains are also an important aspect of the CA and I plan to include them into the analysis in future research.

To get a better picture of the differential patterns of rich vs poor countries, countries are grouped by quintiles of net national income weighted per population. When dealing with grouped countries, results will be shown in US current dollars. When studying specific countries, all of the statistics presented are in real 2022 national currency. Using the Fisher equation, the real yield can simply be calculated as:

$$\bar{i}_t^B = \frac{1 + i_t^B}{1 + \pi_t} - 1 \quad (9)$$

3 Net Foreign Assets dynamics

The Great Recession slowed down the rapid increase of foreign wealth accumulation started in the 90s, but did not stop it and in 2020 foreign global wealth is around 2,5 times the world's GDP. This evolution has been highly unequal across the world, with some countries accumulating very large net negative external positions while others positioning as net creditors.

As expressed in Equation 8, the evolution of net foreign assets is highly dependent of the CA, which will be partly determined by the excess yields of an economy. All else equal, a country with positive excess yield can accumulate more foreign assets as it will experience a premium from investing abroad, which will relax its constraints on the CA.

If one were to consider the NFA officially recorded, we would wrongly get to the conclusion that the world as a whole is a net debtor, which is intrinsically wrong (Figure A6 in Appendix). Even more, this trend has intensified over the recent decades since tax competition and tax evasion have been byproducts of financial globalization, and offshore wealth has reached 10% of the global GDP. Importantly, from the officially recorded statistics one would conclude that the rich countries' IIP is negative since the late 90s. This would mean that the top 20% of the world are net debtors and that the only country group with positive NFA would be the 4th quintile (60-80% of the income distribution). It is important to note that in the latest years, this group is mainly comprised of China. Hence, the official figure would imply that in the aggregate China would own the claims on the vast majority of the world, including the rich world.

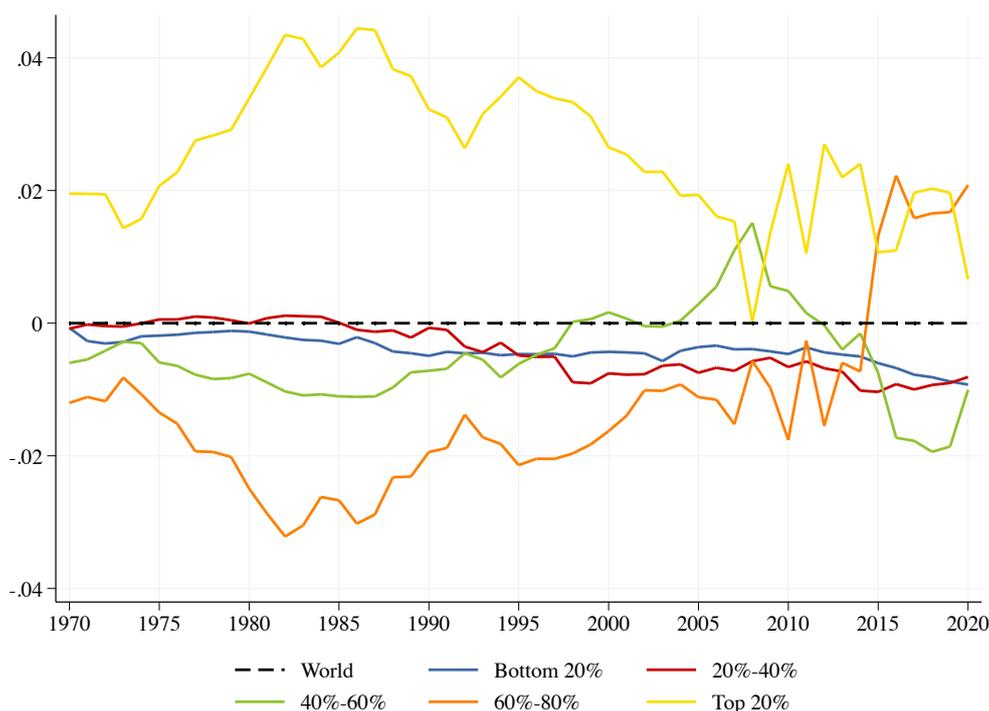
However, we can gain a more comprehensive understanding of the winners and losers of the financial globalization process by using the hidden wealth estimates to correct for offshore wealth (Figure 1). First, by construction, the world aggregate NFA is equal to zero, which is the logical result since every asset owed by someone in the world should be owned by someone else. Second, the rich countries IIP is significantly improved, becoming net creditors. Third, the IIP for the 4 quintile (60-80%) are somehow improved but the positions of 3 quintiles at the bottom are almost unchanged. Correcting for offshore wealth is not only important from a statistical perspective but it also has a meaningful economic reasoning, since it answers the discussed doubts of the true size of the exorbitant privilege of the US posed by [Hausmann and Sturzenegger \(2006\)](#). Finally, this figure suggests that the international balance of power is tilted towards the rich world plus China, who in combination hold the claims on all the debtors.

Owning the claims of another country is not a minor issue for development. The IIP of a country shifts the international balance of power towards the creditor countries, as they are allowed to impose constraints or conditions on debtor countries. At the time of this master thesis being written, the U.S. is facing a hard time to expand its debt ceiling and might enter into technical default if failing to reach an internal political consensus. Such a scenario could raise uncertainty in financial markets and downgrade the U.S. credit rating, which would

increase borrowing costs in the future (the yield paid on liabilities). In such a highly financially integrated world, this would not only affect the U.S. economy but all of the economies, in particular the ones which have a higher share of U.S. Treasuries in their balance sheet, such as China. Arguably, a potential default would destabilize a country like China but would also permit it to intervene in the U.S. situation. Additionally, countries with positive net external balances are more likely to get net positive income from abroad, thus reinforcing its CA and allowing them to accumulate more assets. As discussed through the income puzzle, the final net income figure will depend on the country excess return differential, but in any case having more assets than liabilities contribute to bigger net income inflows.

Figure 1

Net foreign assets as a share of world GDP



Graph shows average net foreign assets corrected by offshore wealth. Simple averages by group. All graphs show net foreign assets corrected for offshore wealth. See appendix for uncorrected graphs and robustness checks. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

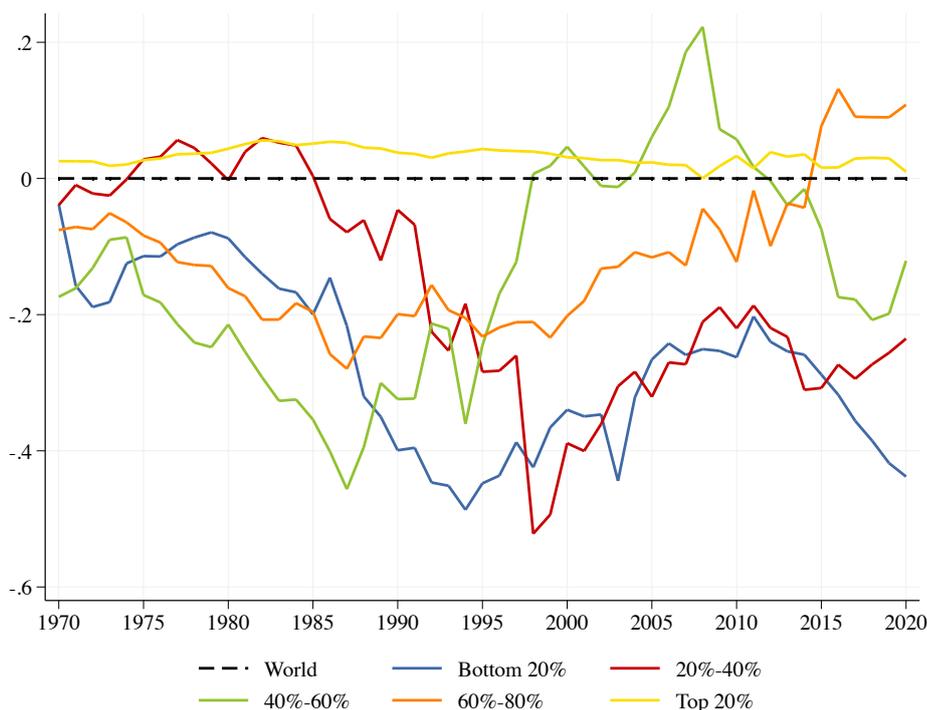
To provide a more accurate understanding of the significance of NFA positions, it is beneficial to use the total group's GDP as the denominator instead of the world's GDP. This approach allows us to assess the relative cost or benefit of NFA positions in relation to the size of the debtors' and creditors' economies. As depicted in Figure 2, the rich world holds a positive IIP equivalent to 1% of its combined GDP, while the same figure for the 4th quintile is 10%. Although these estimates may not appear striking in absolute or relative terms, the

fact that they represent such a low share of their GDP is important. It enables these two groups of countries to hold claims on the rest of the world, equivalent to 40% of the poorest GDP, 23% of the second quintile GDP, and 12% of middle-income countries' GDP, at virtually no cost.

This dynamic has significant consequences for the international balance of power. Debtor countries can -and will- be conditioned whenever they struggle to repay their debts, potentially leading to increased future financing costs. It is important to note that behind the aggregate lines presented in these three graphs, there exists considerable heterogeneity among individual countries. The dataset constructed allows for a comprehensive case-by-case study, enabling a deeper analysis of specific dynamics.

Figure 2

Net foreign assets as a share of group GDP



Graph shows average net foreign assets corrected by offshore wealth. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

In the next subsection, the focus will shift towards examining the main actors in the globalization process, namely the influential set of rich countries known as the G7 and the influential emerging economies referred to as the BRICS. This targeted analysis will provide further insights into the dynamics and implications of net foreign asset positions within these prominent groups of nations. Figure A18 in Appendix depicts the world's situation by regions.

3.1 G7 vs BRICS

When analyzing the capital accumulation process among the G7 countries in Figure 3, it becomes evident that there is significant heterogeneity among these influential economies. Except for the United States and France, the remaining five countries have experienced improvements in their financial accounts over time. This suggests that they have managed to accumulate more foreign assets or reduce their liabilities, leading to a more favorable net foreign asset NFA position.

A notable case is Canada, which has successfully reversed its net negative NFA position since 2010, despite running trade deficits during the same period. This indicates that Canada has been able to attract foreign investment, generate income from its external assets, or undertake measures to reduce its external liabilities. Such efforts have contributed to an improved NFA position, highlighting the country's ability to navigate trade imbalances and foster capital accumulation.

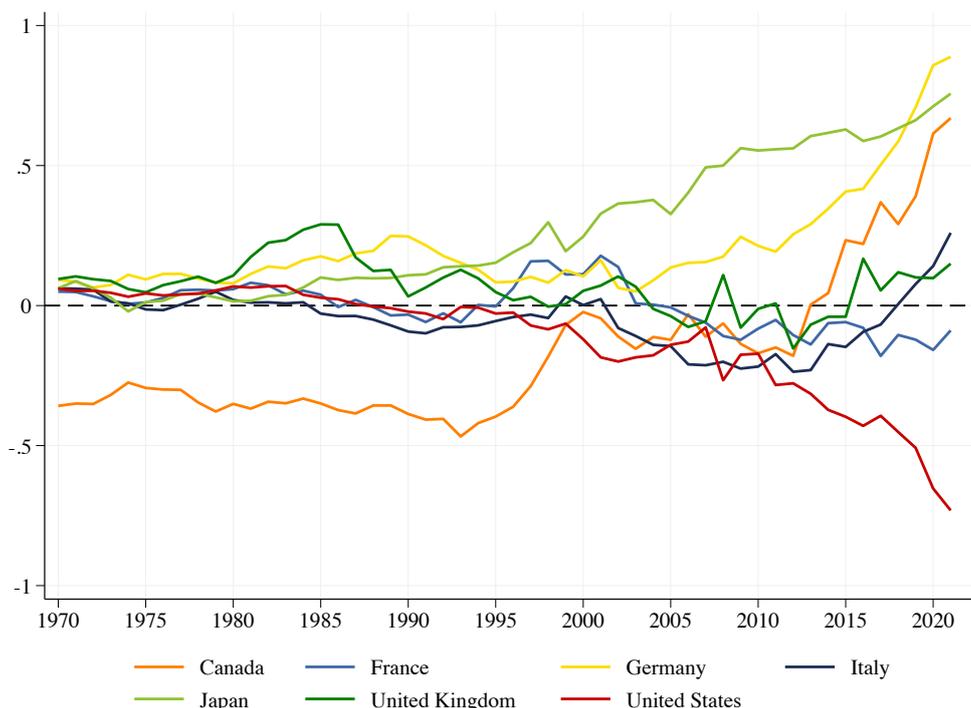
In contrast, Japan and Germany consistently exhibit higher NFA-to-GDP ratios, and these ratios have steadily increased over time. These two economies have built up significant external assets relative to their GDP, reflecting their strong export-oriented industries, high levels of FDI, and robust international competitiveness. Their ability to accumulate foreign assets has solidified their net creditor positions and reinforced their influence in the global economy.

Conversely, the U.S. stands out as the most indebted among the G7 countries, primarily due to its persistent trade deficits. The accumulation of substantial debts over time is a consequence of consistently importing more goods and services than it exports. This trade deficit has led to an increased reliance on foreign financing and a corresponding rise in external liabilities.

The persistently large trade deficits of the United States have led to discussions among macro-economists regarding their financing, where one commonly debated view is that it has come from rapidly growing emerging markets, with China being a prominent example. As depicted in Figure 4, China has consistently maintained a positive net external balance sheet, largely driven by substantial trade surpluses. Its robust export-oriented economy and competitive manufacturing sector have enabled China to accumulate significant foreign assets, which, in turn, have provided the financial resources to finance the U.S. deficits.

Figure 3

Net foreign assets as a share of country GDP, G7 countries



In contrast, Russia has maintained a creditor position since the dissolution of the USSR, primarily due to its abundant energy exports. Russia's vast reserves of natural resources, particularly oil and gas, have contributed to a consistent inflow of foreign currency earnings, bolstering its net external position. This has enabled Russia to accumulate foreign assets and operate as a creditor nation. On the contrary, South Africa has experienced a reversal in its net external position since 2014, shifting from being a debtor to being a creditor country.

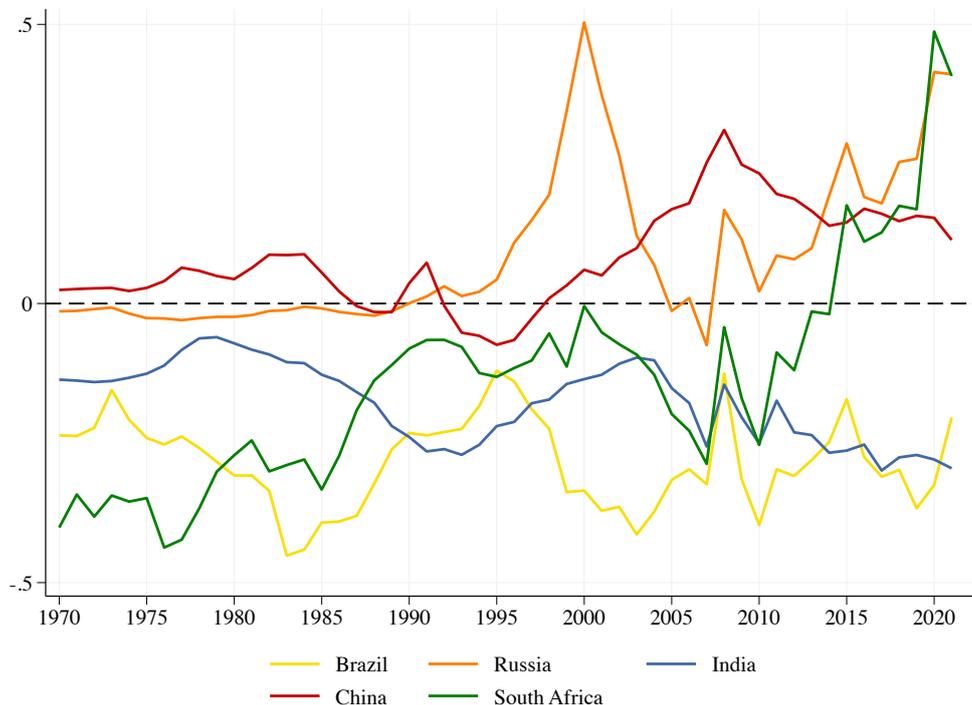
On the other hand, both India and Brazil have accumulated more liabilities than assets throughout the entire period under examination. Despite India rarely recording trade surpluses, its substantial import requirements, particularly for energy and capital goods, have led to an accumulation of foreign liabilities. Similarly, Brazil, with its import-intensive economy and reliance on foreign capital inflows, has also seen a build-up of external liabilities.

The divergent net external positions of the G7 and the BRICS⁵ underscore the varying dynamics and economic realities across the major countries of the world. Although the BRICS are certainly not representative of the smaller economies, understanding these trends in net external positions provides insights into the economic relationships, trade patterns, and financial flows between nations with different levels of development in the global economy.

⁵For figures excluding the tax havens correction refer to the Appendix A24 and A25.

Figure 4

Net foreign assets as a share of country GDP, BRICS



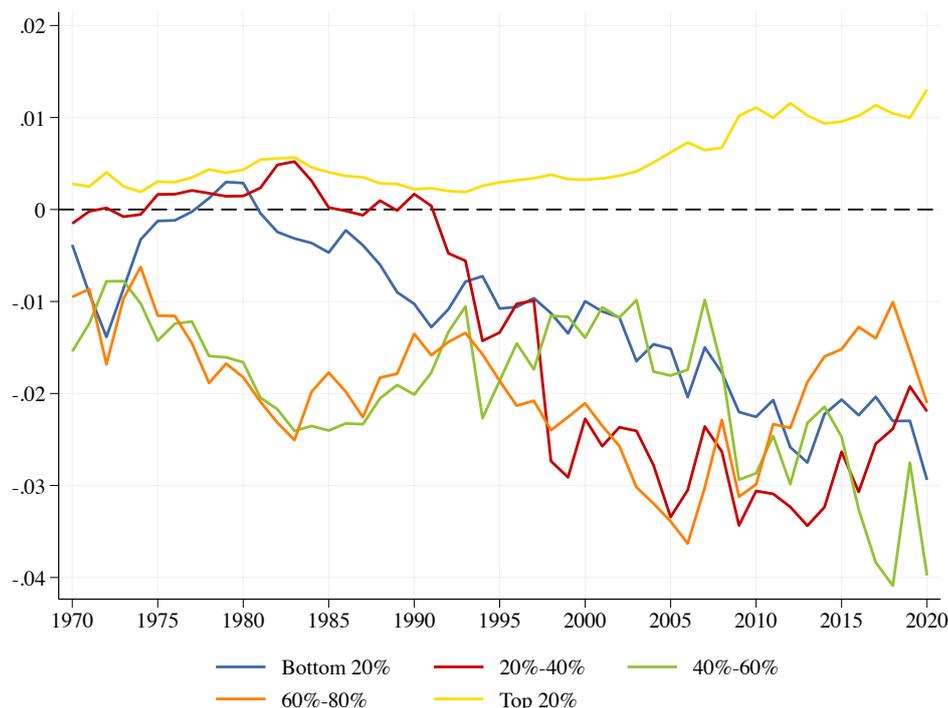
4 Unequal rates of return

The net capital income of an economy plays a crucial role in determining its CA balance and, consequently, the change in its NFA. It is possible for a country to experience an improvement or deterioration in its CA balance based on the net capital income it receives or pays.

When a country's gross assets are larger than its gross liabilities and the average rate of return on its assets exceeds the average rate of return on its liabilities, the country can generate a net positive income. In this scenario, the income earned on its assets ($i^A \times A$) surpasses the income paid on its liabilities ($i^L \times L$). As a result, the country benefits from a net positive income, contributing to a more favorable NFA position. Figure 5 shows that, for the last decade, each year foreign capital income flows results in a net transfer from poor to rich countries of a bit more than 1% of the rich's GDP. This big net transfer of resources allows the richest countries to incur in bigger trade deficits without the need to in-debt themselves to finance them. Moreover, it forces the bottom 80% of the world to record trade surpluses to be able to finance such a transfer. If they fail to do so, then they would need to compensate by acquiring more debt, which reinforces the dynamics.

Figure 5

Net foreign capital income as a share of GDP



Graph shows aggregate net foreign capital income, as a share of income group GDP. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Conversely, even if a country possesses larger gross assets than gross liabilities, it can still have a net negative income if it pays more on its liabilities than what it earns on its assets. This can occur if the average rate of return on liabilities is higher than the average rate of return on assets. In such cases, the country's income payments on liabilities outweigh the income received from its assets, resulting in a net negative income and potentially worsening its NFA position (i.e. China or Russia as shown in Table 4).

However, it is worth noting that certain countries, such as the United States, have demonstrated an intriguing phenomenon known as the *income puzzle*. Despite holding more liabilities than assets, these countries manage to generate net positive income. This is possible when the country possesses a sufficient differential return rate, where the income earned on its assets exceeds the income paid on its liabilities, compensating for the negative effect of having more liabilities than assets.

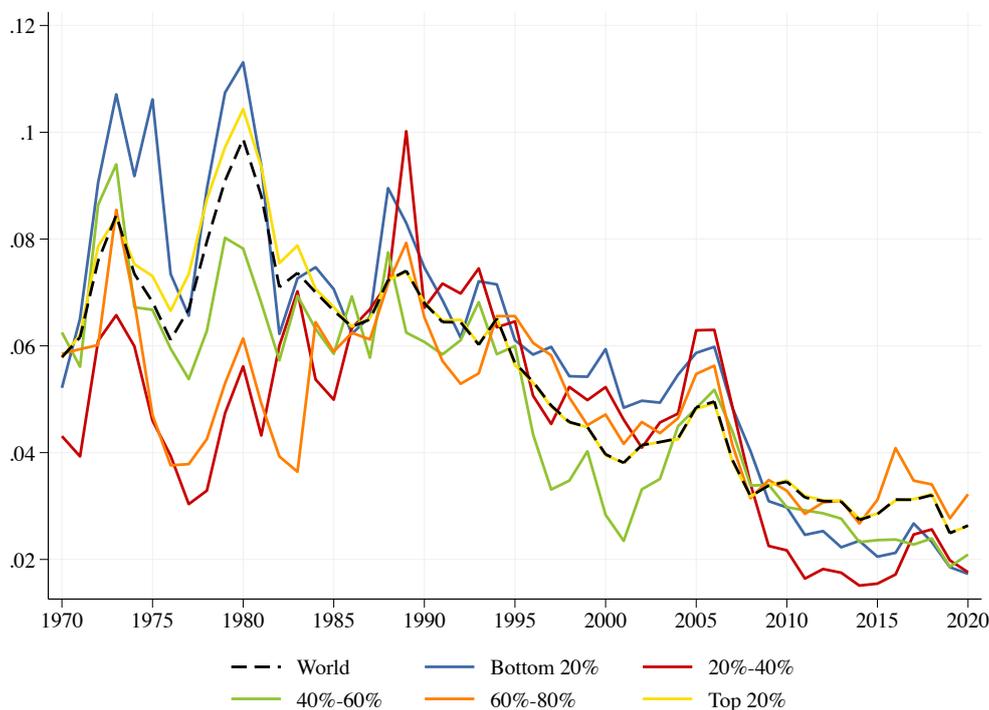
The interplay between net capital income, CA balance, and the composition of assets and liabilities is indeed complex. Factors such as differential return rates, sizes of assets and liabilities, and income flows all contribute to the overall net income position of a country, thereby influencing its net foreign asset NFA dynamics.

To gain insights into the impact of return rates on the net external positions of different country groups, we can calculate the implied yields as the income received (paid) over assets (liabilities). Equation 6 demonstrates this calculation, and Figure 6 presents the implied yield for gross foreign assets. Notably, global return rates have experienced a significant decline from the 1980s (approximately 10%) to 2020 (around 3%). This decreasing trend in return rate on foreign assets holds true for every country group, regardless of their net national income.

However, the situation differs when considering liabilities, as depicted in Figure 7. Only the richest countries have managed to consistently pay less on their obligations over time, while for the poorest countries (the bottom 40%), the opposite is observed: the return rates on their liabilities have increased. Meanwhile, the middle 40% has experienced relatively stable return rates on their liabilities.

Figure 6

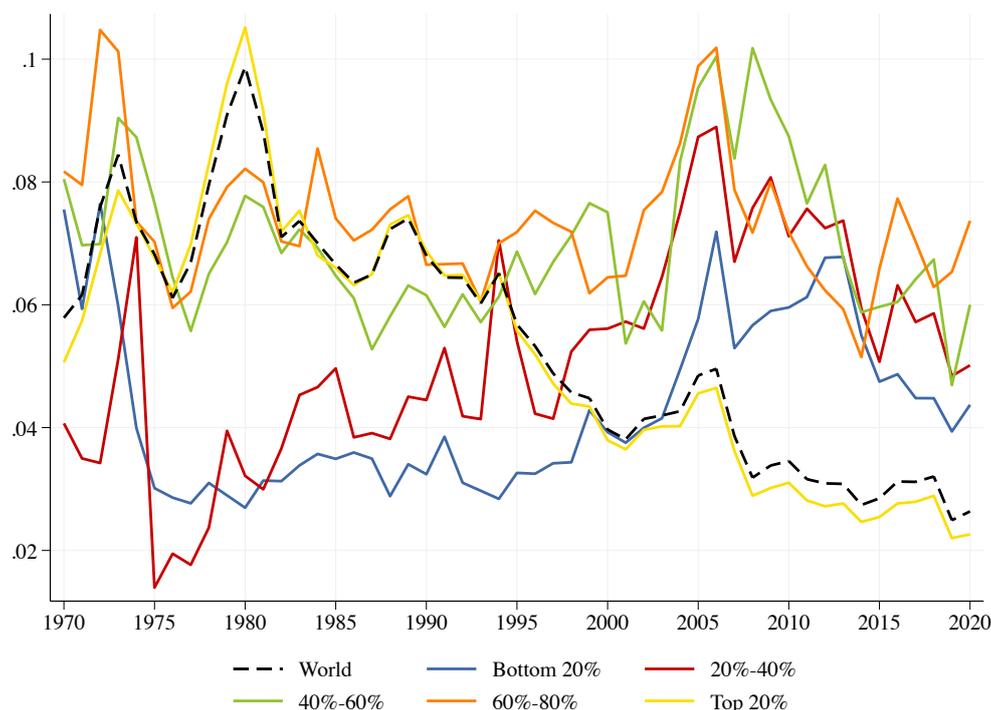
Returns on foreign assets per income group



Graph shows average rate of returns on foreign assets. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure 7

Returns on foreign liabilities per income group



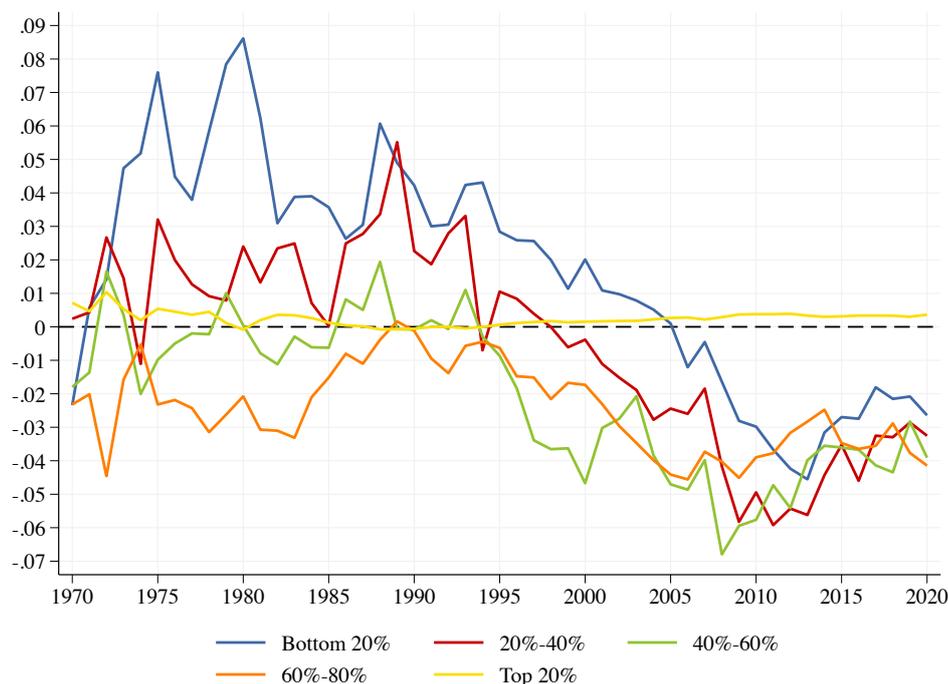
Graph shows average rate of returns on foreign liabilities. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

These findings highlight the divergent patterns in return rates for assets and liabilities across different country groups. Rich countries have benefited from lower payments on their obligations, contributing to their net income position. Conversely, the poorest countries have faced increased costs in servicing their liabilities, impacting their net income position negatively. The middle-income countries have maintained relatively stable return rates on their liabilities.

This disparity in return rates allowed rich countries to experience a moderate privilege in terms of excess yields, as depicted in Figure 8. While the magnitude of this excess yield may be relatively low, its significance lies in the long-run benefits. As yields are relatively stable, they enable rich countries to accumulate foreign assets at virtually no cost in the long-term. This yield differential, combined with its significant impact on net foreign assets, continues to favor rich countries, allowing them to attract the savings of poorer countries by offering safe assets. Consequently, rich countries can reallocate these savings into riskier ventures and generate differential gains from the excess yield.

Figure 8

Excess yields per income group



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

In effect, the central position of rich countries in the international monetary and financial system allows them to function as intermediaries, akin to bankers of the world.

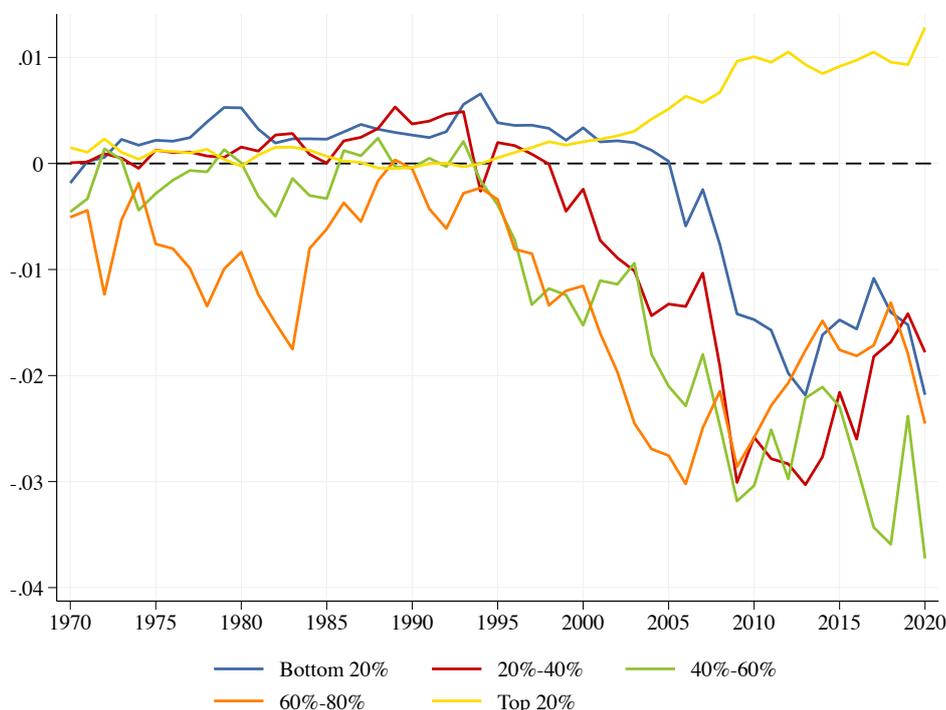
This role further reinforces their privilege, as they leverage their advantageous position to attract excess savings (Bernanke et al., 2005) and channel it towards productive investments. This cycle perpetuates their dominance and strengthens their position as key players in the global economic landscape.⁶

Figure 9 monetizes the excess yields, showing the capital income transfers that are due to the return differentials. The gap between the richest countries and the rest has been widening in the latest decade. Further, we can see from 10 that subtracting the excess yield from the net foreign capital income changes the net balance significantly. The richest countries net foreign capital income would be very close to zero, while the bottom 80% would experience significant increases and the 4th quintile would even record a net positive balance.

⁶For figures excluding the tax havens correction refer to Appendix A26, A27 and A28; for regional figures A32, A33, A34

Figure 9

Excess yield as a share of GDP



Graph shows the foreign capital income received (paid) related to the positive (negative) excess yield, as a share of group GDP. Excess yield income calculated as GFA (GFL) multiplied by excess yield if positive (negative). Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Table 1

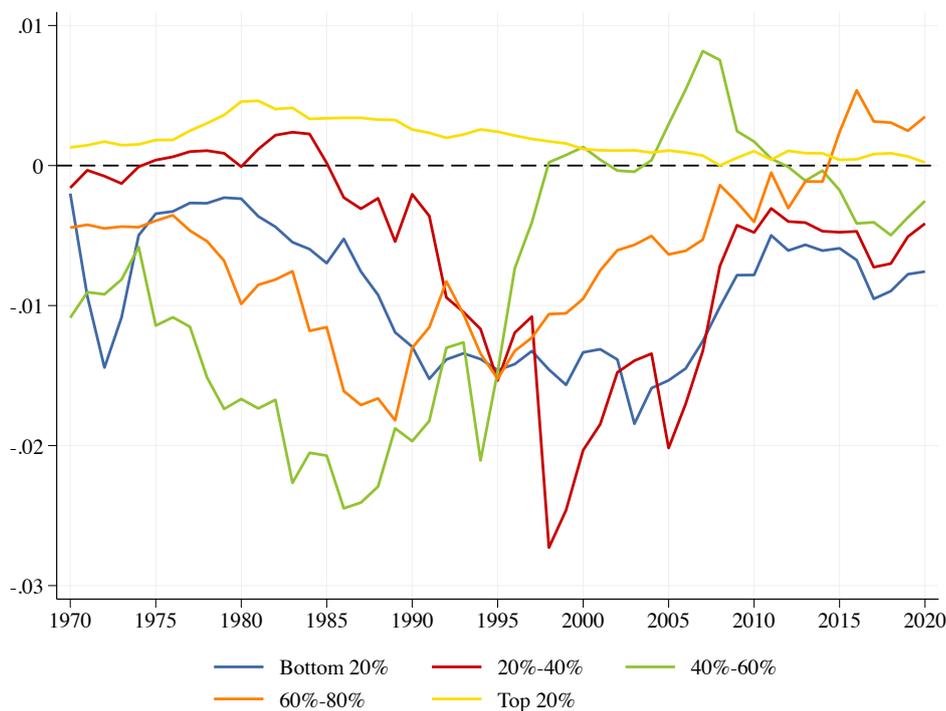
Average net foreign capital income and excess yield as a % of GDP

	Net KI	Exc. yield	Net KI	Exc. yield	Net KI	Exc. yield	Net KI	Exc. yield
	Top 20%		US		Western Europe		Rest of Top 20%	
1970-1999	0,33%	0,07%	0,91%	0,81%	0,36%	-0,04%	-0,17%	-0,42%
2000-2009	0,56%	0,48%	0,95%	1,52%	1,05%	1,11%	-0,44%	-1,25%
2010-2020	1,06%	0,99%	1,22%	2,15%	2,08%	1,87%	-0,07%	-1,08%

Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Switzerland, the U.S. and the U.K. Western Europe countries include Austria, Belgium, Denmark, France, Italy, Netherlands, Switzerland and the U.K. Rest of top 20% exclude the U.S. and Western Europe, include countries as Australia, Canada, Israel, Japan, Qatar and South Korea.

Figure 10

Net foreign capital income minus excess yield income as a share of GDP



Graph shows net foreign capital income if country groups would not have a different average return rate on their assets with respect to their liabilities, as a share of group GDP. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Table 1 provides a summary of the results depicted in the previous graphs. It reveals that the majority of the excess yield is driven by the United States and Western Europe. As highlighted in the income puzzle, the US would experience negative net foreign capital income if it were not for its exorbitant privilege, which allows them to offset their current account deficit by approximately 1.22% of their GDP annually.

Notably, the rest of the Top 20% richest countries, excluding the US and Western Europe, referred to as the (Rest of Top 20%), report a negative net foreign capital income that is entirely driven by their negative excess yield. This finding underscores the reliance on the excess yield to explain the net capital income outcomes for some countries.

These findings emphasize the critical role of the exorbitant privilege enjoyed by the US and Western Europe in shaping their net foreign capital income dynamics. The US's ability to mitigate its negative net foreign capital income through its privilege contributes significantly to the overall positive capital income position. Conversely, the negative net foreign capital income observed for the Rest of Top 20% highlights the absence of such privileges and the impact of their negative excess yield.

These insights further support the notion that the exorbitant privilege and its differential effects on returns play

a crucial role in shaping net capital income flows for different countries and income groups. Understanding these dynamics is essential for comprehending global wealth distribution and addressing disparities in the international monetary and financial system.

Looking at Table 2, we can delve deeper into the Top 20% and observe that the privilege country club is indeed extremely exclusive, with the top 10% enjoying an exorbitant privilege, with gains reaching almost 2% of their GDP.

The Eurozone's net positive capital income is fully explained by the positive return differential it enjoys. Whereas for Western Europe excluding the Eurozone, the return differential accounts for over two-thirds of its net positive capital income. Interestingly, the 9th decile of the distribution, comprising countries in the 80-90% range of the average net national income distribution, experiences a negative excess yield, driving all of its net negative capital income.

In summary, Western European countries and the United States enjoy the highest level of privilege. However, there is a difference between the two groups, as Western Europe records a positive NFA position, enabling them to generate higher positive capital income. On the other hand, the Eurozone and Japan have similar excess yields gains on average at the end of the period. However, for the Eurozone, this positive excess yield explains all of their positive net capital income, while for Japan, it explains only half of it, reflecting its healthier IIP. It is worth noting that Switzerland's privilege seems to be diminishing over time, causing its net foreign capital income decreasing by half.

These findings highlight the concentration of foreign capital income within a select group of countries, particularly among the wealthiest nations. The analysis underscores the varying degrees of privilege across regions and emphasizes the significant role of the return differential in shaping net capital income.

Table 2

Average net foreign capital income and excess yield as a % of GDP

	Net KI	Exc. yield	Net KI	Exc. yield	Net KI	Exc. yield	Net KI	Exc. yield
	Eurozone		West. Eu. non Euro		Japan		Switzerland	
1970-1999	0,04%	-0,17%	1,21%	0,34%	0,40%	-0,14%	4,40%	0,54%
2000-2009	0,52%	0,83%	2,51%	1,87%	1,93%	0,63%	6,07%	1,51%
2010-2020	1,68%	1,75%	3,06%	2,22%	3,19%	1,60%	3,25%	0,15%
	Canada/AUS/NZ		Rest of Top 20%		Top 10%		Next top 10%	
1970-1999	-2,85%	-0,26%	-0,17%	-0,42%	0,59%	0,27%	-0,31%	-0,47%
2000-2009	-1,55%	-0,21%	-0,44%	-1,25%	1,25%	1,21%	-1,05%	-1,19%
2010-2020	0,10%	0,72%	-0,07%	-1,08%	1,92%	1,96%	-1,02%	-1,31%

Eurozone includes only founders before its creation: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain. Countries that joined in subsequent years are included since the year they joined: Greece (2001), Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), and Lithuania (2015). In 2020, Western Europe non Eurozone includes countries such as Croatia, Denmark, Sweden, Switzerland and the U.K. Rest of top 20% excludes U.S., Eurozone, Western Europe, Japan, Switzerland, Canada, Australia and New Zealand. Top 10% includes countries such as Australia, Belgium, Canada, France, Germany, Israel, Japan, Norway, Switzerland, the U.K. and the U.S. Next top 10% includes countries such as Chile, Croatia, Greece, Italy, Poland, Portugal, Romania, South Korea and Uruguay.

4.1 Excess return decomposition

The excess yield is composed by a return and a composition effect, which can be calculated as done in [Gourinchas and Rey \(2007a\)](#); [Habib \(2010\)](#).

$$i^A - i^L = \sum_{\rho} \left(\underbrace{\frac{(\alpha_{\rho} + \lambda_{\rho})}{2} (i_{\rho}^A - i_{\rho}^L)}_{\text{Return effect}} + \underbrace{(\alpha_{\rho} - \lambda_{\rho}) \frac{(i_{\rho}^A + i_{\rho}^L)}{2}}_{\text{Composition effect}} \right) \quad (10)$$

Where ρ refers to the asset class, FDI or portfolio, α_{ρ} (λ_{ρ}) are the weights of each asset class in total assets (liabilities). The return effect measures the importance of differential returns between assets and liabilities within each asset class, and is simply calculated as the yield differential weighted by the average share of each asset class within total assets or liabilities. Further, the composition effect measures how the different weight between gross foreign assets and liabilities may generate excess returns assuming different average returns from each asset class, and is simply calculated by weighting average returns by asset class by the relative composition of assets and liabilities.

In [Figure 11](#) I show the contribution of each effect in the excess returns, averaging values within specific periods. The excess returns obtained by the top 20% income group at the beginning of the period can be attributed to two main factors. Firstly, their balance sheets are weighted towards Foreign Direct Investment (FDI) assets, which tend to be more profitable than their corresponding liabilities -and which became more profitable across time-. Secondly, there is a positive return effect observed in both their FDI and portfolio assets, indicating that the assets held within these categories are more profitable than their liabilities. Consequently, the top 20% income group benefits from a favorable combination of asset composition and return differentials.

Conversely, the 4th quintile (60-80%) presents a different narrative. Not only their balance sheets are primarily weighted towards portfolio assets, but also these assets are less profitable than their corresponding liabilities. As a result, this income group experiences a negative return effect, leading to a lower overall return differential compared to the top income group. The situation of the 3rd quintile (40-60%) presents a similar pattern.

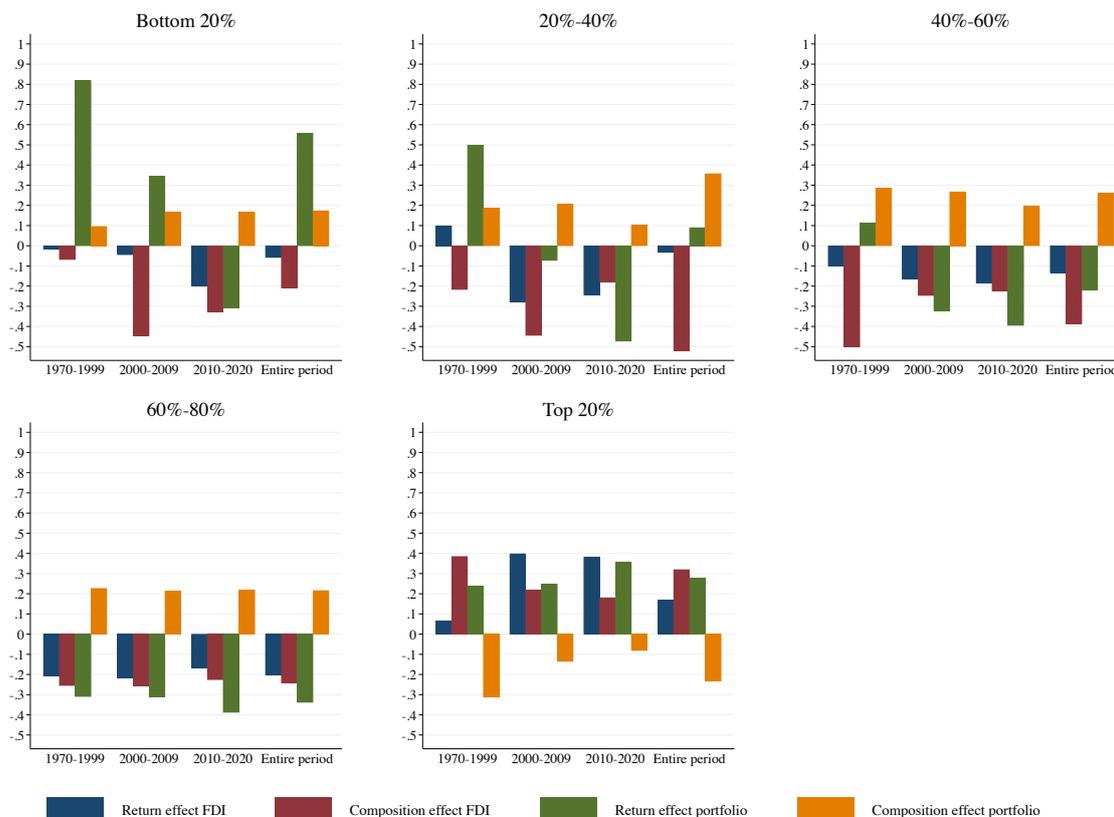
Examining the poorest quintile, an interesting pattern emerges. In the initial period (driven mainly by India), they experience an exorbitantly positive excess yield, which can be attributed to their portfolio assets being more profitable than their portfolio liabilities and a larger share of these assets in their balance sheets. However, in the period between 2006 and 2020, there is a reversal in their excess yield that is explained by a balance sheet weighted towards less profitable portfolio assets and an average FDI asset return lower than its corresponding liabilities. A reversal was also experienced by the 2nd quintile (20-40%) in the period 1990-2004, although in this case was partially compensated by a positive return effect on portfolio assets during the 1990s. Nonetheless, the past 15 years this return effect has also reverted and, in addition to a large negative FDI return effect, has contributed to an average negative excess return through the whole period.

These findings highlight the varying dynamics within different income groups and the influence of asset composition on return differentials. The top income group benefits from a favorable mix of asset classes and higher returns, while the 4th quintile faces challenges due to less profitable portfolio assets. The poorest quintile experiences a complex interplay of factors, with initial positive returns later giving way to a more challenging period.

Understanding these drivers of return differentials provides valuable insights into the economic dynamics and income inequalities within different income groups. By analyzing the composition and performance of assets and liabilities, it becomes possible to gain a deeper understanding of the factors contributing to the observed differential rates of return patterns across various income groups.

Figure 11

Excess yields decomposition



Graph shows the contribution of each effect in the positive or negative excess yield of each country group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits. For instance, for the period 2000-2009, 40% of the excess return in top 20% group is due to a positive return effect in FDI while 10% is due to a negative composition effect on the portfolio class.

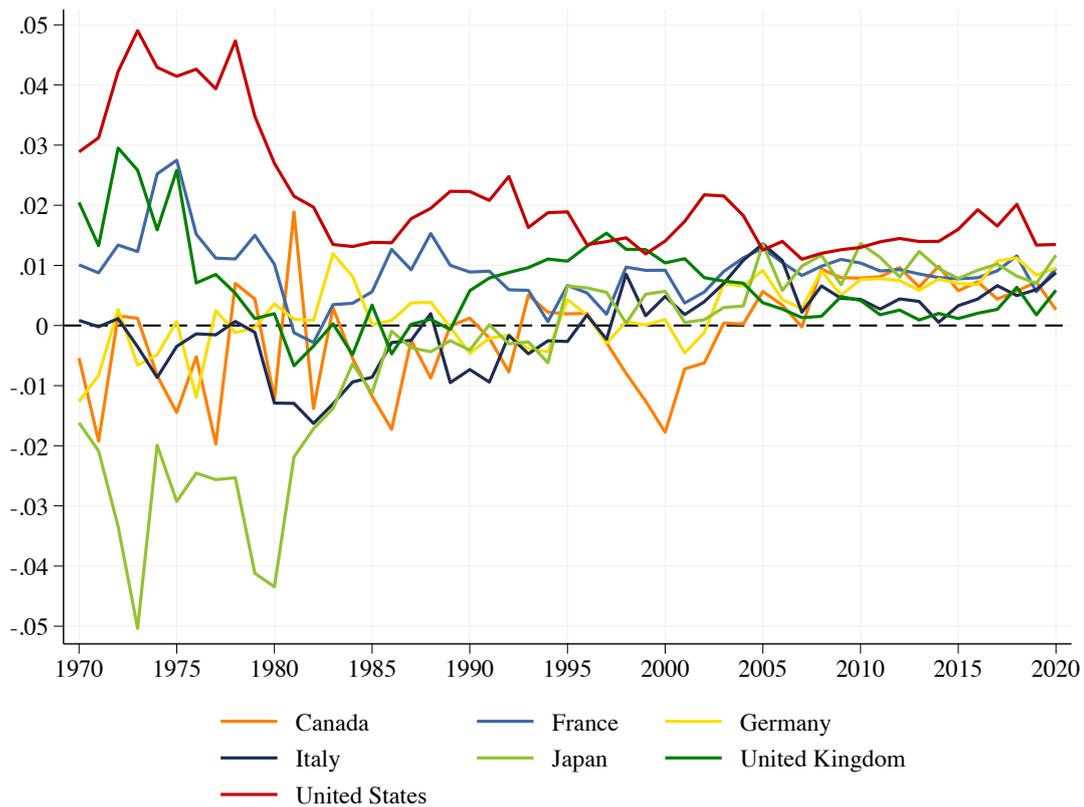
4.2 G7 vs BRICS

While the G7 economies displayed considerable heterogeneity in the evolution of their NFA, they do share a common privilege in the 21st century. The United States, in particular, has enjoyed this privilege consistently throughout the entire period under examination. France and the United Kingdom have also experienced this privilege for the majority of the period, with only a temporary decline observed in the 1980s. Germany, on the other hand, has oscillated around the zero line until 2003. Canada, Japan, and Italy, despite starting with negative NFA positions, managed to reverse this situation and improve their NFA over time. Notably, the Canadian reversal coincided with an improvement in the NFA, as shown in Figure 3, despite experiencing a negative trade balance.

These findings highlight the existence of a privilege shared among the G7 economies in the recent years. This privilege allows these countries to accumulate net foreign assets, even in cases where they run trade deficits. It signifies their ability to attract foreign investment at low rates and generate income from their external assets. Moreover, this privilege has been translated in positive foreign capital income of 1%-4% of their GDP, depending the case (see Figure 13)

Figure 12

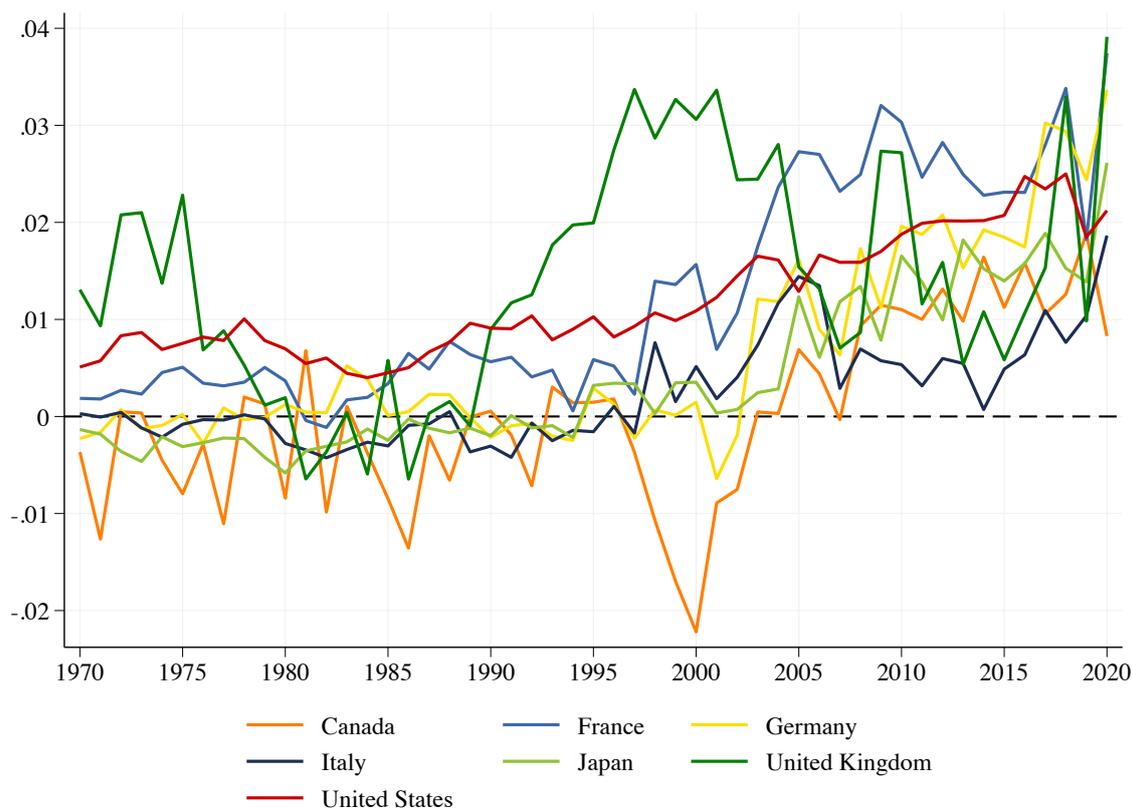
Excess yields, G7 countries



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities.
For returns on assets or liabilities refer to Appendix.

Figure 13

Excess yields as a share of country GDP, G7 countries



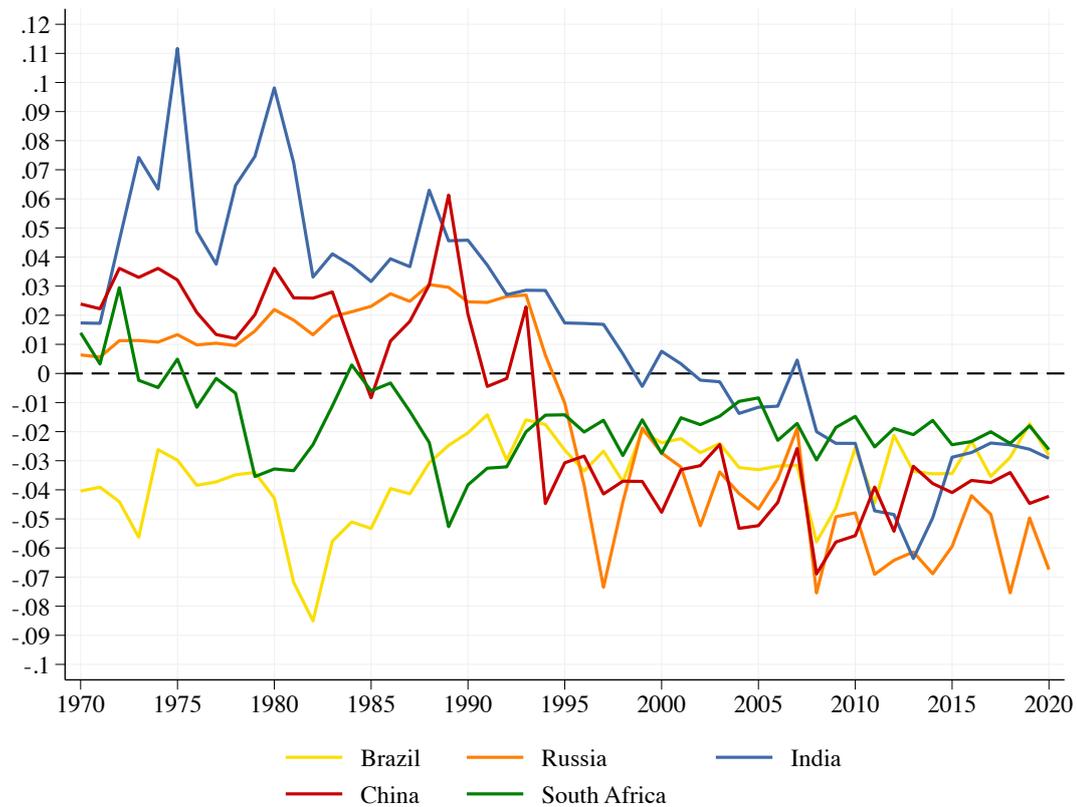
Graph shows the foreign capital income received (paid) related to the positive (negative) excess yield, as a share of group GDP. Excess yield income calculated as GFA (GFL) multiplied by excess yield if positive (negative).

In contrast to the G7 economies, the main developing economies experienced a different narrative in terms of their excess returns. India, in particular, initially experienced an incredibly exorbitant privilege in the first two decades. However, this privilege gradually decreased over time, eventually reversing in the 2000s. China and Russia also witnessed a reversal of their return differential, but during the 1990s, reflecting significant shifts in their economic and political landscapes during that period. South Africa and Brazil's continuous negative excess yield suggests the burden they face in servicing their external liabilities.

The negative excess yield has translated in a deterioration of their CA, as it lowers the country's net foreign capital income. In some cases its the explanation of the net negative income reported. From Figure 15 we see that this excess yield can be expressed as 1,5%-4,5% of the country's GDP, depending the case. For instance, Russia reports negative net foreign capital income due to its negative excess yield, even when having a positive NFA position (Figure A49).

Figure 14

Excess yields, BRICS

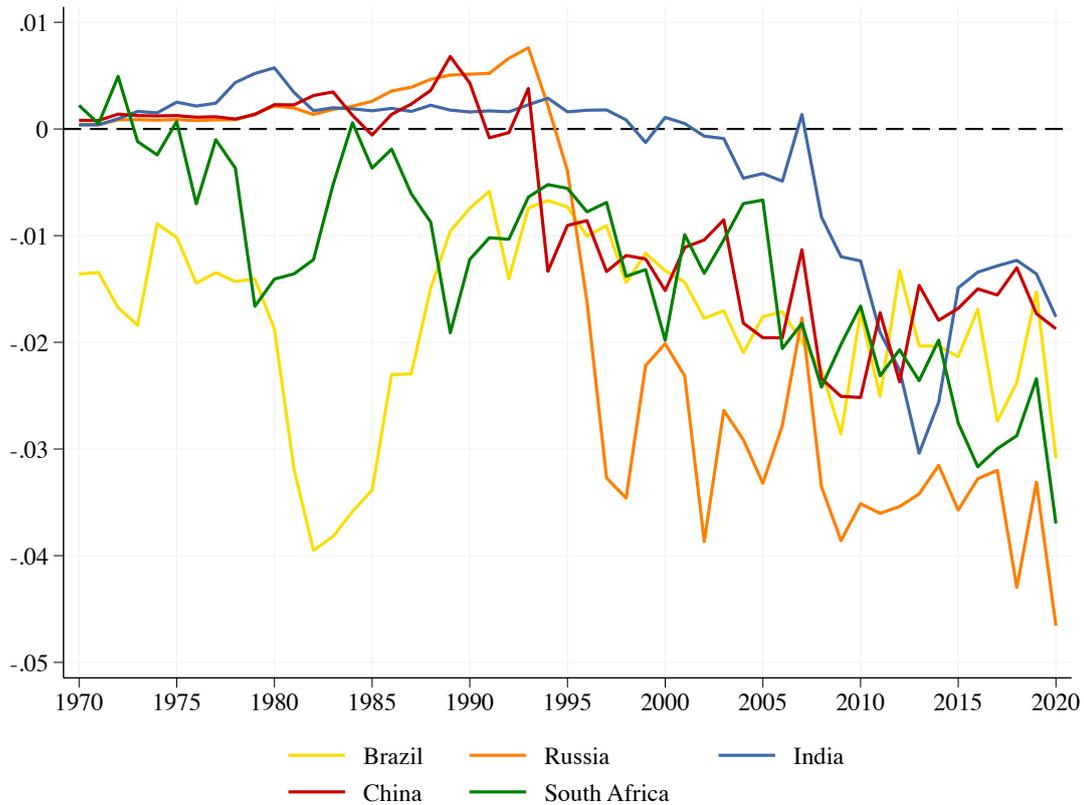


Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities.
For returns on assets or liabilities refer to Appendix.

These findings highlight the divergent experiences of developing economies in terms of their rates of return on foreign wealth. The differential trends observed among these developing economies emphasize the complexity of their economic dynamics and the significant impact of asset-liability management, return differentials, and income flows. Understanding these factors is crucial for analyzing the financial vulnerabilities and opportunities faced by developing economies in the global context.

Figure 15

Excess yields as a share of country GDP, BRICS



Graph shows the foreign capital income received (paid) related to the positive (negative) excess yield, as a share of group GDP. Excess yield income calculated as GFA (GFL) multiplied by excess yield if positive (negative).

Tipping point

In a very simple exercise to better understand how the NFA and the excess return affect the balance of payments of an economy, we can calculate the tipping point for a given economy as the ratio of gross liabilities to gross assets beyond which $i^A A - r^L L$ becomes negative (Obstfeld and Taylor, 2004).

In the case of the U.S., the tipping point is calculated as $\text{Tipping point} = \frac{L}{A} > \frac{i^A}{i^L} = \frac{3,47\%}{2,10\%} = 1,65$. This means that the U.S. can afford to have 65% the size of its liabilities in relation to its assets before experiencing a negative net foreign capital income. Considering the true ratio of liabilities over assets for the U.S. as 1.41, it becomes apparent that the U.S. economy has the capacity to accumulate more debt equivalent to 24% of its gross assets before experiencing a net negative income. This calculation provides valuable insight into the level of indebtedness that the U.S. can sustain while still generating positive net foreign capital income.

Table 4 expands this analysis by comparing the tipping points with the true L/A ratios for each G7+BRICS economy in 2020. The results demonstrate that every G7 economy is currently receiving net positive income, as their tipping points are above their true L/A ratios. Moreover, many of these economies still have significant room to accumulate more debt before reaching a point where they pay more than what they receive. For example, Germany could nearly double its liabilities in comparison to its assets before experiencing a net negative income.

In contrast, the situation is entirely different for the BRICS economies, where each country is currently paying more than what they receive. Reversing this scenario would require substantial efforts for these economies. For instance, Brazil would need to either reduce its liabilities by more than half or more than double its assets before generating net positive capital income.

These straightforward calculations shed light on the significance of excess return differentials across countries and their profound impact on the development process. They provide a glimpse into the importance of managing liabilities and assets effectively to maintain positive net foreign capital income, which can have significant implications for a country's economic development and financial stability.

Table 3

Tipping point at the end of the period (2020)

	i^A	i^L	Tipping point	True ratio L/A
G7				
Canada	3,19%	2,90%	1,10	0,81
Germany	2,17%	1,15%	1,89	0,76
France	2,24%	1,25%	1,79	1,04
United Kingdom	2,22%	1,58%	1,40	0,99
Italy	2,37%	1,45%	1,63	0,93
Japan	3,16%	2,03%	1,56	0,68
United States	3,47%	2,10%	1,65	1,41
BRICS				
Brazil	3,63%	6,85%	0,53	1,42
China	3,14%	7,79%	0,40	0,74
India	1,75%	4,76%	0,37	1,86
Russia	5,03%	12,20%	0,41	0,62
South Africa	2,75%	5,88%	0,47	0,74

Table expresses the amount of liabilities with respect to assets that a country can hold before receiving negative net foreign capital income (its Tipping point). Tipping point is calculated as $\frac{i^A}{i^L}$.

Excess yield decomposition

In decomposing the excess yields for this set of countries, a more comprehensive understanding of the components behind the return differentials emerges. Canada, for instance, was able to reverse its negative differential in the 2000s, primarily due to an improvement in its net foreign portfolio positions, resulting in a decrease in the composition effect. The cases of the UK and France exhibit are comparable to each other, with their positive return differentials stemming from positive return effects in FDI and portfolio assets, combined with positive composition effects in FDI.

Germany and Italy share a similar narrative too, where both countries experienced a reversal of their FDI return effects in the 2000s. However, they were accompanied by positive composition effects in FDI and positive return

effects on portfolio assets. On the other hand, Japan's return effect on FDI is negative, yet it still benefits from a privilege in terms of return differentials due to its portfolio yields. Lastly, the exorbitant privilege enjoyed by the United States has been driven by the outperformance of its FDI assets in comparison to its FDI liabilities.

In contrast, the story is different for developing countries, as most of the components contributing to their return differentials are negative. A common feature among these countries is that their balance sheets are weighted towards portfolio assets, which tend to be less profitable than FDI assets. Consequently, they end up paying returns on FDI liabilities that were invested by rich countries in their territories, utilizing the savings provided by the developing world through the accumulation of low-yield portfolio assets. Russia and China share the additional characteristic of holding portfolio assets that are significantly less profitable than their liabilities.

Table 4

Excess yield decomposition for G7 and BRICS

Period	G7	FDI		Portfolio		Excess	BRICS	FDI		Portfolio		Excess
		Return	Composition	Return	Composition			Return	Composition	Return	Composition	
1970-1999	Canada	-0,59%	0,08%	0,39%	-0,10%	-0,22%	Brazil	-1,21%	-0,33%	-2,62%	0,51%	-3,65%
2000-2009	Canada	-0,53%	0,31%	0,62%	-0,42%	-0,02%	Brazil	-1,85%	0,01%	-1,37%	-0,01%	-3,22%
2010-2020	Canada	0,07%	0,28%	0,57%	-0,23%	0,69%	Brazil	-1,23%	-0,48%	-1,64%	0,38%	-2,96%
1970-2020	Canada	-0,45%	0,22%	0,48%	-0,25%	0,00%	Brazil	-1,47%	-0,30%	-2,13%	0,41%	-3,49%
1970-1999	France	0,08%	0,12%	0,99%	-0,49%	0,71%	China	0,53%	-0,94%	1,06%	0,87%	1,52%
2000-2009	France	0,27%	0,22%	0,64%	-0,19%	0,93%	China	-1,32%	-2,17%	-4,00%	3,14%	-4,35%
2010-2020	France	0,33%	0,31%	0,37%	-0,13%	0,88%	China	-1,03%	-1,67%	-3,73%	2,27%	-4,16%
1970-2020	France	0,18%	0,17%	0,79%	-0,37%	0,77%	China	0,10%	-1,29%	-1,32%	1,52%	-1,00%
1970-1999	Germany	-0,64%	-0,05%	0,68%	0,04%	0,03%	India	0,13%	-0,37%	4,04%	0,45%	4,25%
2000-2009	Germany	0,19%	0,07%	0,19%	-0,07%	0,38%	India	-0,07%	-0,96%	0,23%	0,39%	-0,41%
2010-2020	Germany	0,42%	0,12%	0,32%	-0,05%	0,82%	India	-0,92%	-0,07%	-2,61%	0,05%	-3,55%
1970-2020	Germany	-0,39%	0,04%	0,50%	-0,03%	0,12%	India	0,08%	-0,40%	1,59%	0,33%	1,60%
1970-1999	Italy	-0,13%	-0,01%	-0,15%	0,03%	-0,27%	Russia	-0,02%	-0,04%	0,76%	0,10%	0,80%
2000-2009	Italy	0,12%	0,18%	0,49%	-0,15%	0,64%	Russia	-1,59%	-0,70%	-2,18%	0,40%	-4,07%
2010-2020	Italy	0,19%	0,21%	0,17%	-0,12%	0,45%	Russia	-2,45%	-1,47%	-2,69%	0,66%	-5,95%
1970-2020	Italy	-0,04%	0,05%	0,05%	-0,09%	-0,03%	Russia	-0,47%	-0,31%	-0,87%	0,24%	-1,40%
1970-1999	Japan	-0,11%	0,44%	-1,24%	-0,44%	-1,35%	South Africa	-0,03%	0,76%	-1,08%	-1,01%	-1,37%
2000-2009	Japan	-0,05%	0,41%	0,42%	-0,19%	0,60%	South Africa	-0,85%	-0,93%	-1,23%	1,17%	-1,84%
2010-2020	Japan	-0,27%	1,05%	0,47%	-0,28%	0,96%	South Africa	-1,11%	0,07%	-1,00%	-0,08%	-2,12%
1970-2020	Japan	-0,13%	0,55%	-0,53%	-0,36%	-0,48%	South Africa	-0,47%	0,19%	-1,09%	-0,24%	-1,62%
1970-1999	United Kingdom	0,23%	0,44%	0,37%	-0,29%	0,76%						
2000-2009	United Kingdom	0,29%	0,44%	0,11%	-0,23%	0,61%						
2010-2020	United Kingdom	0,30%	0,04%	-0,05%	-0,01%	0,28%						
1970-2020	United Kingdom	0,26%	0,34%	0,23%	-0,20%	0,62%						
1970-1999	United States	1,72%	1,03%	0,72%	-1,14%	2,32%						
2000-2009	United States	1,07%	0,43%	0,37%	-0,30%	1,57%						
2010-2020	United States	1,00%	0,36%	0,34%	-0,17%	1,52%						
1970-2020	United States	1,41%	0,74%	0,58%	-0,68%	2,05%						

Table expresses how much of the real excess yield is due to each effect. For instance, the real average excess yield for Germany at the end of the period is 0,82%, with more than half coming from its positive return FDI effect (0,42%).

These findings shed light on the contrasting dynamics between developed and developing countries when it comes to the components driving return differentials. While developed countries leverage their positive return

effects in FDI and portfolio assets, developing countries face challenges associated with less profitable portfolio assets and the resulting payment of returns on FDI liabilities.

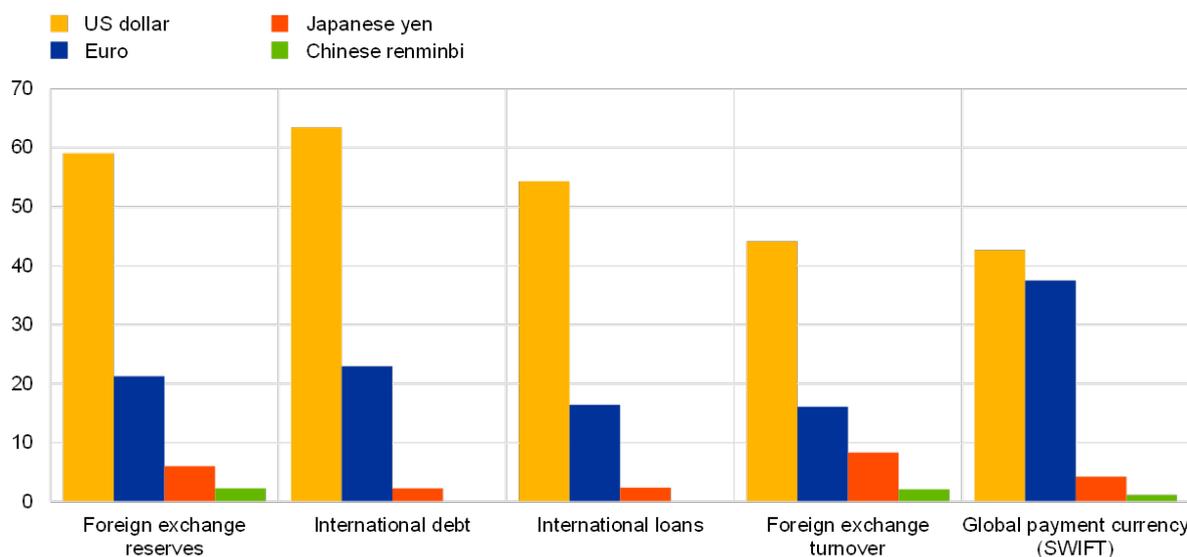
4.3 The Eurozone

The hegemonic role of the U.S. dollar in the international monetary system was first spotted in Europe. Specifically, the term “exorbitant privilege” was coined by the then French Finance Minister Valéry Giscard d’Estaing (later president) in the 1960s -under the presidency of Charles de Gaulle-. Giscard d’Estaing noted the central, privileged and dominant position that allowed the US to enjoy benefits from being the issuer of the global currency reserve. Thirty years later, the main economies of Western Europe joined forces to create a currency that would compete against the U.S. dollar as an international reserve, the Euro.

The Euro plays a significant role in the international monetary system as one of the major reserve currencies alongside the US dollar, being the second most widely used in terms of the share of global payments (36,7%, right behind the 38,7% of the US dollar). It is the official currency of the 19 euro area members states, and also 60 countries and territories outside the EU have chosen to use the euro or to peg their currency to it. Its importance stems from several factors. Firstly, the Eurozone is a major economic powerhouse, with a combined GDP ranked as the world’s third-largest economy (just overtaken by China in 2021), providing a solid economic foundation for the Euro’s global significance.

Figure 16

The International Monetary System



Graph taken from *The international role of the Euro*, June 2021 (ECB).

Sources: BIS, IMF, SWIFT and ECB calculations.

Secondly, the Euro offers diversification benefits to central banks and international investors. Holding Euro-denominated assets allows them to reduce reliance on the US dollar and spread their currency risks. This diversification contributes to the stability and resilience of the global financial system, preventing excessive concentration of reserve assets in a single currency. Furthermore, the Euro is widely used in international trade and financial transactions, which certainly contributes to its widely acceptance worldwide. Many countries and businesses around the world conduct their trade and investment activities in Euro, facilitating cross-border transactions and reducing exchange rate risks. The share of exports invoices in Euro is almost 47% while it is

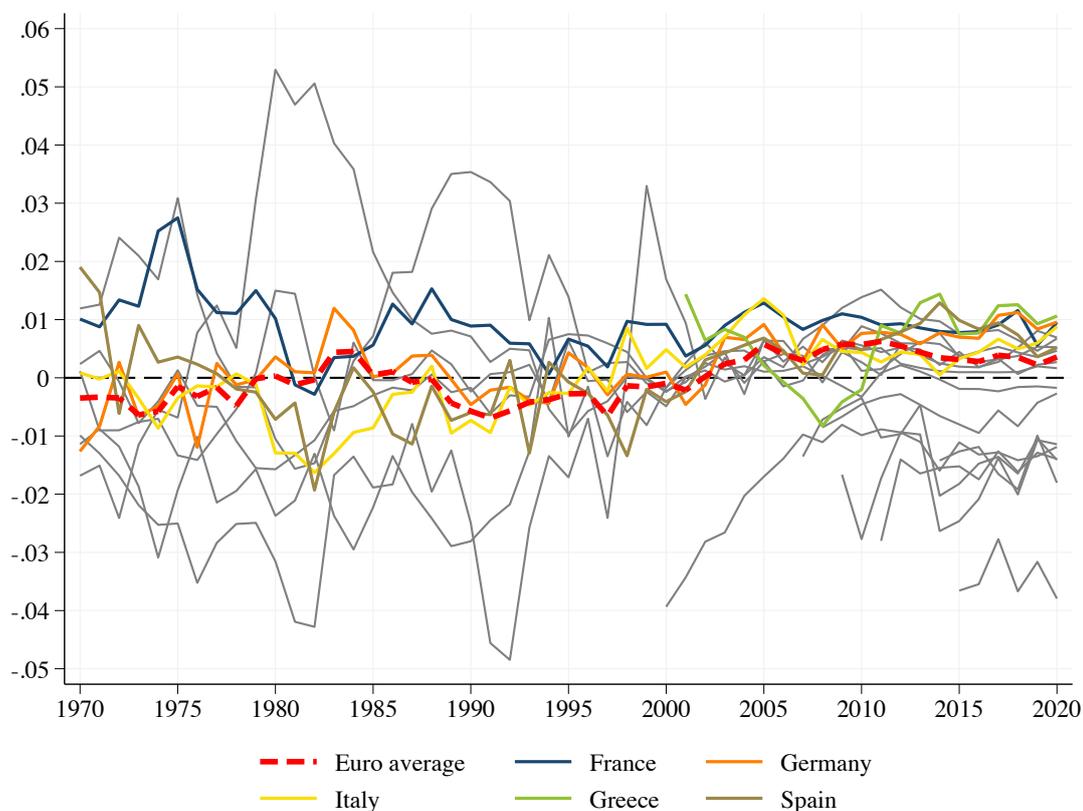
around 40% for the dollar (Boz et al., 2020)⁷

Being issuers of an international reserve currency offers several advantages to the Eurozone countries. Firstly, it enhances their financial and economic stability by increasing their access to global capital markets. This enables Eurozone governments and businesses to borrow funds at favorable interest rates and maintain liquidity during periods of economic stress. Additionally, the ability of Eurozone countries to issue an international reserve currency strengthens their position as attractive investment destinations. It fosters confidence in their economies and financial systems, attracting foreign direct investment and supporting economic growth.

Secondly, the status of the Euro as an international reserve currency increases the Eurozone countries' influence in global financial governance and policy discussions. It provides them with a platform to participate actively in shaping international monetary policies, fostering cooperation among central banks, and promoting financial stability worldwide.

Figure 17

Has the Euro solved the concerns of Valéry Giscard d'Estaing? Real excess yields



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities, in real euros. Before Eurozone was created only founders are included: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain. Countries that joined in subsequent years are included since the year they joined: Greece (2001), Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), and Lithuania (2015).

Overall, the Euro's prominence in the international monetary system and the Eurozone countries' role as issuers of an international reserve currency bring numerous benefits, including stability, diversification, and increased

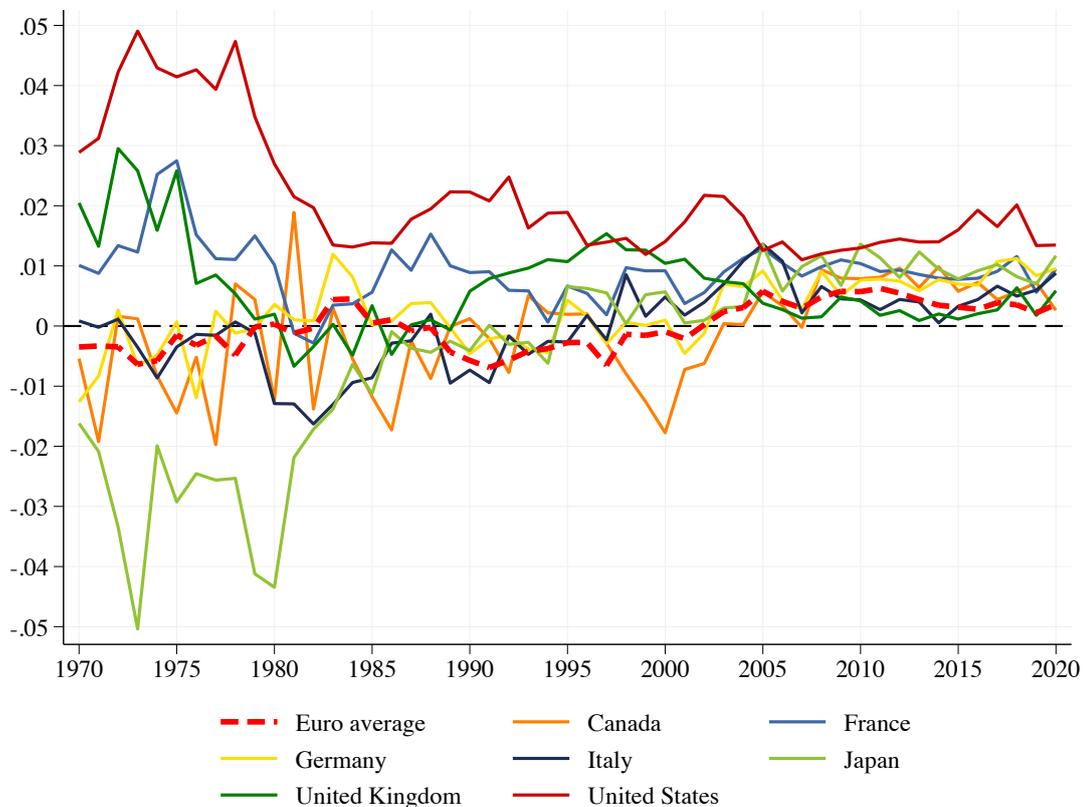
⁷Figures include intra-euro area transactions. If those were excluded, the share of the Euro would fall to 30% while the dollar would be around 50%.

influence in global financial matters. As it can be observed, the Euro enjoys a certain degree of privilege as a major international reserve currency (Figure 17). The Euro benefits from global demand, widespread usage, and the confidence it instills in financial markets. The Euro's status as a reserve currency provides advantages to Eurozone countries, such as lower borrowing costs and increased access to global capital markets. Furthermore, the Euro's role fosters stability, diversification, and economic integration within the Eurozone, enhancing its attractiveness as an investment destination. All of this has allowed the Eurozone to report around 2% of their combined GDP as excess yield income, just somewhat below the US latest figures (Figure 19).

However, it is worth noting that the extent and sustainability of the Euro's privilege may depend on various factors, including the stability and cohesion of the Eurozone itself, global economic dynamics, and potential shifts in international monetary arrangements. Continued research and analysis are necessary to further understand and assess the implications and future trajectory of the Euro's privilege in the international financial system.

Figure 18

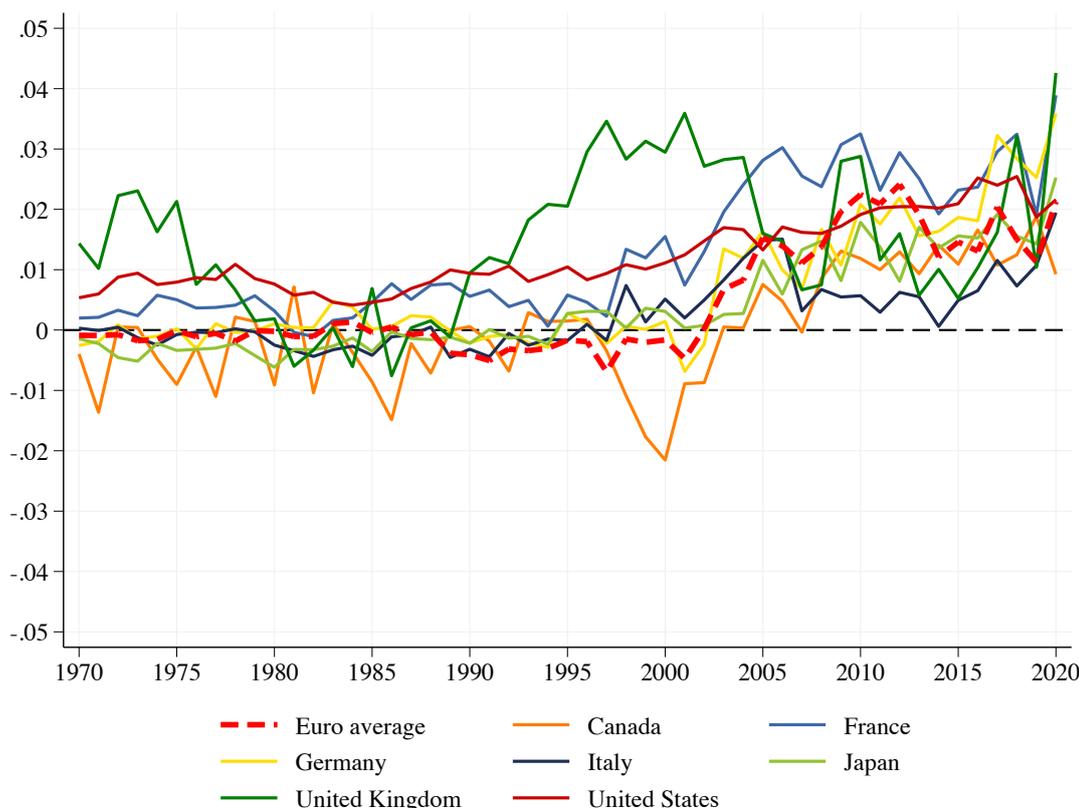
Excess yields of the Euro vs G7 countries



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities. Before Eurozone was created only founders are included: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain. Countries that joined in subsequent years are included since the year they joined: Greece (2001), Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), and Lithuania (2015).

Figure 19

Excess yields of the Euro vs G7 countries, as a share of country (Eurozone) GDP



Graph shows the foreign capital income received (paid) related to the positive (negative) excess yield, as a share of group GDP. Excess yield income calculated as GFA (GFL) multiplied by excess yield if positive (negative). Before Eurozone was created only founders are included: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain. Countries that joined in subsequent years are included since the year they joined: Greece (2001), Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), and Lithuania (2015).

5 Conclusion

This paper has examined the global dynamics of the unequal return rates across different income groups, and the concept of the exorbitant privilege. The findings highlight that the exorbitant privilege, which was historically associated with the United States, has now become a rich world privilege, with heterogeneity among these selected countries. This privilege enjoyed by the richest countries stems from the composition of their balance sheets, which are weighted towards FDI assets, as well as the higher average profitability of the FDI and portfolio assets they hold compared to their respective liabilities. The exorbitant differential obtained by the US remains unmatched.

The findings reveal that while return rates on foreign assets have decreased globally, return rates on foreign liabilities have only decreased for the top 20% richest countries. This persistent privilege enjoyed by the rich countries has resulted in a net capital income transfer from the rest of the world, amounting to approximately 1% of the richest GDP. As a result, these countries are able to consistently record trade deficits equal to 1% of their GDP without adversely impacting their International Investment Position (IIP). In contrast, the bottom

80% of countries are compelled to record trade surpluses or seek financing to cover the interest accrued from their foreign liabilities. Importantly, the magnitude is even bigger when looking at the top 10% richest countries, which receive net capital income transfers of almost 2% of their combined GDP because of their excess yield.

Interestingly, the Eurozone has been successful in reversing a negative excess yield since its creation, indicating its ability to supply the world with a low-yield safe asset. When comparing the Group of Seven (G7) and the BRICS, representing the most influential sets of countries in the developed and developing world respectively, divergent patterns emerge. The G7 has consolidated its privilege in the 21st century, while the BRICS have established a negative differential.

While it is important for future research to assess the specific impact of China's rise and its demand for safe assets, it is worth noting that the rich world had already been enjoying a constant privilege for 30 years before China became a major player in the international financial scenario. Therefore, other factors have played significant roles in shaping the dynamics of the exorbitant privilege.

To enhance our understanding of net foreign asset dynamics, future work should consider incorporating the rate of capital gain to estimate the total rate of return and assess the impact of valuation gains on the IPP. Additionally, it is crucial to include other components of the current account, such as trade deficits and surpluses, to gain deeper insights into the causes of these dynamics.

By exploring these dimensions, future research can contribute to a more comprehensive understanding of the exorbitant privilege, its drivers, and its impact on global financial dynamics. This knowledge will be valuable in informing policymakers and fostering a more balanced and sustainable international monetary and financial system.

Efforts must be directed towards redesigning the current monetary and financial system to promote a more egalitarian regime. While the system has contributed to globalization, trade, financialization, and economic growth, it has failed to address complex challenges such as climate change, technological innovation, rising inequality, long-term demographic changes, and escalating geopolitical conflicts in a multiplex world. The initial promise made after World War II to establish a neutral international monetary system remains unfulfilled.

Contrary to what some economists argue, the United States has not *earned* its privileged position of the US dollar, but this privilege was inherited from a time when it was imposed by law, during the early years of the Bretton Woods system. Although it is true that dollar reserves have been accumulated voluntarily by the rest of the world, the initial role of the dollar as a stable global currency has allowed the US to become the currency hegemon and to capture an exorbitant privilege while tilting the international balance of power in its favor. So far, its hegemony has only been partially contested by other -rich- currency provider countries.

Meaningful structural reforms have yet to take place, even more after failed promises in the aftermath of the Great Recession. As it stands, the financial system primarily serves the interests of a few privileged countries, who extract benefits from their central role. In return, they are expected to provide global public goods, such as safety instruments where to allocate the excess savings of the poorer countries. However, as shown in the results of this study, gains tend to benefit the richest countries more than what they help the poor.

The most challenging question to answer is the direction in which we should move forward. It is unclear. What is evident, however, is that the current system is far from neutral and is ultimately unsustainable. Decision-making power remains concentrated among the wealthiest countries, with influential organizations like the Financial Stability Board primarily lobbying on their behalf. In practice, such an organization may not even be necessary, as existing institutional frameworks like the International Monetary Fund (IMF) are designed to benefit the richest economies. If we are aiming for a more egalitarian global system, we need to construct a more stable international monetary system based on true global governance, where developing countries have a voice and vote that extends beyond major powers.

Solutions will not arise by simply focusing on attenuating the demand for reserve assets. Instead, we require supply-side proposals that meet the needs of the “rest of the world”. While competing reserve or supranational currencies (e.g. SDRs) could provide safe and liquid assets, they alone are insufficient to achieve a more egalitarian global system. Moreover, they face the historical constraint of past bi-currency systems such as gold/silver in the 19th century or sterling/dollar after Bretton Woods have failed to prevail, ultimately converging towards a dominant currency.

The IMF’s role in preventing and resolving crises must be strengthened. It should go back to its foundational mission of financial development and provide lending at low rates without imposing conditions. Furthermore, mechanisms for debt restructuring need improvement, particularly considering the rising levels of unsustainable debt faced by several countries. However, addressing these challenges is difficult for the current financial system, which is ill-equipped to handle them. One reason is the changing landscape of sovereign debt, with a higher proportion of private sector creditors in many low-income countries and a more diverse creditor base, including bilateral official creditors like China. While having multiple creditors can bring certain benefits, it becomes increasingly challenging to achieve the necessary consensus for debt restructuring.

Governance of major international financial institutions also requires redesign. The increasing divergence in development paths between rich economies, who are the dominant shareholders, and poorer economies, who are the primary clients, has widened significantly. Redefining the IMF quota formula, which determines SDRs and voting power, is a crucial step towards promoting a more equitable international monetary system. Intended “to help assess members’ relative position in the world economy”, the Calculated Quota Shares IMF formula is the modern and international version of censitary regimes:

$$CQS = (0.50 \times GDP + 0.30 \times Openness + 0.15 \times Variability + 0.05 \times Reserves)^K$$

where *GDP* is a blended GDP⁸, *Openness* is the sum of current payments and current receipts (goods, services, income and transfers), *Variability* measures the volatility of current receipts (for example, earnings from the export of goods and services, as well as receipts on foreign investments) and net capital flows to an economy, *Reserves* is the average stock of international reserves held by a country and *K* is a compression factor of 0.95. This formula seems endogenous, since it allows richer and more financially integrated countries to have a higher saying in decisions, which will allow them to prevail in the international financial system.

A more democratic design is needed. One possible improvement would be to include population as a variable in the equation, ensuring that representation and voting power are not solely determined by economic size. Although certainly not enough, giving voice and influence to a broader range of countries, especially those with significant populations but smaller economies, the decision-making processes within the IMF can become more reflective of the diverse needs and perspectives of the global community.

To stop labeling countries as privileged, rich, developed, developing, poor and so on, the international monetary system needs to be reformed, as it is currently unsustainable. We can reform it now or wait for another crisis to do so.

⁸For the purpose of the formula, a country’s gross domestic product (GDP) is measured as a blend of GDP based on market exchange rates (weight of 60 percent) and on PPP exchange rates (40 percent)

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Appendices

A Data

I put together a comprehensive dataset, encompassing 216 economies worldwide and spanning the period from 1970 to 2020 that ensures complete coverage of GDP, price indices, US dollar market value exchange rates, foreign wealth, and foreign capital income. Despite the availability of extensive information, integrating diverse data sources and ensuring comprehensive temporal coverage required making various assumptions and conducting meticulous work. While the specific estimated figures may not be flawless, conservative estimates were chosen in cases of uncertainty.

GDP, price index, and exchange rate data were obtained from Wid.world, and in instances where any of these variables were unavailable, such as for the Former Soviet countries prior to the dissolution of the USSR, it was assumed that the variables followed the trajectory of the parent economy; additionally, data for certain small territories considered as tax havens, like Bonaire, St Eustatius, and Saba, were sourced from regional statistics offices such as CBS Netherlands.

The primary source for data on foreign capital income is the IMF Balance of Payments (BOP), and in situations where IMF data is not accessible, alternative sources like the United Nations System of National Accounts (SNA) or OECD statistics are used; foreign capital income encompasses diverse components, including portfolio and other income received and paid, income received from tax havens, and reinvested earnings on portfolio investment. Foreign direct investment income comprises both officially recorded income and adjustments made for underreported FDI income due to profit shifting (Tørsløv et al., 2018).

If foreign capital income is not reported for a certain year but an aggregate is reported (e.g.: foreign income), then I use the foreign capital income-to-foreign income ratio of the closest year to fill in the missing value. If foreign capital income received or paid is available but the country does not report its decomposition (FDI or portfolio), then I assume each asset class capital income is proportional to the share of the asset class on aggregate wealth.

For missing values, predictions are made based on asset class stock, GDP in USD, exchange rates, and inflation rates. Return rates predictions are made separately for each asset class since FDI is assumed to be more profitable than portfolio. An Ordinary Least Squares (OLS) regression model is used, including country-specific fixed effects to account for time-invariant characteristics of each economy, as well as region-year fixed effects to capture unobserved shocks affecting the region uniformly. Specifically:

$$i_{\rho,ct}^B = \beta_0 + \beta_1 \frac{wealth_{\rho,ct}^B}{GDP_{ct}} + \beta_2 e_{ct} + \beta_3 \pi_{ct} + \alpha_c + \gamma_{rt} + \epsilon_{ct} \quad (\text{A1})$$

Where i refers to the return rate, B to asset or liability, ρ to the asset class (FDI or portfolio), c to the country, t to the year, e to the nominal exchange rate with respect to US dollars, π to the inflation rate and α , γ and ϵ to the country fixed effects, region-year fixed effects and error term, respectively. Whenever data is still missing, I impute the value based on the regional average.

A.1 Data coverage

Iso	Country	Capital income received		Capital income paid		Foreign wealth	
		IMF	UN/OECD	IMF	UN/OECD	Assets	Liabilities
AD	Andorra	.	.	.	.	1995-2021	1995-2021
AE	United Arab Emirates	.	1972-2019	.	1972-1990	1973-2021	1973-2021
AF	Afghanistan	1979-2020	.	1979-2020	.	2002-2021	2002-2021
AG	Antigua and Barbuda	1977-2020	.	1977-2020	.	1977-2021	1977-2021
AI	Anguilla	1990-2020	.	1990-2020	.	1990-2021	1990-2021
AL	Albania	1980-2020	.	1980-2020	.	1993-2021	1993-2021
AM	Armenia	1994-2020	1993	1993-2020	.	1996-2021	1996-2021
AO	Angola	1985-2020	.	1985-2020	.	1980-2021	1980-2021
AR	Argentina	1976-2020	.	1976-2020	.	1970-2021	1970-2021
AT	Austria	2005-2020	1970-2004	2005-2020	1970-2004	1970-2021	1970-2021
AU	Australia	1989-2020	1970-1988	1989-2020	1970-1988	1970-2021	1970-2021
AW	Aruba	1986-2020	.	1986-2020	.	1986-2021	1986-2021
AZ	Azerbaijan	1995-2020	1993-1994	1995-2020	1993-1994	1995-2021	1995-2021
BA	Bosnia and Herzegovina	1998-2020	.	1998-2020	.	1998-2021	1998-2021
BB	Barbados	1970-2017	.	1970-2017	.	1970-2021	1970-2021
BD	Bangladesh	1976-2020	.	1976-2020	.	1973-2021	1973-2021
BE	Belgium	2002-2020	1970-2001	2002-2020	1970-2001	1970-2021	1970-2021
BF	Burkina Faso	2005-2020	1970-2004	2005-2020	1970-2004	1974-2021	1974-2021
BG	Bulgaria	1980-2020	.	1980-2020	.	1991-2021	1991-2021
BH	Bahrain	1975-2018	.	1975-2018	.	1970-2021	1970-2021
BI	Burundi	1985-2018	1970-1984	1985-2018	1970-1984	1970-2021	1970-2021
BJ	Benin	1974-2020	.	1974-2020	.	1970-2021	1970-2021
BM	Bermuda	2006-2020	1996-2005	2006-2020	1997-2004	2001-2021	2001-2021
BN	Brunei	2001-2020	.	2001-2020	.	1985-2021	1985-2021
BO	Bolivia	1976-2020	1970-1975	1976-2020	1970-1975	1970-2021	1970-2021
BQ	Bonaire, Saint-Eustache et Saba	.	.	.	.	.	.
BR	Brazil	1975-2020	.	1975-2020	.	1970-2021	1970-2021
BS	Bahamas	1976-2020	.	1976-2020	.	1970-2021	1970-2021
BT	Bhutan	2006-2020	1980-2000	2006-2020	1983-2000	1983-2021	1983-2021
BW	Botswana	1975-2020	1973-1974	1975-2020	1973-1974	1974-2021	1974-2021
BY	Belarus	1993-2020	1990-1992	1993-2020	1990-1992	1994-2021	1994-2021
BZ	Belize	1984-2020	1973-1976	1984-2020	1973-1976	1976-2021	1976-2021
CA	Canada	1970-2020	.	1970-2020	.	1970-2021	1970-2021
CD	Democratic Republic of Congo	2005-2020	.	2005-2020	.	1970-2021	1970-2021
CF	Central African Republic	1977-1994	2001-2006	1977-1994	2001-2006	1970-2021	1970-2021
CG	Congo	1978-2020	.	1978-2020	.	1970-2021	1970-2021

I first rely on IMF BOP data. If subcomponents (FDI/portfolio income) are missing but aggregates are reported (foreign capital income received or paid), I use shares asset class over total foreign wealth (asset or liability), interpolating if there are missing years in between the series. Then the same process is repeated for UN/OECD data. For missing values, predictions are made based on asset class stock, GDP in USD, exchange rates, and inflation rates. Missing values and zeros for capital income are treated as misreports (and thus estimated) unless foreign wealth in the EWN also reports zero values for such component.

Iso	Country	Capital income received		Capital income paid		Foreign wealth	
		IMF	UN/OECD	IMF	UN/OECD	Assets	Liabilities
CH	Switzerland	1977-2020	1970-1976	1977-2020	1970-1976	1970-2021	1970-2021
CI	Cote d'Ivoire	2005-2020	1970-2000	2005-2020	1970-2000	1970-2021	1970-2021
CL	Chile	1975-2020	1970-1973	1975-2020	.	1970-2021	1970-2021
CM	Cameroon	1977-2020	1971-1976	1977-2020	1971-1976	1970-2021	1970-2021
CN	China	1982-2020	.	1982-2020	.	1981-2021	1981-2021
CO	Colombia	1970-2020	.	1970-2020	.	1970-2021	1970-2021
CR	Costa Rica	1977-2020	1970-1976	1977-2020	1970-1976	1970-2021	1970-2021
CU	Cuba	.	.	.	.	.	.
CV	Cape Verde	1977-2020	.	1977-2020	.	1981-2021	1981-2021
CW	Curaçao	2011-2020	1987-2010	2011-2020	1976-2010	1976-2021	1976-2021
CY	Cyprus	1976-2020	.	1976-2020	.	1973-2021	1973-2021
CZ	Czech Republic	1993-2020	1992	1993-2020	1992	1993-2021	1993-2021
DE	Germany	1971-2020	1970	1971-2020	1970	1970-2021	1970-2021
DJ	Djibouti	1991-2012	1976-1990	1991-2020	1990	1977-2021	1977-2021
DK	Denmark	1975-2020	1970-1974	1975-2020	1970-1974	1970-2021	1970-2021
DM	Dominica	1976-2020	.	1976-2020	.	1977-2021	1977-2021
DO	Dominican Republic	1970-2020	.	1970-2020	.	1970-2021	1970-2021
DZ	Algeria	1977-2020	1970-2004	1977-2020	1970-2004	1970-2021	1970-2021
EC	Ecuador	1976-2020	1970-1975	1976-2020	1970-1975	1970-2021	1970-2021
EE	Estonia	1992-2020	.	1992-2020	.	1992-2021	1992-2021
EG	Egypt	1977-2020	1970-1976	1977-2020	1970-1976	1970-2021	1970-2021
ER	Eritrea	1995-2000	.	1996-2000	.	1995-2021	1995-2021
ES	Spain	1975-2020	.	1975-2020	.	1970-2021	1970-2021
ET	Ethiopia	1977-2020	1972-1976	1977-2020	1972-1976	1970-2021	1970-2021
FI	Finland	1975-2020	1970-1974	1975-2020	1970-1974	1970-2021	1970-2021
FJ	Fiji	1979-2020	1977-1978	1979-2020	1977-1978	1977-2021	1970-2021
FM	Micronesia	2009-2014	.	2009-2014	.	1995-2021	1995-2021
FR	France	1975-2020	1970-1974	1975-2020	1970-1974	1970-2021	1970-2021
GA	Gabon	1978-2015	1972-1977	1978-2015	1972-1977	1970-2021	1970-2021
GB	United Kingdom	1970-2020	.	1970-2020	.	1970-2021	1970-2021
GD	Grenada	1977-2020	.	1977-2020	.	1971-2021	1971-2021
GE	Georgia	1997-2020	1996	1997-2020	1996	1995-2021	1995-2021
GG	Guernsey	.	.	.	.	2001-2021	2001-2021
GH	Ghana	1975-2020	.	1975-2020	.	1970-2021	1970-2021
GI	Gibraltar	1995-2021	1995-2021
GL	Greenland

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Iso	Country	Capital income received		Capital income paid		Foreign wealth	
		IMF	UN/OECD	IMF	UN/OECD	Assets	Liabilities
GM	Gambia	1978-2020	.	1978-2020	.	1970-2021	1970-2021
GN	Guinea	1986-2020	.	1986-2020	.	1970-2021	1970-2021
GQ	Equatorial Guinea	1987-1996	.	1987-1996	.	1980-2021	1980-2021
GR	Greece	1976-2020	1970-1998	1976-2020	1970-1998	1970-2021	1970-2021
GT	Guatemala	1977-2020	1970-1976	1977-2020	1970-1976	1970-2021	1970-2021
GW	Guinea-Bissau	1982-2020	.	1982-2020	.	1980-2021	1980-2021
GY	Guyana	1977-2020	.	1977-2020	.	1970-2021	1970-2021
HK	Hong Kong	1998-2020	1993-1997	1998-2020	1993-1997	1979-2021	1979-2021
HN	Honduras	1974-2020	.	1974-2020	.	1970-2021	1970-2021
HR	Croatia	1993-2020	.	1993-2020	.	1996-2021	1996-2021
HT	Haiti	1971-2020	.	1971-2020	.	1970-2021	1970-2021
HU	Hungary	1982-2020	.	1982-2020	.	1982-2021	1982-2021
ID	Indonesia	1981-2020	.	1981-2020	.	1970-2021	1970-2021
IE	Ireland	2005-2020	1970-2004	2005-2020	1970-2004	1970-2021	1970-2021
IL	Israel	1970-2020	.	1970-2020	.	1970-2021	1970-2021
IM	Isle of Man	.	.	.	.	2001-2021	2001-2021
IN	India	1975-2020	1970-1974	1975-2020	1970-1974	1970-2021	1970-2021
IQ	Iraq	2005-2020	.	2005-2020	.	2005-2021	2005-2021
IR	Iran	1976-2000	1970-2017	1976-2000	1970-2017	1970-2021	1970-2021
IS	Iceland	1976-2020	.	1976-2020	.	1970-2021	1970-2021
IT	Italy	1970-2020	.	1970-2020	.	1970-2021	1970-2021
JE	Jersey	.	.	.	.	2001-2021	2001-2021
JM	Jamaica	1976-2020	1970-1975	1976-2020	1970-1975	1970-2021	1970-2021
JO	Jordan	1972-2020	.	1972-2020	.	1970-2021	1970-2021
JP	Japan	1996-2020	1970-1995	1996-2020	1970-1995	1970-2021	1970-2021
KE	Kenya	1975-2020	.	1975-2020	.	1970-2021	1970-2021
KG	Kyrgyz Republic	1995-2020	1991-1994	1993-2020	1991-1992	1993-2021	1993-2021
KH	Cambodia	1994-2020	.	1992-2020	.	1993-2021	1993-2021
KI	Kiribati	1979-2020	1972-1974	1979-2020	1972-1974	1988-2021	1988-2021
KM	Comoros	1980-2020	.	1980-2020	.	1979-2021	1979-2021
KN	Saint Kitts and Nevis	1980-2020	.	1980-2020	.	1981-2021	1980-2021
KP	North Korea	.	.	.	.	.	.
KR	South Korea	1976-2020	1970-1975	1976-2020	1970-1975	1971-2021	1971-2021
KS	Kosovo	2004-2020	.	2004-2020	.	2004-2021	2004-2021
KW	Kuwait	1975-2020	.	1975-2020	.	1974-2021	1974-2021
KY	Cayman Islands	2016-2020	1972-2015	2016-2020	1972-2015	1980-2021	1983-2021

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Iso	Country	Capital income received		Capital income paid		Foreign wealth	
		IMF	UN/OECD	IMF	UN/OECD	Assets	Liabilities
KZ	Kazakhstan	1995-2020	1993-1994	1995-2020	1993-1994	1994-2021	1994-2021
LA	Laos	1984-2020	.	1984-2020	.	1977-2021	1977-2021
LB	Lebanon	2002-2020	1997-2001	2002-2020	1997-2001	1970-2021	1970-2021
LC	Saint Lucia	1976-2020	.	1976-2020	.	1976-2021	1976-2021
LI	Liechtenstein	.	.	.	.	1995-2021	1995-2021
LK	Sri Lanka	1975-2020	1970-1974	1975-2020	1970-1974	1970-2021	1970-2021
LR	Liberia	1979-2019	.	1979-2019	.	1970-2021	1970-2021
LS	Lesotho	1975-2020	1972-1974	1975-2020	.	1975-2021	1975-2021
LT	Lithuania	1993-2020	.	1993-2020	.	1992-2021	1992-2021
LU	Luxembourg	1999-2020	1970-1998	1999-2020	1970-1998	1990-2021	1990-2021
LV	Latvia	1992-2020	1990-1991	1992-2020	1990-1991	1992-2021	1992-2021
LY	Libya	1977-2020	1970-1976	1977-2020	1970-1976	1972-2021	1972-2021
MA	Morocco	1975-2020	1970-1974	1975-2020	1970-1974	1970-2021	1970-2021
MC	Monaco	.	.	.	.	.	.
MD	Moldova	1994-2020	1991-1993	1994-2020	1991-1993	1994-2021	1994-2021
ME	Montenegro	2007-2020	.	2007-2020	.	2006-2021	2006-2021
MG	Madagascar	1974-2020	1970-1973	1974-2020	1970-1973	1970-2021	1970-2021
MH	Marshall Islands	2005-2020	.	2005-2020	.	2005-2021	2001-2021
MK	Macedonia	1996-2020	.	1996-2020	.	1993-2021	1993-2021
ML	Mali	1975-2020	.	1975-2020	.	1970-2021	1970-2021
MM	Myanmar	1976-2019	.	1976-2019	.	1970-2021	1970-2021
MN	Mongolia	1981-2020	.	1981-2020	.	1992-2021	1992-2021
MO	Macao	2002-2020	.	2002-2020	.	1984-2021	1984-2021
MR	Mauritania	1975-2020	1973-1974	1975-2020	1973-1974	1970-2021	1970-2021
MS	Montserrat	1986-2020	.	1986-2020	.	1983-2021	1983-2021
MT	Malta	1971-2020	1970	1971-2020	1970	1970-2021	1970-2021
MU	Mauritius	1976-2020	1970-1975	1976-2020	1970-1975	1970-2021	1970-2021
MV	Maldives	1977-2020	.	1977-2020	.	1978-2021	1978-2021
MW	Malawi	1977-2020	1970-1972	1977-2020	1970-1972	1970-2021	1970-2021
MX	Mexico	1979-2020	1970-1978	1979-2020	1970-1978	1970-2021	1970-2021
MY	Malaysia	1974-2020	.	1974-2020	.	1970-2021	1970-2021
MZ	Mozambique	2005-2020	1996-2004	2005-2020	1996-2004	1980-2021	1980-2021
NA	Namibia	1990-2020	1989	1990-2020	1989	1989-2021	1989-2021
NC	New Caledonia	2002-2016	.	2002-2016	.	2002-2021	2002-2021
NE	Niger	1974-2020	.	1974-2020	.	1970-2021	1970-2021
NG	Nigeria	1977-2020	1973-1976	1977-2020	1973-1976	1970-2021	1970-2021

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Iso	Country	Capital income received		Capital income paid		Foreign wealth	
		IMF	UN/OECD	IMF	UN/OECD	Assets	Liabilities
NI	Nicaragua	1977-2020	.	1977-2020	.	1970-2021	1970-2021
NL	Netherlands	1970-2020	.	1970-2020	.	1970-2021	1970-2021
NO	Norway	1975-2020	1970-1974	1975-2020	1970-1974	1970-2021	1970-2021
NP	Nepal	1976-2020	.	1976-2020	.	1970-2021	1970-2021
NR	Nauru	2008-2018	.	2008-2018	.	2008-2021	2008-2021
NZ	New Zealand	2000-2020	1971-1999	2000-2020	1971-1999	1970-2021	1970-2021
OM	Oman	1974-2020	.	1974-2020	.	1973-2021	1973-2021
PA	Panama	1977-2020	1970-1976	1977-2020	.	1970-2021	1970-2021
PE	Peru	1977-2020	.	1977-2020	.	1970-2021	1970-2021
PF	French Polynesia	2002-2016	.	2002-2016	.	2002-2021	2002-2021
PG	Papua New Guinea	1976-2020	1970-1975	1976-2020	1970-1975	1973-2021	1970-2021
PH	Philippines	1977-2020	1970-1976	1977-2020	1970-1976	1970-2021	1970-2021
PK	Pakistan	1976-2020	.	1976-2020	.	1970-2021	1970-2021
PL	Poland	1976-2020	.	1976-2020	.	1975-2021	1975-2021
PR	Puerto Rico	.	1970-2006	.	1970-2006	.	.
PS	Palestine	1995-2020	.	1995-2020	.	1998-2021	1998-2021
PT	Portugal	1975-2020	.	1975-2020	.	1972-2021	1972-2021
PW	Palau	2005-2020	.	2005-2020	.	2000-2021	2000-2021
PY	Paraguay	1975-2020	.	1975-2020	.	1970-2021	1970-2021
QA	Qatar	2011-2020	2001-2010	2011-2020	1996-2010	1970-2021	1970-2021
RO	Romania	1971-2020	.	1971-2020	.	1990-2021	1990-2021
RS	Serbia	2007-2020	2002-2006	2007-2020	2002-2006	1999-2021	1999-2021
RU	Russia	1994-2020	1992-1993	1994-2020	1992-1993	1993-2021	1993-2021
RW	Rwanda	2010-2020	1983-1989	2010-2020	1985-1989	1970-2021	1970-2021
SA	Saudi Arabia	1971-2020	1970	1971-2020	1970	1970-2021	1970-2021
SB	Solomon Islands	1975-2020	.	1975-2020	.	1977-2021	1977-2021
SC	Seychelles	1976-2020	.	1976-2020	.	1977-2021	1977-2021
SD	Sudan	1977-2020	1970-1976	1977-2020	1970-1976	1970-2021	1970-2021
SE	Sweden	1970-2020	.	1970-2020	.	1970-2021	1970-2021
SG	Singapore	1972-1994	.	1972-1994	.	1970-2021	1970-2021
SI	Slovenia	1992-2020	.	1992-2020	.	1992-2021	1992-2021
SK	Slovak Republic	1993-2020	.	1993-2020	.	1993-2021	1993-2021
SL	Sierra Leone	1977-2020	1970-1976	1977-2020	1970-1976	1970-2021	1970-2021
SM	San Marino	.	2012-2018	.	2012-2018	1993-2021	1993-2021
SN	Senegal	1974-2018	.	1974-2018	.	1970-2021	1970-2021
SO	Somalia	.	1972-1980	.	1972-1980	1970-2021	1970-2021

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Iso	Country	Capital income received		Capital income paid		Foreign wealth	
		IMF	UN/OECD	IMF	UN/OECD	Assets	Liabilities
SR	Suriname	2005-2020	1972-2004	2005-2020	1972-2004	1976-2021	1976-2021
SS	South Sudan	2014-2019	.	2014-2020	.	2011-2021	2011-2021
ST	Sao Tome and Principe	1974-2020	.	1974-2020	.	1987-2021	1987-2021
SV	El Salvador	1976-2020	1970-1975	1976-2020	1970-1975	1970-2021	1970-2021
SX	Sint Maarten (Dutch part)	2011-2020	1987-2009	2011-2020	1976-2009	1976-2021	1976-2021
SY	Syria	1977-2010	.	1977-2010	.	1970-2011	1970-2010
SZ	Swaziland	1974-2020	1970	1974-2020	1970	1970-2021	1970-2021
TC	Turks and Caicos Islands	2014-2018	.	2014-2018	.	1995-2021	1995-2021
TD	Chad	1977-1994	1970-2009	1977-1994	1970-2009	1970-2021	1970-2021
TG	Togo	1974-2020	1970-1973	1974-2020	1970-1973	1970-2021	1970-2021
TH	Thailand	1975-2020	1974	1975-2020	.	1970-2021	1970-2021
TJ	Tajikistan	2002-2020	.	2002-2020	2000-2001	1997-2021	1997-2021
TL	Timor	2006-2020	.	2006-2020	.	2005-2021	2005-2021
TM	Turkmenistan	.	.	.	.	1993-2021	1993-2021
TN	Tunisia	1976-2020	1970-1975	1976-2020	1970-1975	1970-2021	1970-2021
TO	Tonga	1971-2020	1970-2001	1971-2020	1970-2001	1980-2021	1980-2021
TR	Turkey	1974-2020	1970-1972	1974-2020	1970-1973	1970-2021	1970-2021
TT	Trinidad and Tobago	1975-2020	.	1975-2020	.	1970-2021	1970-2021
TV	Tuvalu	2001-2020	.	2001-2020	.	2001-2021	2001-2021
TW	Taiwan	.	.	.	.	1976-2021	1976-2021
TZ	Tanzania	1976-2020	.	1976-2020	.	1970-2021	1970-2021
UA	Ukraine	1996-2020	1989-1995	1996-2020	1991-1995	1994-2021	1994-2021
UG	Uganda	1980-2020	.	1980-2020	.	1970-2021	1970-2021
US	United States	1970-2020	.	1970-2020	.	1970-2021	1970-2021
UY	Uruguay	1978-2020	.	1978-2020	.	1970-2021	1970-2021
UZ	Uzbekistan	2005-2020	.	2005-2020	.	1993-2021	1993-2021
VC	Saint Vincent and the Grenadines	1978-2020	.	1978-2020	.	1976-2021	1976-2021
VE	Venezuela	1970-2016	2017-2018	1970-2016	2017-2018	1970-2021	1970-2021
VG	British Virgin Islands	.	1984-1998	.	1984-1998	1980-2021	1980-2021
VN	Vietnam	2012-2014	.	2012-2014	.	1995-2021	1989-2021
VU	Vanuatu	1982-2020	.	1982-2020	.	1973-2021	1973-2021
WS	Samoa	1977-2020	.	1977-2020	.	1970-2021	1970-2021
YE	Yemen	2005-2016	1990-2017	2005-2016	1990-2017	1990-2021	1990-2021
ZA	South Africa	1970-2020	.	1970-2020	.	1970-2021	1970-2021
ZM	Zambia	1978-2020	1970-1977	1978-2020	1970-1977	1970-2021	1970-2021
ZW	Zimbabwe	1977-2020	1975-1999	1977-2020	1975-1999	1976-2021	1970-2021

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A.2 Corrections

The adjustments made ensured that the net foreign capital income and net foreign wealth collectively sum up to zero globally, contingent upon the presence of all 216 economies, following the principles outlined in the hidden

wealth literature pioneered by [Zucman \(2013\)](#). These corrections address the critique of *dark matter* presented by [Hausmann and Sturzenegger \(2006\)](#), who argue that the exorbitant privilege stems from the mismeasurement of U.S. foreign assets.

Net foreign capital income is composed by: Net foreign direct investment income (Net officially recorded + Shifted profits = 0 at the global level) and Net portfolio and other income (Net officially recorded + Received from tax havens = 0 at the global level + Net reinvested earnings on portfolio investment = 0 at the global level).

Hidden wealth: To correct the negative figures on aggregate wealth, the mismatch was addressed by assigning assets hidden in tax havens, along with their respective foreign income, to each individual country. This allocation methodology follows the approach outlined in [Alstadsæter et al. \(2018\)](#). The list of 41 tax havens is taken from [Tørsløv et al. \(2018\)](#), which builds upon ([Hines Jr and Rice, 1994](#)):

List of Tax Havens: Andorra, Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bahrain, Barbados, Belgium, Belize, Bermuda, Bonaire, St. Eustatius, and Saba , British Virgin Islands, Cayman Islands, Cyprus, Curacao, Gibraltar, Grenada, Guernsey, Hong Kong, Ireland, Isle of Man, Jersey, Lebanon, Liechtenstein, Luxembourg, Macao, Malta, Marshall Islands, Mauritius, Monaco, Netherlands, Panama, Puerto Rico, Seychelles, Singapore, Sint Maarten, St. Kitts and Nevis, St. Lucia, St. Vincent & Grenadines, Switzerland, Turks and Caicos.

For countries not included in [Tørsløv et al. \(2018\)](#), the value was completed using the regional average of the offshore wealth-to-GDP ratio. It is important to note that tax havens, with the exception of Belgium, Ireland, and the Netherlands, were not assigned any offshore wealth.

List of countries with imputed offshore wealth share: Belarus, Brunei, Costa Rica, Djibouti, Dominica, French Polynesia, Gambia, Greenland, Guyana, Kiribati, Kosovo, Liberia, Malaysia, Maldives, Montenegro, Montserrat, Myanmar, Nauru, New Caledonia, North Korea, Palau, Palestine, Papua New Guinea, Samoa, San Marino, Solomon Islands, Somalia, South Sudan, Timor, Tuvalu, Uruguay, Vanuatu.

Figure A1

Global foreign wealth as a share of global GDP

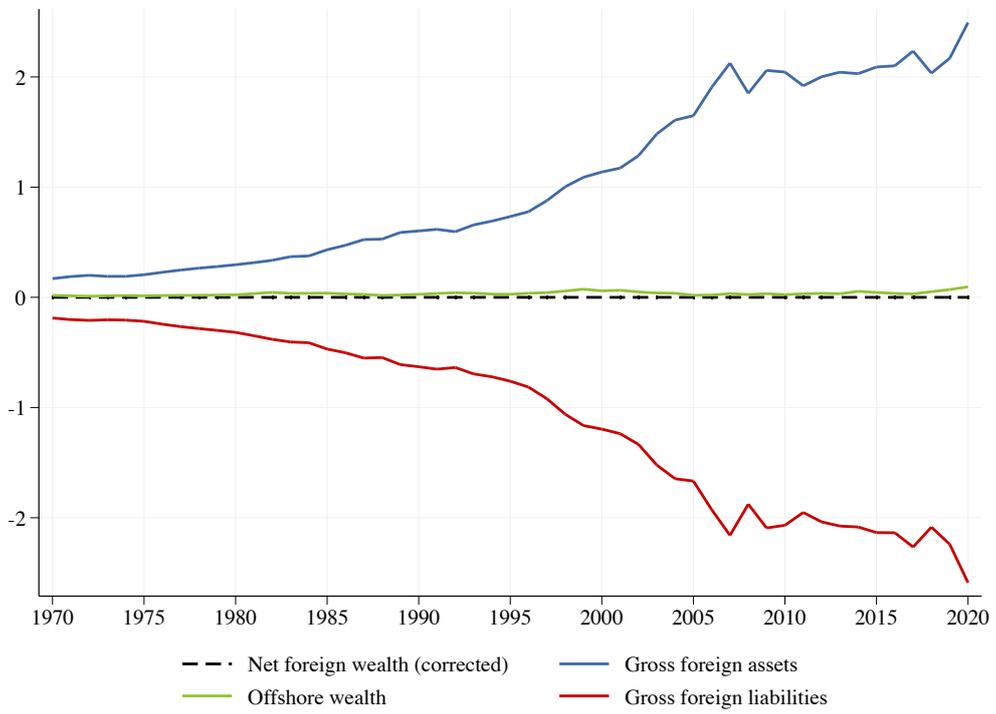
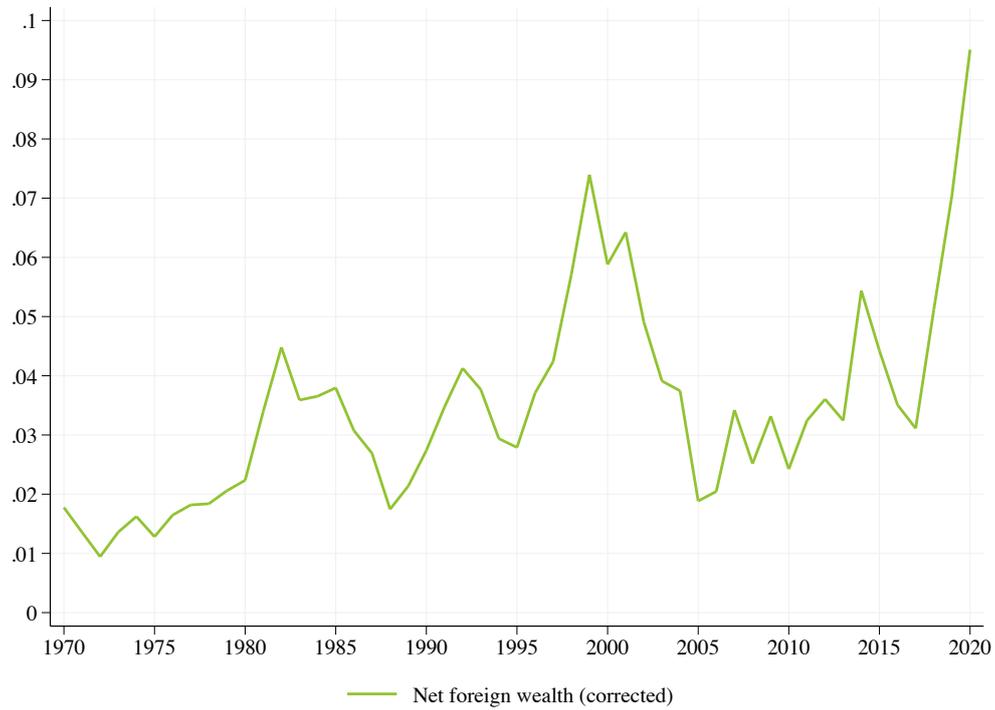


Figure A2

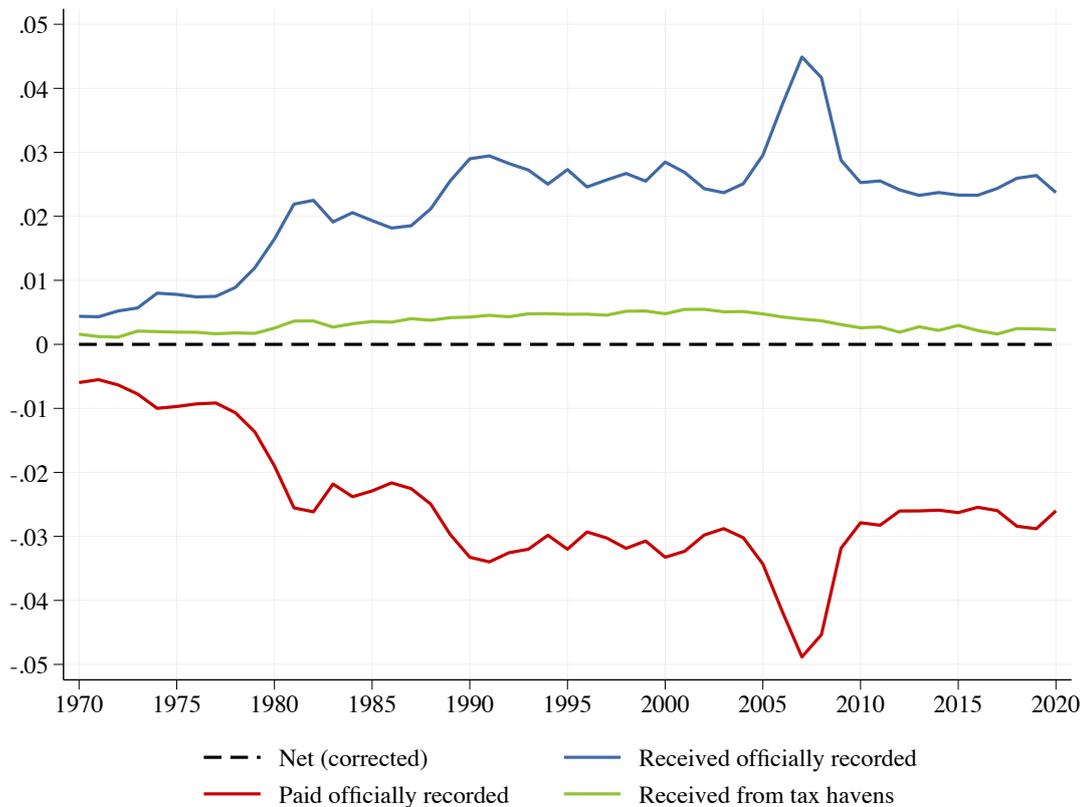
Global offshore wealth as a share of global GDP



Missing portfolio income: The same methodology as the one used for hidden wealth is applied. Importantly, global net wealth and global net portfolio income figures before correction are not proportional, meaning that rate of return on missing assets is not constant throughout the period.

Figure A3

Global portfolio income as a share of global GDP



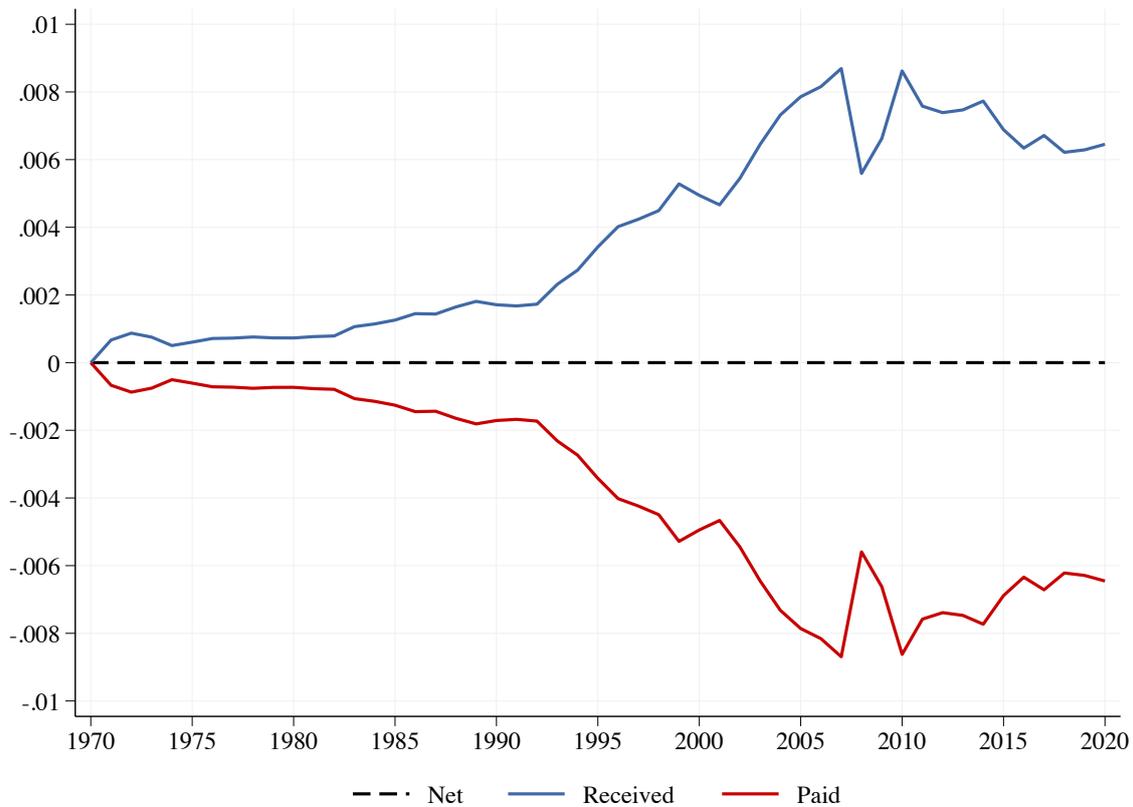
Retained earnings on portfolio investment: The income that a company retains after having paid its suppliers, its employees, its shareholders, and its corporate income tax bill is what we call “undistributed profits” or “retained earnings.” This flow is part of national income.

However, imagine that a company in country A has some undistributed profits, but is actually owned by residents of country B. If the ownership takes the form of portfolio investment, meaning that the residents of country B do not have a direct control over the company’s decisions, then the SNA currently considers that the entire flow of undistributed profits belongs to the national income of country A, not country B.

I correct SNA following [Blanchet et al. \(2021\)](#), by redistributing the corresponding share to country B. The correction estimates both the flow of foreign retained earnings that accrue to residents and the flow of domestic retained earnings that accrue to foreigners. The difference between these two items leads to our adjustment. I completed the procedure for all 216 countries and made sure that aggregates add up to 0. Tax Havens do not play a role here.

Figure A4

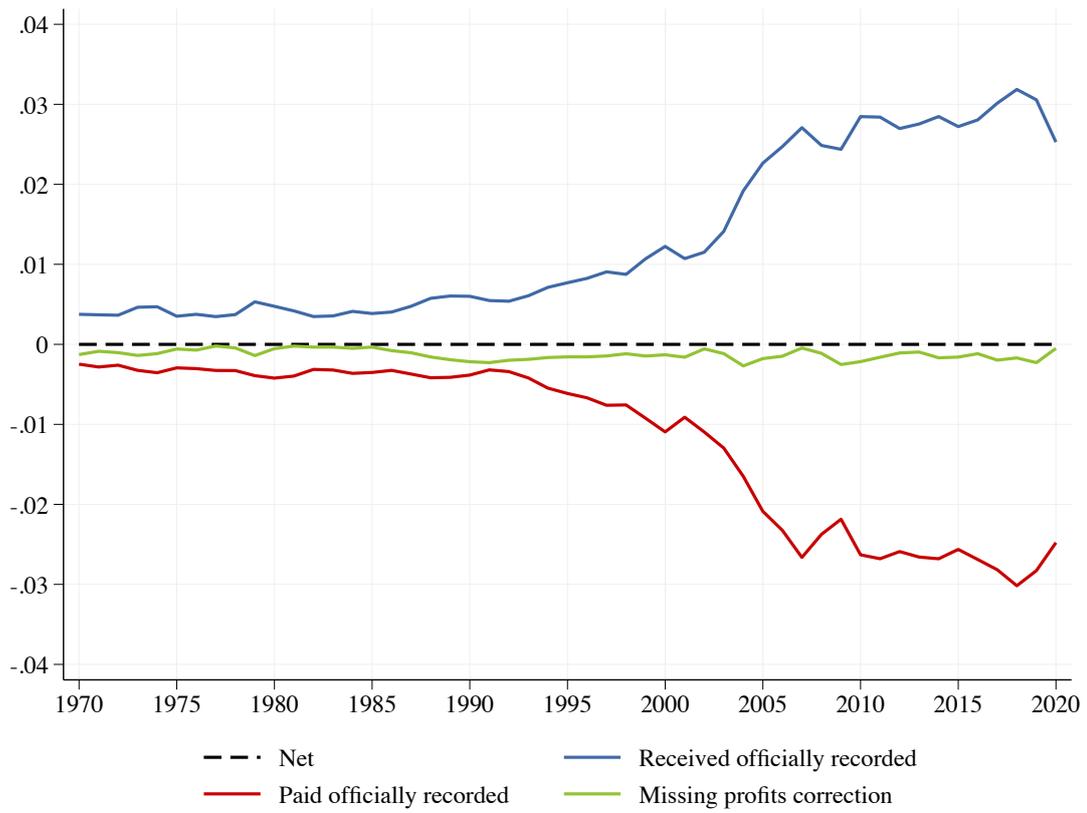
Global reinvested earnings on portfolio investment as a share of global GDP



Shifted profits: In contrast to the deficit observed in portfolio income, the world experiences a surplus in FDI income (Tørsløv et al., 2018), (Wier and Zucman, 2022). This surplus can be attributed to profit shifting practices, particularly in tax havens. In tax havens, foreign firms tend to exhibit significantly higher profits-to-wage ratios compared to local firms, indicating that parent companies from high-tax countries may be shifting profits to them to mitigate their corporate tax liabilities. It is estimated that approximately 40% of multinational profits are shifted through mechanisms such as royalty payments, management fees, and interest payments. Furthermore, profits generated in tax havens often go unrecorded or are under-counted, while tax havens report lower levels of FDI income than what their partner countries record as receiving. Hence, I correct for this discrepancy and I also correct the estimates for the economies that are under-reporting FDI income received following Tørsløv et al. (2018), for the last decade of the period since it is when some of the years show negative aggregate values.

Figure A5

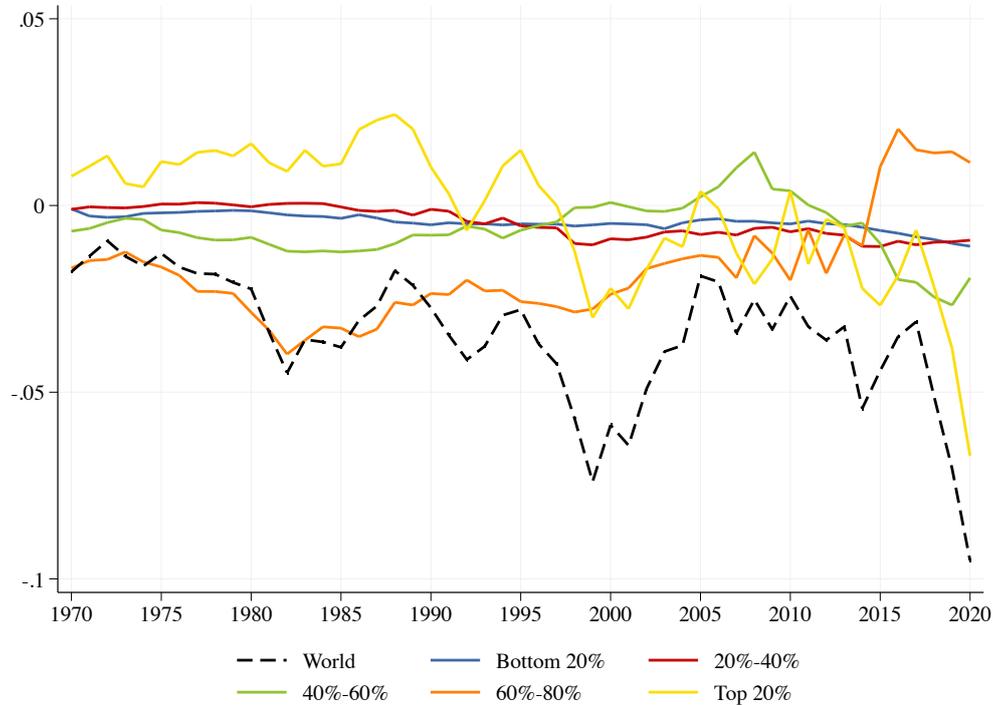
Global foreign direct investment income as a share of global GDP



B Additional figures

Figure A6

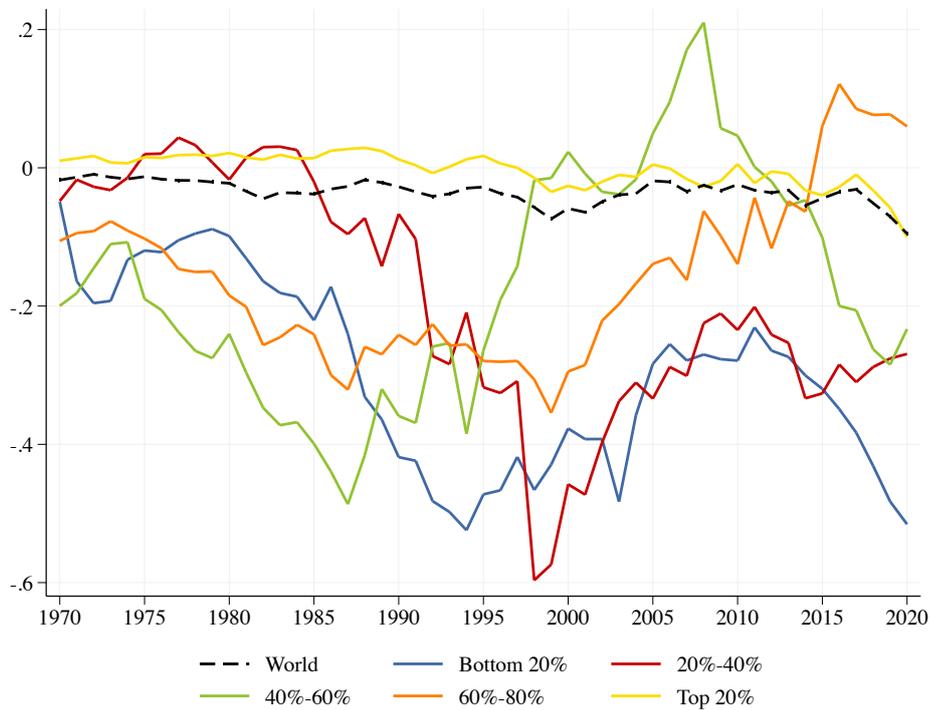
Net foreign assets before offshore wealth correction, as a share of world GDP



Graph shows average net foreign assets. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A7

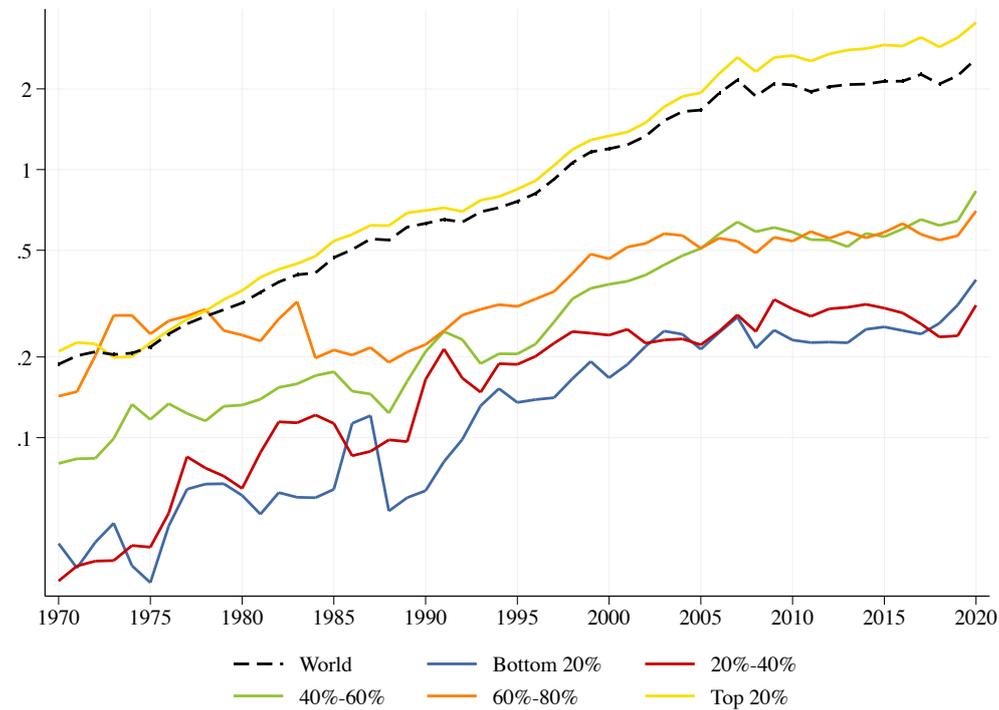
Net foreign assets before offshore wealth correction, as a share of group GDP



Graph shows average net foreign assets. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A8

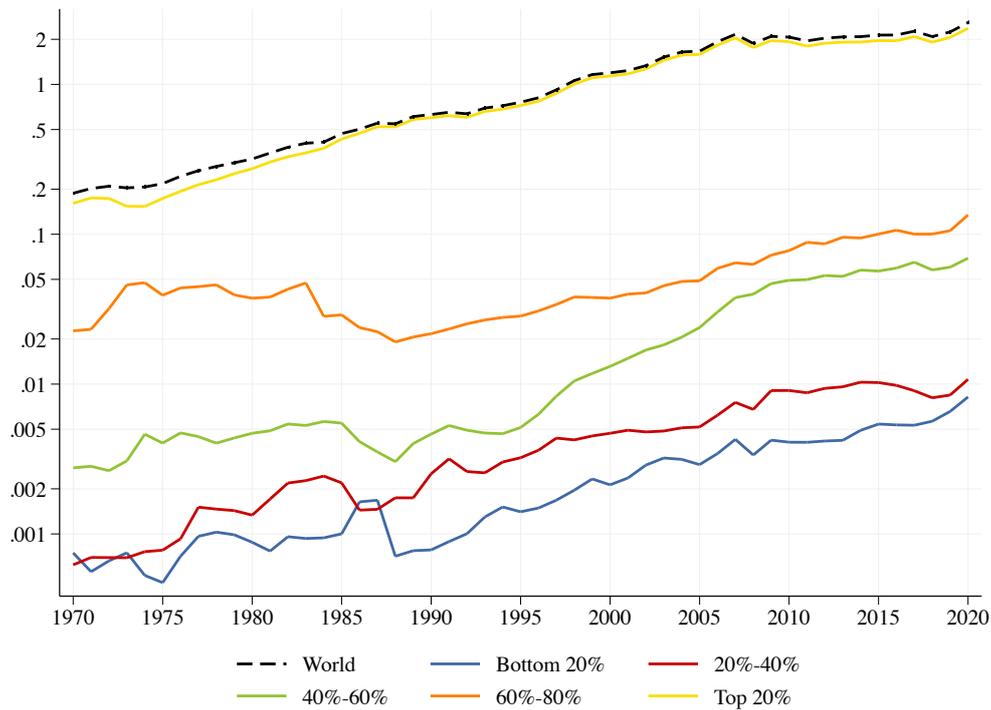
Gross foreign assets, as a share of group GDP



Graph shows average gross foreign assets. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A9

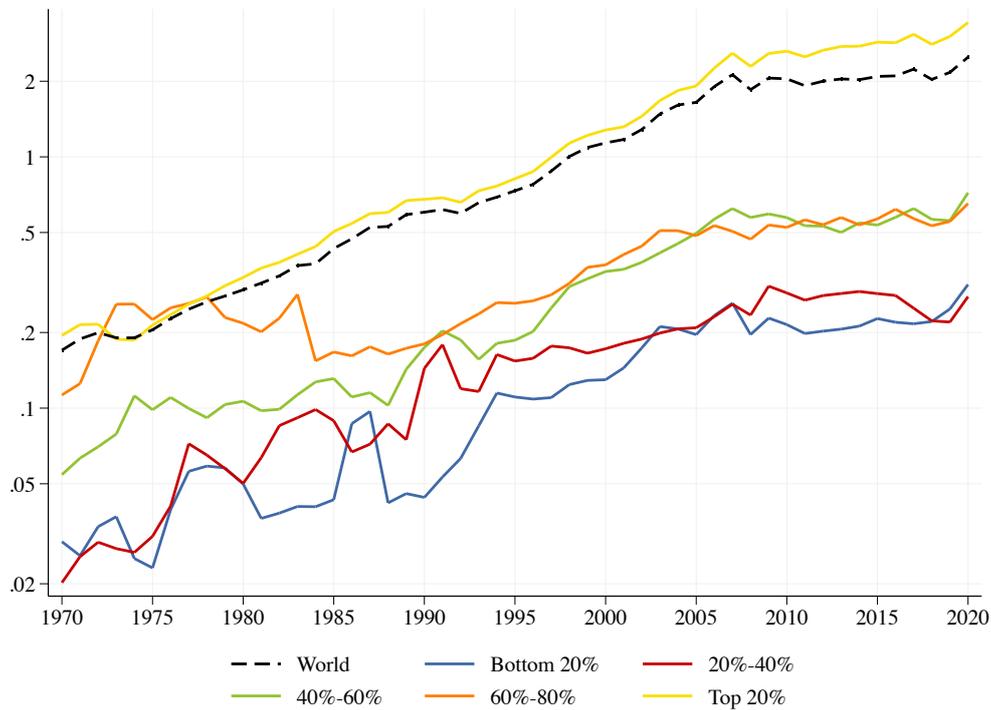
Gross foreign assets, as a share of global GDP



Graph shows average gross foreign assets. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A10

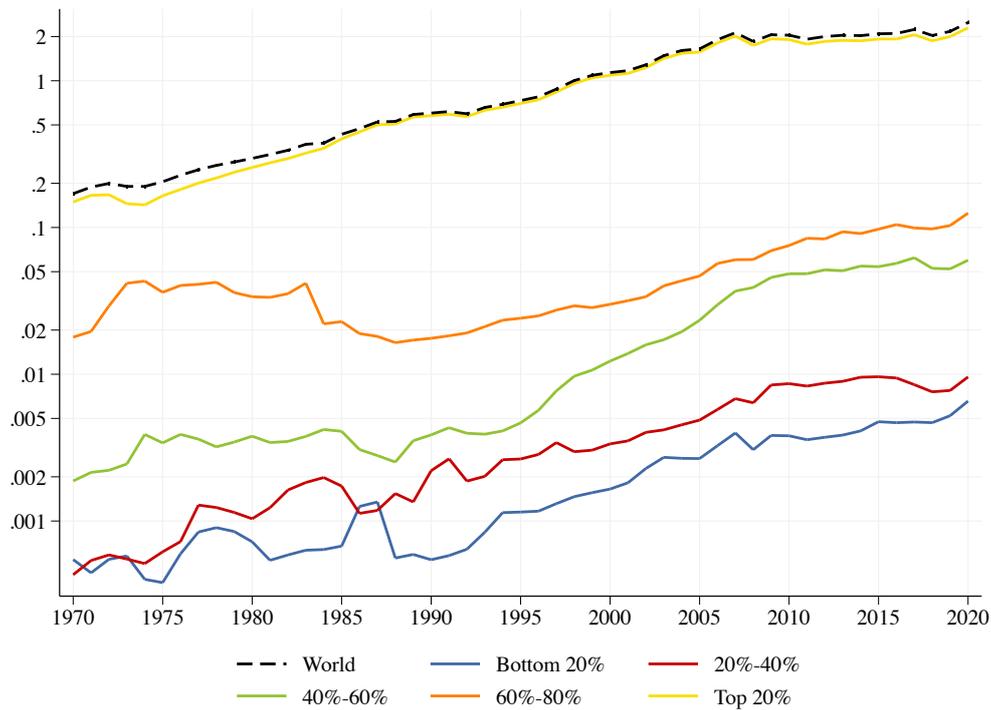
Gross foreign assets without offshore wealth, as a share of group GDP



Graph shows average gross foreign assets. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A11

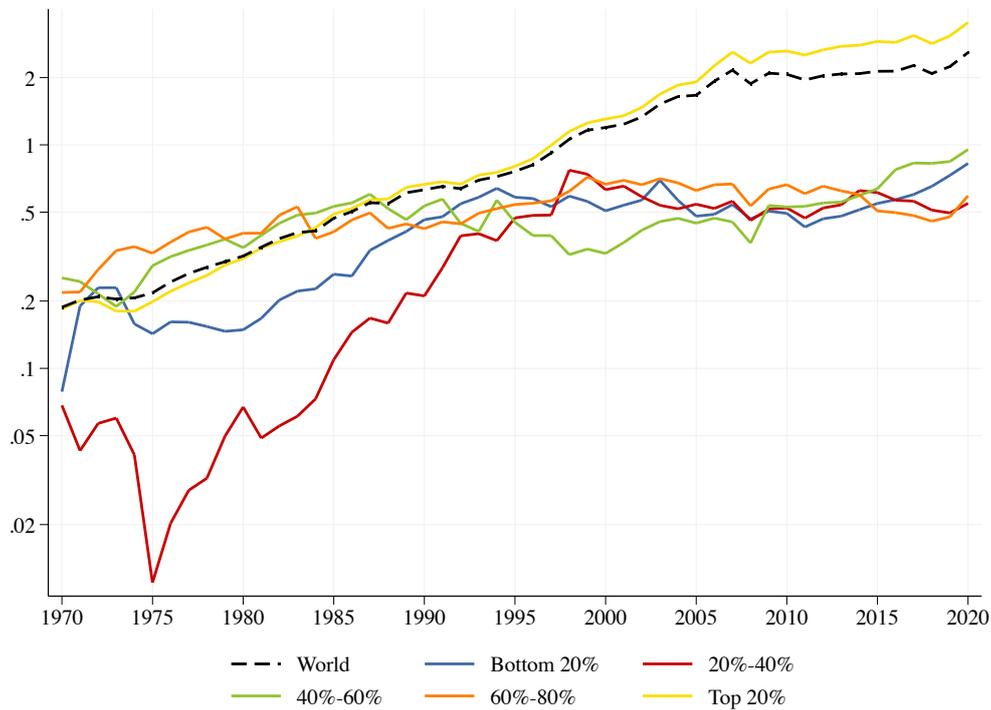
Gross foreign assets without offshore wealth, as a share of global GDP



Graph shows average gross foreign assets. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A12

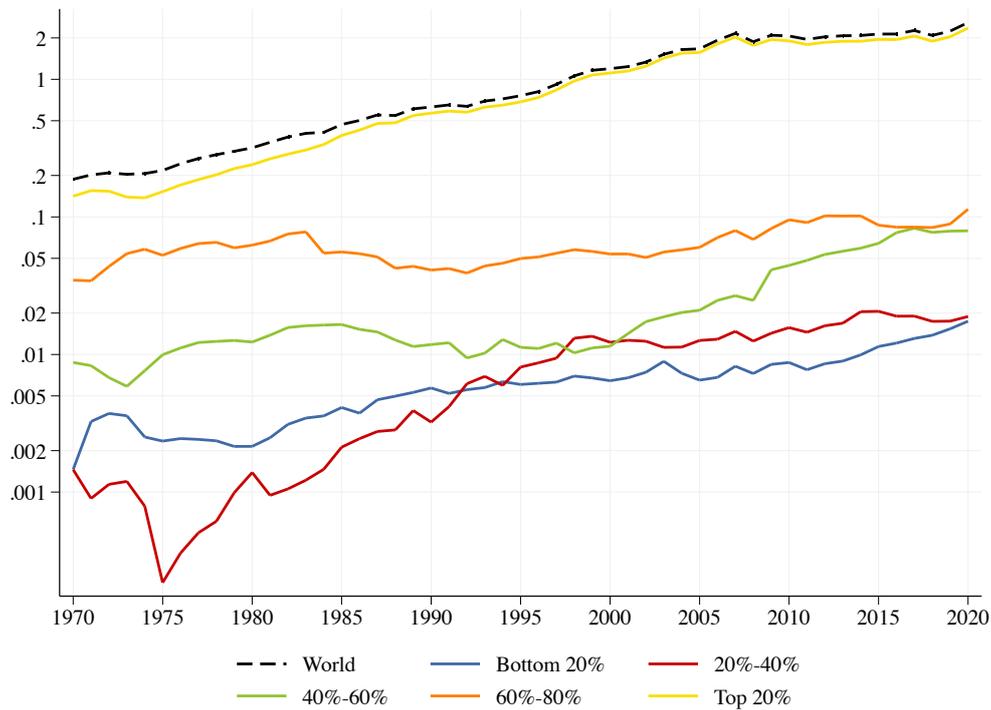
Gross foreign liabilities, as a share of group GDP



Graph shows average gross foreign liabilities. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A13

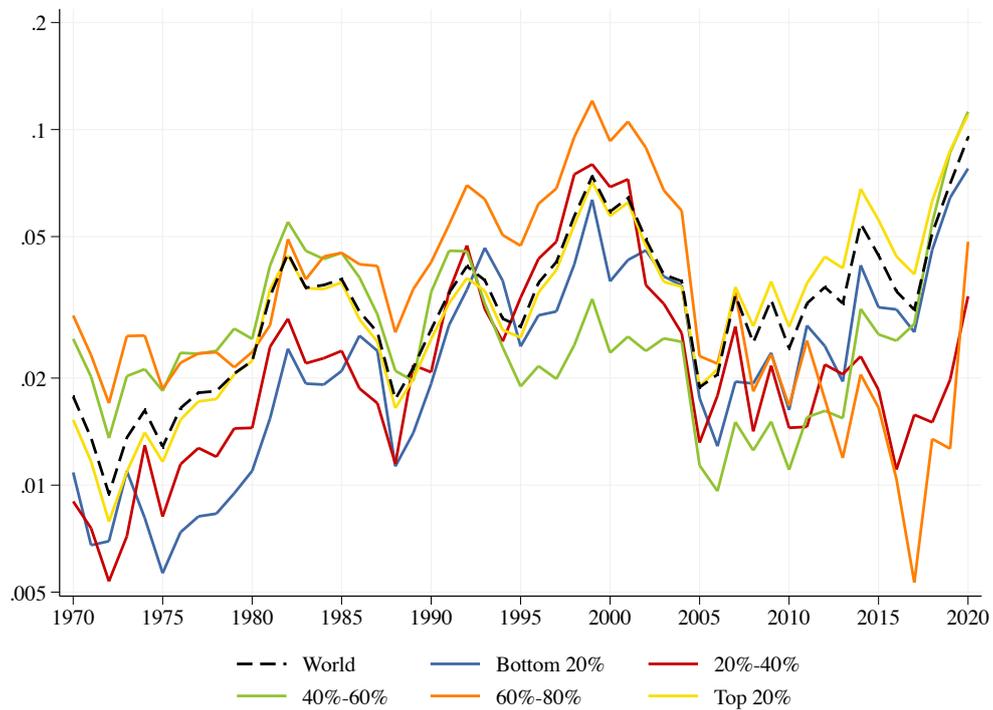
Gross foreign liabilities, as a share of global GDP



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Figure A14

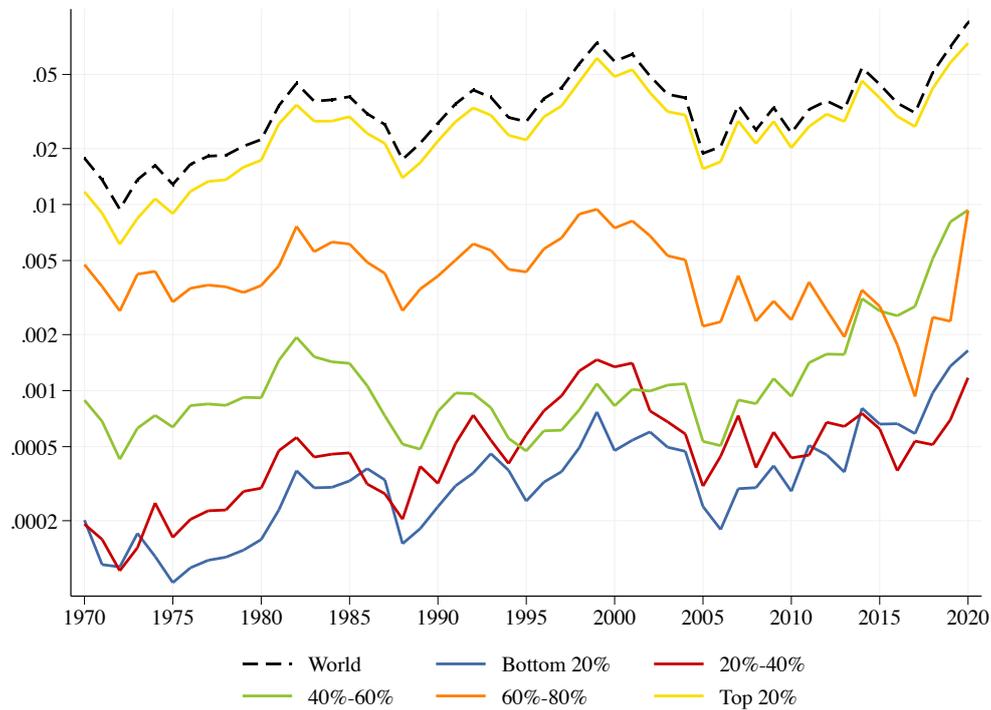
Offshore wealth, as a share of group GDP



Graph shows average offshore wealth. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A15

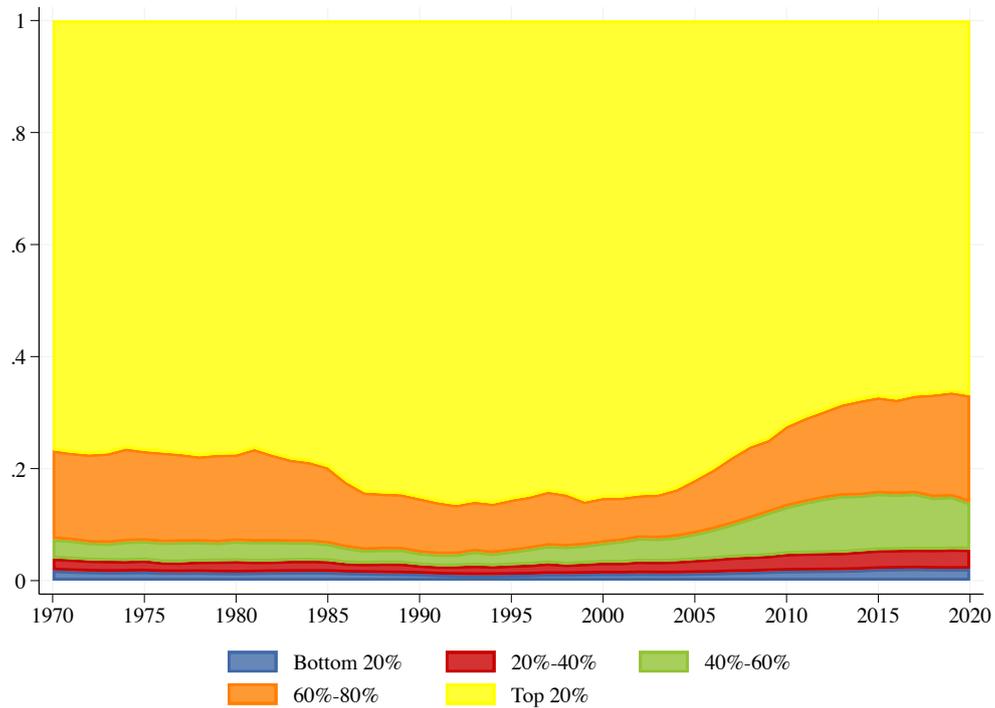
Offshore wealth, as a share of global GDP



Graph shows average offshore wealth. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A16

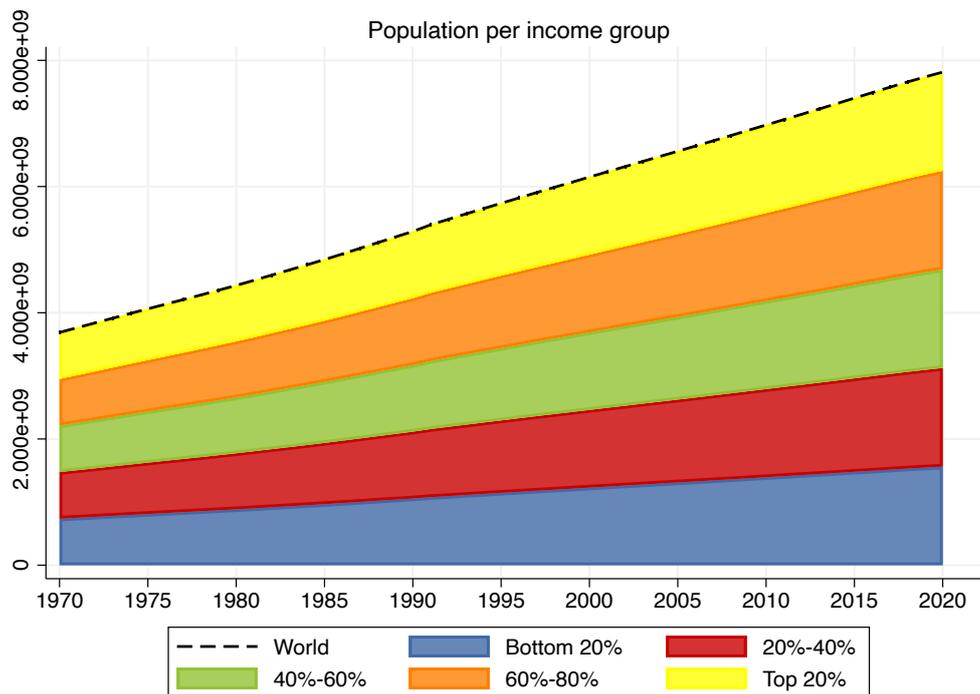
Share of global GDP per income group



Graph shows aggregate GDP per group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A17

Share of global population per income group

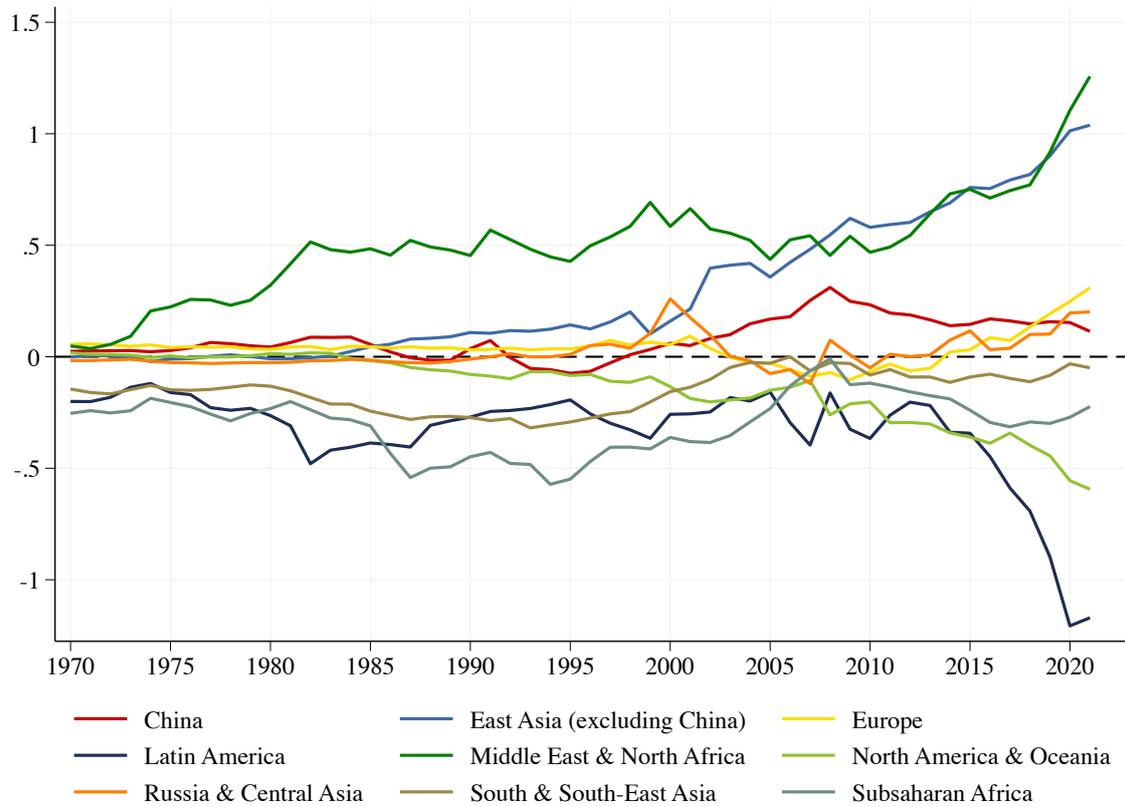


Graph confirms that each quintile has 20% of the world's population.

Graph shows aggregate population per group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A18

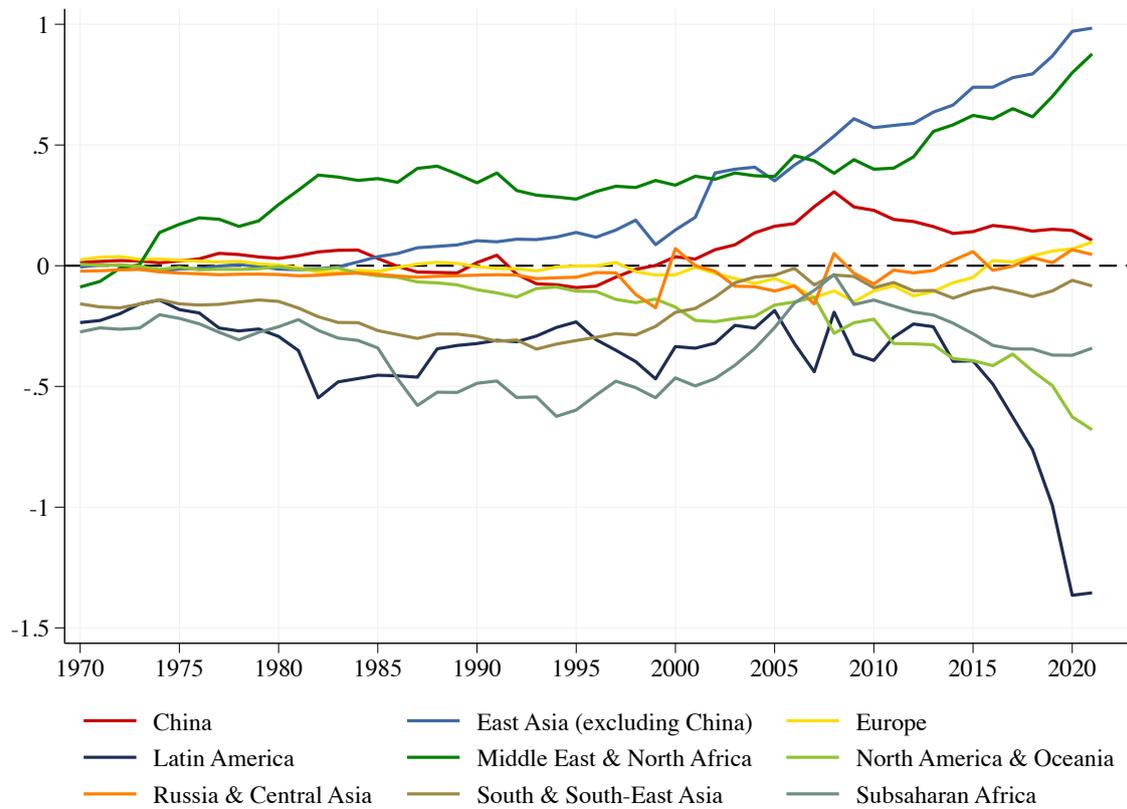
Net foreign assets as a share of regional GDP



Graph shows net foreign assets corrected by offshore wealth as a share of each region's GDP.

Figure A19

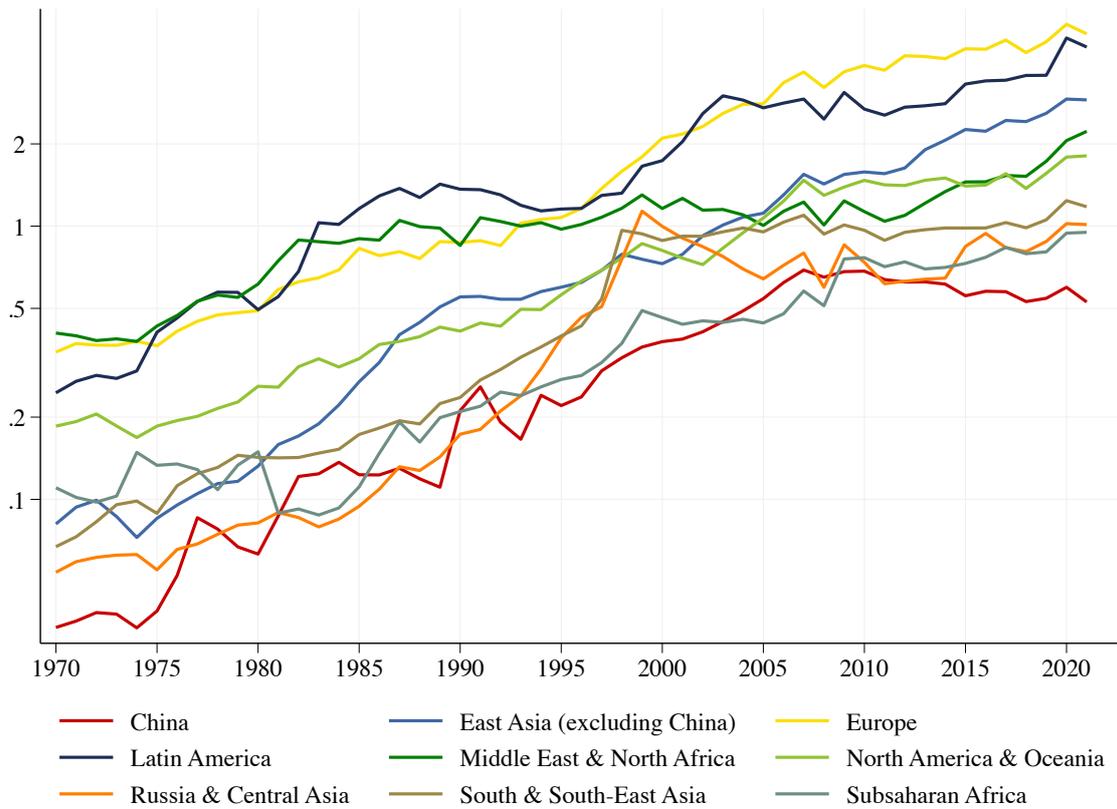
Net foreign assets as a share of regional GDP, without offshore wealth



Graph shows net foreign assets without offshore wealth correction as a share of each region's GDP.

Figure A20

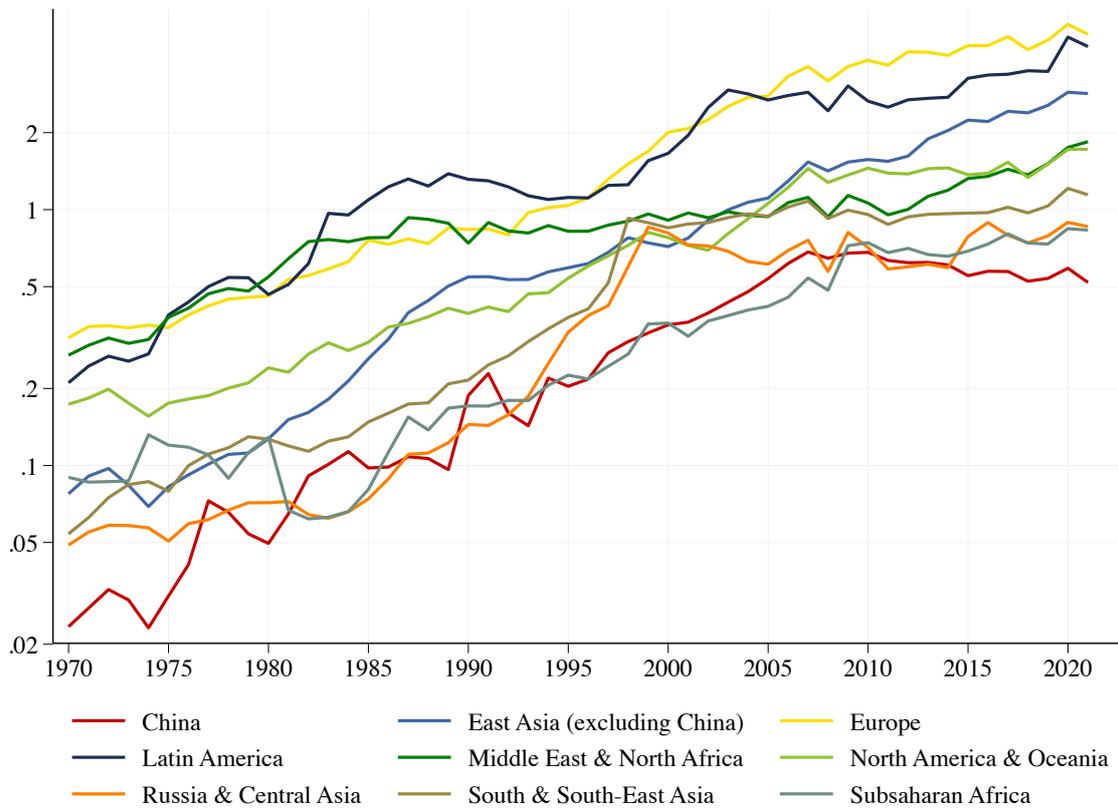
Gross foreign assets as a share of regional GDP



Graph shows gross foreign assets corrected by offshore wealth as a share of each region's GDP.

Figure A21

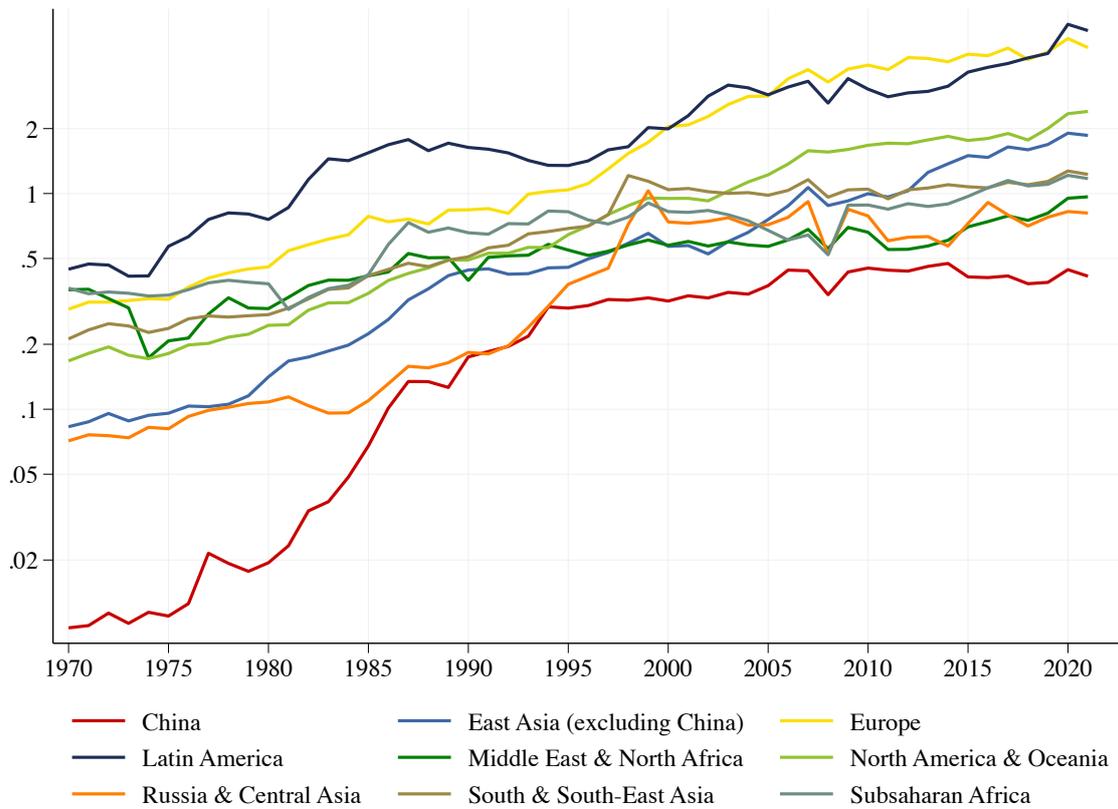
Gross foreign assets as a share of regional GDP, without offshore wealth



Graph shows gross foreign assets without offshore wealth correction as a share of each region's GDP.

Figure A22

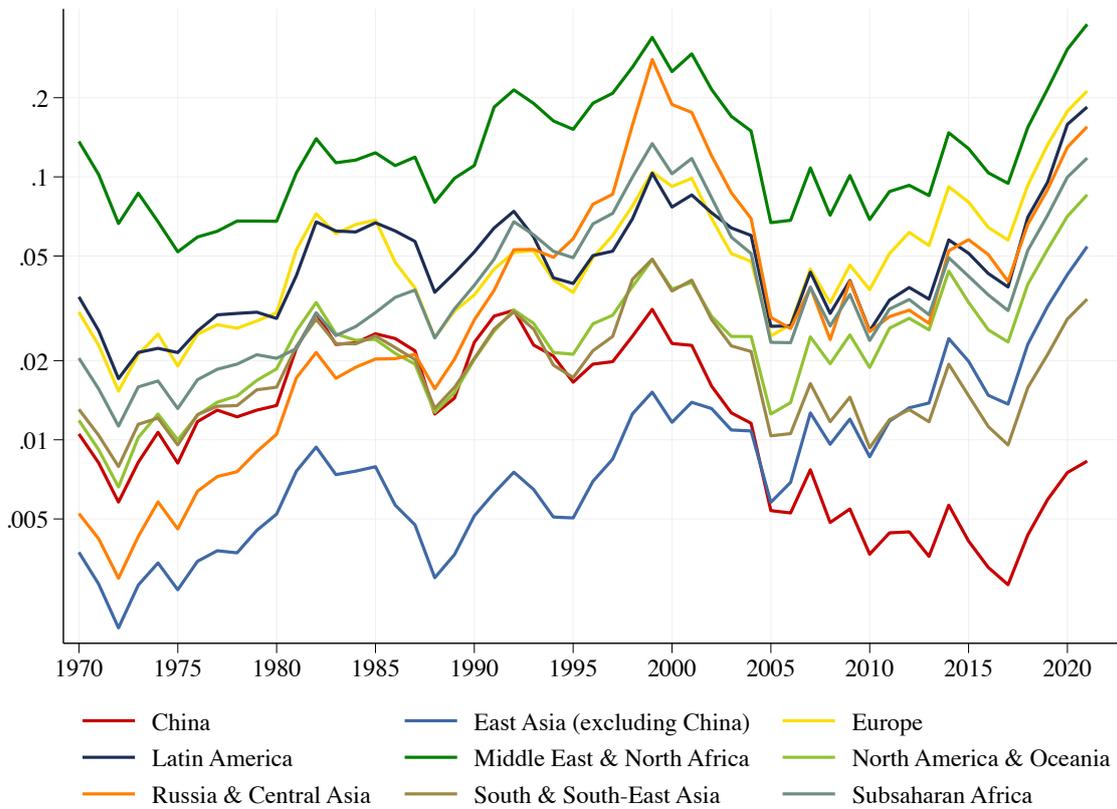
Gross foreign liabilities as a share of regional GDP



Graph shows gross foreign liabilities as a share of each region's GDP.

Figure A23

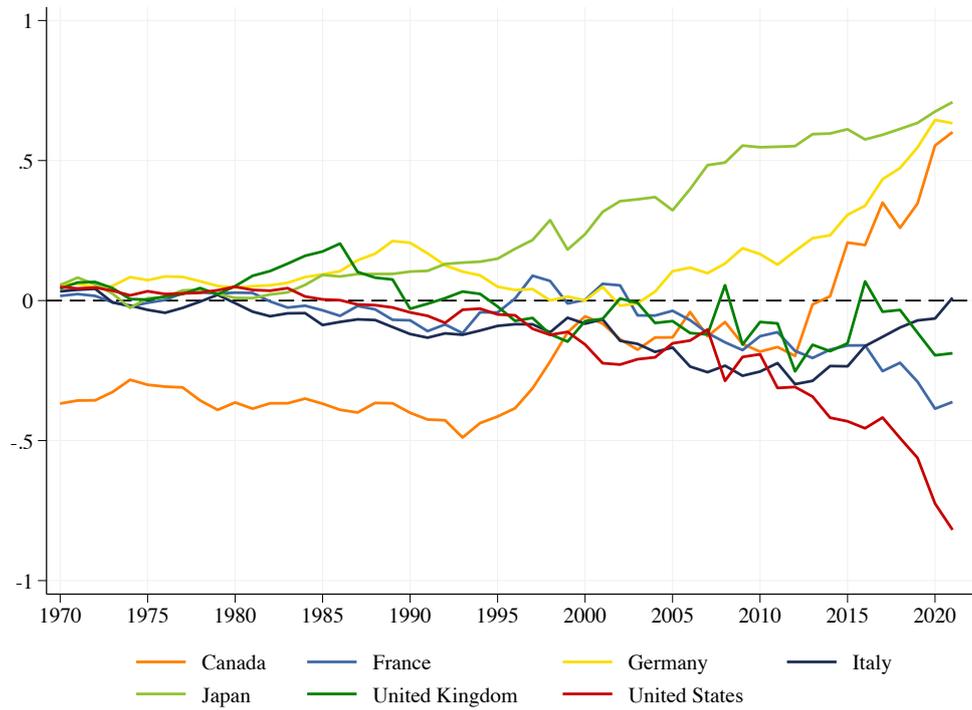
Offshore wealth as a share of regional GDP



Graph shows offshore wealth as a share of each region's GDP.

Figure A24

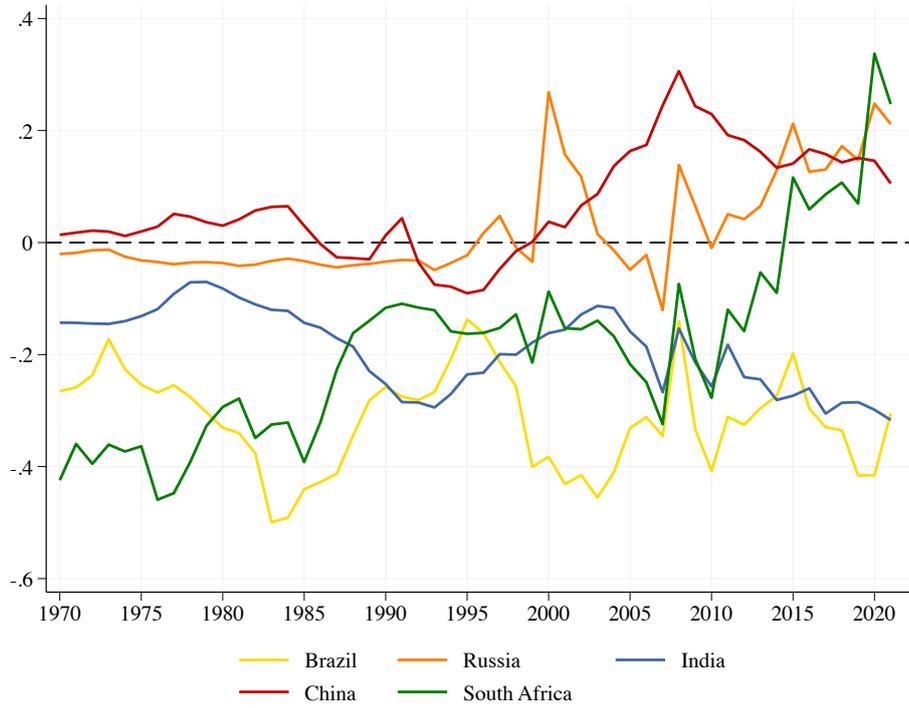
Net foreign assets before offshore wealth correction as a share of country GDP, G7 countries



Graph shows net foreign assets as a share of each country's GDP.

Figure A25

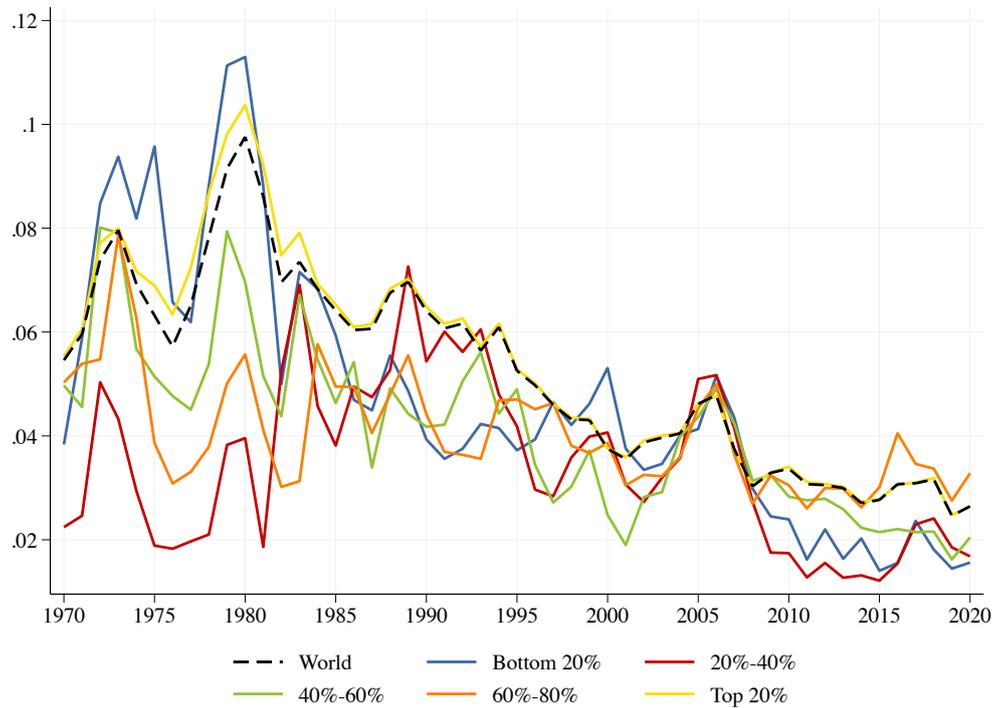
Net foreign assets before offshore wealth correction as a share of country GDP, BRICS



Graph shows net foreign assets as a share of each country's GDP.

Figure A26

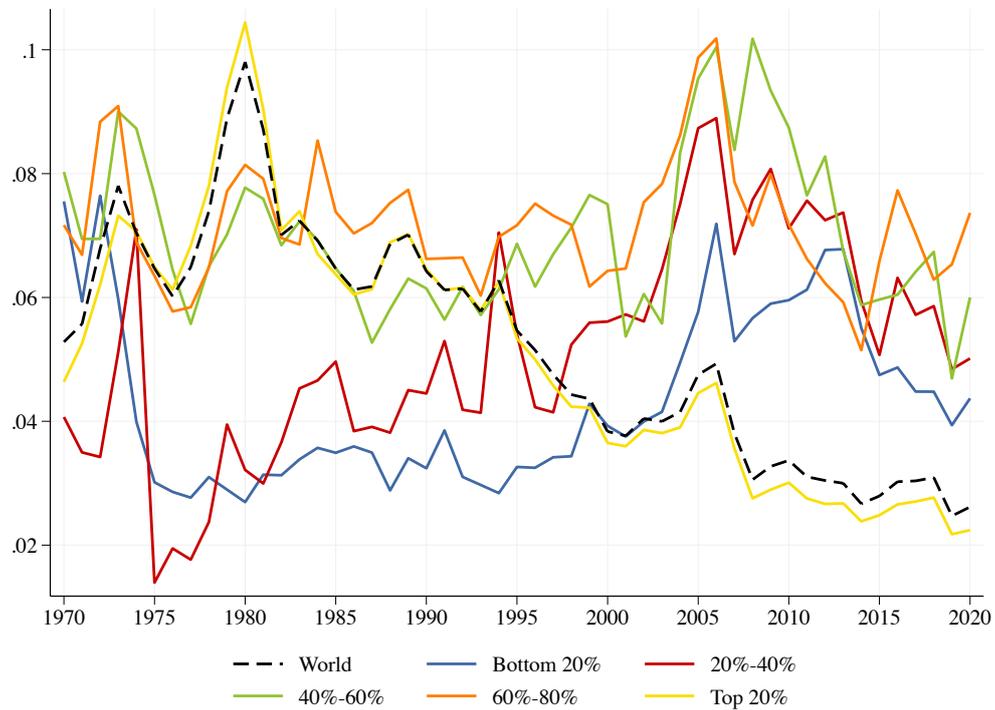
Returns on foreign assets per income group, without tax havens correction



Graph shows average rate of returns on foreign assets before correcting for offshore wealth. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A27

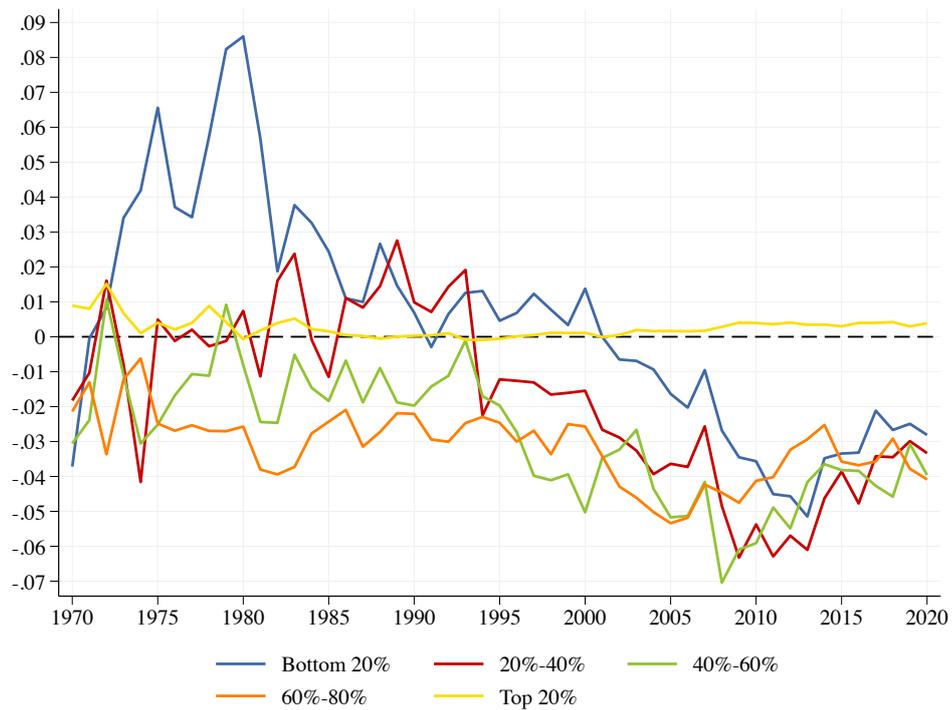
Returns on foreign liabilities per income group, without tax havens correction



Graph shows average rate of returns on foreign liabilities before correcting for offshore wealth. Simple averages by group. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A28

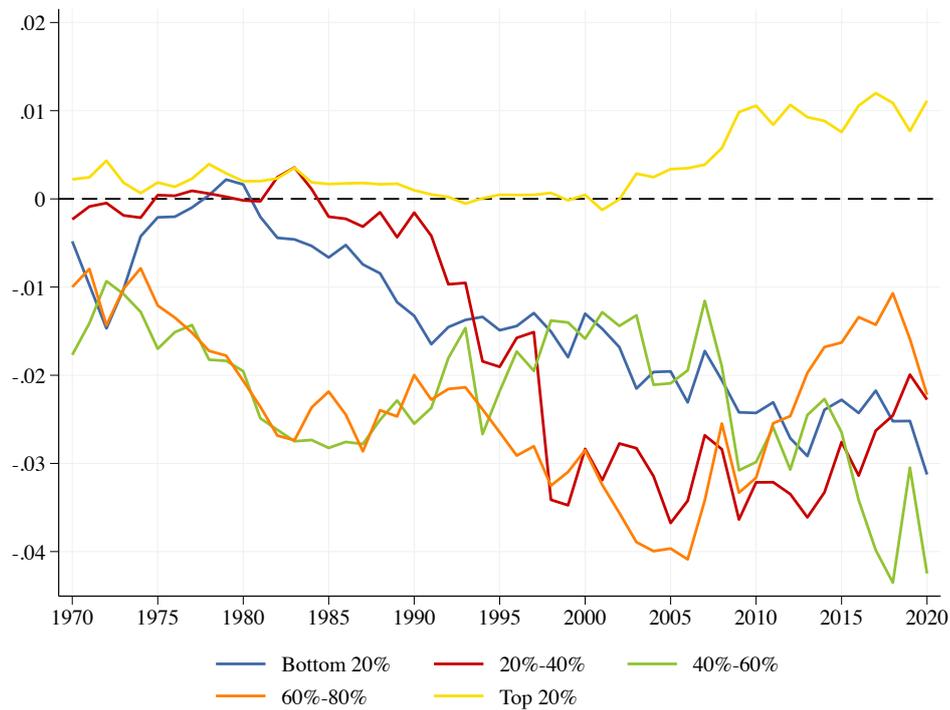
Excess yields per income group, without tax havens correction



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A29

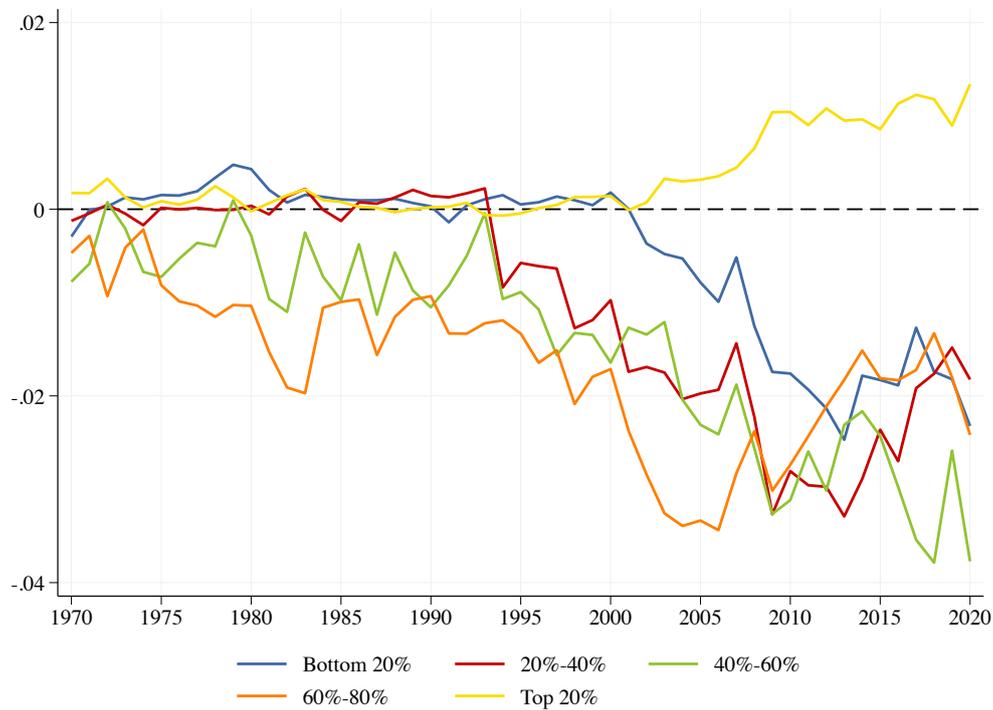
Net foreign capital income as a share of GDP, without tax havens correction



Graph shows aggregate net foreign capital income without offshore wealth correction, as a share of income group GDP. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A30

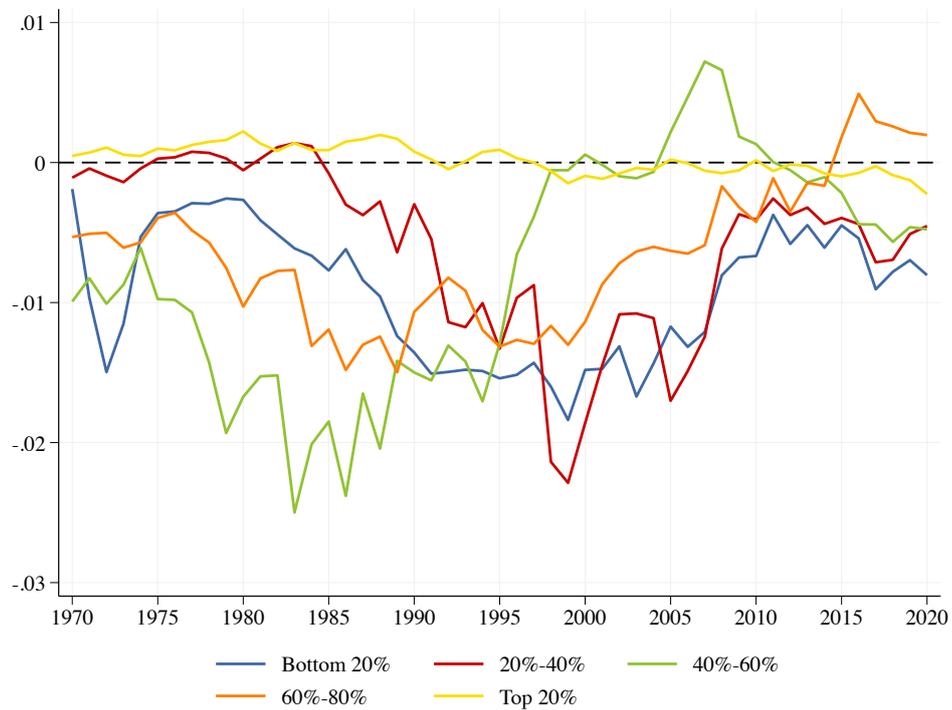
Excess yield as a share of GDP, without tax havens correction



Graph shows the foreign capital income received (paid) related to the positive (negative) excess yield without offshore wealth correction, as a share of group GDP. Excess yield income calculated as GFA (GFL) multiplied by excess yield if positive (negative). Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A31

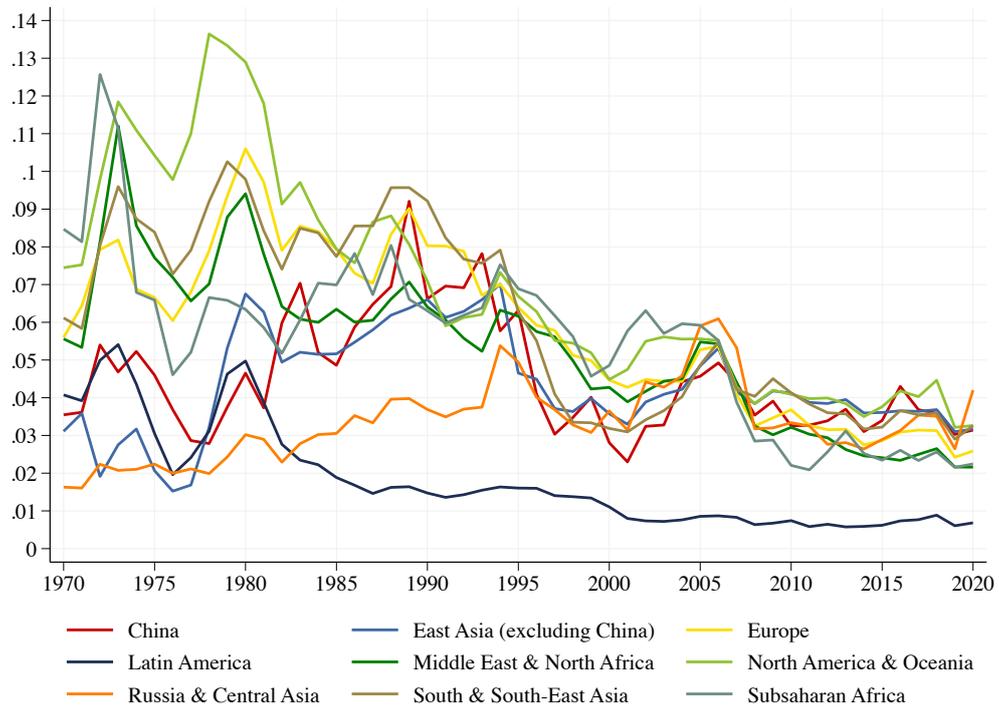
Net foreign capital income minus excess yield income as a share of GDP, without tax havens correction



Graph shows net foreign capital income if country groups would not have a different average return rate on their assets with respect to their liabilities, without offshore wealth correction, as a share of group GDP. Countries grouped according to national income per capita quintiles, weighted by population. E.g. top 20% countries include exactly the top 20% of the world population (1,6 billion out of 7,8 billion in 2020) living in the countries with highest per capita income. In 2020: main top 20% countries include Australia, Canada, Finland, France, Germany, Japan, Switzerland, the U.S. and the U.K. Main 60%-80% countries include Argentina, China, Russia and Turkey. Main 40%-60% countries include Algeria, Bolivia, Brazil, Iran, Turkmenistan, Ukraine, Venezuela and Vietnam. Main 20%-40% countries include Bangladesh, India, Kenya and Nigeria. Main bottom 20% countries include Afghanistan, Cameroon, Congo, Myanmar, South Sudan and Zimbabwe. National income does not include FDI income paid correction due to shifted profits.

Figure A32

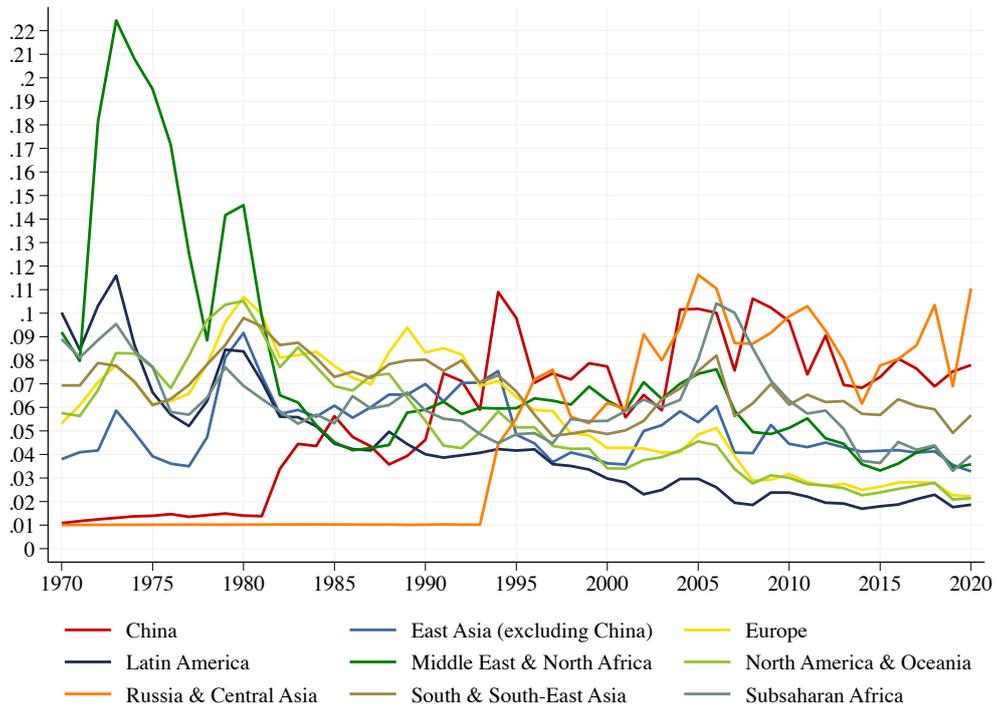
Returns on foreign assets per region



Graph shows average rate of returns on foreign assets for different regions in the world.

Figure A33

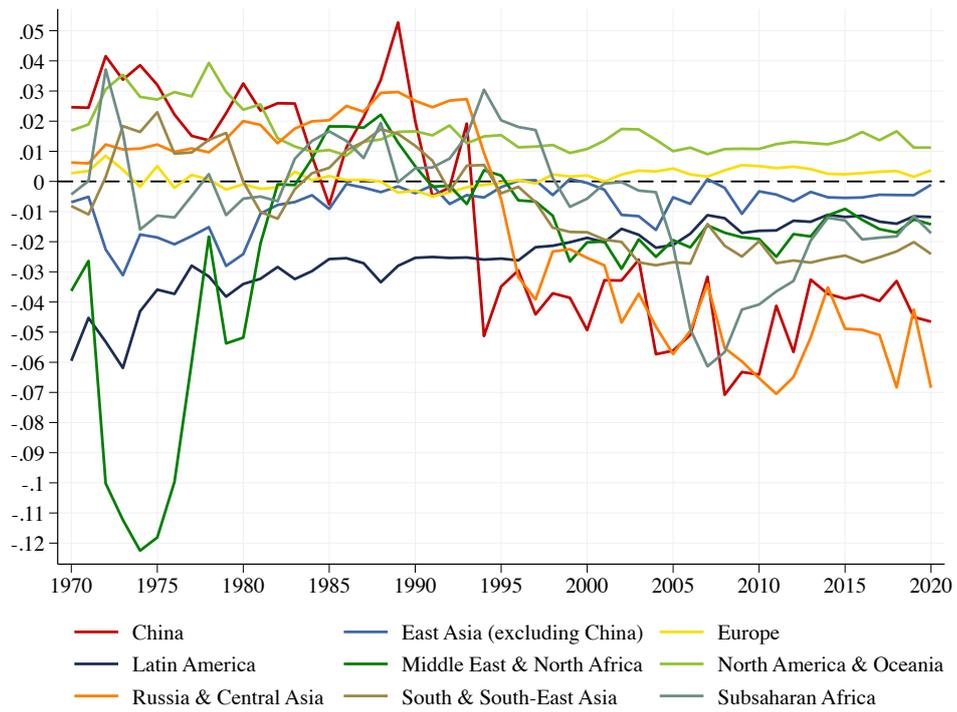
Returns on foreign liabilities per region



Graph shows average rate of returns on foreign liabilities for different regions in the world.

Figure A34

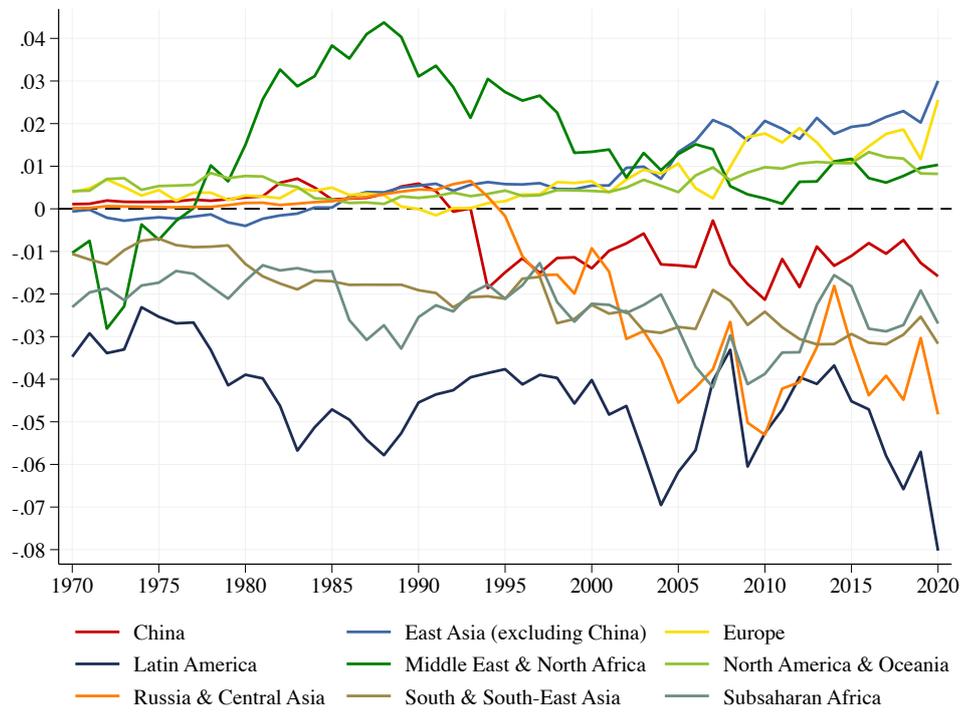
Excess yields per region



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities.

Figure A35

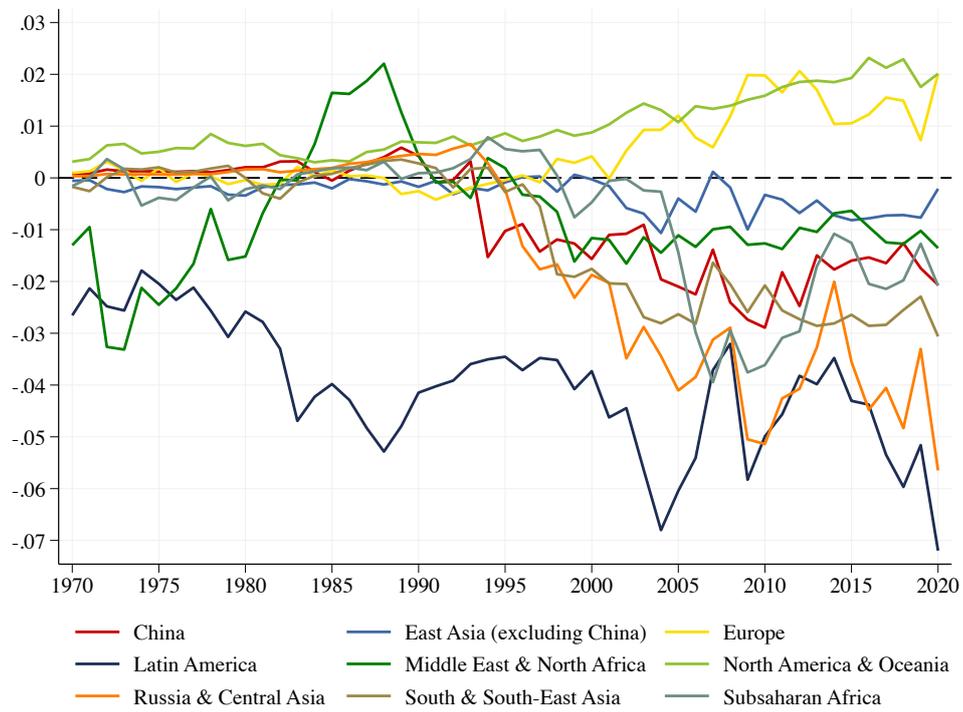
Net foreign capital income as a share of GDP



Graph shows aggregate net foreign capital income, as a share of regional GDP.

Figure A36

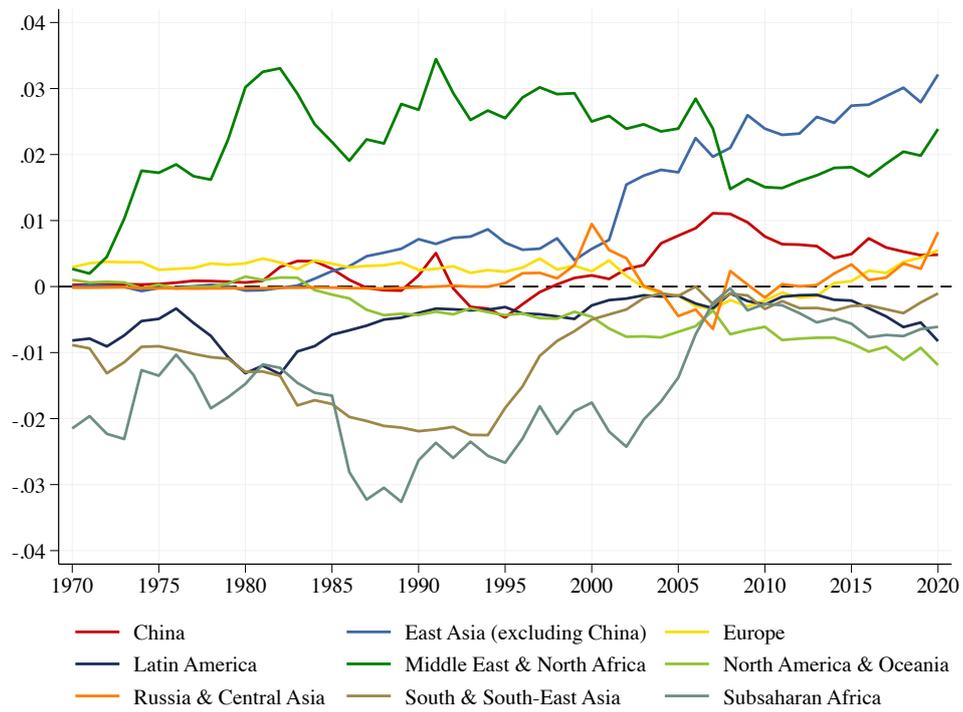
Excess yield as a share of GDP



Graph shows the foreign capital income received (paid) related to the positive (negative) excess yield, as a share of group GDP. Excess yield income calculated as GFA (GFL) multiplied by excess yield if positive (negative).

Figure A37

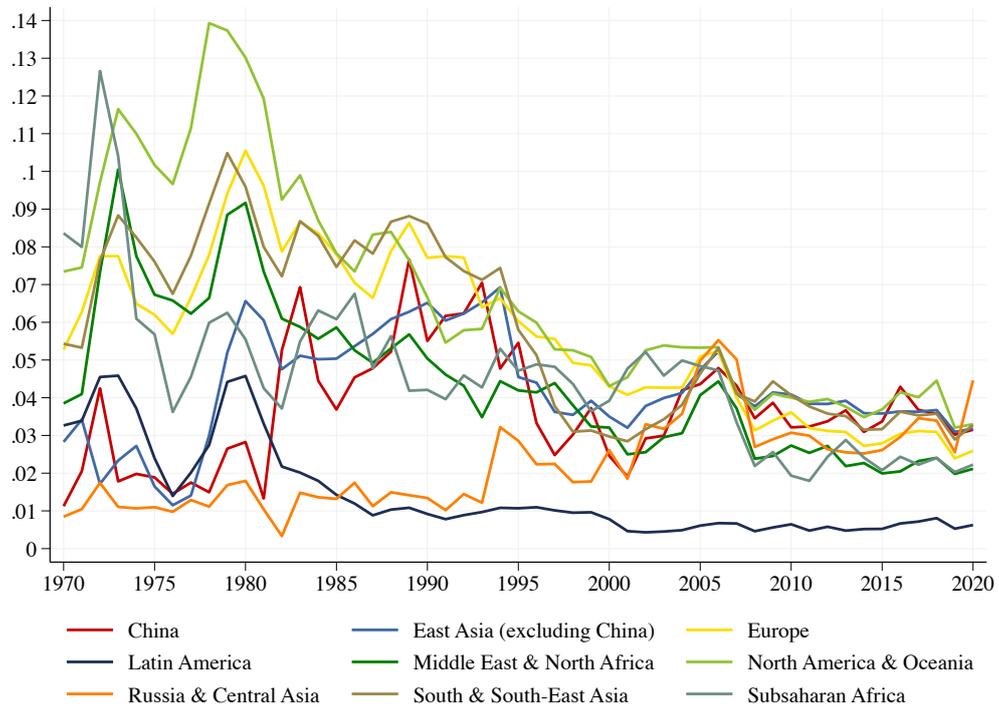
Net foreign capital income minus excess yield income as a share of GDP



Graph shows net foreign capital income if regions would not have a different average return rate on their assets with respect to their liabilities, as a share of group GDP.

Figure A38

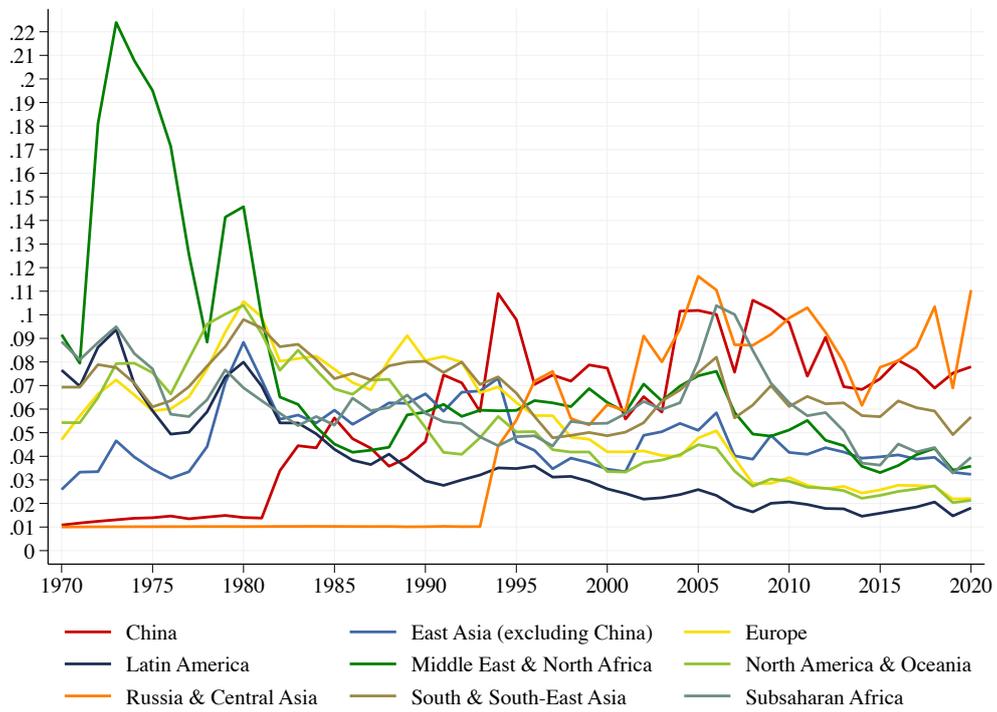
Returns on foreign assets per region, without tax havens correction



Graph shows average rate of returns on foreign assets for different regions in the world, without offshore wealth correction.

Figure A39

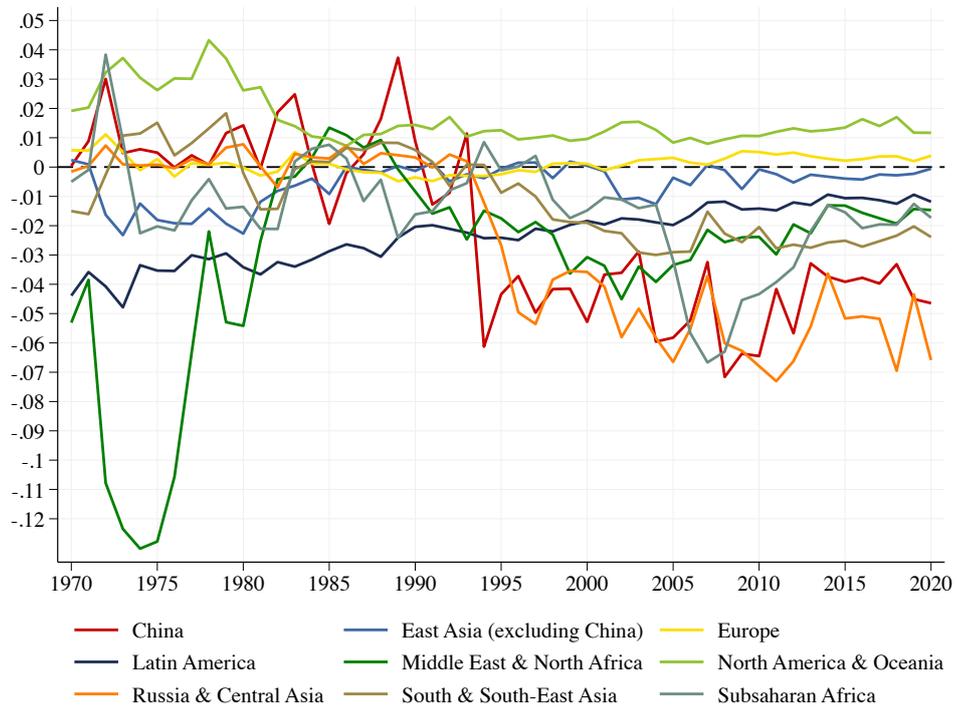
Returns on foreign liabilities per region, without tax havens correction



Graph shows average rate of returns on foreign liabilities for different regions in the world, without offshore wealth correction.

Figure A40

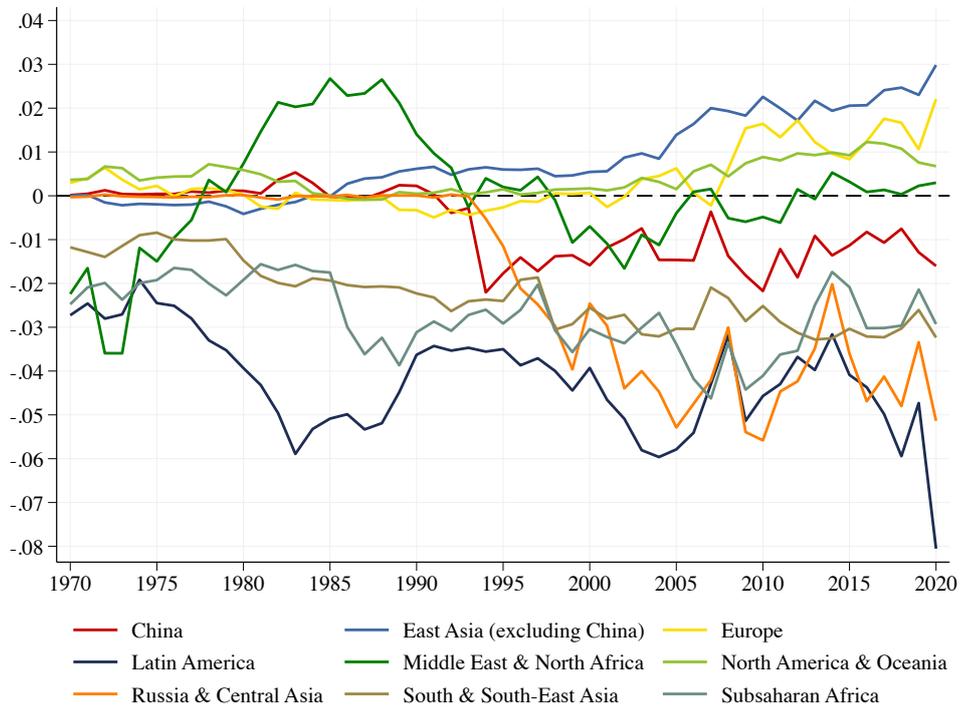
Excess yields per region, without tax havens correction



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities, without offshore wealth correction.

Figure A41

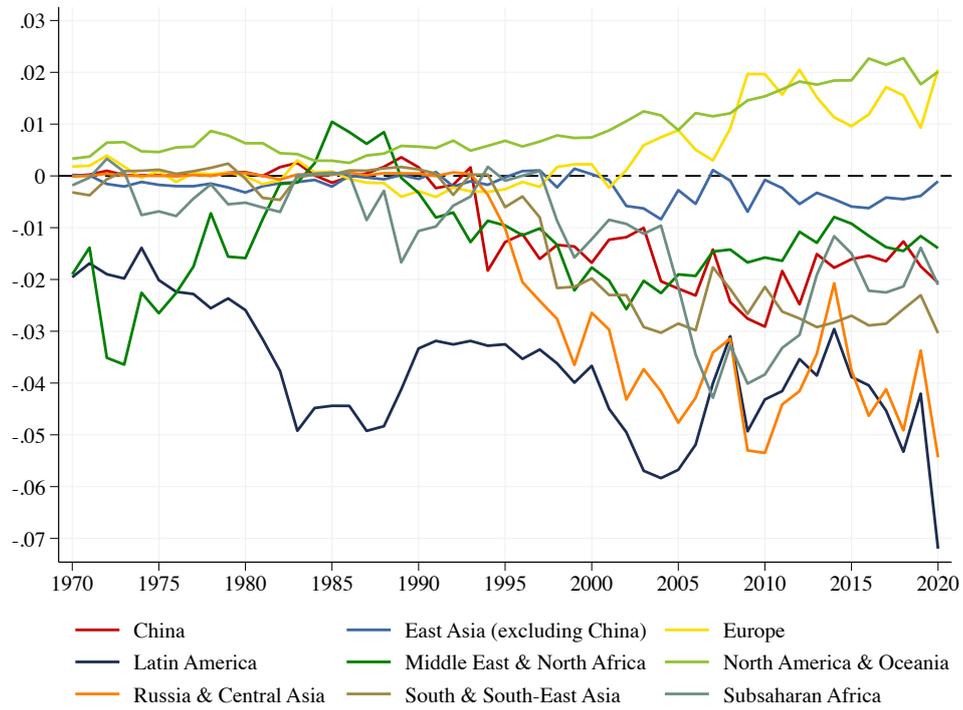
Net foreign capital income as a share of GDP, without tax havens correction



Graph shows aggregate net foreign capital income, without offshore wealth correction, as a share of regional GDP.

Figure A42

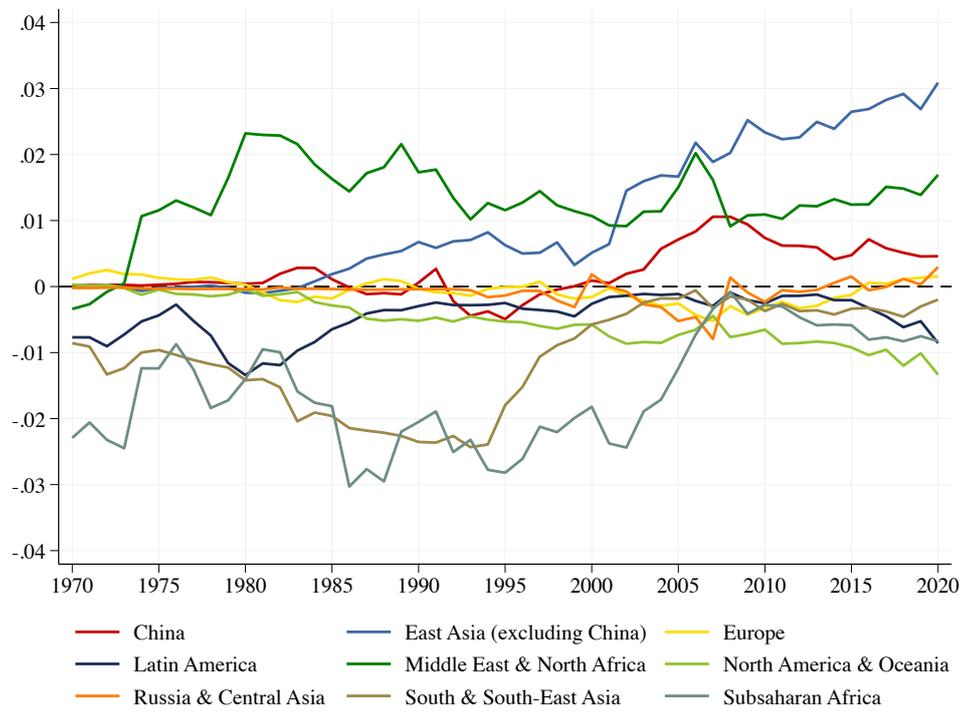
Excess yield as a share of GDP, without tax havens correction



Graph shows the foreign capital income received (paid) related to the positive (negative) excess yield, as a share of group GDP. Excess yield income calculated as GFA (GFL) multiplied by excess yield if positive (negative).

Figure A43

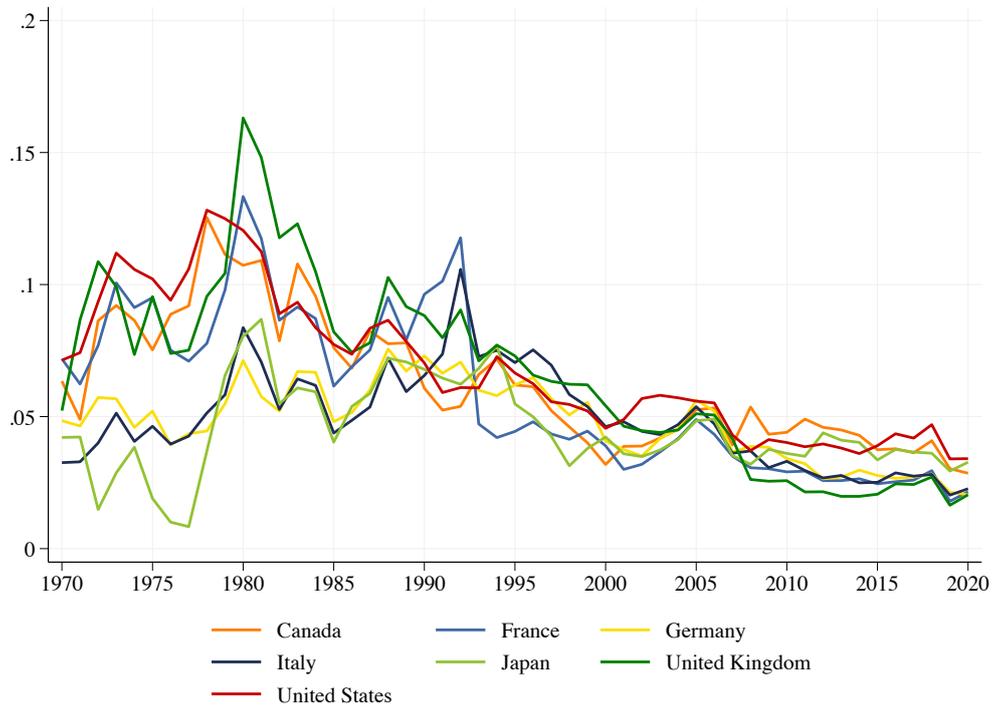
Net foreign capital income minus excess yield income as a share of GDP, without tax havens correction



Graph shows net foreign capital income if regions would not have a different average return rate on their assets with respect to their liabilities, as a share of group GDP.

Figure A44

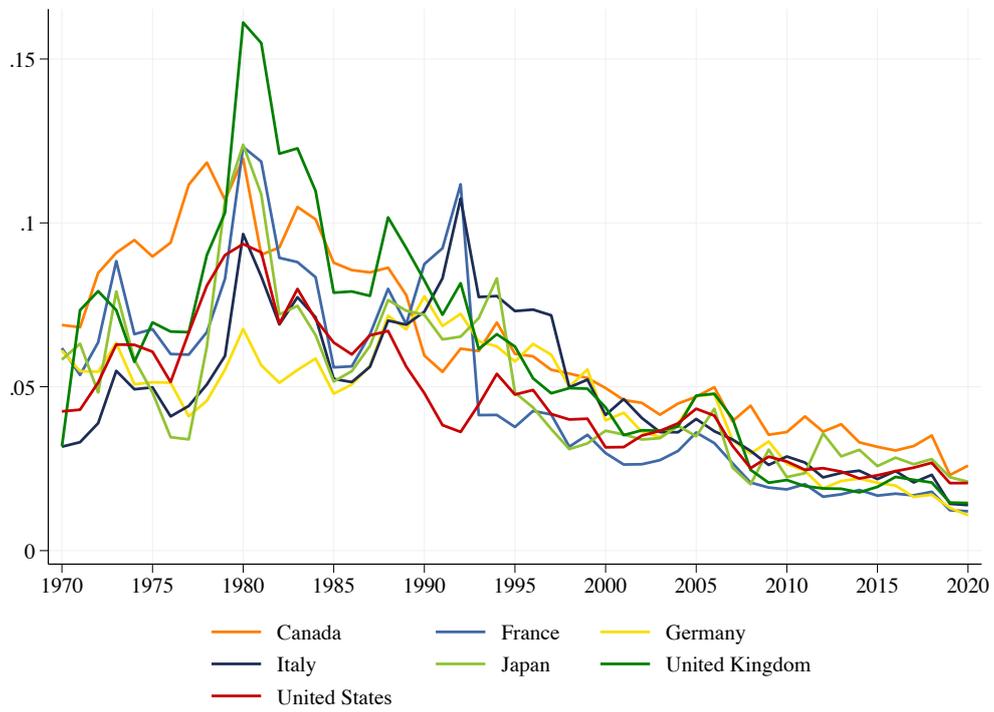
Returns on foreign assets, G7 countries



Graph shows average rate of returns on foreign assets.

Figure A45

Returns on foreign liabilities, G7 countries



Graph shows average rate of returns on foreign liabilities.

Figure A46

Net foreign capital income as a share of country GDP, G7 countries

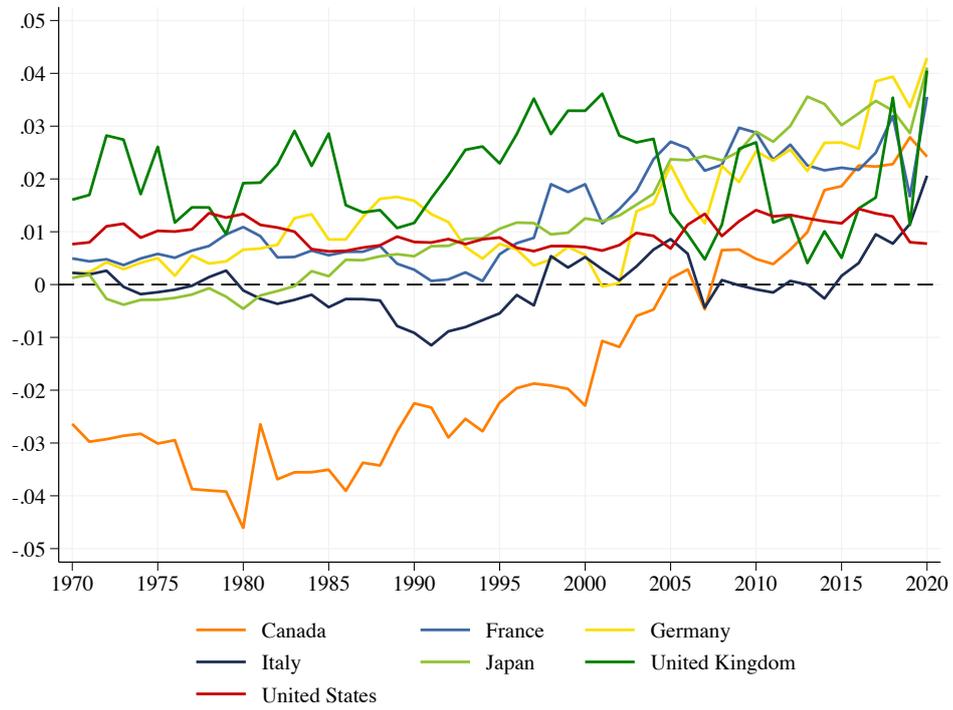
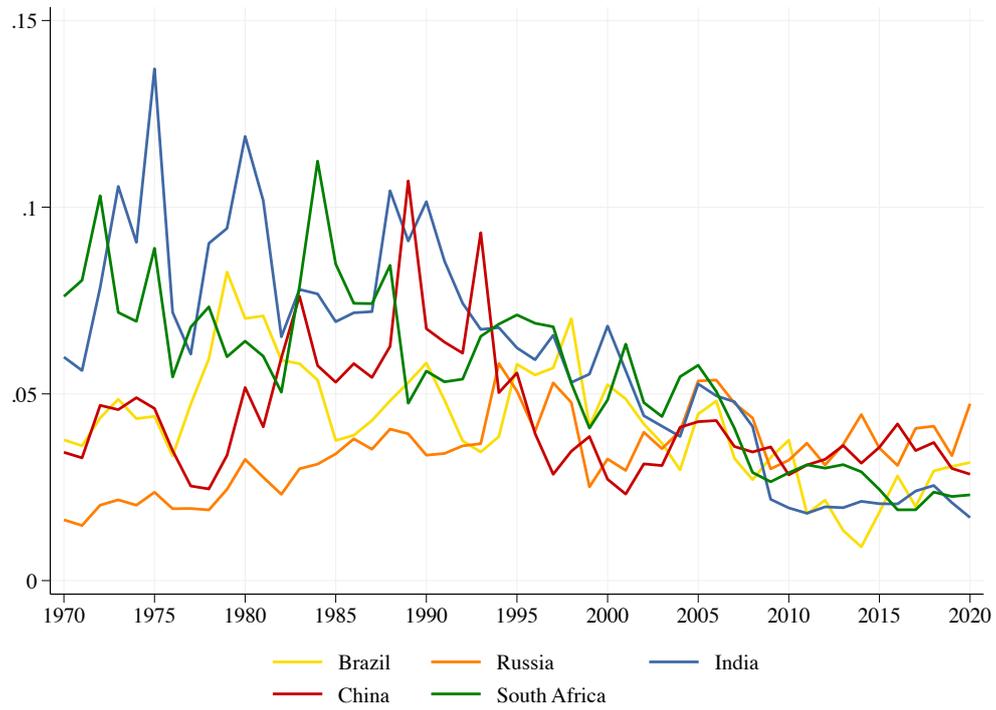


Figure A47

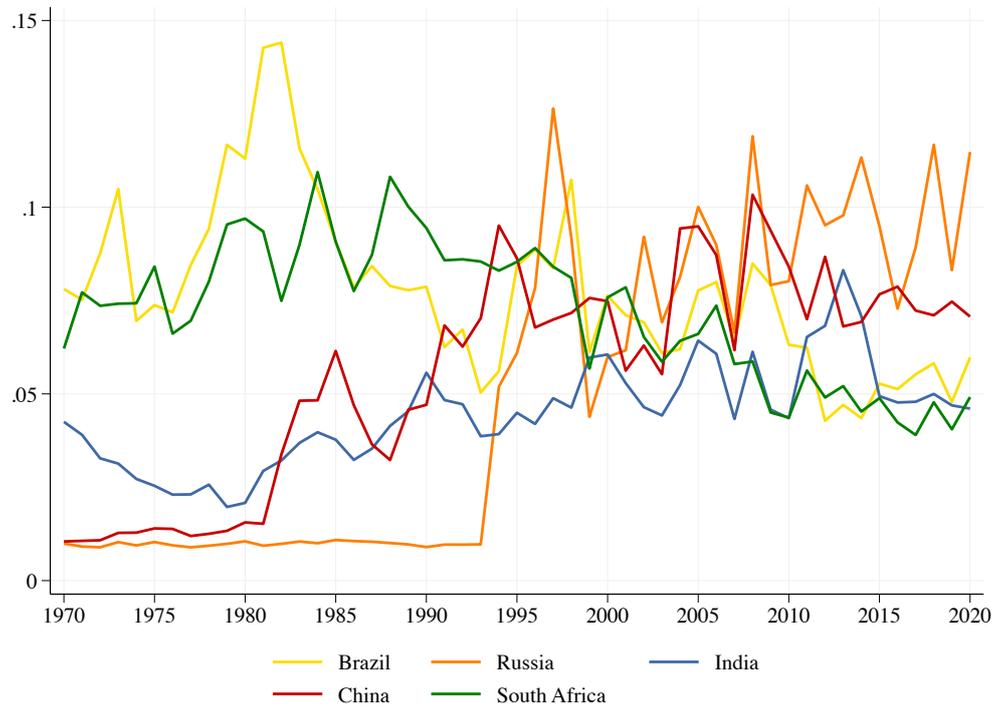
Returns on foreign assets, BRICS



Graph shows average rate of returns on foreign assets.

Figure A48

Returns on foreign liabilities, BRICS



Graph shows average rate of returns on foreign liabilities.

Figure A49

Net foreign capital income as a share of country GDP, BRICS

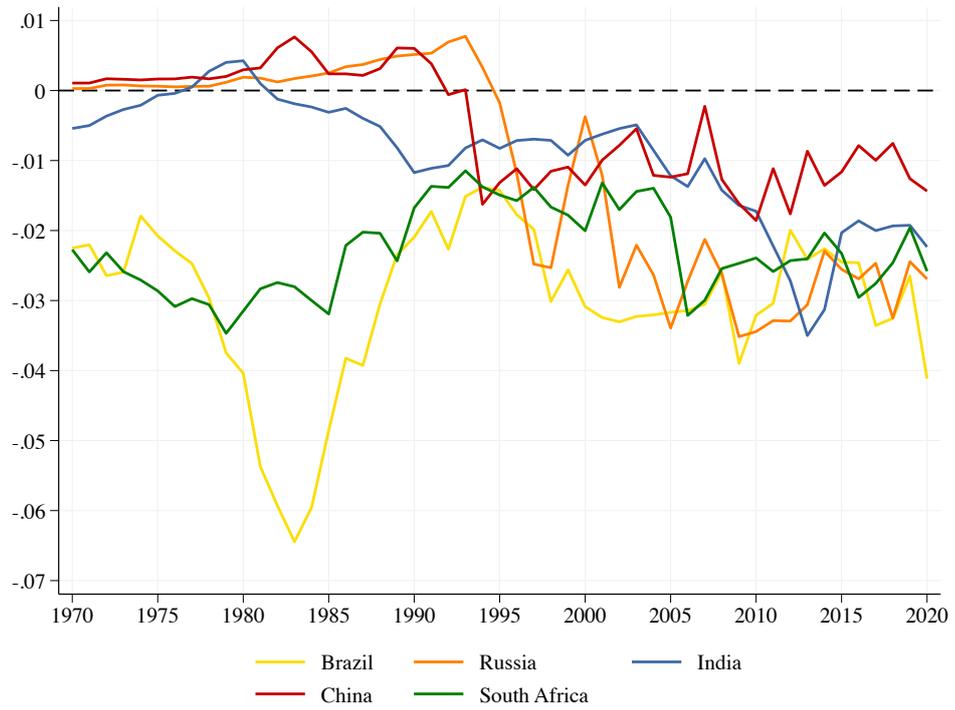
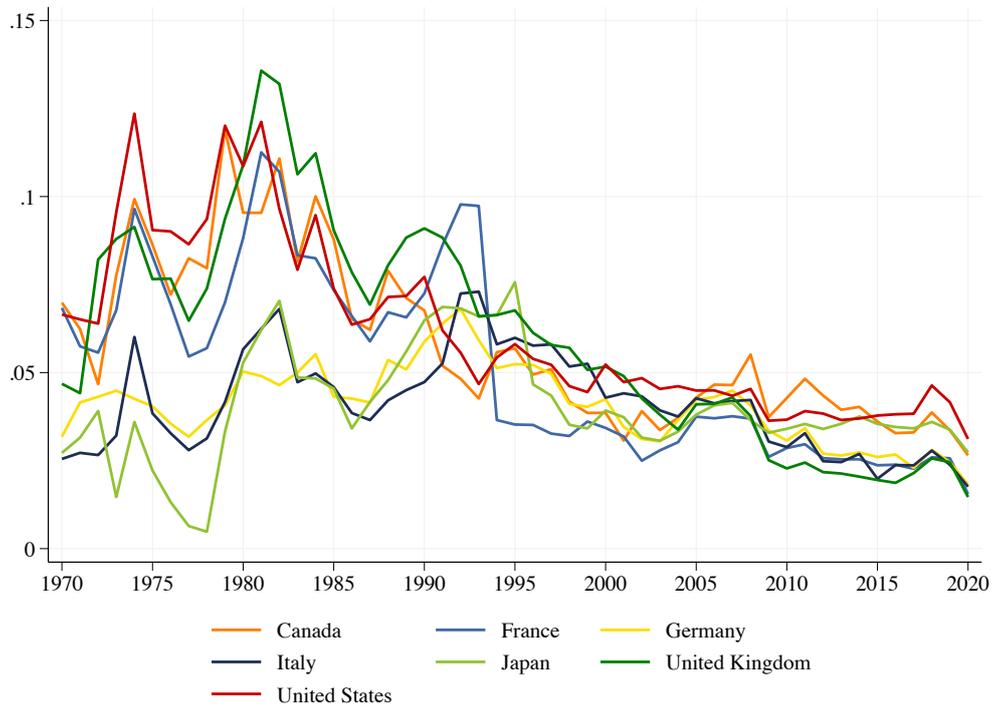


Figure A50

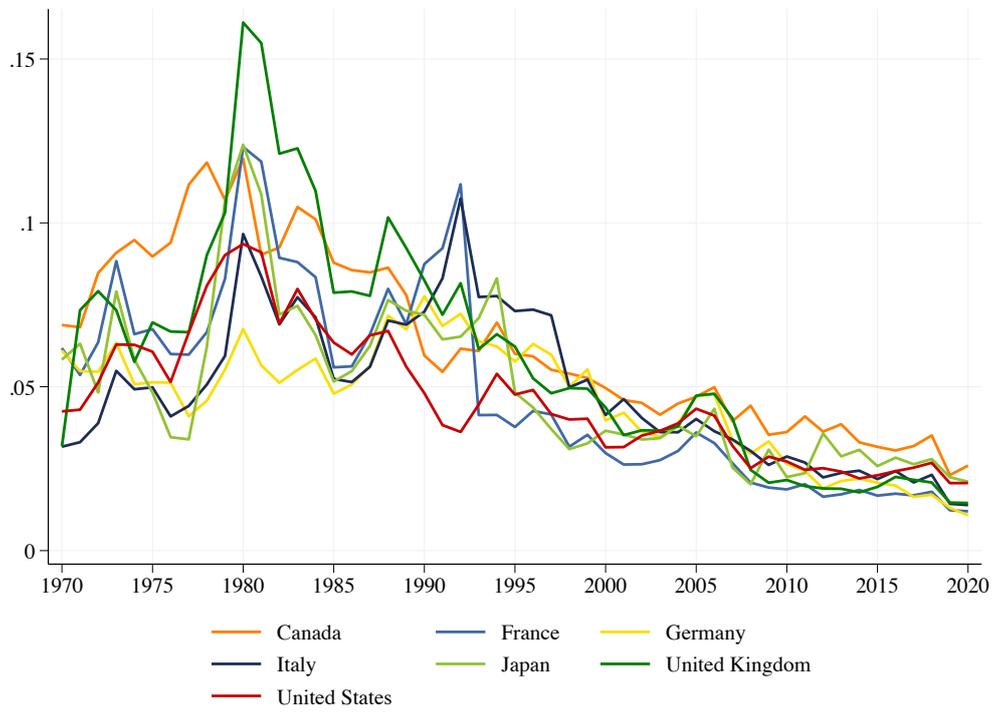
Returns on foreign assets without tax havens correction, G7 countries



Graph shows average rate of returns on foreign assets.

Figure A51

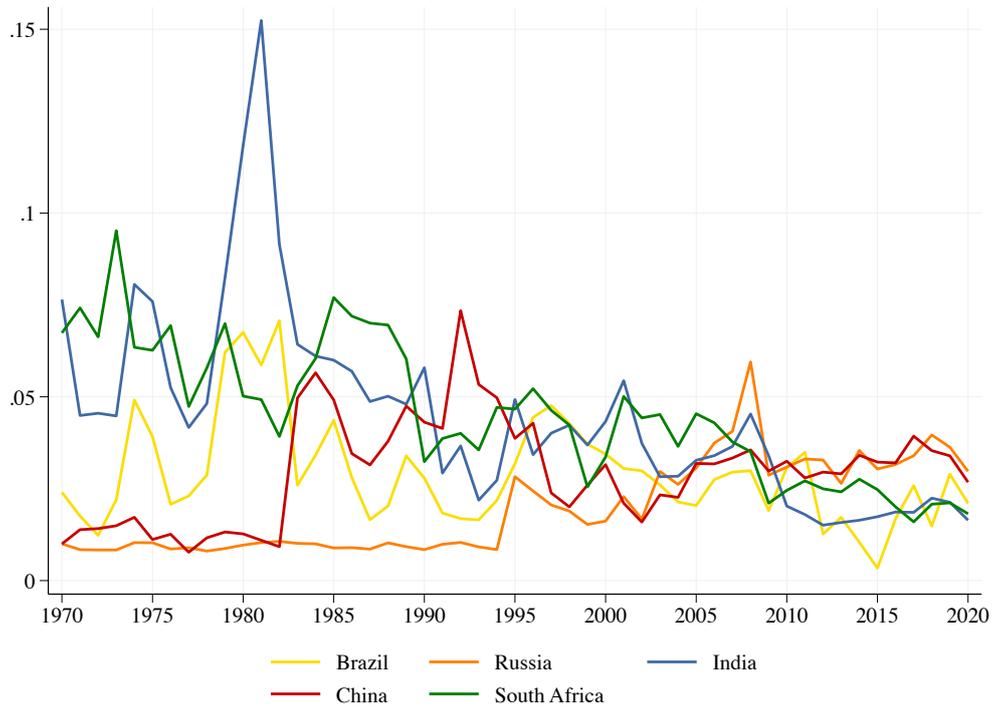
Returns on foreign liabilities without tax havens correction, G7 countries



Graph shows average rate of returns on foreign liabilities.

Figure A52

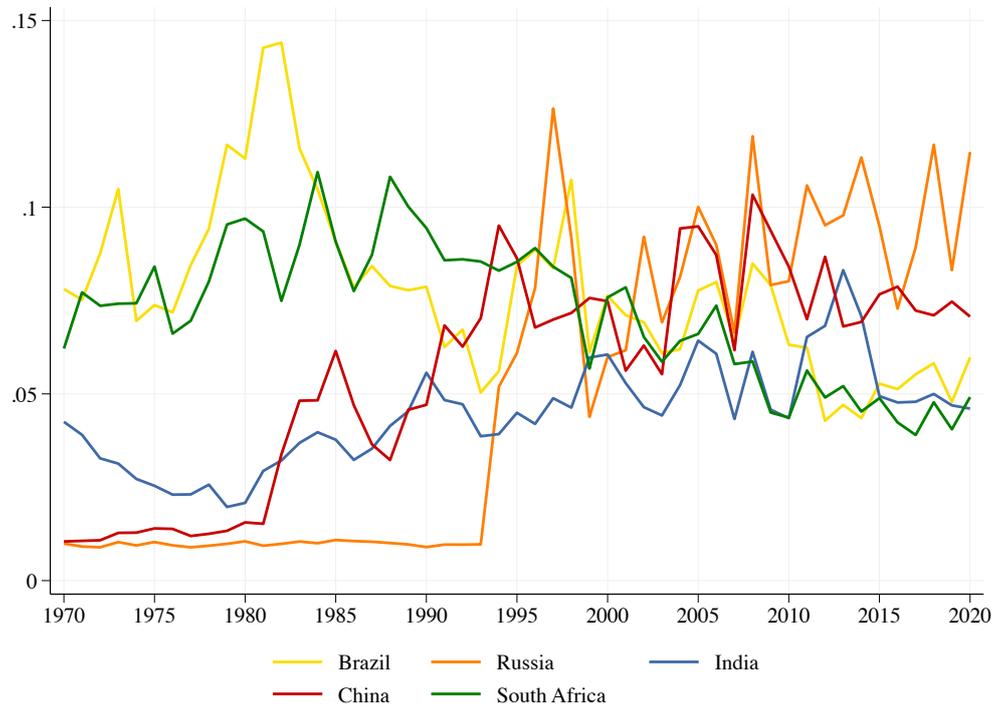
Returns on foreign assets without tax havens correction, BRICS



Graph shows average rate of returns on foreign assets.

Figure A53

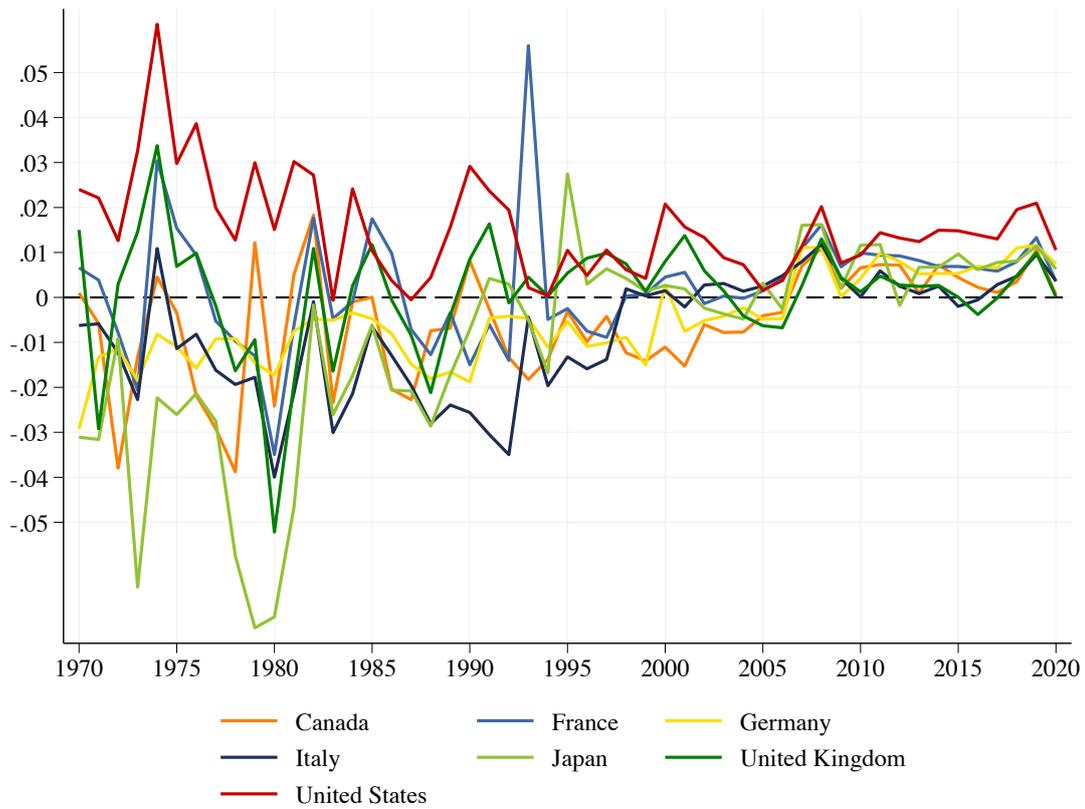
Returns on foreign liabilities without tax havens correction, BRICS



Graph shows average rate of returns on foreign liabilities.

Figure A54

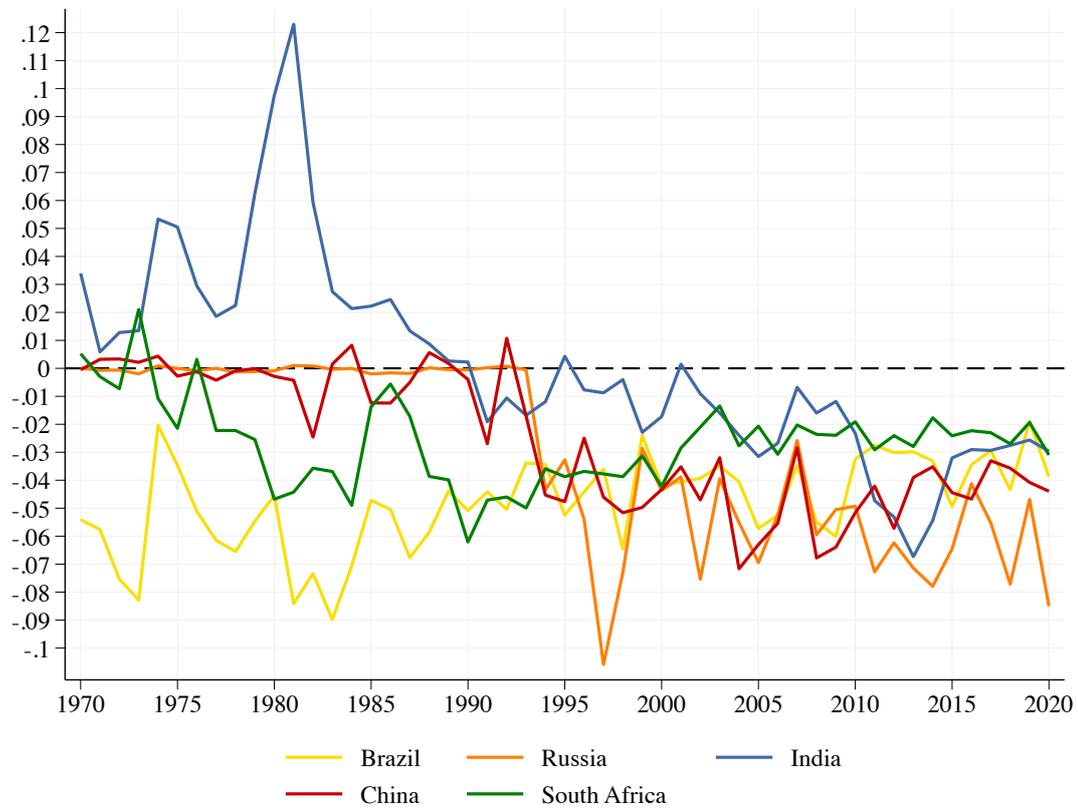
Excess yields without tax havens correction, G7 countries



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities.

Figure A55

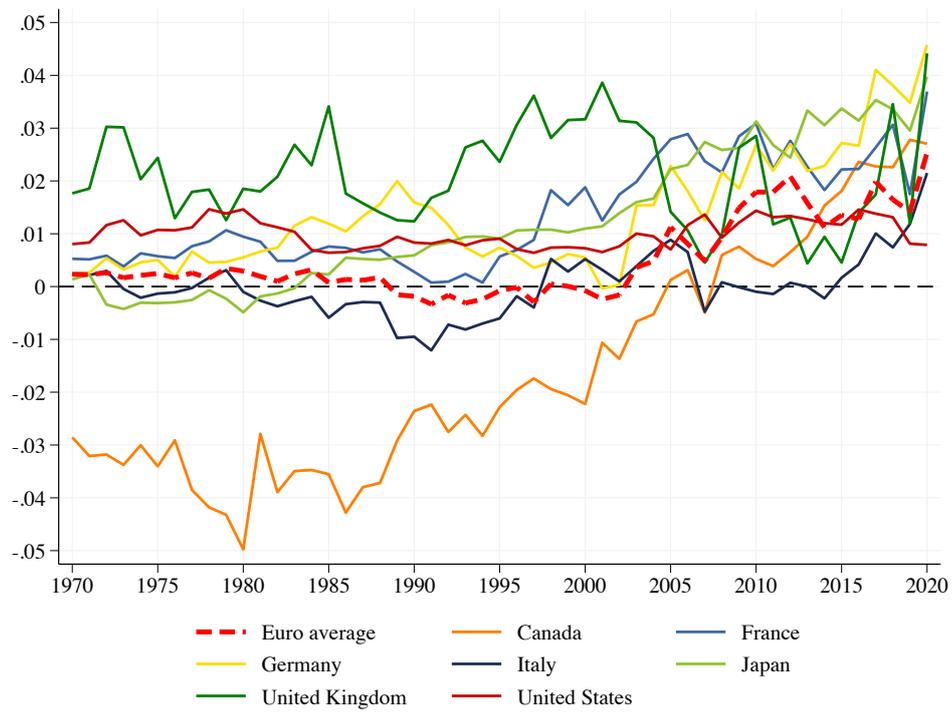
Excess yields without tax havens correction, BRICS



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities.

Figure A56

Net foreign capital income as a share of country (Eurozone) GDP



Graph shows net foreign capital income, as a share of country (Eurozone) GDP. Before Eurozone was created only founders are included: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain. Countries that joined in subsequent years are included since the year they joined: Greece (2001), Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), and Lithuania (2015).