



**ALLOCATING MISSING
FOREIGN WEALTH AND
MISSING FOREIGN INCOME:
SOURCES AND METHODS
USED IN WID.WORLD**

**GASTÓN NIEVAS
THOMAS PIKETTY**



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Allocating missing foreign wealth and missing foreign income: sources and methods used in WID.world

Gastón Nievas

Thomas Piketty

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Abstract

This technical note presents the methodology that we use in order to achieve net zero aggregate values for foreign wealth and foreign income variables used in WID.world. We also discuss the advantages and limitations of using this methodology vis-a-vis other possible methods, and the prospects for future improvements.

1 Introduction

This technical note outlines the methodology developed to achieve net zero aggregate values for foreign wealth and foreign income variables used in the World Inequality Database (WID.world). Ensuring that these variables balance to zero is crucial for accurately representing global economic disparities and trends. This methodology hinges on the comprehensive inclusion of data from all 216 core countries over the period from 1970 to 2023, ensuring a broad and consistent dataset (see Moshrif et al 2024)

The note delves into the procedural aspects of our approach, detailing the steps and calculations required to harmonize data from diverse national sources. By aggregating and balancing foreign wealth and income across these countries, we can offer a more precise global perspective that is essential for researchers and policymakers.

Additionally, we discuss the benefits and drawbacks of this methodology in comparison to alternative methods. While our approach provides a robust framework for global economic analysis, it also comes with certain limitations that need to be acknowledged. These include the assumptions required to fill in gaps where data is incomplete or inconsistent.

Overall, this technical note serves as a comprehensive guide for researchers using WID.world data, helping them understand the methodology behind the net zero aggregation and its implications for their work.

Section 2 outlines the main stylized facts about global financial inconsistencies and imbalances that need to be corrected when dealing with available global raw data. Section 3 presents how these aggregates are modified when squaring the database (i.e. imputing missing observations). Section 4 discusses the possibility of negative net national incomes for some territories and the way we impose a non-negativity constraint. Finally section 5 presents the "proportional adjustment" method that we use when netting the aggregate data and discusses alternative possible methods (including the "portfolio allocation" method), and section 6 presents a simple Stata code that can be used to test for the net zero properties of the dataset.

2 Global aggregate inconsistencies while using raw data

For the most part, our raw data comes from Lane and Milesi-Ferretti (2018) for foreign wealth and from the IMF Balance of Payments for foreign income (see Nievas and Sodano (2024) and Moshrif et al (2024) for additional details).

Global foreign wealth is composed by global foreign assets and global foreign liabilities. Net foreign assets -for any asset class- is the result of assets minus liabilities. The decomposition of global asset classes is the following:

$$\begin{aligned} \text{Net Foreign Assets} &= \text{Net Portfolio Assets} + \text{Net FDI Assets} & (1) \\ \text{Net Portfolio Assets} &= \text{Net Portfolio Equity Assets} + \text{Net Portfolio Debt Assets} & (2)^1 \end{aligned}$$

¹ Note that Net Portfolio debt assets includes Net Other Investment assets, FX Reserves and Net Financial derivatives, which are bundled together by convention. I.e. Net Portfolio Debt Assets = Net Portfolio Debt Assets + Net Other Investment Assets+ FX Reserves + Net Financial Derivatives (3). Importantly, Foreign Exchange (FX) Reserves do not have a liability counterpart. Also note that in this step, we apply a simple correction to ensure proper coverage of every asset

Similarly, global foreign capital income is composed by global foreign capital income received and global foreign capital income paid, and is accrued from each of the asset classes above. Net foreign capital income is the result of received minus paid. The decomposition of global foreign capital income is as follows:

$$\text{Net Foreign Capital Income} = \text{Net Portfolio Income} + \text{Net FDI Income} \quad (5)$$

$$\text{Net Portfolio Income} = \text{Net Portfolio Equity Income} + \text{Net Portfolio Debt Income} \quad (6)^2$$

The main stylized facts regarding global financial imbalances and inconsistencies which we find with the raw data are the following:

Wealth:

- Net global wealth is always negative (the so-called “missing wealth” problem) (Figures 1-2)
- Net portfolio wealth is always negative (Figures 3-6)
- Net FDI wealth is mostly positive although sometimes -and for latest years- is negative (Figures 7-8)

Income:

- Net Global foreign capital income is usually negative (Figures 9-10).
- Net portfolio income is always negative (Figures 11-13)
- Net FDI income is almost always positive (Figure 14)

The main stylized fact is the so-called "missing wealth" problem: the world as a whole has negative net foreign wealth, i.e. less financial assets than financial liabilities, which is logically impossible. The usual interpretation is that some foreign assets owned via tax havens by wealthy individuals (e.g. residents of rich countries) are not properly reported as assets in official financial statistics, but are recorded as liabilities, thereby creating a gap (see e.g. Zucman 2013). The main purpose of this technical note is precisely to explain how we reallocate these missing assets - and corresponding income flows - to the relevant countries.

In order to do so, we face two main difficulties. In general, we do observe that wealth and income for each asset class seem to behave in the same way, if one aggregate is positive (negative) in a given year then it is most likely that the other one will also be positive (negative), which is reassuring. However, there are some exceptions that make it complicated to achieve a general rule to distribute the excesses. For

class so that the aggregates we show below are consistent to each other. That is, we only keep from the EWN observations where the column ‘Total assets excluding gold’ and the column ‘Total liabilities’ are not missing. Additionally, for many countries such variables are present but its decomposition is absent for earlier periods. We solve this by assuming that Gross Foreign Assets (Liabilities) are distributed proportionally among asset classes, using the shares of the earliest year available. Simply: $\text{FDI assets}_{t-1} = \text{Gross foreign assets}_{t-1} \times \text{FDI assets}_{t_0} / \text{Gross foreign assets}_{t_0}$ (4) with t_0 being the first year we can observe all the asset classes and $t - 1$ being earlier periods. The same repeats for other asset classes.

² In the same way as for assets, we define Net Portfolio Debt Income = Net Portfolio Debt Income + Net Other Investment Income + FX Reserves Income Received (7).

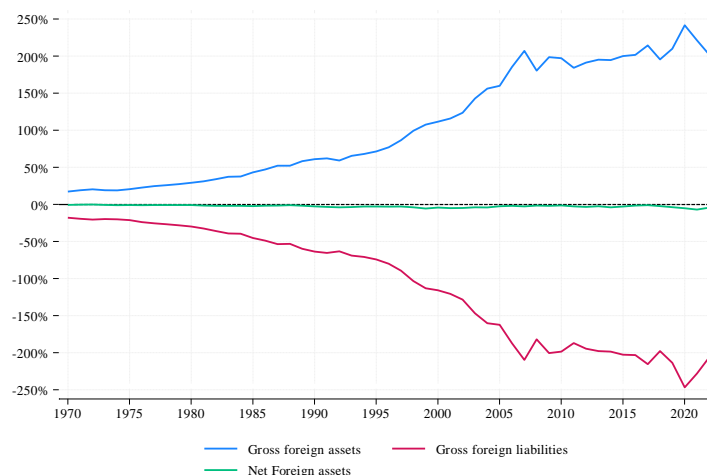
instance, there are years when net FDI assets are negative but net FDI income is positive (e.g. in recent years).

The second – and most systematic – difficulty is that portfolio wealth and FDI wealth behave very differently in terms of global inconsistencies and imbalances. In the context of the definitions that are currently used in national accounts and balance of payments (see SNA 2008 and DINA Guidelines, Blanchet et al 2024), portfolio assets refer to financial investment without a controlling stake. In contrast, FDI assets correspond to a situation where the investor has a controlling stake, either because the investment vehicle is a foreign subsidiary, or more generally because the investor has a sufficiently high share.³ In practice, foreign portfolio assets represent about 150-170% of global GDP in recent years (see Figure 3), vs about 60-70% of global GDP for FDI assets (see Figure 7). Generally speaking, portfolio assets tend to follow the same pattern than foreign wealth as a whole: net portfolio wealth and net portfolio income are almost always negative. In contrast, net FDI wealth and net FDI income are generally positive.

The main candidate explanation is that foreign direct investors develop very specific tax optimization strategies with their foreign subsidiaries: they tend to book profits in some of their foreign subsidiaries (and sometime never report them back) in such a way that this generate the opposite inconsistency as for portfolio wealth and portfolio income. These profit-shifting strategies were analyzed by Torslov et al (2018), among others. Although this is quantitatively less important than the portfolio asset effect (which corresponds to the more standard “missing wealth” hypothesis), this makes it difficult to design a general and consistent strategy to correct for these various inconsistencies, especially given the large and sometime erratic time variations.

Figure 1

Global foreign wealth as a share of global GDP (raw data)

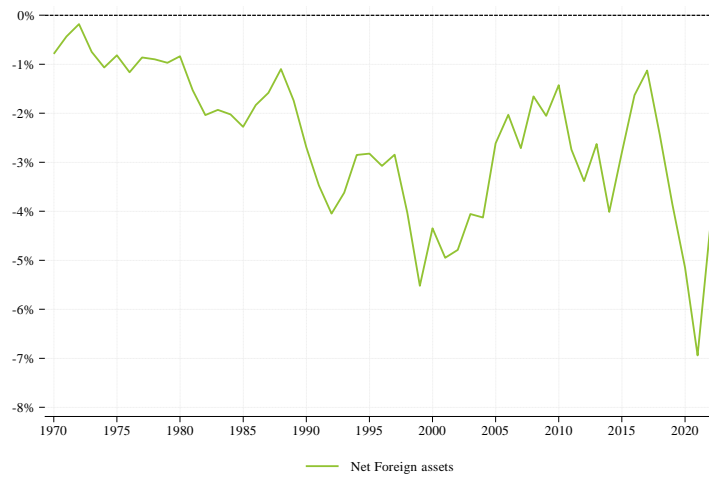


See Equation 1.

³ The threshold for a controlling share is usually set at 10%, according to the IMF’s Balance of Payments and International Investment Position Manual (BPM6).

Figure 2

Net global foreign wealth as a share of global GDP (raw data)

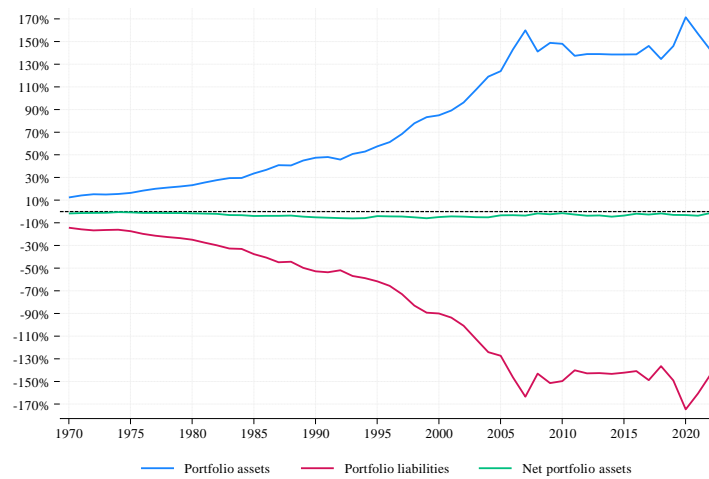


See Equation 1.

Net Foreign assets

Figure 3

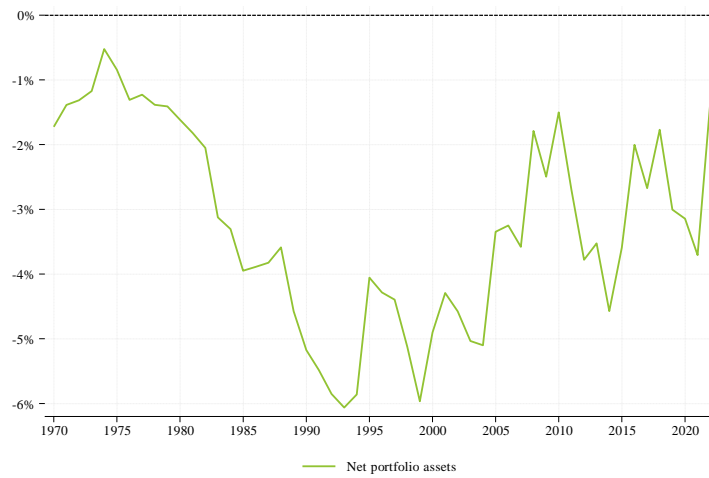
Global foreign portfolio wealth as a share of global GDP (raw data)



See Equation 2.

Figure 4

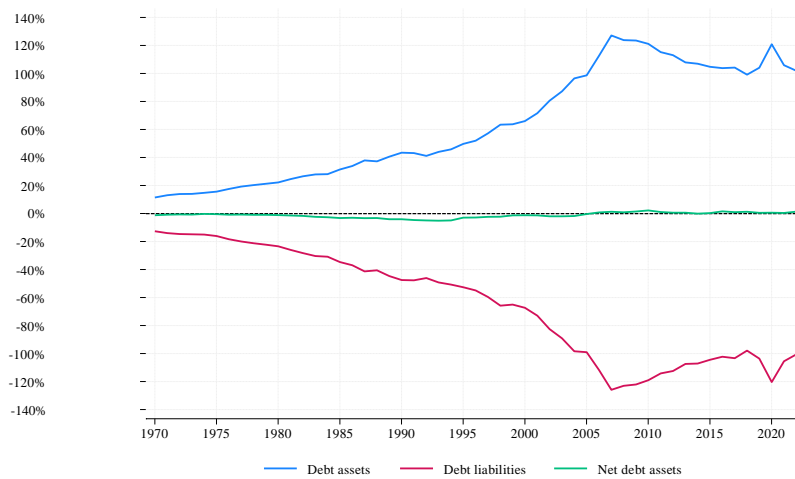
Net global foreign portfolio wealth as a share of global GDP (raw data)



See Equation 2.

Figure 5

Global foreign portfolio debt as a share of global GDP (raw data)



See Equation 3.

Figure 6

Global foreign portfolio equity as a share of global GDP (raw data)

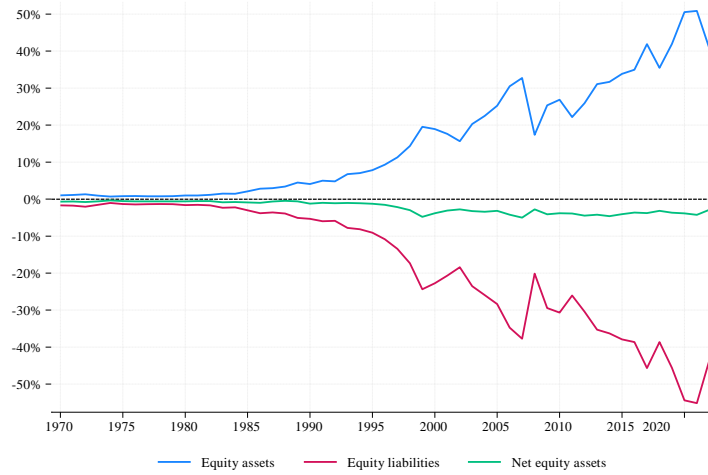


Figure 7

Global FDI wealth as a share of global GDP (raw data)

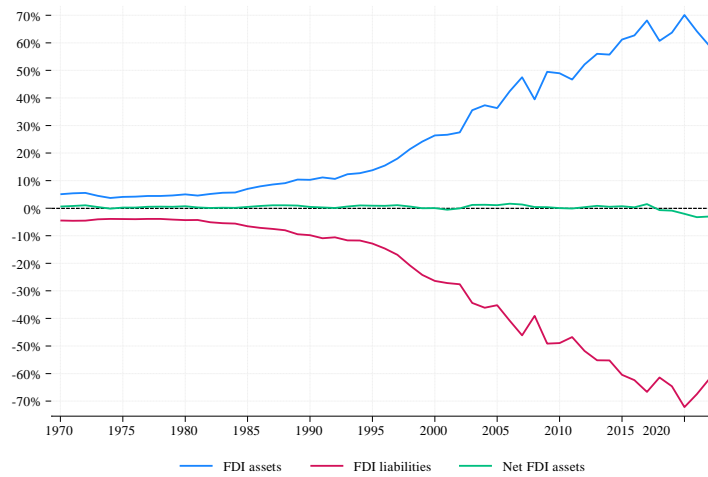
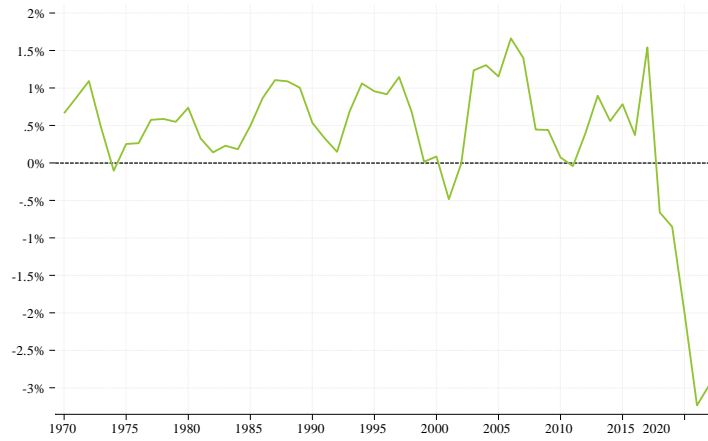


Figure 8

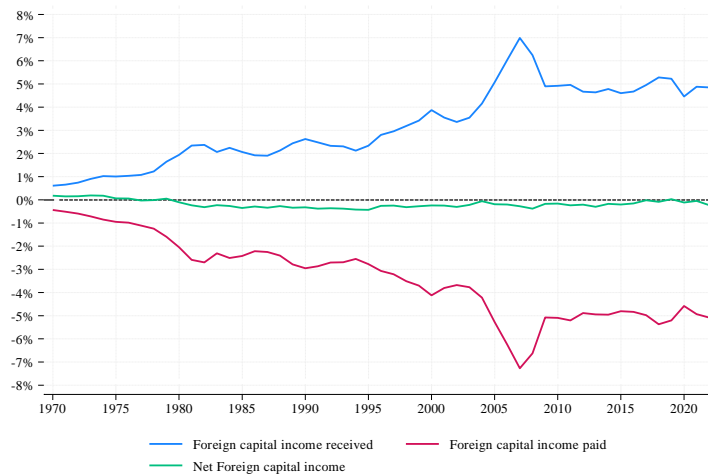
Net Global FDI wealth as a share of global GDP (raw data)



2.1 Foreign capital income

Figure 9

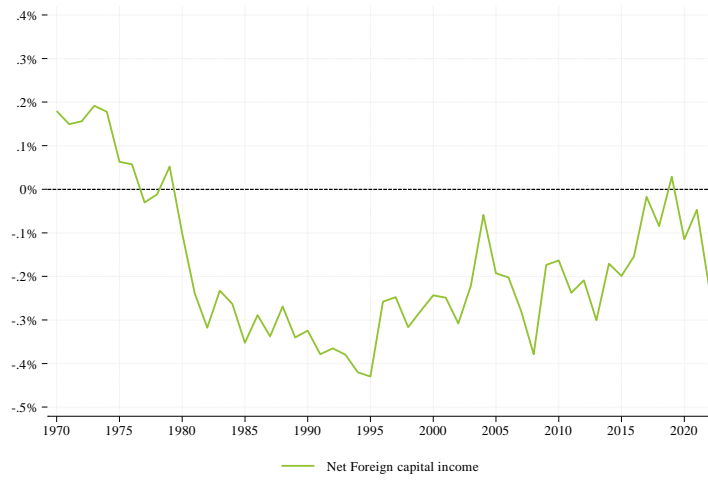
Global foreign capital income as a share of global GDP (raw data)



See Equation 5.

Figure 10

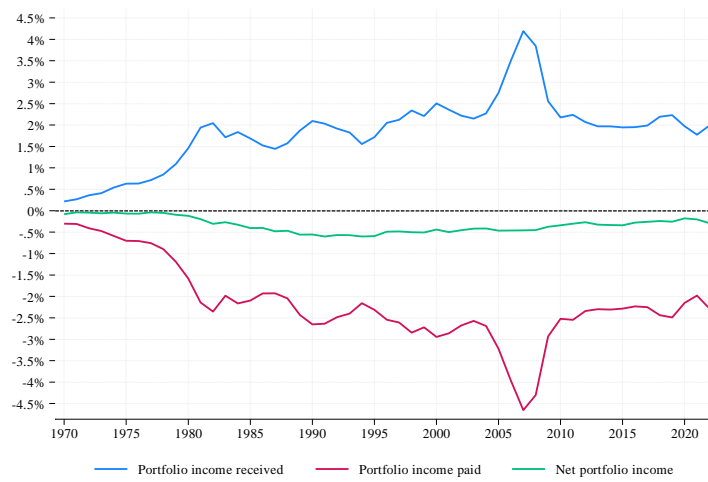
Net Global foreign capital income as a share of global GDP (raw data)



See Equation 5.

Figure 11

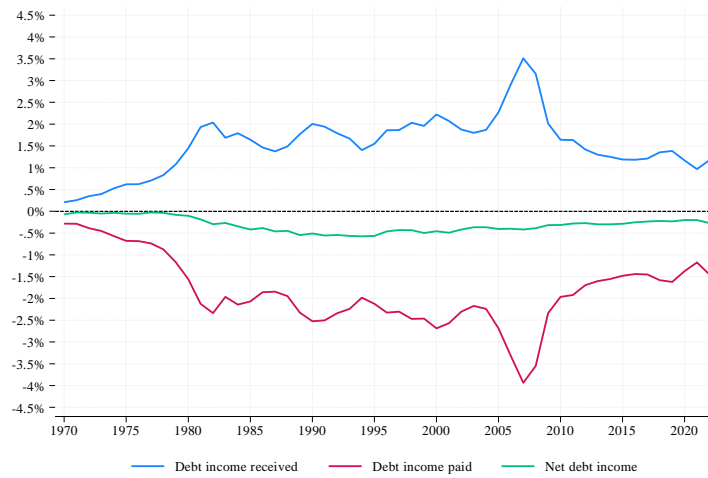
Global foreign portfolio income as a share of global GDP (raw data)



See Equation 6.

Figure 12

Global foreign portfolio debt income as a share of global GDP (raw)



See Equation 7.

Figure 13

Global foreign portfolio equity income as a share of global GDP (raw data)

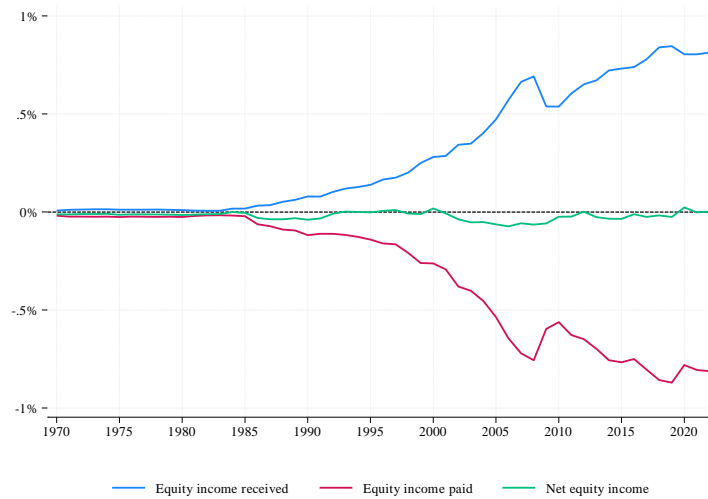
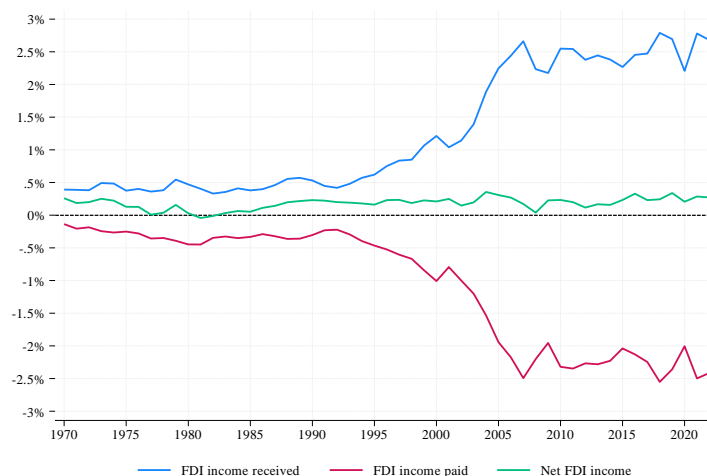


Figure 14

Global FDI income as a share of global GDP (raw data)



3 Squaring the database

In this section we present how global aggregates are modified when squaring the data. Whenever we refer to squaring the data we mean ensuring complete coverage of all variables for every country throughout the period 1970-2023, which we do by using imputation techniques based upon observed data for similar countries (see below).

Generally speaking, the raw data for foreign wealth covers most countries, representing about 80% of global GDP in 1970 and as much as 98-99% of global GDP after 1995.⁴ The coverage for foreign income is less comprehensive at the beginning of the period (about 50-80% of global GDP in 1970-1990) and is over 95% in the post-1995 period (see Figure 15).

This implies that our imputation methods are particularly important for foreign income and for the early period. 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. Appendix A shows the yearly coverage per country before squaring the data.

If foreign capital income is not reported for a certain year but an aggregate is reported (e.g.: foreign

⁴ The data on foreign wealth is sourced from “The External Wealth of Nations” (Lane and Milesi-Ferretti, 2018), 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 of foreign capital accumulation. Only six countries have been completely imputed using a regional average: Bonaire, Cuba, Kosovo, Monaco, North Korea, Puerto Rico

income), then we 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 we 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:

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

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, we impute the value based on the regional average.

Note that, when we refer to regions (i.e. when imputing regional averages) we treat tax havens⁵ as if they were part of a unique region, to avoid them distorting regional averages of non havens.

In practice, the squaring of the database has very little impact on the main stylized facts regarding global imbalances and inconsistencies. We find roughly the same patterns after squaring the data (see Figures 16-29) than with the raw data (see Figures 1-14).

⁵ Here tax havens are defined as in [Tørsløv, Wier, and Zucman \(2018\)](#), who expand the definition of [Hines Jr and Rice \(1994\)](#). We include Montserrat, which is part of [Hines Jr and Rice \(1994\)](#) but not of [Tørsløv et al. \(2018\)](#) and replace The Netherland Antilles by Curacao. Complete list: Andorra, Anguilla, Antigua and Barbuda, Aruba, Bahrain, Barbados, Belgium, Belize, Bermuda, The Bahamas, The British Virgin Islands, The Cayman Islands, Curacao, Cyprus, Gibraltar, Grenada, Guernsey, Hong Kong, Ireland, The Isle of Man, Jersey, Lebanon, Liechtenstein, Luxembourg, Macau, Malta, Marshall Islands, Mauritius, Monaco, Montserrat, The Netherlands, Panama, Puerto Rico, Samoa, Seychelles, Singapore, St. Kitts and Nevis, St. Lucia, St. Vincent Grenadines, Switzerland, Turks and Caicos, Vanuatu.

Figure 15

Global coverage of raw data with respect to global GDP

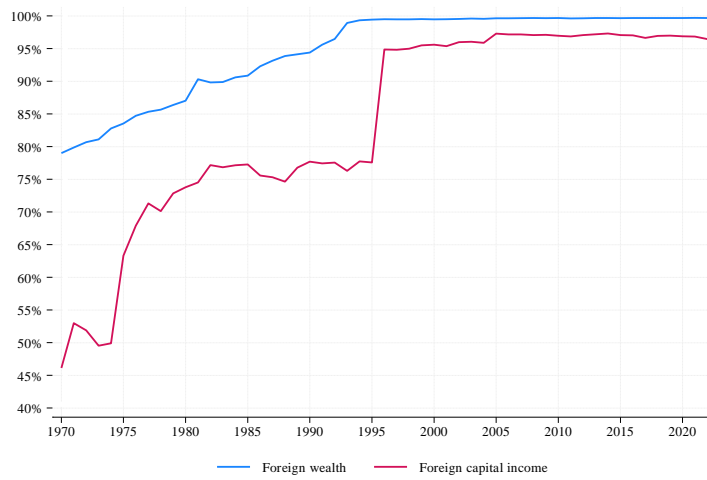


Figure 16

Global coverage of raw data with respect to global Population

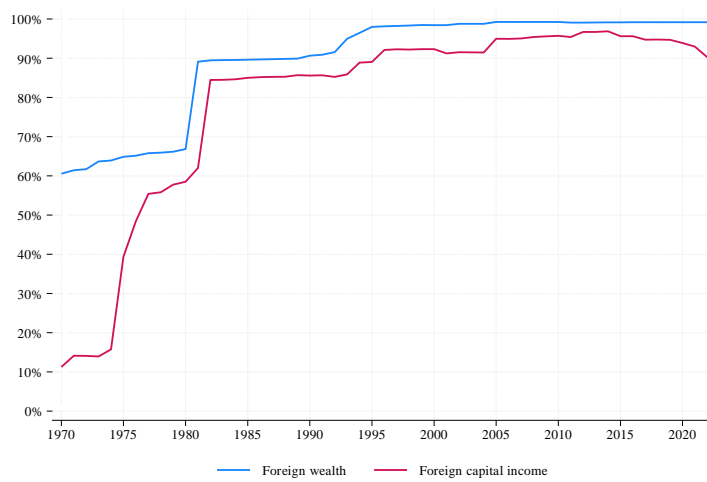
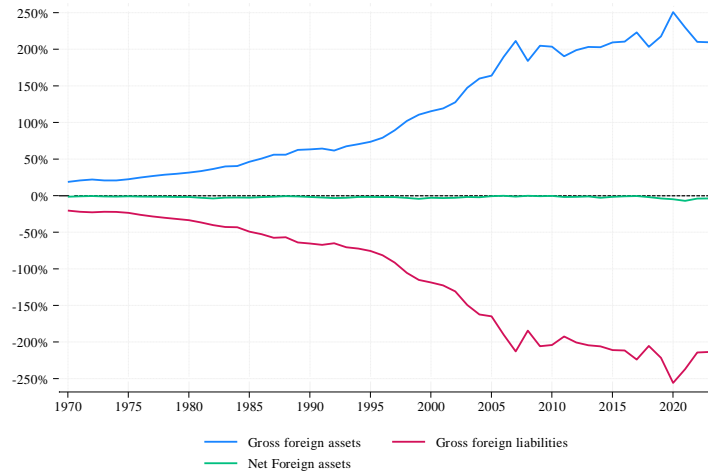


Figure 17

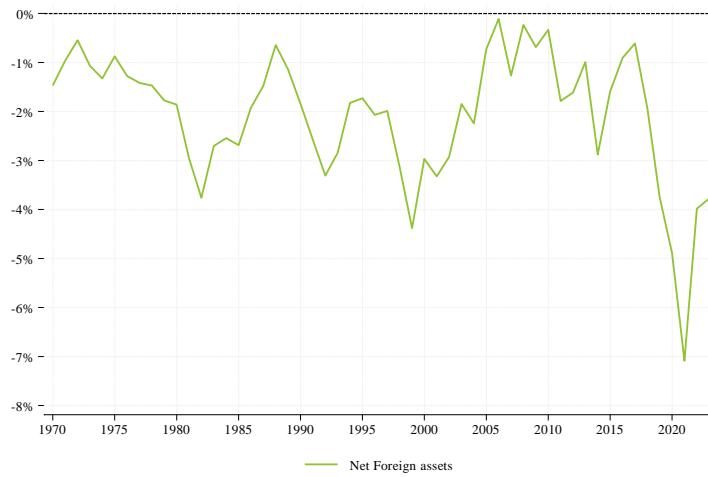
Global foreign wealth as a share of global GDP (squared data)



See Equation 1.

Figure 18

Net foreign wealth as a share of global GDP (squared data)



See Equation 1.

Figure 19

Global FDI wealth as a share of global GDP (squared data)

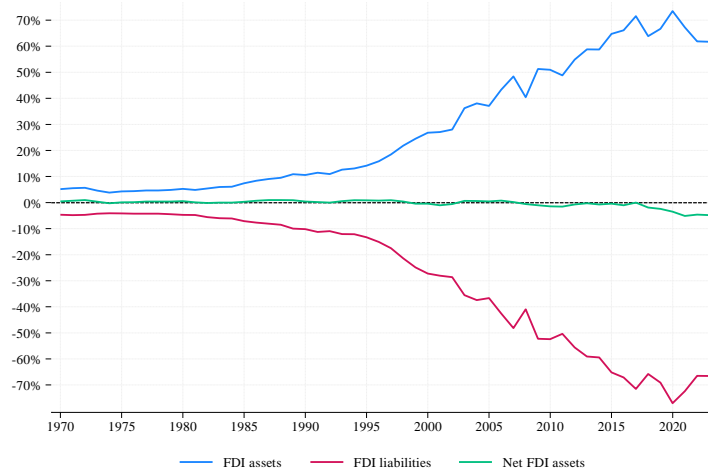


Figure 20

Global FDI as a share of global GDP (squared data)

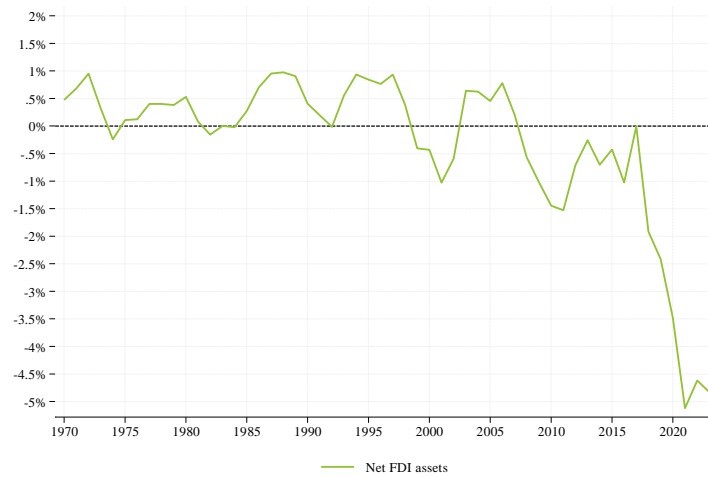
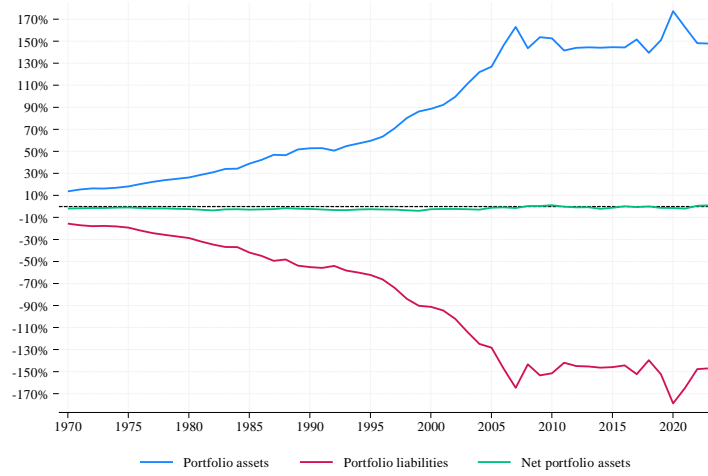


Figure 21

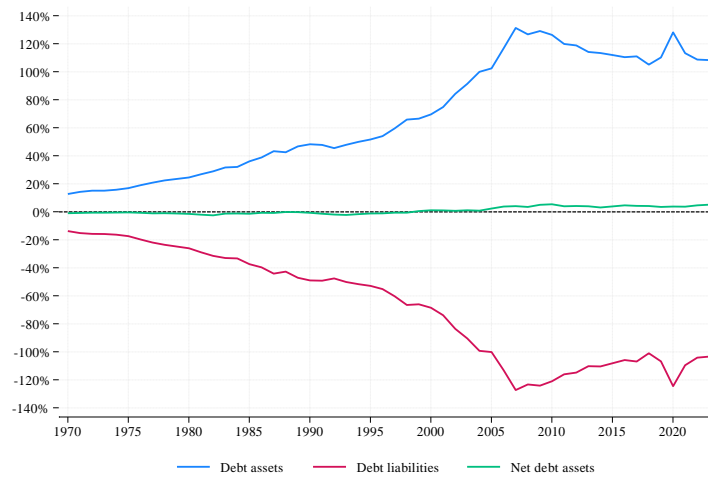
Global foreign portfolio wealth as a share of global GDP (squared data)



See Equation 2.

Figure 22

Global foreign portfolio debt as a share of global GDP (squared data)



See Equation 3.

Figure 23

Global foreign portfolio equity as a share of global GDP (squared data)

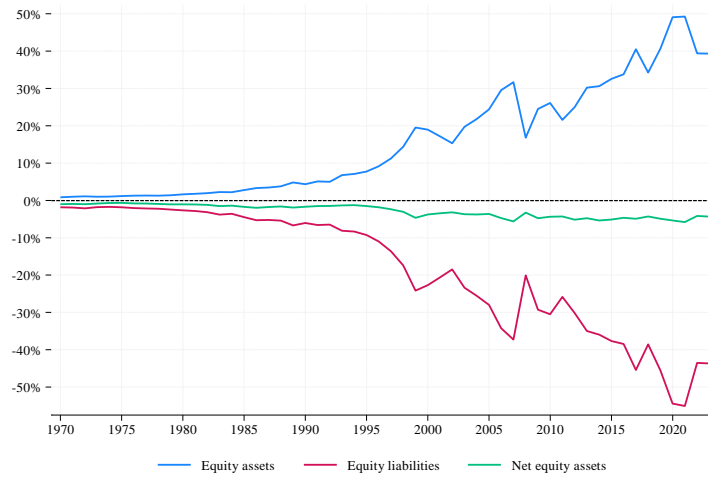
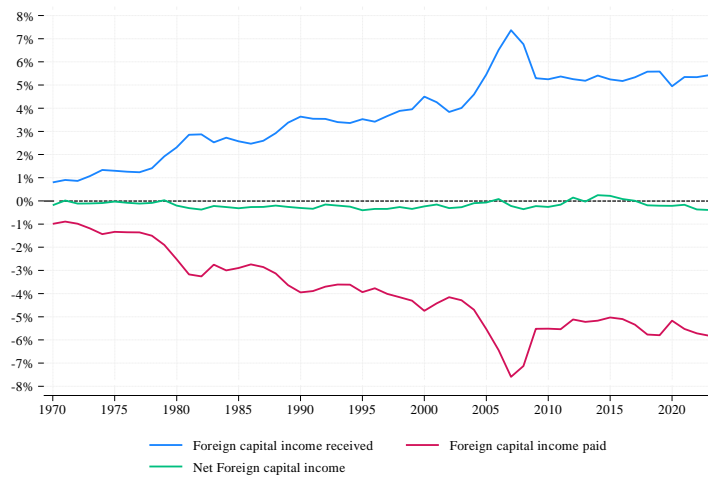


Figure 24

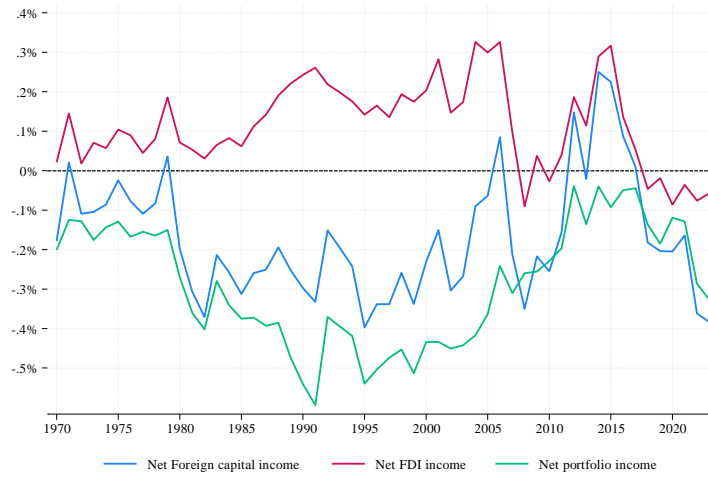
Global foreign capital income as a share of global GDP (squared data)



See Equation 5.

Figure 25

Global foreign capital income as a share of global GDP (squared data)



See Equation 5.

Figure 26

Global FDI income as a share of global GDP (squared data)

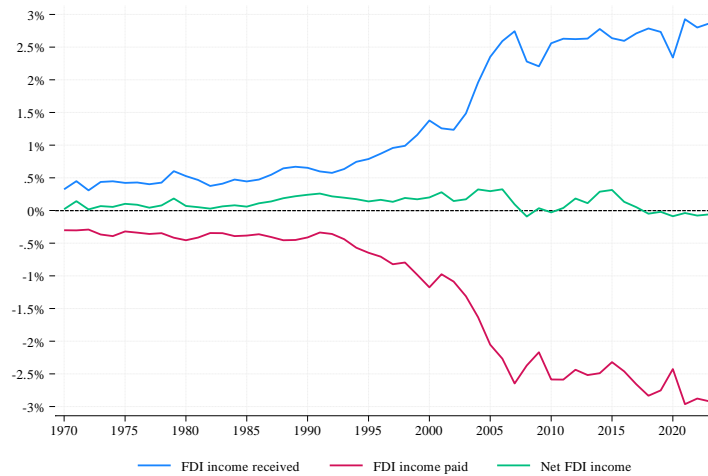
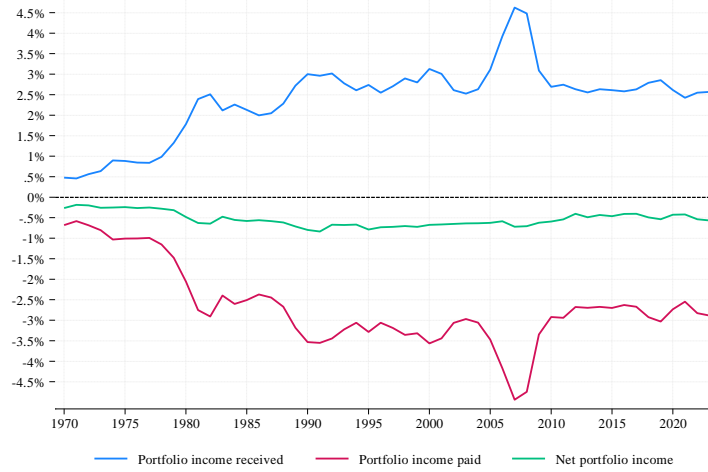


Figure 27

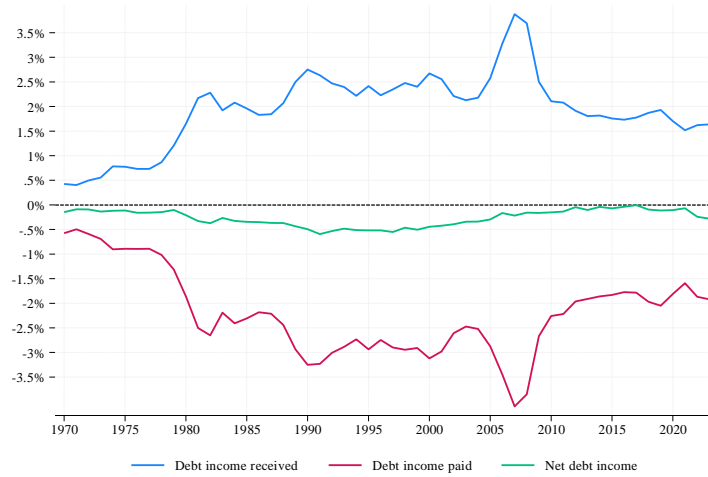
Global foreign portfolio income as a share of global GDP (squared data)



See Equation 6.

Figure 28

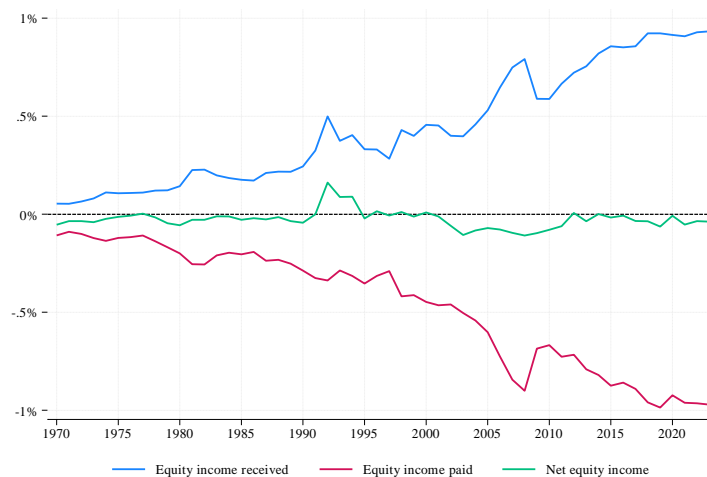
Global foreign portfolio debt income as a share of global GDP (squared data)



See Equation 7.

Figure 29

Global foreign portfolio equity income as a share of global GDP (squared data)



4 Imposing non-negative net national incomes

Generally speaking, the squaring of the data has relatively little impact on global imbalances and inconsistencies. However for a small number of countries it can create implausible values, namely negative net national incomes. In particular, since our imputation method relies on the stock of assets/liabilities that belong to a certain country, this can have large effects for jurisdictions with unusually large foreign assets and liabilities with respect to their GDP (such as tax havens). In this section we explore these issues and design a correction strategy in order to impose non-negative net national incomes. The main identities to have in mind are the following:

$$\text{Net National Income} = \text{GDP} + \text{Net Foreign Income} - \text{Consumption of Fixed Capital} \quad (8)$$

$$\begin{aligned} \text{Net Foreign Income} = & \text{Net Foreign Capital Income} + \text{Net Compensation to Employees} \\ & + \text{Net Subsidies} \end{aligned} \quad (9)$$

We display below the composition of net national income for the Tax Havens territories for 2022 in Table 1, the distribution of national income and foreign assets for Tax Havens and non Havens in 2022 in Table 2 and for all years in Table 3. Noteworthy, there is no negative net national income when only using raw data, but there are many missing values for key components.

Table 1

Composition of net national income and foreign wealth for Tax Havens (raw data, 2022)

iso	Country	GDP (bn USD)	Pop. (000s)	GDP per cap. (000 USD)	As a percentage of country GDP									As % of world GDP			
					Net nat. income	Net for. income	For. cap. income	Net comp. to employees	Net subs. - taxes	Cons. of fixed cap.	Gross for. assets	Gross for. liabilities	Net for. Assets	Gross for. assets	Gross for. liabilities	Net for. assets	
AD	Andorra	3	80	42	94%	8%					13%	549%	209%	340%	0.02%	0.01%	0.01%
AG	Antigua and Barbuda	2	94	20	82%	-5%	-5%	0%	0%		13%	73%	178%	-106%	0.00%	0.00%	0.00%
AI	Anguilla	0	16	29	88%	2%	2%	0%	0%		14%	283%	515%	-233%	0.00%	0.00%	0.00%
AW	Aruba	4	106	33	86%	-4%	-3%	0%	0%		11%	111%	208%	-97%	0.00%	0.01%	0.00%
BB	Barbados	6	282	20	89%	-5%					6%	2625%	2514%	111%	0.15%	0.14%	0.01%
BE	Belgium	583	11656	50	82%	2%	0%	1%	0%		19%	423%	367%	56%	2.47%	2.15%	0.33%
BH	Bahrain	44	1472	30	88%	-4%	-4%				8%	309%	273%	36%	0.14%	0.12%	0.02%
BM	Bermuda	8	64	118	123%	27%					5%	38132%	30319%	7813%	2.88%	2.29%	0.59%
BQ	Bonaire, Sint Eustatius and Saba	1	27	31	87%						13%						
BS	Bahamas	13	410	31	87%	-7%	-6%				6%	2033%	2300%	-266%	0.26%	0.30%	-0.03%
BZ	Belize	3	405	7	79%	-4%	-4%				16%	31%	151%	-121%	0.00%	0.00%	0.00%
CH	Switzerland	818	8740	94	74%	-3%	1%	-4%	0%		23%	688%	598%	90%	5.64%	4.90%	0.74%
CW	Curacao	3	191	16	86%	0%	-2%	2%	0%		14%	1747%	3820%	-2073%	0.05%	0.12%	-0.06%
CY	Cyprus	29	885	33	80%	-8%	-8%	0%	0%		12%	1730%	1830%	-100%	0.51%	0.54%	-0.03%
GD	Grenada	1	125	10	81%	-7%	-4%	-3%	0%		12%	114%	260%	-146%	0.00%	0.00%	0.00%
GG	Guernsey	5	63	74	86%						14%	10502%	7147%	3355%	0.49%	0.34%	0.16%
GI	Gibraltar	3	33	98	85%						15%	1952%	320%	1632%	0.06%	0.01%	0.05%
HK	Hong Kong	360	7489	48	92%	7%	7%	0%	0%		14%	1688%	1199%	489%	6.09%	4.32%	1.77%
IE	Ireland	533	5023	106	48%	-27%	-28%	0%	1%		24%	1540%	1658%	-118%	8.23%	8.86%	-0.63%
IM	Isle of Man	5	85	63	86%						14%	2759%	2961%	-203%	0.15%	0.16%	-0.01%
JE	Jersey	7	111	64	86%						14%	11310%	11466%	-156%	0.80%	0.81%	-0.01%
KN	Saint Kitts and Nevis	1	48	20	91%	-3%	-4%	1%	0%		6%	167%	248%	-82%	0.00%	0.00%	0.00%
KY	Cayman Islands	7	69	100	62%	-31%					8%	87319%	100997%	-13678%	5.99%	6.93%	-0.94%
LB	Lebanon	39	5490	7	93%	-2%	-2%	0%	0%		5%	141%	409%	-268%	0.06%	0.16%	-0.11%
LC	Saint Lucia	2	180	13	79%	-9%	-9%	0%	0%		12%	93%	144%	-51%	0.00%	0.00%	0.00%
LI	Liechtenstein	8	39	197	91%	7%					17%	1346%	385%	961%	0.10%	0.03%	0.07%
LU	Luxembourg	82	648	126	58%	-29%	-12%	-17%	0%		13%	15015%	14968%	47%	12.28%	12.25%	0.04%
MC	Monaco	9	36	241	85%						15%						
MH	Marshall Islands	0	42	6	120%	30%					11%	10871%	23616%	-12744%	0.03%	0.06%	-0.03%
MO	Macao	24	695	35	103%	22%	29%				19%	1270%	836%	434%	0.31%	0.20%	0.10%
MS	Montserrat	0	4	16	91%	4%	4%	0%	0%		13%	213%	96%	117%	0.00%	0.00%	0.00%
MT	Malta	18	533	34	74%	-12%	-11%	0%	0%		14%	1639%	1587%	52%	0.30%	0.29%	0.01%
MU	Mauritius	13	1299	10	103%	16%	16%	0%	0%		12%	4522%	4297%	225%	0.59%	0.56%	0.03%
NL	Netherlands	1009	17435	58	82%	-1%	1%	-1%	0%		17%	1041%	969%	73%	10.53%	9.80%	0.73%
PA	Panama	77	4409	17	88%	-5%	-5%	0%	0%		7%	129%	221%	-92%	0.10%	0.17%	-0.07%
PR	Puerto Rico	117	3252	36	60%	-32%					7%						
SC	Seychelles	2	107	15	88%	-4%	-4%	0%	0%		8%	417%	464%	-47%	0.01%	0.01%	0.00%
SG	Singapore	467	5868	80	70%	-16%	-15%	1%	-1%		15%	1125%	949%	176%	5.26%	4.44%	0.82%
SX	Sint Maarten (Dutch part)	2	44	35	84%	-2%	0%	-2%	0%		13%	51%	117%	-66%	0.00%	0.00%	0.00%
TC	Turks and Caicos Islands	1	46	25	84%	-3%					13%	499%	79%	420%	0.01%	0.00%	0.00%
VC	Saint Vincent and the Grenadines	1	104	9	87%	-1%	-1%	0%	0%		12%	90%	261%	-171%	0.00%	0.00%	0.00%
VG	Virgin Islands, British	1	31	47	76%	-9%					15%	128125%	102402%	25723%	1.89%	1.51%	0.38%
	Total	4312	77736	55	76%	-7%	-5%	-1%	0%	18%	1514%	1423%	91%	65.41%	61.49%	3.92%	

Tax Havens are defined as in [Tørsløv et al. \(2018\)](#), who expand the definition of [Hines Jr and Rice \(1994\)](#). We include Montserrat, which is part of [Hines Jr and Rice \(1994\)](#) but not of [Tørsløv et al. \(2018\)](#) and replace The Netherland Antilles by Curacao.

Table 2*Distribution of national income and foreign assets (as a % of GDP), for 2022*

No havens						Tax havens					
min	p25	mean	p75	max	sd	min	p25	mean	p75	max	sd
Net national income											
53.0%	83.2%	88.1%	91.0%	160.2%	11.0%	48.4%	80.5%	84.8%	88.6%	122.7%	13.6%
Net foreign income											
-40.0%	-3.9%	-0.8%	0.3%	70.1%	10.1%	-32.3%	-7.3%	-3.0%	1.7%	30.2%	13.8%
Net foreign capital income											
-39.7%	-4.7%	-2.8%	-1.1%	16.5%	5.1%	-28.5%	-6.1%	-2.6%	0.7%	28.5%	10.0%
Net compensation to employees											
-1.2%	-0.1%	1.3%	0.6%	35.7%	4.4%	-17.1%	-0.3%	-0.9%	0.1%	1.8%	3.7%
Net subsidies											
-0.3%	0.0%	0.8%	0.1%	50.2%	5.6%	-1.2%	-0.0%	-0.0%	0.0%	1.3%	0.4%
Consumption of fixed capital											
1.7%	7.6%	11.1%	14.3%	21.6%	4.8%	4.8%	10.5%	12.6%	14.6%	24.4%	4.4%
Gross foreign assets											
3.0%	31.2%	104.9%	122.4%	628.3%	125.9%	30.7%	166.6%	8530.0%	2625.4%	128125.1%	24763.7%
Gross foreign liabilities											
12.2%	71.3%	123.1%	148.5%	639.8%	88.0%	78.6%	248.3%	8239.5%	2961.4%	102401.6%	2293.6%
Net foreign assets											
-376.0%	-67.7%	-18.1%	-2.7%	565.8%	123.6%	-13678.2%	-145.6%	290.6%	225.0%	25723.5%	5354.2%

Table 3*Distribution of national income and foreign assets (as a % of GDP), for all years*

No havens						Tax havens					
min	p25	mean	p75	max	sd	min	p25	mean	p75	max	sd
Net national income											
28.1%	83.9%	88.7%	91.8%	302.8%	11.4%	46.3%	83.6%	86.0%	89.0%	130.8%	9.4%
Net foreign income											
-63.5%	-3.5%	-0.8%	-0.2%	205.6%	11.0%	-41.1%	-6.8%	-3.3%	0.8%	38.0%	10.8%
Net foreign capital income											
-113.6%	-3.7%	-2.1%	-0.4%	60.9%	5.4%	-40.6%	-6.1%	-3.3%	0.6%	41.0%	9.3%
Net compensation to employees											
-18.5%	-0.1%	1.0%	0.3%	174.0%	8.0%	-23.2%	-0.6%	-0.1%	0.7%	34.1%	4.6%
Net subsidies											
-29.4%	0.0%	0.4%	0.0%	91.5%	4.2%	-9.6%	0.0%	0.5%	0.0%	26.3%	3.0%
Consumption of fixed capital											
0.4%	7.2%	10.7%	13.9%	52.4%	4.8%	3.2%	9.1%	11.7%	13.9%	28.4%	3.8%
Gross foreign assets											
-7.2%	15.3%	64.1%	61.8%	1207.0%	111.7%	3.1%	78.5%	4325.2%	1473.8%	132760.3%	15304.0%
Gross foreign liabilities											
0.4%	41.9%	90.5%	110.8%	1005.1%	82.4%	4.7%	93.8%	3972.4%	1179.6%	13997.2%	1373.0%
Net foreign assets											
-990.5%	-60.6%	-26.4%	-7.6%	1176.6%	121.1%	-31399.1%	-59.3%	352.8%	112.6%	61329.2%	4940.2%

We now display the composition of net national income for the Tax Havens territories for 2022 in Table 4, the distribution of national income and foreign assets for Tax Havens and non Havens in 2022 in Table 5 and for all years in Table 6, with the distinction that we now refer to the squared database. Importantly, some territories present negative net national income that comes from a significant negative foreign capital income with respect to their GDP (although not extraordinary given the amount of foreign wealth they held).

Table 4

Composition of net national income and foreign wealth for Tax Havens (squared data, 2022)

iso	Country	GDP (bn USD)	Pop. (000s)	GDP per cap. (000 USD)	As a percentage of country GDP									As % of world GDP		
					Net nat. income	Net for. income	For. cap. income	Net comp. to employees	Net subs. - taxes	Cons. of fixed cap.	Gross for. assets	Gross for. liabilities	Net for. Assets	Gross for. assets	Gross for. liabilities	Net for. assets
AD	Andorra	3	80	42	95%	8%	7%	0%	2%	13%	561%	214%	347%	0.02%	0.01%	0.01%
AG	Antigua and Barbuda	2	94	20	82%	-5%	-6%	0%	1%	13%	76%	187%	-111%	0.00%	0.00%	0.00%
AI	Anguilla	0	16	29	88%	2%	1%	0%	1%	14%	286%	522%	-236%	0.00%	0.00%	0.00%
AW	Aruba	4	106	33	86%	-4%	-4%	0%	1%	11%	110%	208%	-97%	0.00%	0.01%	0.00%
BB	Barbados	6	282	20	158%	65%	64%	1%	0%	6%	2642%	2530%	112%	0.15%	0.14%	0.01%
BE	Belgium	583	11656	50	82%	2%	0%	1%	0%	19%	424%	368%	56%	2.48%	2.15%	0.33%
BH	Bahrain	44	1472	30	88%	-4%	-3%	-4%	2%	8%	313%	276%	37%	0.14%	0.12%	0.02%
BM	Bermuda	8	64	118	124%	29%	3%	23%	3%	5%	38121%	30311%	7811%	2.88%	2.29%	0.59%
BQ	Bonaire, Sint Eustatius and Saba	1	27	31	28%	-59%	-61%	0%	2%	13%	8754%	8460%	294%	0.07%	0.07%	0.00%
BS	Bahamas	13	410	31	87%	-7%	-7%	-1%	1%	6%	2094%	2369%	-275%	0.27%	0.31%	-0.04%
BZ	Belize	3	405	7	79%	-4%	-4%	0%	0%	16%	30%	149%	-119%	0.00%	0.00%	0.00%
CH	Switzerland	818	8740	94	74%	-3%	1%	-4%	1%	23%	688%	598%	90%	5.64%	4.90%	0.74%
CW	Curacao	3	191	16	86%	0%	-2%	2%	0%	14%	1747%	3820%	-2073%	0.05%	0.12%	-0.06%
CY	Cyprus	29	885	33	80%	-8%	-8%	0%	0%	12%	1754%	1856%	-102%	0.51%	0.54%	-0.03%
GD	Grenada	1	125	10	81%	-7%	-5%	-3%	1%	12%	114%	260%	-146%	0.00%	0.00%	0.00%
GG	Guernsey	5	63	74	118%	32%	30%	0%	2%	14%	10502%	7147%	3356%	0.49%	0.34%	0.16%
GI	Gibraltar	3	33	98	113%	28%	26%	0%	2%	15%	1967%	323%	1644%	0.06%	0.01%	0.05%
HK	Hong Kong	360	7489	48	92%	7%	6%	0%	1%	14%	1688%	1199%	489%	6.09%	4.32%	1.77%
IE	Ireland	533	5023	106	47%	-28%	-29%	0%	1%	24%	1539%	1657%	-118%	8.22%	8.85%	-0.63%
IM	Isle of Man	5	85	63	50%	-36%	-37%	0%	2%	14%	2739%	2941%	-201%	0.15%	0.16%	-0.01%
JE	Jersey	7	111	64	86%	0%	-2%	0%	2%	14%	11310%	11466%	-156%	0.80%	0.81%	-0.01%
KN	Saint Kitts and Nevis	1	48	20	91%	-3%	-5%	1%	1%	6%	166%	247%	-81%	0.00%	0.00%	0.00%
KY	Cayman Islands	7	69	100	62%	-31%	-31%	-1%	2%	8%	87182%	100838%	-13656%	5.98%	6.92%	-0.94%
LB	Lebanon	39	5490	7	93%	-2%	-2%	0%	1%	5%	160%	465%	-305%	0.06%	0.18%	-0.12%
LC	Saint Lucia	2	180	13	79%	-9%	-10%	0%	0%	12%	95%	147%	-52%	0.00%	0.00%	0.00%
LI	Liechtenstein	8	39	197	95%	12%	13%	0%	-1%	17%	1342%	384%	958%	0.10%	0.03%	0.07%
LU	Luxembourg	82	648	126	58%	-29%	-13%	-16%	0%	13%	14973%	14926%	47%	12.25%	12.21%	0.04%
MC	Monaco	9	36	241	20%	-65%	-67%	0%	2%	15%	8754%	8460%	294%	0.77%	0.74%	0.03%
MH	Marshall Islands	0	42	6	117%	28%	0%	8%	20%	11%	10934%	23760%	-12826%	0.03%	0.06%	-0.03%
MO	Macao	24	695	35	103%	22%	26%	-5%	1%	19%	1281%	843%	438%	0.31%	0.20%	0.11%
MS	Montserrat	0	4	16	91%	4%	4%	0%	0%	13%	210%	95%	115%	0.00%	0.00%	0.00%
MT	Malta	18	533	34	74%	-12%	-11%	0%	0%	14%	1635%	1583%	52%	0.30%	0.29%	0.01%
MU	Mauritius	13	1299	10	103%	16%	14%	0%	1%	12%	4561%	4334%	227%	0.59%	0.56%	0.03%
NL	Netherlands	1009	17435	58	82%	-1%	1%	-1%	0%	17%	1042%	969%	73%	10.54%	9.80%	0.73%
PA	Panama	77	4409	17	88%	-5%	-6%	0%	1%	7%	128%	219%	-91%	0.10%	0.17%	-0.07%
PR	Puerto Rico	117	3252	36	71%	-21%	-24%	1%	2%	7%	8754%	8460%	294%	10.28%	9.94%	0.35%
SC	Seychelles	2	107	15	88%	-4%	-4%	0%	0%	8%	367%	408%	-41%	0.01%	0.01%	0.00%
SG	Singapore	467	5868	80	91%	6%	7%	0%	-1%	15%	1125%	950%	176%	5.26%	4.44%	0.82%
SX	Sint Maarten (Dutch part)	2	44	35	84%	-2%	0%	-2%	0%	13%	51%	117%	-66%	0.00%	0.00%	0.00%
TC	Turks and Caicos Islands	1	46	25	97%	10%	8%	0%	2%	13%	507%	80%	428%	0.01%	0.00%	0.00%
VC	Saint Vincent and the Grenadines	1	104	9	87%	-1%	-1%	0%	0%	12%	90%	261%	-171%	0.00%	0.00%	0.00%
VG	Virgin Islands, British	1	31	47	109%	24%	20%	2%	2%	15%	128321%	102560%	25723%	1.89%	1.51%	0.38%
	Total	4312	77736	55	78%	-4%	-3%	-1%	0%	18%	1771%	1672%	99%	76.53%	72.25%	4.28%

Tax Havens are defined as in *Tørsløv et al. (2018)*, who expand the definition of *Hines Jr and Rice (1994)*. We include Montserrat, which is part of *Hines Jr and Rice (1994)* but not of *Tørsløv et al. (2018)* and replace The Netherland Antilles by Curacao.

Table 5*Distribution of national income and foreign assets (as a % of GDP), for 2022*

No havens						Tax havens					
min	p25	mean	p75	max	sd	min	p25	mean	p75	max	sd
Net national income											
53.0%	83.2%	88.4%	91.5%	163.9%	11.2%	19.7%	79.1%	86.0%	94.9%	158.5%	23.9%
Net foreign income											
-40.0%	-3.8%	-0.5%	0.3%	73.8%	10.3%	-65.2%	-6.8%	-1.4%	8.3%	64.8%	23.0%
Net foreign capital income											
-39.8%	-4.4%	-2.7%	-0.6%	21.7%	4.9%	-66.8%	-6.7%	-2.6%	5.5%	64.1%	21.9%
Net compensation to employees											
-8.7%	-0.1%	1.1%	0.5%	35.7%	4.2%	-15.6%	-0.2%	0.0%	0.1%	22.9%	4.7%
Net subsidies											
-2.1%	0.0%	1.1%	0.4%	49.1%	5.5%	-0.9%	0.0%	1.2%	1.6%	19.7%	3.0%
Consumption of fixed capital											
1.7%	7.6%	11.1%	14.3%	21.6%	4.8%	4.8%	10.5%	12.6%	14.6%	24.4%	4.4%
Gross foreign assets											
3.0%	32.4%	105.6%	122.5%	620.2%	123.5%	30.3%	210.5%	8551.0%	4560.7%	128321.2%	23852.3%
Gross foreign liabilities											
14.8%	70.6%	123.6%	155.0%	575.1%	84.3%	79.8%	260.3%	8261.1%	4333.7%	102560.3%	22082.2%
Net foreign assets											
-370.9%	-67.0%	-17.9%	-2.3%	563.7%	123.4%	-13655.9%	-119.0%	289.9%	294.2%	25760.9%	5162.8%

Table 6*Distribution of national income and foreign assets (as a % of GDP), for all years*

No havens						Tax havens					
min	p25	mean	p75	max	sd	min	p25	mean	p75	max	sd
Net national income											
35.3%	84.0%	89.1%	92.0%	304.9%	12.4%	-7.2%	82.5%	89.1%	92.8%	342.2%	22.9%
Net foreign income											
-56.3%	-3.2%	-0.2%	0.1%	207.7%	11.1%	-93.7%	-5.5%	0.8%	3.9%	256.7%	22.7%
Net foreign capital income											
-48.1%	-3.3%	-1.7%	-0.1%	50.3%	4.5%	-95.7%	-5.2%	1.0%	3.3%	288.4%	27.5%
Net compensation to employees											
-19.4%	-0.1%	0.9%	0.4%	209.6%	7.9%	-145.8%	-0.8%	-0.5%	0.8%	41.5%	10.0%
Net subsidies											
-8.8%	0.0%	0.6%	0.1%	91.5%	4.2%	-49.1%	0.0%	0.3%	0.8%	26.2%	3.5%
Consumption of fixed capital											
0.4%	7.2%	10.7%	13.9%	52.4%	4.8%	3.2%	9.1%	11.7%	13.9%	28.4%	3.8%
Gross foreign assets											
0.2%	11.7%	60.3%	58.2%	9954.0%	152.7%	3.0%	90.8%	3722.1%	2017.9%	132994.3%	13198.9%
Gross foreign liabilities											
0.4%	30.4%	88.4%	102.1%	5953.6%	664.0%	4.5%	88.2%	3407.4%	1733.9%	13920.4%	1187.2%
Net foreign assets											
-49582.0%	-51.5%	-28.1%	-2.6%	1397.7%	562.2%	-31221.0%	-43.9%	314.7%	250.4%	61473.4%	4202.7%

Given the extraordinary amount of gross foreign assets and/or gross foreign liabilities that Tax Havens hold, the imputations of foreign capital income can take too big values, either net positive or negative, that distort net national income. Thus, we apply a simple correction that ensures this does not happen. Specifically, whenever net national income of a country that has imputed foreign capital income is lower than 50% of its GDP or bigger than 150% of it, we increase foreign capital income received/paid. In other words:

$$\text{Foreign Capital Income Received} = \text{Foreign Capital Income Received} + (0.5 \times \text{GDP} - \text{Net National Income})$$

if Net National Income < 0.5 × GDP and Foreign Capital Income is imputed

(10)

$$\text{Foreign Capital Income Paid} = \text{Foreign Capital Income Paid} + (\text{Net National Income} - 1.5 \times \text{GDP})$$

if Net National Income > 1.5 × GDP and Foreign Capital Income is imputed

(11)

We then distribute the added foreign capital income between portfolio income and FDI income proportionally. This ensures that there are never negative net national income.

5 Netting the data

To ensure that global aggregates for Net portfolio assets, Net FDI assets, Net portfolio income, Net FDI income, Net compensation to employees and Net subsidies (all measured in current USD or EUR using market exchange rates) are exactly equal to zero at the global level, both for wealth and income, we simply distribute proportionally any excess.

For instance, for a given country we correct portfolio assets, we distribute (Global PTF assets - Global PTF liabilities) -which is the green line in Figure 21 :

$$\text{PTF Assets} = \text{PTF Assets} - \frac{\text{PTF Assets}}{\text{Global PTF Assets}} \times (\text{Global PTF Assets} - \text{Global PTF Liabilities})$$

if Global PTF Assets < Global PTF Liabilities.

(12)

Note that the allocated difference is subtracted because the Global Net is negative. The same process repeats for the other elements. The global zero net of FDI and portfolio ensures an aggregate zero net of foreign capital income and foreign wealth. Table 7 compares the shares of the proportional adjustment method with the ones proposed by [Alstadsæter, Johannesen, and Zucman \(2018\)](#), for the global portfolio assets correction. In the future we plan to develop more sophisticated netting strategies that would make systematic use of this information. As noted above, the main difficulties are that we want the net zero property to work for all asset categories and that the inconsistencies and imbalances take different forms for different years and asset categories (particularly portfolio assets vs FDI assets). For now, the proportional adjustment method seems like the simplest and most transparent manner to ensure global consistency across years and asset categories, but more sophisticated method need to be developed in the future. In any case, whatever the research question at stake, it is critical to check that the key results are robust to variations in the method. For instance, [Nievas and Sodano \(2024\)](#) show that they find the same results on “excess yields” for rich countries whether they use the proportional adjustment method or the portfolio allocation method, which in practice seem to make relatively little difference regarding general global patterns.

Table 7*Share of reallocation for portfolio assets - 2022*

Ranking	iso	Country	Share Alstadsæter et al. (2018)	Share prop. adjustment	Ranking	iso	Country	Share Alstadsæter et al. (2018)	Share prop. adjustment
1	US	United States	18.82%	14.79%	21	AU	Australia	1.02%	1.18%
2	GB	United Kingdom	8.86%	8.74%	22	SA	Saudi Arabia	4.16%	1.17%
3	DE	Germany	9.81%	6.23%	23	AE	United Arab Emirates	3.35%	1.05%
4	JP	Japan	2.20%	5.17%	24	KR	South Korea	0.23%	1.02%
5	FR	France	7.28%	4.81%	25	BE	Belgium	1.46%	0.95%
6	PR	Puerto Rico		4.80%	26	SE	Sweden	0.51%	0.87%
7	LU	Luxembourg		4.77%	27	DK	Denmark	0.15%	0.74%
8	CN	China	1.45%	4.42%	28	RU	Russia	3.05%	0.71%
9	IE	Ireland	0.48%	4.32%	29	KW	Kuwait	0.90%	0.64%
10	KY	Cayman Islands		3.30%	30	AT	Austria	0.54%	0.51%
11	NL	Netherlands	0.90%	2.90%	31	FI	Finland	0.12%	0.50%
12	HK	Hong Kong		2.63%	32	QA	Qatar	0.13%	0.48%
13	SG	Singapore		2.47%	33	IN	India	0.59%	0.38%
14	CH	Switzerland		2.40%	34	IL	Israel	1.42%	0.36%
15	CA	Canada	1.21%	2.17%	35	MC	Monaco		0.36%
16	IT	Italy	4.66%	1.77%	36	MX	Mexico	1.31%	0.33%
17	TW	Taiwan	1.57%	1.50%	37	JE	Jersey		0.32%
18	ES	Spain	2.91%	1.33%	38	BR	Brazil	1.55%	0.30%
19	NO	Norway	0.25%	1.32%	39	VG	British Virgin Islands		0.29%
20	BM	Bermuda		1.31%	40	GG	Guernsey		0.28%

Table shows top 40 countries with the highest share of reallocation according to the proportional adjustment method.

6 STATA code example

We provide an example of how to ensure netting world totals using the command 'wid' from STATA:

```
global corecountries ` ' "AD" "AE" "AF" "AG" "AI" "AL" "AM" "AO" "AR" "AT" "AU" "AW" "AZ"
    "BA" "BB" "BD" "BE" "BF" "BG" "BH" "BI" "BJ" "BM" "BN" "BO" "BQ" "BR" "BS" "BT" "BW"
    " " "BY" "BZ" "CA" "CD" "CF" "CG" "CH" "CI" "CL" "CM" "CN" "CO" "CR" "CU" "CV" "CW" " "
    "CY" "CZ" "DE" "DJ" "DK" "DM" "DO" "DZ" "EC" "EE" "EG" "ER" "ES" "ET" "FI" "FJ" "FM"
    "FR" "GA" "GB" "GD" "GE" "GG" "GH" "GI" "GL" "GM" "GN" "GQ" "GR" "GT" "GW" "GY" "HK"
    "HN" "HR" "HT" "HU" "ID" "IE" "IL" "IM" "IN" "IQ" "IR" "IS" "IT" "JE" "JM" "JO" "JP"
    " " "KE" "KG" "KH" "KI" "KM" "KN" "KP" "KR" "KS" "KW" "KY" "KZ" "LA" "LB" "LC" "LI" " "
    "LK" "LR" "LS" "LT" "LU" "LV" "LY" "MA" "MC" "MD" "ME" "MG" "MH" "MK" "ML" "MM" "MN"
    "MO" "MR" "MS" "MT" "MU" "MV" "MW" "MX" "MY" "MZ" "NA" "NC" "NE" "NG" "NI" "NL" "NO"
    "NP" "NR" "NZ""'
global corecountries ` ' $corecountries "OM" "PA" "PE" "PF" "PG" "PH" "PK" "PL" "PR" "PS"
    "PT" "PW" "PY" "QA" "RO" "RS" "RU" "RW" "SA" "SB" "SC" "SD" "SE" "SG" "SI" "SK" "SL"
    " " "SM" "SN" "SO" "SR" "SS" "ST" "SV" "SX" "SY" "SZ" "TC" "TD" "TG" "TH" "TJ" "TL" " "
    "TM" "TN" "TO" "TR" "TT" "TV" "TW" "TZ" "UA" "UG" "US" "UY" "UZ" "VC" "VE" "VG" "VN"
    "VU" "WS" "YE" "ZA" "ZM" "ZW""'

wid, indicators(mnwnxa inyixx xlcusx) years(1970/2023) clear

gen corecountry = .
foreach c of global corecountries {
    replace corecountry = 1 if country == "`c'"
}
keep if (corecountry == 1) & year >= 1970

// values need to be current and in the same currency (EUR in this example)
drop percentile age pop
greshape wide value, i(country year) j(variable) string
renvars value*, postd(4)
renvars value*, pred(5)

replace mnwnxa =(mnwnxa*inyixx)/xlcusx
collapse (sum) mnwnxa, by(year)
```

As this computer code illustrates, the world aggregates of the variables described above nets out provided that all core countries are included in the sum and that variables are expressed in current values and in the same currency. Due to rounding mistakes and data storage issues, totals and sums might not always be exactly equal to zero, but we ensure that percentage difference are always below 10^{-4} (i.e. 0.01%).

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Appendices

A Data coverage

Iso	Country	Capital income received		Capital income paid		Foreign wealth	
		IMF	UN/OECD	IMF	UN/OECD	Assets	Liabilities
AD	Andorra	2019-2021	.	2019-2021	.	1995-2022	1995-2022
AE	United Arab Emirates	.	.	.	.	1973-2022	1973-2022
AF	Afghanistan	1979-2020	.	1979-2020	.	2002-2022	2002-2022
AG	Antigua and Barbuda	1977-2022	.	1977-2022	.	1977-2022	1977-2022
AI	Anguilla	1990-2022	.	1990-2022	.	1990-2022	1990-2022
AL	Albania	1980-2022	.	1980-2022	.	1993-2022	1993-2022
AM	Armenia	1994-2022	1993	1993-2022	.	1996-2022	1996-2022
AO	Angola	1985-2022	.	1985-2022	.	1980-2022	1980-2022
AR	Argentina	1976-2022	.	1976-2022	.	1970-2022	1970-2022
AT	Austria	2005-2022	1970-2004	2005-2022	1970-2004	1970-2022	1970-2022
AU	Australia	1989-2022	1970-1988	1989-2022	1970-1988	1970-2022	1970-2022
AW	Aruba	1986-2022	.	1986-2022	.	1986-2022	1986-2022
AZ	Azerbaijan	1995-2022	1993-1994	1995-2022	1993-1994	1995-2022	1995-2022
BA	Bosnia and Herzegovina	1998-2022	.	1998-2022	.	1998-2022	1998-2022
BB	Barbados	1970-2017	.	1970-2017	.	1970-2022	1970-2022
BD	Bangladesh	1976-2022	.	1976-2022	.	1973-2022	1973-2022
BE	Belgium	2002-2022	1970-2001	2002-2022	1970-2001	1970-2022	1970-2022
BF	Burkina Faso	2005-2021	1970-2004	2005-2021	1970-2004	1974-2022	1974-2022
BG	Bulgaria	1980-2022	.	1980-2022	.	1991-2022	1991-2022
BH	Bahrain	1975-2022	.	1975-2022	.	1970-2022	1970-2022
BI	Burundi	1985-2018	1970-1984	1985-2018	1970-1984	1970-2022	1970-2022
BJ	Benin	1974-2021	.	1974-2021	.	1970-2022	1970-2022
BM	Bermuda	2006-2021	1996-2005	2006-2021	1997-2004	2001-2022	2001-2022
BN	Brunei	2001-2022	.	2001-2022	.	1985-2022	1985-2022
BO	Bolivia	1976-2022	1970-1975	1976-2022	1970-1975	1970-2022	1970-2022
BS	Bahamas	1976-2022	.	1976-2022	.	1970-2022	1970-2022
BT	Bhutan	2006-2022	1980-2000	2006-2022	1983-2000	1983-2022	1983-2022
BW	Botswana	1975-2022	1973-1974	1975-2022	1973-1974	1974-2022	1974-2022
BY	Belarus	1993-2022	1990-1992	1993-2022	1990-1992	1994-2022	1994-2022
BZ	Belize	1984-2022	1973-1976	1984-2022	1973-1976	1976-2022	1976-2022
CA	Canada	1970-2022	.	1970-2022	.	1970-2022	1970-2022
CD	Democratic Republic of Congo	2005-2021	.	2005-2021	.	1970-2022	1970-2022
CF	Central African Republic	1977-1994	2001-2007	1977-1994	2001-2007	1970-2022	1970-2022
CG	Congo	1978-2020	.	1978-2020	.	1970-2022	1970-2022

We first rely on IMF BOP data. If subcomponents (FDI/portfolio income) are missing but aggregates are reported (foreign capital income received or paid), we 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	1977-2022	1970-1976	1977-2022	1970-1976	1970-2022	1970-2022
CI	Cote d'Ivoire	2005-2022	1970-2000	2005-2022	1970-2000	1970-2022	1970-2022
CL	Chile	1975-2022	1970-1973	1975-2022	.	1970-2022	1970-2022
CM	Cameroon	1977-2022	1971-1976	1977-2022	1971-1976	1970-2022	1970-2022
CN	China	1982-2022	.	1982-2022	.	1981-2022	1981-2022
CO	Colombia	1970-2022	.	1970-2022	.	1970-2022	1970-2022
CR	Costa Rica	1977-2022	1970-1976	1977-2022	1970-1976	1970-2022	1970-2022
CU	Cuba	.	.	.	.	.	.
CV	Cape Verde	1977-2022	.	1977-2022	.	1981-2022	1981-2022
CW	Curaçao	2011-2022	1976-2010	2011-2022	1976-2010	1976-2022	1976-2022
CY	Cyprus	1976-2022	.	1976-2022	.	1973-2022	1973-2022
CZ	Czech Republic	1993-2022	1992	1993-2022	1992	1993-2022	1993-2022
DE	Germany	1971-2022	1970	1971-2022	1970	1970-2022	1970-2022
DJ	Djibouti	1991-2022	1976-1990	1991-2022	1990	1977-2022	1977-2022
DK	Denmark	1975-2022	1970-1974	1975-2022	1970-1974	1970-2022	1970-2022
DM	Dominica	1976-2022	.	1976-2022	.	1977-2022	1977-2022
DO	Dominican Republic	1970-2022	.	1970-2022	.	1970-2022	1970-2022
DZ	Algeria	1977-2022	1970-2004	1977-2022	1970-2004	1970-2022	1970-2022
EC	Ecuador	1976-2022	1970-1975	1976-2022	1970-1975	1970-2022	1970-2022
EE	Estonia	1992-2022	.	1992-2022	.	1992-2022	1992-2022
EG	Egypt	1977-2022	1970-1976	1977-2022	1970-1976	1970-2022	1970-2022
ER	Eritrea	1995-2000	.	1996-2000	.	1995-2022	1995-2022
ES	Spain	1975-2022	.	1975-2022	.	1970-2022	1970-2022
ET	Ethiopia	1977-2022	1972-1976	1977-2022	1972-1976	1970-2022	1970-2022
FI	Finland	1975-2022	1970-1974	1975-2022	1970-1974	1970-2022	1970-2022
FJ	Fiji	1979-2022	1977-1978	1979-2022	1977-1978	1977-2022	1970-2022
FM	Micronesia	2009-2014	.	2009-2014	.	1995-2022	1995-2022
FR	France	1975-2022	1970-1974	1975-2022	1970-1974	1970-2022	1970-2022
GA	Gabon	1978-2015	1972-1977	1978-2015	1972-1977	1970-2022	1970-2022
GB	United Kingdom	1970-2022	.	1970-2022	.	1970-2022	1970-2022
GD	Grenada	1977-2022	.	1977-2022	.	1971-2022	1971-2022
GE	Georgia	1997-2022	1996	1997-2022	1996	1995-2022	1995-2022
GG	Guernsey	.	.	.	.	2001-2022	2001-2022
GH	Ghana	1975-2022	.	1975-2022	.	1970-2022	1970-2022
GI	Gibraltar	.	.	.	.	1995-2022	1995-2022
GL	Greenland	.	.	.	.	.	.

We first rely on IMF BOP data. If subcomponents (FDI/portfolio income) are missing but aggregates are reported (foreign capital income received or paid), we 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
GM	Gambia	1978-2022	.	1978-2022	.	1970-2022	1970-2022
GN	Guinea	1986-2022	.	1986-2022	.	1970-2022	1970-2022
GQ	Equatorial Guinea	1987-1996	.	1987-1996	.	1980-2022	1980-2022
GR	Greece	1976-2022	1970-1998	1976-2022	1970-1998	1970-2022	1970-2022
GT	Guatemala	1977-2022	1970-1976	1977-2022	1970-1976	1970-2022	1970-2022
GW	Guinea-Bissau	1982-2021	.	1982-2021	.	1980-2022	1980-2022
GY	Guyana	1977-2022	.	1977-2022	.	1970-2022	1970-2022
HK	Hong Kong	1998-2022	1993-1997	1998-2022	1993-1997	1979-2022	1979-2022
HN	Honduras	1974-2022	.	1974-2022	.	1970-2022	1970-2022
HR	Croatia	1993-2022	.	1993-2022	.	1996-2022	1996-2022
HT	Haiti	1971-2022	.	1971-2022	.	1970-2022	1970-2022
HU	Hungary	1982-2022	.	1982-2022	.	1982-2022	1982-2022
ID	Indonesia	1981-2022	.	1981-2022	.	1970-2022	1970-2022
IE	Ireland	2005-2022	1970-2004	2005-2022	1970-2004	1970-2022	1970-2022
IL	Israel	1970-2022	.	1970-2022	.	1970-2022	1970-2022
IM	Isle of Man	.	.	.	.	2001-2022	2001-2022
IN	India	1975-2022	1970-1974	1975-2022	1970-1974	1970-2022	1970-2022
IQ	Iraq	2005-2022	.	2005-2022	.	2005-2022	2005-2022
IR	Iran	1976-2000	1970-2018	1976-2000	1970-2018	1970-2022	1970-2022
IS	Iceland	1976-2022	.	1976-2022	.	1970-2022	1970-2022
IT	Italy	1970-2022	.	1970-2022	.	1970-2022	1970-2022
JE	Jersey	.	.	.	.	2001-2022	2001-2022
JM	Jamaica	1976-2022	1970-1975	1976-2022	1970-1975	1970-2022	1970-2022
JO	Jordan	1972-2022	.	1972-2022	.	1970-2022	1970-2022
JP	Japan	1996-2022	1970-1995	1996-2022	1970-1995	1970-2022	1970-2022
KE	Kenya	1975-2022	.	1975-2022	.	1970-2022	1970-2022
KG	Kyrgyz Republic	1995-2022	1991-1994	1993-2022	1991-1992	1993-2022	1993-2022
KH	Cambodia	1994-2022	.	1992-2022	.	1993-2022	1993-2022
KI	Kiribati	1979-2022	1972-1974	1979-2022	1972-1974	1988-2022	1988-2022
KM	Comoros	1980-2022	.	1980-2022	.	1979-2022	1979-2022
KN	Saint Kitts and Nevis	1980-2022	.	1980-2022	.	1981-2022	1980-2022
KP	North Korea	.	.	.	.	.	.
KR	South Korea	1976-2022	1970-1975	1976-2022	1970-1975	1971-2022	1971-2022
KS	Kosovo	2004-2022	.	2004-2022	.	2004-2022	2004-2022
KW	Kuwait	1975-2022	.	1975-2022	.	1974-2022	1974-2022
KY	Cayman Islands	2016-2021	1972-2015	2016-2021	1972-2015	1980-2022	1983-2022

We first rely on IMF BOP data. If subcomponents (FDI/portfolio income) are missing but aggregates are reported (foreign capital income received or paid), we 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
KZ	Kazakhstan	1995-2022	1993-1994	1995-2022	1993-1994	1994-2022	1994-2022
LA	Laos	1984-2022	.	1984-2022	.	1977-2022	1977-2022
LB	Lebanon	2002-2022	1997-2001	2002-2022	1997-2001	1970-2022	1970-2022
LC	Saint Lucia	1976-2022	.	1976-2022	.	1976-2022	1976-2022
LI	Liechtenstein	.	.	.	.	1995-2022	1995-2022
LK	Sri Lanka	1975-2022	1970-1974	1975-2022	1970-1974	1970-2022	1970-2022
LR	Liberia	1979-2022	.	1979-2022	.	1970-2022	1970-2022
LS	Lesotho	1975-2022	1972-1974	1975-2022	.	1975-2022	1975-2022
LT	Lithuania	1993-2022	.	1993-2022	.	1992-2022	1992-2022
LU	Luxembourg	1999-2022	1970-1998	1999-2022	1970-1998	1990-2022	1990-2022
LV	Latvia	1992-2022	1990-1991	1992-2022	1990-1991	1992-2022	1992-2022
LY	Libya	1977-2021	1970-1976	1977-2021	1970-1976	1972-2022	1972-2022
MA	Morocco	1975-2022	1970-1974	1975-2022	1970-1974	1970-2022	1970-2022
MC	Monaco	.	.	.	.	.	.
MD	Moldova	1994-2022	1991-1993	1994-2022	1991-1993	1994-2022	1994-2022
ME	Montenegro	2007-2022	.	2007-2022	.	2006-2022	2006-2022
MG	Madagascar	1974-2022	1970-1973	1974-2022	1970-1973	1970-2022	1970-2022
MH	Marshall Islands	2005-2021	.	2005-2021	.	2005-2022	2001-2022
MK	Macedonia	1996-2022	.	1996-2022	.	1993-2022	1993-2022
ML	Mali	1975-2021	.	1975-2021	.	1970-2022	1970-2022
MM	Myanmar	1976-2019	.	1976-2019	.	1970-2022	1970-2022
MN	Mongolia	1981-2022	.	1981-2022	.	1992-2022	1992-2022
MO	Macao	2002-2022	.	2002-2022	.	1984-2022	1984-2022
MR	Mauritania	1975-2022	1973-1974	1975-2022	1973-1974	1970-2022	1970-2022
MS	Montserrat	1986-2022	.	1986-2022	.	1983-2022	1983-2022
MT	Malta	1971-2022	1970	1971-2022	1970	1970-2022	1970-2022
MU	Mauritius	1976-2022	1970-1975	1976-2022	1970-1975	1970-2022	1970-2022
MV	Maldives	1977-2022	.	1977-2022	.	1978-2022	1978-2022
MW	Malawi	1977-2021	1970-1972	1977-2021	1970-1972	1970-2022	1970-2022
MX	Mexico	1979-2022	1970-1978	1979-2022	1970-1978	1970-2022	1970-2022
MY	Malaysia	1974-2022	.	1974-2022	.	1970-2022	1970-2022
MZ	Mozambique	2005-2022	1996-2004	2005-2022	1996-2004	1980-2022	1980-2022
NA	Namibia	1990-2022	1989	1990-2022	1989	1989-2022	1989-2022
NC	New Caledonia	2002-2016	.	2002-2016	.	2002-2022	2002-2022
NE	Niger	1974-2022	.	1974-2022	.	1970-2022	1970-2022
NG	Nigeria	1977-2022	1973-1976	1977-2022	1973-1976	1970-2022	1970-2022

We first rely on IMF BOP data. If subcomponents (FDI/portfolio income) are missing but aggregates are reported (foreign capital income received or paid), we 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
NI	Nicaragua	1977-2022	.	1977-2022	.	1970-2022	1970-2022
NL	Netherlands	1970-2022	.	1970-2022	.	1970-2022	1970-2022
NO	Norway	1975-2022	1970-1974	1975-2022	1970-1974	1970-2022	1970-2022
NP	Nepal	1976-2022	.	1976-2022	.	1970-2022	1970-2022
NR	Nauru	2008-2018	.	2008-2018	.	2008-2022	2008-2022
NZ	New Zealand	2000-2022	1971-1999	2000-2022	1971-1999	1970-2022	1970-2022
OM	Oman	1974-2022	.	1974-2022	.	1973-2022	1973-2022
PA	Panama	1977-2022	1970-1976	1977-2022	.	1970-2022	1970-2022
PE	Peru	1977-2022	.	1977-2022	.	1970-2022	1970-2022
PF	French Polynesia	2002-2016	.	2002-2016	.	2002-2022	2002-2022
PG	Papua New Guinea	1976-2021	1970-1975	1976-2021	1970-1975	1973-2022	1970-2022
PH	Philippines	1977-2022	1970-1976	1977-2022	1970-1976	1970-2022	1970-2022
PK	Pakistan	1976-2022	.	1976-2022	.	1970-2022	1970-2022
PL	Poland	1976-2022	.	1976-2022	.	1975-2022	1975-2022
PR	Puerto Rico	.	1970-2007	.	1970-2007	.	.
PS	Palestine	1995-2022	.	1995-2022	.	1998-2022	1998-2022
PT	Portugal	1975-2022	.	1975-2022	.	1972-2022	1972-2022
PW	Palau	2005-2022	.	2005-2022	.	2000-2022	2000-2022
PY	Paraguay	1975-2022	.	1975-2022	.	1970-2022	1970-2022
QA	Qatar	2011-2022	1996-2010	2011-2022	1996-2010	1970-2022	1970-2022
RO	Romania	1971-2022	.	1971-2022	.	1990-2022	1990-2022
RS	Serbia	2007-2022	2002-2006	2007-2022	2002-2006	1999-2022	1999-2022
RU	Russia	1994-2022	1992-1993	1994-2022	1992-1993	1993-2022	1993-2022
RW	Rwanda	2010-2022	1983-1989	2010-2022	1985-1989	1970-2022	1970-2022
SA	Saudi Arabia	1971-2022	1970	1971-2022	1970	1970-2022	1970-2022
SB	Solomon Islands	1975-2022	.	1975-2022	.	1977-2022	1977-2022
SC	Seychelles	1976-2022	.	1976-2022	.	1977-2022	1977-2022
SD	Sudan	1977-2022	1970-1976	1977-2022	1970-1976	1970-2022	1970-2022
SE	Sweden	1970-2022	.	1970-2022	.	1970-2022	1970-2022
SG	Singapore	1972-1994	.	1972-1994	.	1970-2022	1970-2022
SI	Slovenia	1992-2022	.	1992-2022	.	1992-2022	1992-2022
SK	Slovak Republic	1993-2022	.	1993-2022	.	1993-2022	1993-2022
SL	Sierra Leone	1977-2022	1970-1976	1977-2022	1970-1976	1970-2022	1970-2022
SM	San Marino	.	2012-2021	.	2012-2021	1993-2022	1993-2022
SN	Senegal	1974-2021	.	1974-2021	.	1970-2022	1970-2022
SO	Somalia	.	1972-1981	.	1972-1981	1970-2022	1970-2022

We first rely on IMF BOP data. If subcomponents (FDI/portfolio income) are missing but aggregates are reported (foreign capital income received or paid), we 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
SR	Suriname	2005-2022	1972-2004	2005-2022	1972-2004	1976-2022	1976-2022
SS	South Sudan	2014-2019	.	2014-2022	.	2011-2022	2011-2022
ST	Sao Tome and Principe	1974-2022	.	1974-2022	.	1987-2022	1987-2022
SV	El Salvador	1976-2022	1970-1975	1976-2022	1970-1975	1970-2022	1970-2022
SX	Sint Maarten (Dutch part)	2011-2022	1976-2009	2011-2022	1976-2009	1976-2022	1976-2022
SY	Syria	1977-2010	.	1977-2010	.	1970-2011	1970-2010
SZ	Swaziland	1974-2022	1970	1974-2022	1970	1970-2022	1970-2022
TC	Turks and Caicos Islands	2014-2018	.	2014-2018	.	1995-2022	1995-2022
TD	Chad	1977-1994	1970-2010	1977-1994	1970-2010	1970-2022	1970-2022
TG	Togo	1974-2020	1970-1973	1974-2020	1970-1973	1970-2022	1970-2022
TH	Thailand	1975-2022	1974	1975-2022	.	1970-2022	1970-2022
TJ	Tajikistan	2002-2022	.	2002-2022	2000-2001	1997-2022	1997-2022
TL	Timor	2006-2022	.	2006-2022	.	2005-2022	2005-2022
TM	Turkmenistan	.	.	.	.	1993-2022	1993-2022
TN	Tunisia	1976-2022	1970-1975	1976-2022	1970-1975	1970-2022	1970-2022
TO	Tonga	1971-2022	1970-2001	1971-2022	1970-2001	1980-2022	1980-2022
TR	Turkey	1974-2022	1970-1972	1974-2022	1970-1973	1970-2022	1970-2022
TT	Trinidad and Tobago	1975-2022	.	1975-2022	.	1970-2022	1970-2022
TV	Tuvalu	2001-2022	.	2001-2022	.	2001-2022	2001-2022
TW	Taiwan	.	.	.	.	1976-2022	1976-2022
TZ	Tanzania	1976-2022	.	1976-2022	.	1970-2022	1970-2022
UA	Ukraine	1996-2022	1989-1995	1996-2022	1989-1995	1994-2022	1994-2022
UG	Uganda	1980-2022	.	1980-2022	.	1970-2022	1970-2022
US	United States	1970-2022	.	1970-2022	.	1970-2022	1970-2022
UY	Uruguay	1978-2022	.	1978-2022	.	1970-2022	1970-2022
UZ	Uzbekistan	2005-2022	.	2005-2022	.	1993-2022	1993-2022
VC	Saint Vincent and the Grenadines	1978-2022	.	1978-2022	.	1976-2022	1976-2022
VE	Venezuela	1970-2016	2017-2019	1970-2016	2017-2019	1970-2022	1970-2022
VG	British Virgin Islands	.	1984-1999	.	1984-1999	1980-2022	1980-2022
VN	Vietnam	2012-2014	.	2012-2014	.	1995-2022	1989-2022
VU	Vanuatu	1982-2022	.	1982-2022	.	1973-2022	1973-2022
WS	Samoa	1977-2022	.	1977-2022	.	1970-2022	1970-2022
YE	Yemen	2005-2016	1990-2020	2005-2016	1990-2020	1990-2022	1990-2022
ZA	South Africa	1970-2022	.	1970-2022	.	1970-2022	1970-2022
ZM	Zambia	1978-2022	1970-1977	1978-2022	1970-1977	1970-2022	1970-2022
ZW	Zimbabwe	1977-2020	1975-1999	1977-2020	1975-1999	1976-2022	1970-2022

We first rely on IMF BOP data. If subcomponents (FDI/portfolio income) are missing but aggregates are reported (foreign capital income received or paid), we 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.