

Applying method #6

Some additional aspects

Bojan NASTAV



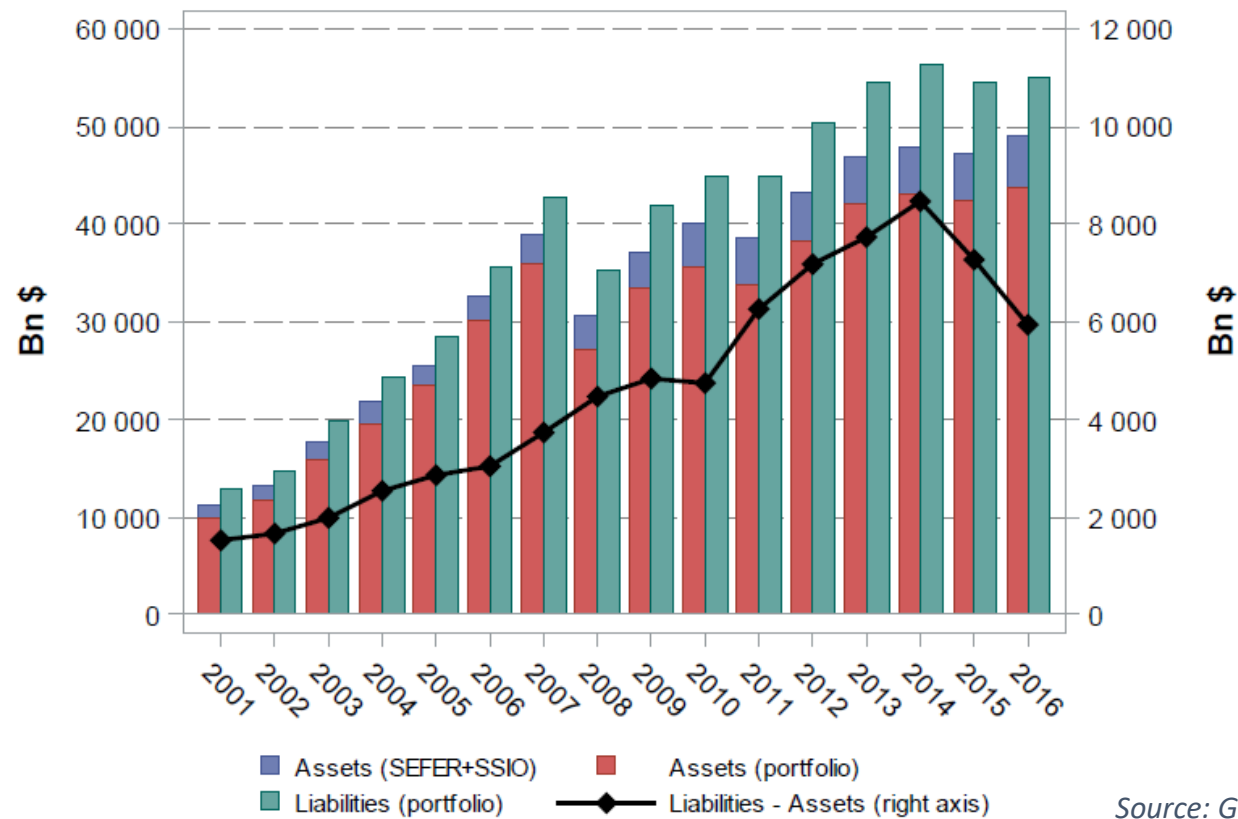
Contents

- Hidden security assets in BOP
- Case study – European Commission (2019)
- Data sources
- Additional literature

Hidden security assets in BOP

- Bank of France identifies hidden securities assets in the BoP

Global discrepancy between assets and liabilities in international securities statistics

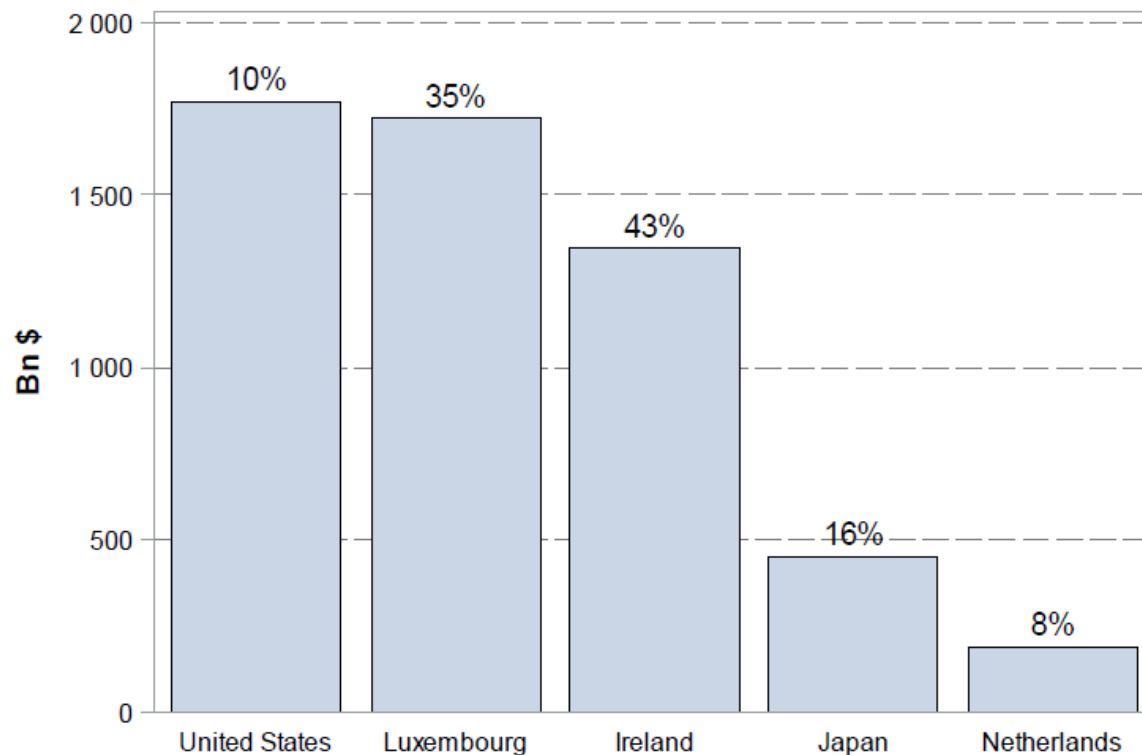


Source: Gervais and Quang (2018)

Hidden security assets in BOP

- Financial assets are well collected except for the part that is owned by households in offshore centres

Differences between nationally-compiled liabilities and liabilities derived from counterparts assets



Source: Gervais an Quang (2018).

Hidden security assets in BOP

- **Caution using the methodology for statistical purposes!**
 - Adjustments to methodologies prior to use in statistical compilation
 - Data limitation -> short time series
 - Single source for inconsistencies?
- Solution?
 - Sharing data – safely and in line with considerations of official statistics



Case study

- Estimating International Tax Evasion by Individuals (European Commission, 2019)

<https://op.europa.eu/en/publication-detail/-/publication/10854d45-f549-11e9-8c1f-01aa75ed71a1>



Case study

- Data Used for Estimating Offshore Wealth

$$offFinW_{G,t} = offPFW_{G,t} + Deposits_{G,t}$$

- Data on international portfolio securities
 - IMF Coordinated Portfolio Investment Survey (CPIS)
 - IMF International Investment Position (IIP)
 - External Wealth of Nations Mark II database (EWN)
- Limitations: coverage and/or bilateral data does not exist (rather, ROW)

Case study



Table 18. Examples of Data Availability on Assets in IIP, CPIS and EWN

		Situation 1: the 3 databases are consistent	Situation 2: IIP, CPIS and EWN are inconsistent	Situation 3: only IIP is available (and reported in EWN)	Situation 4: only CPIS is available	Situation 5: only EWN is available
		Denmark	UK	Morocco	The Bahamas	United Arab Emirates
IIP	Portfolio Investment Assets	251,885	3,318,834	178	N/A	N/A
	Equity and Investment Fund Shares	132,047	1,653,362	171	N/A	N/A
	Debt securities	119,838	1,665,472	8	N/A	N/A
CPIS	Portfolio Investment Assets	251,884	3,140,509	N/A	19,678	N/A
	Equity and Investment Fund Shares	132,046	1,366,482	N/A	1,067	N/A
	Debt securities	119,838	1,774,028	N/A	18,611	N/A
EWN	Assets					
	Equity and Investment Fund Shares	132,047	1,490,828	171	1,067	302,761
	Debt (incl. debt securities + other debt)	277,808	7,314,943	14,092	397,986	181,669
	Of which debt securities	119,838	1,564,036	8	N/A	N/A

Note: 2006, end of period, current millions of US\$.



Case study

- Data corrections to assess the global portfolio assets and liabilities

$$offPFW_{G,t} = \sum_i IPFLiabilities_{i,t} - \sum_i IPFassets_{i,t}$$

- Supplement CPIS data with IIP and EWN
- Corrective strategies for missing years / countries
 - Netherlands' Special Financial Institutions sector
 - Cayman mutual fund sector – share of US securities in the portfolio of the Cayman Islands is estimated using a gravity model
 - ...

$$\log(1 + A_{i,j,t}) = \phi_j + \theta_t + \beta Z_{i,j,t} + \gamma X_{i,t} + \epsilon_{i,j,t}$$

Case study

Table 11. Portfolio Assets Estimates (Billions of US\$)

	Raw CPIS assets	Correction for CPIS reporting countries			Correction for non-CPIS reporting countries				Total securities assets
		Missing years	Netherlands correction	Cayman Islands non-bank sector	China	Middle-East oil exporters	Of which: reported in CPIS	EWN assets for other countries	
2001	12,718	12	24	182	213	141	22	347	13,615
2002	14,148	28	19	227	288	115	22	449	15,253
2003	19,221	21	3	346	405	144	29	610	207,22
2004	23,489	2	1	533	611	228	35	745	25,574
2005	26,052	2	0	584	814	307	46	872	28,586
2006	33,162	0	5	871	1,174	,464	63	1094	36,708
2007	39,304	0	3	1,186	1,585	606	79	1397	44,001
2008	31,041	0	0	990	1,907	649	74	1338	35,850
2009	37,523	0	2	1,086	2,330	659	69	1471	42,954
2010	40,604	0	2	1,219	2,791	765	68	1620	46,932
2011	39,359	0	2	1,478	3,099	913	64	1684	46,471
2012	43,630	0	3	1,598	3,320	1018	71	1887	51,385
2013	47,768	0	0	1,873	3,889	1136	58	2012	56,621
2014	48,683	0	0	2,047	3,913	1158	51	2092	57,843
2015	49,731	18	0	378	3,425	1009	48	2092	56,607
2016	51,469	67	1	480	3,225	896	49	2121	58,211
<i>Nb of countries included in the estimations or correction</i>	72	8	1	1	1	8	2	132 (extrapolation for 2015-2016; IIP for 68 countries and CPIS ratio for 64 countries)	213
<i>Notes on the estimation strategies</i>	Use of CPIS database	Extrapolation with ratio	Comparison with the IIP published by the DNB	Estimation using the US securities held by Cayman Islands (TIC data) and gravity model	Estimation using the US securities held by China (TIC data), IIP of China and reserves published in IFS	Estimation using the US securities held by MEO (TIC data) and reserves published in IFS		Use of EWN estimations, extrapolations when no portfolio asset debt estimates, and IIP and extrapolation ratio for 2015 and 2016	



Case study



Table 12. Portfolio Liabilities Estimates (Billions of US\$)

	EWN liabilities	Correction to EWN data					raw CPIS derived liabilities > reported liabilities	Non EWN countries		International organisations	Total securities liabilities
		IIP liabilities (not included in EWN)	No debt data	Missing Years	Netherlands corrections	Other		Small Financial Centres (incl. Cayman Islands)			
2001	14,590	1	439	0	265	246	1	163	389	16,484	
2002	15,925	0	555	0	326	192	1	155	449	17,982	
2003	21,425	0	720	0	18	274	1	199	517	23,632	
2004	26,458	0	914	0	0	252	3	214	573	28,923	
2005	29,525	0	1,015	0	0	431	3	255	563	32,372	
2006	37,187	0	1,309	0	0	451	3	266	603	40,495	
2007	45,059	0	1,607	0	0	453	5	309	672	49,129	
2008	36,370	0	1,218	0	0	264	2	272	673	39,868	
2009	43,801	7	1,241	0	0	261	3	255	821	47,190	
2010	46,812	8	1,253	0	5	497	3	313	916	50,655	
2011	46,737	11	1,169	0	5	654	3	280	1,073	50,651	
2012	52,231	13	1,231	0	18	882	3	254	1,374	56,791	
2013	56,978	20	1,210	0	15	1,334	4	309	1,490	62,149	
2014	58,765	29	992	0	75	1,514	7	294	1,522	64,120	
2015		54,012		4,059	0	2,098	6	332	1,494	62,929	
2016		54,551		4,269	20	2,472	7	343	1,527	64,116	
<i>Nb of countries included in the estimations or correction</i>	211	136	114	92	1	187	31	8		242	
<i>Notes on the estimation strategies</i>	Use of EWN values	Use of last IIP report to update EWN and complete for 2015 and 2016	Use of the CPIS-derived liabilities to complete portfolio debt data	Use of evolution ratio for missing years	Comparison with the IIP published by the DNB	Comparing the estimated securities liabilities and take the max	Use of CPIS-derived liabilities		Estimation from the SEFER-derived equity liabilities and the data on international debt from the BIS		



Case study

- Breakdown by country of ownership
 - Adjustments made using outgoing FDI/GDP to account for individuals/entities
 - Larger FDI -> more corporate deposits
 - Outgoing cross-border deposits

$$d_{i,t} = w_{i,t} * d_{i,t}^{bis}$$

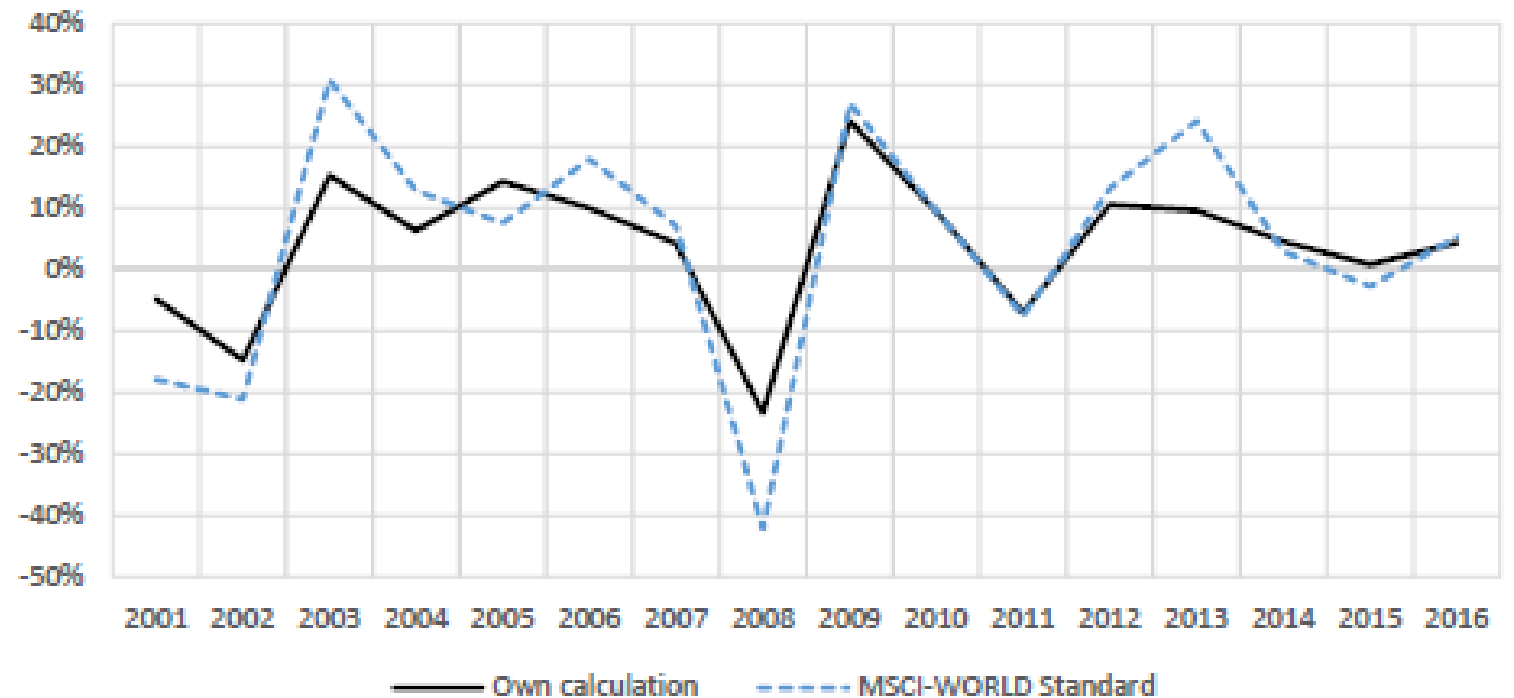
$$w_{i,t} = \frac{\frac{3}{2} \frac{gdp_{i,t}}{\sum gdp_{i,t}} + \frac{1}{2} \frac{fdi_{i,t}}{\sum fdi_{i,t}}}{\frac{gdp_{i,t}}{\sum gdp_{i,t}} + \frac{fdi_{i,t}}{\sum fdi_{i,t}}}$$



Case study

- Rates of return on capital
 - Rates of return on portfolio securities calculated from data on 14,000 mutual funds
 - Vs. MSCI World Index

Figure 5. Average Rates of Return of Mutual Funds

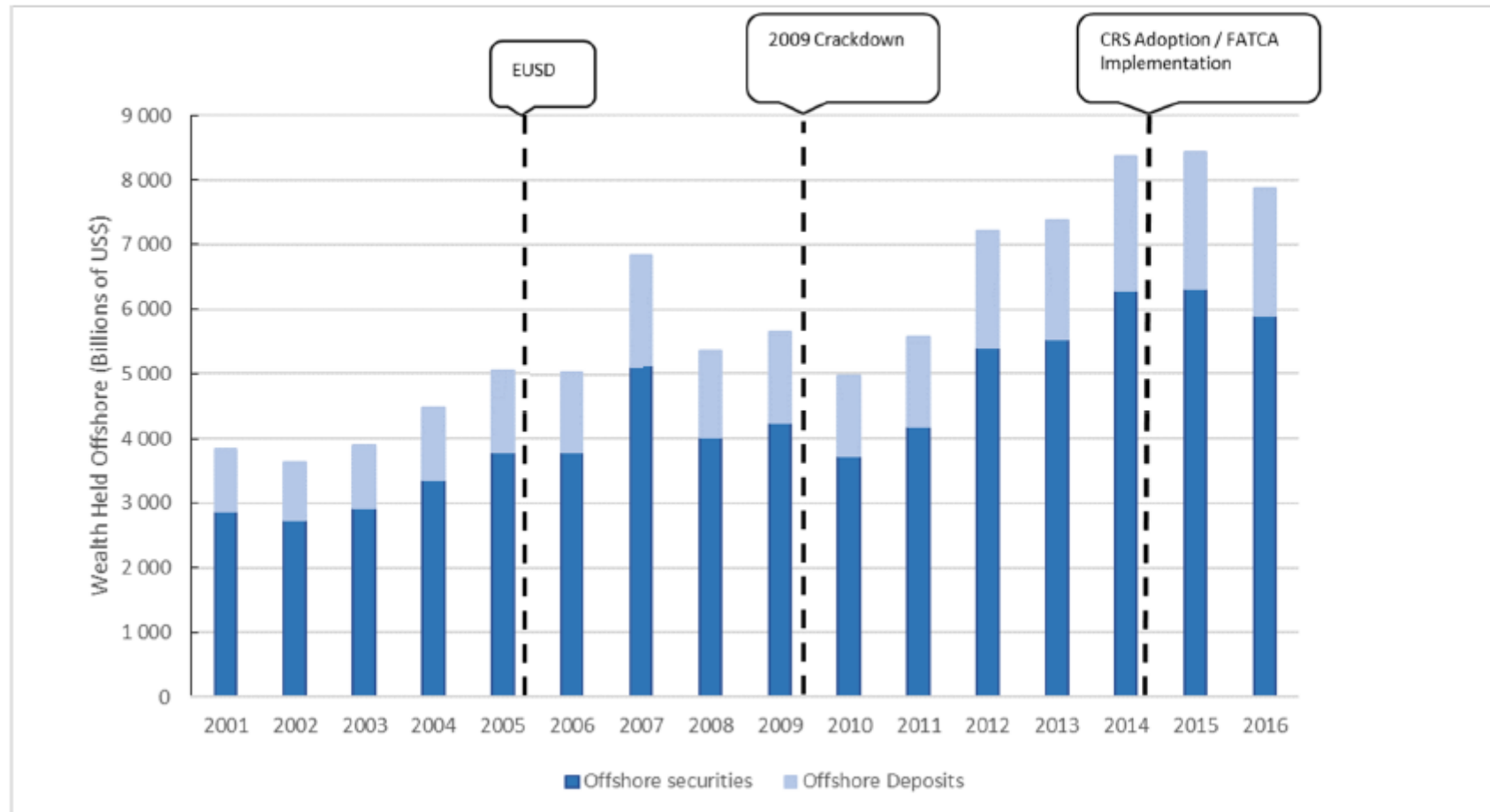


Sources: Own computations and MSCI-World Standard.

Case study



Figure 6. Estimated Global Offshore Wealth (Billions of US\$)



Case study



Table 20. Databases Used in the Study

Database	Source	Description	Step in the methodology	Use in the methodology	Limitations	Statistics of interest	Metadata
Coordinated Portfolio Investment Survey (CPIS)	IMF statistics Source: http://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DE0C3367363 Data: downloadable online as excel or CSV files.	General information: - Data on bilateral international portfolio asset position; - Voluntary data collection; - Augmented by SSIO and SEFER; - IMF derives aggregate portfolio liabilities for all economies (reporters and non-reporters). Coverage: - Period: 2001 - 2016; - Participating countries: 91; - Frequency: Between 2001-2012: annual report at the end of December. From 2012: bi-annual report encouraged.	Step 1 Main database	- Main source for portfolio investment asset: use of aggregated data by country (equity and debt); - Use of bilateral data for estimation of gravity model; - Derived liability to complete data for portfolio investment liabilities (for some small countries and for equity liabilities of international organisations); - Marginal use to compute ratio to extrapolate from other incomplete databases (e.g., EWN for 2015/2016).	- Not all countries are reporting or reported for each year (only 61 countries reported each year between 2001 and 2016); - Survey only on portfolio assets. Liabilities are only derived from the reported asset.	- Aggregate portfolio investment assets by countries; - Bilateral portfolio investment assets; - Derived portfolio investment liabilities; - Portfolio reserves (SEFER and SSIO).	Available metadata by country (but not for all countries).
The External Wealth of Nations database (EWN)	Lane and Milesi-Ferretti (2007) Source: http://www.hiilolane.org/EWN.html Data: Downloadable online as Excel file.	General information: - Extent of the IIP by countries; - Use of CPIS data to extend IIP as well as other estimation techniques to cover more countries; - Data on international portfolio investment, direct investment, other investments, and reserves. Coverage: - Period: 1970 - 2014; - Number of covered countries: 211; - Frequency: End-of-year values.	Step 1 Main database	- Main source for portfolio investment liabilities; - Complementary source for portfolio investment assets; - Marginal use to complete data (e.g. reserves for Iran and GDP of some countries for gravity model).	- No update after 2014; - Not only raw data but estimations; - When countries are not reporting their IIP to the IMF, no breakdown between portfolio debt and other debts; - For some small countries and IFCs, data are not necessarily reliable.	- Portfolio equity assets and liabilities; - Portfolio debt assets and liabilities; - FX Reserves minus gold; - GDP.	Available metadata by country to explain the estimation techniques for each variable.

Case study



International Investment Positions (IIP)	IMF statistics Source: http://data.imf.org/?sk=7A513048-6426-40C0-83DD-CA473CA1FD52 Data: Downloadable online as Excel or CSV files.	General information: - Data on investment position of each country against the rest of the world; - Four elements for both asset and liability: direct	Step 1 Main database	- Complementary source to CPIS and EWN (for 2015/2016) for portfolio investment assets and liabilities; - Main source for privately-held	- Not all countries report their IIP to the IMF and not each year.	- Portfolio equities and debts (asset and liability).	Available metadata by country but not for all	https://offshoreleaks.icij.org/pages/data-base	bank accounts and companies; - Anonymous leak; - More than 214 000 offshore companies.	their estimated offshore wealth; - To check the consistency between the estimated indirect deposits and the use	owners; - No distinction between tax evasion purpose or other (legal)	owner.					
International banking statistics – Locational Banking statistics	Bank for International Settlements (BIS) statistics Source: https://www.bis.org/statistics/about_banking_stats.htm?m=6%7C31%7C637 Data: Downloadable online as CSV files.	Taxes in Europe Database v3 (TEDB)	Switzerland https://data.snb.ch/en Data: Downloadable online as Excel or CSV files	portfolios held in Swiss banks; - Breakdown between resident holders and non-resident holders - Published data on fiduciary deposits by country of origin	Step 1 Secondary database	- Ratio between foreign securities and foreign dep held in Switzerland used to estimate the aggregate amount of deposits held offshore (Step 1).	Data: Download online as Excel or C files.	International debt securities	BIS statistics Source: https://www.bis.org/statistics/about_securities_statistics.htm?m=6%7C33 Data: Download online as Excel files.	Compiled from a security-by-security database built by the BIS using information from commercial data providers	Step 1 Marginal database	- Portfolio investment debt liabilities for Cayman Islands, for some small offshore centres and for international	- Imperfect estimation: total international debt securities	- International debt securities.			
Monthly banking statistics and Bank in	Swiss National Bank statistics Source:	Taxes database	European Commission Source: http://ec.europa.eu/taxation_customs/tdb/splSearchForm.html Data: Online scrolling database, no downloadable file.	International Financial Statistics (IFS) Source: http://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B Data: Downloadable online as Excel or CSV files.	General information: - One data; - Coverage: rates; - Period: 2001 - 2016; - Country State	Data: Downloadable online as Excel or CSV files.	World Development Indicators	World Bank statistics Direct download from Stata with <code>wbopendata</code>	Statistics from IFC central banks	Data sources: website of the central bank of the concerned countries Format: PDF files	Step 2 Marginal database	- To construct the assumptions on the breakdown between individuals and corporations' deposits.					
		OECD Source: http://www.oecd.org/tax/tax-database.htm Data: Online scrolling database, no downloadable file.	US Treasury International Capital System (US TIC) Source: https://www.treasury.gov/press-releases/2017/0910/default.htm Estimates of Bertaut and Tryon (2007): https://www.federalreserve.gov/pubs/fin/2007/910/default.htm And Bertaut	General information: - Data board flows US residents; - Coverage: 2016 US and 2016 foreign; - Frequency: short annual	Data: Online scrolling, no downloadable file.	ICIJ (The International Consortium of Investigative Journalists) statistics Source: https://projects.icij.org/swiss-leaks/ Data: Online scrolling, no downloadable file.	Foreign Direct Investment	UNCTAD Statistics Source: https://unctadstat.unctad.org/wds/ReportFolders/ Data: Download online as	Data sources: website of the monetary authorities of the concerned offshore centres Format: PDF	Step 1 Marginal database	- Estimation of equity invested in funds in the small offshore centres (Cayman etc.).						
Panama Papers (Offshore)		IBFD Source (Limited)			Coverage: - Period: 1988 - 2007 (private accounts); - Maximum amounts in client accounts during 2006 and 2007. - HSBC branches in Switzerland (and their foreign clients).	ICIJ statistics Source:	General information: - Leaked information on the secret owners of offshore	Step 2 consistency check	- To check the consistency between the use of shell companies by countries and	- Not all shell companies have identifiable	- Residency of the shell company						

Data

- Data (un)availability is key
- Granular data from Central Bank
- International data sources
 - Official statistics
 - Unofficial statistics
 - Investigative journalist data

Data

- BIS Locational banking statistics:
<https://www.bis.org/statistics/bankstats.htm>
- IMF Balance of Payments Statistics (BOPS):
<https://data.imf.org/?sk=7A51304B-6426-40C0-83DD-CA473CA1FD52>
- IMF Coordinated Portfolio Investment Survey (CPIS):
<https://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DE0C3367363>
- IMF International investment positions (IIP):
<https://data.imf.org/?sk=7A51304B-6426-40C0-83DD-CA473CA1FD52>

Data

- TJN Financial Secrecy Index: <https://fsi.taxjustice.net/en/>
- Openlux: <https://www.occrp.org/en/openlux/>
- ICIJ: <https://offshoreleaks.icij.org/>
- FinCEN: <https://www.icij.org/investigations/fincen-files/explore-the-fincen-files-data/>
- Aleph: <https://docs.alephdata.org/how-aleph-is-used>

Additional literature

- Lucy Chernykh, Sergey Mityakov (2017): Offshore schemes and tax evasion: The role of banks. *Journal of Financial Economics*, Volume 126, Issue 3, December 2017, Pages 516-542. <https://doi.org/10.1016/j.jfineco.2017.09.004>
- Jim Omartian (2017): Do Banks Aid and Abet Asset Concealment: Evidence from the Panama Papers.
- Annette Alstadsæter, Niels Johannesen, Gabriel Zucman (2018): Who owns the wealth in tax havens? Macro evidence and implications for global inequality. *Journal of Public Economics*, Volume 162, June 2018, Pages 89-100. <https://doi.org/10.1016/j.jpubeco.2018.01.008>
- Gabriel Zucman (2013): The Missing Wealth of Nations: Are Europe and the U.S. net Debtors or net Creditors? *The Quarterly Journal of Economics*, Volume 128, Issue 3, August 2013, Pages 1321–1364. <https://doi.org/10.1093/qje/qjt012>

<https://stats.unctad.org/iffs>



TAX AND COMMERCIAL
ILLICIT FINANCIAL FLOWS