Flows of offshore financial wealth by country

Concept and assumptions
As in previous method, this method focuses on wealth held by individuals outside their countries and unreported to the Tax authorities where they are a resident. It is a top-down method. Offshore financial wealth by country as proposed here is a three-step approach to estimate international tax evasion by individuals by country as presented in the European Commission (2019). The steps, or phases, are:

a) Estimation of global offshore financial wealth, focusing on global level imbalance between international portfolio liabilities and assets. As these discrepancies may be driven by measurements errors in international investment statistics rather than illicit activity, they need to be inspected with caution by experts in the field before moving ahead with the method application. Case study 1 illustrates how the Central Bank of France identifies hidden securities assets in the BoP.

b) Breakdown of data by country of ownership and by International Financial Centre (IFC), conducted using data on offshore deposits to allocate estimated global offshore wealth to each individual country of ownership and IFC.

c) Estimation of international tax evasion by country applied only partially in the guidelines to account for IFFs; the non-compliance rate on offshore wealth is applied and followed by transformation of stock measure to flow to identify the level of illicit flows. This step captures capital gains, but not wealth consumption; and it only produces grounds to estimate IFF outflows, not inflows.

In view of tax and commercial IFFs the method further suffers from collating other categories of IFFs into this category, specifically, criminal activities (to generate the income located abroad or conceal the proceeds of crime or corruption).

Another critical point lies in the challenges related to associating deposits with their origin: various screening arrangements, e.g., shell companies, prevent direct estimation of ownership shares of undeclared offshore wealth. Such arrangements are normally located in an IFC, not the country of residency of the actual owner(s), hence incorrectly assigning deposits to IFC instead of the country of actual owner.

Case study 1. Identifying hidden assets in the Balance of Payments by Bank of France

The Bank of France analysed how the discrepancy between assets and liability in international investment positions statistics can be attributed to hidden investments. Authors do, however, point out that caution is needed in using this methodology for statistical purposes (Gervais and Quang, 2018).

The below figure presents the global discrepancy between assets and liabilities in international securities statistics. Different coverage of participating countries in surveys and the inability of BoP compilers to collect data on resident portfolios held in other jurisdictions contribute to the discrepancy.

Global discrepancy between assets and liabilities in international securities statistics
The authors assume that financial assets are well collected except for the part that is owned by households in offshore centres. They plot top five countries in differences between liabilities as reported by national compilers and liabilities derived from assets in other sources.

European regulation requires financial corporations to report directly to national compilers, whereas non-financial corporations and households are not. Hence, one can assume that "hidden assets" are held by these two sectors.

Gervais and Quang (2018) conclude that academic findings cannot be directly used in BoP statistics since:
1. Adjustment to statistical methodologies and concept may be required prior to their use in statistics compilation.
2. Data limitations prevent establishing longer time series.
3. It is not natural to assume inconsistencies are explained by a single source, i.e., households’ hidden assets.

According to authors, sharing data on third-party holdings can solve the problem, i.e., requiring participating or contributing countries to provide data, bringing in various stakeholders, also investment companies and private banks.
Overcoming limitations

Major drawback in the practical application of the method is data availability. Several assumptions are therefore required for the method to reach results. An assumption is also required to divide offshore wealth into deposits and portfolio investments, assuming a 25 – 75 per cent division. A crucial assumption also relates to the 75 per cent non-compliance rate. According to the European Commission (2019), a large part of offshore wealth is not likely to be reported through tax returns. These assumptions may need constant validation and calibration.

The coverage of assets is also limited: only portfolio assets and deposits are considered, whereas other asset classes (real estate assets, artwork, life insurance contracts, cash money and cryptocurrencies) are not included.

Source data

Source data are spread in various international databases and are found in statistics on international portfolio securities and on foreign deposits. Three global databases provide reliable global data on portfolio securities: the IMF’s Coordinated Portfolio Investment Survey (CPIS), the IMF’s International Investment Position (IIP) and the External Wealth of Nations Mark II database (EWN). These have limitations, above all their coverage of countries.

The Central Bank of Switzerland publishes detailed statistics on bank deposits, portfolios of equities, bonds, and mutual fund shares managed by Swiss banks on behalf of foreigners. Data on foreign deposits are sourced from BIS locational banking statistics, with limitations in terms of coverage, confidentiality restrictions, and difficulty to distinguish between individuals and entities.

Calculation

The method arrives at the result in three phases, as per original three-step approach by the European Commission (2019).
1. Estimating the global offshore financial wealth

First, an assumption is made that the financial wealth held offshore by individuals (households) is comprised of: (i) portfolio assets; and (ii) deposits.

\[
\text{off} \text{FinW}_{G,t} = \text{offPFW}_{G,t} + \text{Deposits}_{G,t} \quad \text{Equation (44)}
\]

where:
- \( \text{offFinW}_{G,t} \) ... global (G) offshore financial wealth in time \( t \);
- \( \text{offPFW}_{G,t} \) ... global (G) offshore portfolio wealth in time \( t \);
- \( \text{Deposits}_{G,t} \) ... global (G) offshore deposits in time \( t \).

For estimating the (i) **global offshore portfolio wealth** held by individuals, the global excess of international portfolio liability positions over international portfolio asset positions is taken:

\[
\text{offPFW}_{G,t} = \sum_i IPFliabilities_{i,t} - \sum_i IPFassets_{i,t} \quad \text{Equation (45)}
\]

where:
- \( \text{offPFW}_{G,t} \) ... global (G) offshore portfolio wealth in time \( t \);
- \( IPFliabilities_{i,t} \) ... international portfolio liability position for country \( i \) in time \( t \);
- \( IPFassets_{i,t} \) ... international portfolio asset position for country \( i \) in time \( t \).
The European Commission (2019, Appendix 1) lists relevant and required data corrections to assess the global portfolio assets and liabilities.

Next, to estimate the (ii) offshore deposits in IFCs, following procedure in the European Commission (2019), an assumption is made that 25 per cent of financial wealth is held in the form of deposits and the remaining 75 per cent in the form of portfolio securities. Therefore:

\[
\text{Deposits}_{C,t} = \frac{25}{75} \times \text{offPFW}_{C,t},
\]

Equation (46)

2. Dividing global offshore financial wealth by country of ownership and by IFC

In the second phase, the global offshore financial wealth from first phase is broken down by country of ownership and by IFC.

First, estimate the breakdown by country of ownership using ownership shares of cross-border deposits held by individuals in IFCs as proxies (see European Commission, 2019). These are sourced from BIS locational banking statistics, which, however, do not distinguish between cross-border deposits from individuals and those from entities. They are, however, becoming more often available on disaggregated counterparty ownership of bank deposits. Corrections are made on the assumption that a country with a large outgoing FDI stock (relative to GDP) is assumed to have a large proportion of outgoing corporate deposits, and vice versa, as presented in Case study 2. These data will likely be available to NSOs.

Case study 2. Using foreign direct investment data to identify cross-border deposits from individuals

Statistics on deposits by non-financial institutions, as provided by the BIS, do not distinguish between individuals and corporations — but we need to get as close as possible to cross-border deposits of individuals. Recognising that the share of cross-border deposits by corporations is positively correlated with the level of FDI, a correction is applied to the BIS statistics. Outgoing cross-border deposits by a given country \(i\) in a year \(t\) are given by the following formula:

\[
\begin{align*}
  d_{i,t} &= w_{i,t} \times d_{i,t}^{bis}, \\
  w_{i,t} &= \frac{3 \times gdpi_{i,t} + \frac{3}{2} \sum gdpi_{i,t} + \frac{1}{2} \sum fdi_{i,t}}{gdpi_{i,t} + \sum fdi_{i,t}},
\end{align*}
\]

where

- \(d_{i,t}^{bis}\) is the outgoing deposits of country \(i\) in year \(t\). It is decreasing with the share of FDI by country \(i\) with respect to the total world FDI and increasing with its share of GDP. It has been specified to be equal to 1 for countries with a share of FDI equal to their share of GDP. The FDI statistics used for the computation of these weights are taken from the United Nations Conference on Trade and Development.

Second step in this phase refers to breakdown by IFC. Offshore wealth in each IFC is estimated using either direct observation of Swiss National Bank (SNB) data for Swiss IFCs or using BIS data to supplement the estimation. Within this phase, two types of IFCs need to be identified (see European Commission, 2019) namely:
• Type I IFC as a wealth-receiving IFC, where a large number of non-residents own a bank account with offshore wealth invested in third countries.

• Type II IFC providing shell companies and other screening means, whereby international deposits are incorrectly assigned to residents of that IFC.

Case study 3. Gravity model to estimate total foreign securities owned by the Cayman Islands

Estimating international tax evasion by individuals requires global offshore wealth to be, first, estimated, and second, distributed among countries. Applying the gravity model to estimate total foreign securities owned by the Cayman Islands stems from available data by the United States Treasury: information on the value of United States securities held by the Cayman Islands, \( A_{KY,US,t} \). It is then estimated with the following gravity-like model of bilateral cross-border portfolio holdings (European Commission, 2019):

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

where \( A_{i,j,t} \) denotes the portfolio holdings of country \( i \) in country \( j \) in year \( t \) (as declared in the CPIS database), \( \phi_j \) denotes host-country fixed effects, \( \theta_t \) year fixed-effects, \( Z_{i,j,t} \) a vector of bilateral controls (distance, GDP gap, dummies for common language, etc.), and \( X_{i,t} \) a vector of source-level controls (population, GDP per capita, etc.).

From the predicted bilateral claims \( \hat{A}_{i,j,t}^p \), one can compute the predicted share of each country \( j \) in \( i \)'s portfolio at time \( t \) as:

\[
\omega_{i,j,t}^p = \frac{\hat{A}_{i,j,t}^p}{\sum_k \hat{A}_{i,k,t}^p}.
\]

The estimated value of total foreign securities owned by the Cayman Islands is then equal to \( A_{KY,US,t} / \omega_{KY,US,t}^p \).

Results of the estimation are presented in the following table.

\[\text{Gravity Model Estimation}\]

\[\text{Table}\]

\[\text{Results}\]

\[\text{Not to overestimate the offshore wealth held by residents of Type II IFC, data on wealth channelled through shell companies are needed (European Commission, 2019).}\]
3. Estimate IFFs based on offshore wealth using non-compliance rate

The final phase reflects the estimation of IFFs, which is based on the set non-compliance rate of 75 per cent and applied to entire offshore wealth held by individuals, estimated in the previous phase. Crucial assumption is being further constructed on the calculation of the flows from estimated stocks of wealth: flow in a given year is calculated as the difference of offshore wealth of the current year and the previous year (similar to method in section 3.1). To account for the possibility that wealth increase from one year to another can also stem from an increase of portfolio assets valuation (and not because additional investments or inflows have been made), such market valuation effects are considered. Applying the rate of variation of the market asset price level in a given year, \( v_t \), the flow of assets for country \( i \) in time \( t \) is calculated by:

\[
flow_{i,t} = offFinW_{i,t} - offFinW_{i,t-1} \ast (1 + v_t)
\]

Equation (47)

To determine the yearly rate of increase of assets captured in \( v_t \), the MSCI world price index is used (MSCI 2020).

If these flows are positive, citizens of country \( i \) are shifting assets out of their country. Applying the non-compliance rate, \( \eta_n \), we obtain the outward IFFs as:
\[ \text{OutwardIFFs}_{i,t} = \max(0, \text{flow}_{i,t}) \times r_i \quad \text{Equation (48)} \]

On the other hand, when the wealth from one period to another is diminishing, the negative value of outward IFFs does not represent inward IFFs. The mirror image would be required to calculate inward IFFs, i.e., calculating for all other countries their respective outward IFFs, but only specifically into a given country studied for its inflows. Their positive sum would present inward IFFs of studied country. However, with current data availability, dictating also the first phase of presented methodology, this calculation is not viable.

Case study 4. International tax evasion for the EU-28

The European Commission (2019) applies this method for 28 EU member states. Their results estimate global offshore wealth at US$7.8 trillion in 2016 (€7.5 trillion), or 10.4 per cent of global GDP. Dynamics and breakdown by offshore securities and deposits is depicted in the following chart:

Estimated global offshore wealth (US$ billions)

Source: The European Commission (2019) based on computations by the European Commission and World Bank indicators for global GDP

Offshore wealth held by EU residents is estimated at US$1.6 trillion (€1.5 trillion) in 2016, leading to the estimated €46 billion or 0.32 per cent of GDP of revenue lost to international tax evasions for the EU-28 in 2016.