

How Big Are Illicit Financial Flows?

The Hot Phase of IFF Estimations

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5.1 Introduction

Wealthy people, for tax or criminal purposes, have been hiding their money from the authorities for a long time, but only recently has this attracted broad public attention. The financial crises, combined with the fiscal crisis, has put the focus on how the wealthy and criminals are abusing the globalized financial system to hide their assets. Journalists started to inform the public by uncovering some of the secrets, sometimes empowered by serious leaks, like the Panama Papers, the Swiss leaks, the Paradise Papers, and the Bahama Leaks. Such leaks gave the public a little insight into the peaks of the shadow side of the financial system. As can be seen in Table 5.1, these leaks have intensified in the last couple of years, though many of them stayed unnoticed by the wider public, and only a few have been catching media attention. They provide us important insights into how illicit money is hidden, in tax havens supposedly, out of reach from the authorities.

The attention to the problem of illicit finance combined with the diminishing tax revenues creates the momentum to enact policies to fight these practices and try to get money back into the coffers of the public sector. International organizations, the EU, and its Member States developed new tax policy regulations and anti-money laundering standards at the national and international level. These innovations constitute a major change in tax policy and fiscal regime, perhaps even a paradigm shift (Picciotto 2019) after a long drought of not being able to regulate tax policy at an international level (see Chapter 1). After a long period of sporadic ineffective tax policy reforms, we are now in the hot phase of tax regulation, where many regulations take place at the same time, indicating serious shocks to the tax ecosystem (see Boine et al. 2005; Seabrooke and Tsingou 2019).

This hot phase of international policy reforms has its effects not only on national policy-making, on corporations, tax experts and on enforcement agencies, but also seems to have attracted the attention of journalists and scholars. Table 5.1 indicates that we are now not only in a hot phase of regulation but also in a hot phase of international leaks. The amount of research on estimating illicit

Table 5.1 Overview of leaks since 2001 uncovering illicit financial flows

Year	Name of the leak	Source of the leak
2001	KBLux	Kredit Bank Luxembourg
2007	UBS	Bank Switzerland
2009	Anonymous	Rabobank SA Luxembourg
2013	Offshore Leaks	Two Trust and Company Service Providers from BVI and Asia
2014	Lux Leaks	Tax Advisor PWC in Luxembourg
2015	Swiss Leaks	HSBC bank in Switzerland
2016	Panama Papers	Trust and Company Service Provider Mossack & Fonseca
2016	Bahama Leaks	Company Registry Bahamas
2017	Football Leaks	Unknown
2017	Credit Suisse	Swiss bank
2017	Paradise Suisse	Offshore law firm Appleby Bermuda/Company registries
2017	Azerbaijani Laundromat	OCCRP/Danske Berlingske
2018	Dubai Leak	Property records land-registry Dubai
2019	Mauritius Leaks	Law firm Conyers Dill & Pearman
2019	Cayman bank Leaks	Daughter on Isle of Man
2019	29 Leaks	Company formation agent UK
2019	Troika Leak	Banks from Lithuania
2020	Luanda Leaks	unknown

Source: Jan van Koningsveld, updated version of the table in van Koningsveld (2018).

financial flows has also increased significantly recently and even got its own international abbreviation label, the ‘IFFs’. A Scopus search on the number of publications about estimating or forecasting illicit financial flows (or elements of it, like tax avoidance, tax evasion or money laundering) shows that there have been 394 studies done between 1982 and 2019. Publications increased from less than ten per year before the financial crisis, to more than fifty annually in the last decade (see Figure 5.1). We, therefore, can state that we are now not only in a hot phase of tax regulation and leaks but also in a hot phase of IFF estimations. But what have all these studies taught us? How big is the problem? And, what do they measure exactly? And how? This chapter focuses on the research on estimating the size of the problem and attempts to get an overview of what is happening in the world of IFF estimations.

5.2 Relevance of IFF Estimations

Properly estimating the amount of illicit financial flows is important for three reasons: Policy priority setting, policy evaluation, and scientific research.

Illicit financial flows are a problem because they threaten to erode welfare states and therefore need to be tackled. But governments face many challenges and

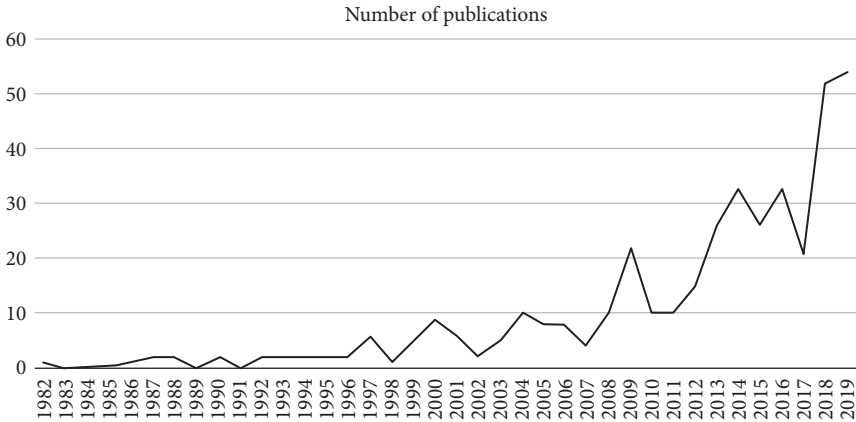


Figure 5.1 Scopus search on the number of publications about estimating illicit financial flows.

Source: Author-made based on a Scopus search. The used searched string in Scopus: TITLE-ABS-KEY (('estimate' OR 'estimation' OR 'forecast') AND ('tax evasion' OR 'tax avoidance' OR 'money laundering' OR 'money laundering' OR 'illicit financial')).

therefore have to make policy decisions. Politicians need to decide which problems will need to be tackled first and how much of their limited budget can be spent to deal with each issue. It is therefore important to know the size of the problem; to inform politicians and allow them to make a justified priority decision.

When policies are enacted to tackle the problem of illicit financial flows, the question quickly arises whether such policies are effective. Since ‘water always finds its way’ (Unger and den Hertog 2012), criminals and the wealthy will react to new policies and try to circumvent them. Just like species in an ecosystem that gets hit by a shock, new ways of survival are sought. Estimating the amount of illicit financial flows properly is important for evaluating ex-post whether the policies have been effective and efficient. Did the amount of illicit financial flows really decrease after the policy was introduced (effectiveness)? And was this worth the spending on the policy (efficiency)? It is even possible and better to evaluate beforehand whether a policy will be effective. This can be done with an agent-based model (see Chapter 14) and requires a proper understanding of the nature and scope of the problem.

Illicit financial flows can have all kinds of effects for societies, like inequality due to unpaid taxes, distorted statistics (which complicates policy-making), unwanted political pressures, corruption, and many more (see Reuter 2017 for a more complete overview and Ferwerda 2013 for an overview of the effects of money laundering in particular). Many of these effects can easily be mentioned and understood, but the empirical support for these effects is often lacking. (see e.g.

Unger et al. 2006) The empirical research on these effects, and especially the research on how big these effects are, is still in its infancy. Empirical research on the effects of illicit financial flows is complicated because the most important variable is so hard to measure: the size of illicit financial flows. This is yet another reason why we should care about how big the problem really is. To sum up: we need proper IFF estimations to get a better understanding of their effects.

5.3 How Big Are Illicit Financial Flows?

Global estimates of Illicit Financial Flows are generally in the billions or trillions. These estimates are so enormous that it can be hard to have any perception of how much money this really is. It might, therefore, be useful to relate such numbers to the amount of money that is needed to deal with some of the most serious global problems. The estimates of how much it would cost to end world hunger range between 7 and 265 billion USD a year (Fan et al. 2018). The annual global education finance gap is 39 billion USD (UNESCO 2016). Saving the planet's biodiversity may cost 100 billion USD per year.¹ When compared to IFF estimates, one can safely assume that the most serious problems of the world, stopping famine, filling the education gap and maintaining biodiversity, could be solved when recuperating even only parts of the illicit financial flows.

Table 5.2 gives an overview of relevant IFF estimations and shows that the global estimates range from 125 billion to 15 trillion USD.

The estimates in Table 5.2 vary significantly. These differences should not be interpreted directly as an indication of how imprecise these estimates are. There can be many different reasons why the estimations differ so much. First, as shown in the last column of Table 5.2, not all these estimations estimate the exact same thing. All the estimations relate to illicit financial flows, but often to different parts of it. The estimations are done with different estimation methods. To get a better understanding of the different estimation methods, the data used, and the relevant assumptions made, an in-depth analysis is needed.

5.4 More In-depth Analysis of Relevant Studies

It is clearly not possible to give an in-depth analysis of all the 394 studies on estimating illicit financial flows (or components of it) that are shown in Figure 5.1.

¹ The Economic Times (22 April 2019) Earth Day: Saving the planet may cost USD 100 billion per year. Accessed online at: <https://economictimes.indiatimes.com/news/science/earth-day-saving-the-planet-may-cost-usd-100-billion-per-year/articleshow/68991339.cms?from=mdr> (accessed on 9 February 2020).

Table 5.2 Selected estimations of illicit financial flows

Study	Estimation (billion USD)	Countries included	What is estimated?
Cobham and Janský (2017)	50–80	US	Tax gain US multinationals with profit shifting
Clausing (2016)	77–111	US	Tax gain US multinationals with profit shifting
Janský and Palanský (2019)	125	Global estimate	Lost tax revenues from FDI related profit shifting
Crivelli et al. (2015)	>200	developing countries	Revenue loss from tax avoidance
Crivelli et al. (2015)	>400	OECD countries	Revenue loss from tax avoidance
Cobham and Janský (2018)	500	Global estimate	Revenue loss from tax avoidance
Tørsløv et al. (2018)	>600	Global estimate	Shifted profits
Janský and Palanský (2019)	420	Global estimate	Shifted profits
Murphy (2019)	852–1,023 ²	EU-28	Tax gap
Ferwerda et al. (2020)	2,333	Global estimate	Money laundering
Walker (1999)	2,850	Global estimate	Money laundering
Zucman (2013)	5,878	Global estimate	Hidden wealth offshore
Van Koningsveld (2015)	5,900	Global estimate	Offshore financial assets
Zucman (2015)	7,600	Global estimate	Hidden wealth
Cobham et al. (2019)	9,561	Global estimate	Trade reporting gap
Damgaard et al. (2019)	15,000	Global estimate	Phantom FDI
Henry (2012)	>21,000–32,000	Global estimate	Private wealth invested virtually tax-free through offshore

Source: Made by the authors based on the reported studies. > indicates that the authors mentioned the estimate as a minimum. – indicates a range.

This chapter will, therefore, focus the more in-depth analysis on four recent estimations done by participants of the EU project COFFERS (Combating Fiscal Fraud and Empowering Regulators) which shows the diversity of approaches even within a small group which closely worked together for three years. All these estimations are top-down indirect estimation procedures that had an important impact on (inter)national organizations and are expected to be

² The estimate in Murphy (2019) is in Euro, namely 750–900 billion Euro per year. For consistency the estimate is converted to USD using the exchange rate in January 2019 (when the paper was published): 1 USD = 0.88 Euro.

decisive in the future. Our analysis does not include the often mentioned top-down indirect estimation procedures that are known as the World Bank Residual Method and the Hot Money Narrow Method. Nitsch (2016) provides an in-depth analysis of those estimation methods. We start with an overview of the different concepts that are estimated in the four studies we focus on and then go more into the details of the studies. It is not feasible to explain all the details of the four estimations of which this chapter focuses. This chapter will try to keep the descriptions of the estimation strategies used in all four studies as simple and brief as possible, focusing only on the main estimation and how this result has been found. The descriptions briefly mention the main potential limitations.

5.4.1 What Is Being Measured? Conceptual Framework for Illicit Financial Flows

Illicit financial flows include many different concepts, from tax avoidance and tax evasion to money laundering and corruption. Stocks of illicit wealth are clearly not flowing and therefore might not be classified directly as illicit financial flows, but since these stock are generally the direct result of illicit flows, its estimates are relevant in the overview of this chapter. Moreover, financial stocks can generate illicit flows, as a return for investment or saving or more indirectly because of unpaid (capital) taxes. Generally, the estimations define quite precisely what is being estimated, but also estimate only a part of the illicit financial flows. An all-encompassing estimate of illicit financial flows is absent.

Figure 5.2 gives an overview of relevant concepts that are part of the over-arching concept of illicit financial flows and estimated by the studies this chapter focuses on. Money laundering (as estimated by Ferwerda et al. 2020) is by definition illegal and seems to be mostly happening in the financial sector. Not all money laundering is part of the broad concept of tax gap (defined as unpaid taxes by Murphy 2019), because some criminals actually prefer to pay taxes in an attempt to give a more legitimate appearance to their criminal proceeds. Even though Murphy (2019) defines tax gaps as very broad (all unpaid taxes), his estimates are based on shadow economy estimations, which is a narrower concept that focuses on real economic activities that are not registered. FDI related profit shifting (as estimated by Janský and Palanský 2019) are financial transactions that reduce the tax payments of companies and are therefore completely part of the tax gap. Trade misreporting (as estimated by Cobham et al. 2019) can be used to reduce tax payments and is then part of the tax gap, but can also be perfectly legitimate (for instance a typing error which leads to more tax payments) and then falls completely outside the concept of tax gaps and even illicit financial flows. Trade misreporting can also be used to launder money, so-called trade-based money laundering (TBML) (see eg. FATF 2006; Ferwerda et al. 2013; Zdanowicz

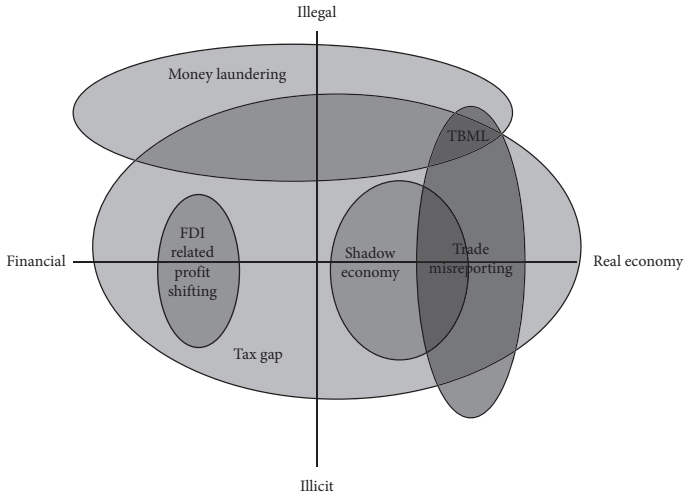


Figure 5.2 Visual representations of selected concepts within the over-arching concept of illicit financial flows.

Source: Author-made. Partly inspired by Cobham (2014).

2009). To give an example of how trade-based money laundering works: A drug dealer buys with his criminal proceeds some expensive watches. He then sets up a company abroad and imports his own watches for a (misreported) low price. If the criminal then sells these watches for the normal price in the country where he set up the company, it appears as if he bought the watches cheap (the misreported trade price) and sold them for more, making legitimate profits. He can then freely spend his ill-gotten gains because they appear legitimate; the goal of money laundering has been achieved. It is then discussable whether this is part of the tax gap. The criminal pays taxes on his profits from selling the watches, but import taxes are reduced due to the too low reported trade value.

5.4.2 Ferwerda et al. (2020)

Ferwerda et al. (2020) estimate the amount of global money laundering—making criminal proceeds appear legal—at 2,333 billion USD per year. The main data sources used for this estimation are the crime statistics of the UN and a confidential database of transactions suspicious of money laundering to and from the Netherlands. Multiplying the UN crime statistics with an estimate of the average proceeds per reported crime (based on Walker 1999) gives the amount of money that needs to be laundered in each country. The database of transactions

suspicious of money laundering makes it possible, for the first time, to empirically analyse why money laundering happens more between certain countries and less between other country pairs. Ferwerda et al. (2020) find with their panel data regression that money laundering flows follow the so-called gravity model. This model is related to the gravity equation in physics and shows that money laundering flows happen more between bigger countries (size attracts) and when countries are closer to each other (measured in kilometres or cultural, like common language and common religion). The uncovered logic of money laundering flows is then used—with an out-of-sample prediction—to simulate money laundering flows around the world. Adding up all the simulated flows gives a money laundering estimate per country, which can then be added up to have an estimate of the amount of money laundering worldwide.

Crucial for the estimation are the estimates of the average proceeds per recorded crime and the assumption that the logic of money laundering flows to and from the Netherlands represents the logic of money laundering flows worldwide.

5.4.3 Janský and Palanský (2019)

Janský and Palanský (2019) estimate that the global amount of lost tax revenues from profit shifting related to FDI is at least 125 billion USD per year. The idea of the paper, following the approach of UNCTAD (2015), is that profit shifting should show up in the statistics in the fact that the rate of return (of FDI) is lowered when profits are shifted (and therefore don't appear in the statistics). Their model identifies these shifted profits by comparing the bilateral rate of return for two non-tax haven countries with the bilateral rate of return involving a tax haven. The analysis indeed shows—with fixed effects panel data regressions—that when tax havens are involved, the rate of returns are lower, indicating that profits have been shifted. This makes it possible to estimate how much profits have been shifted and can then be used—by multiplying with the relevant tax rate—to estimate the amount of lost tax revenues from FDI related profit shifting. The paper also looks into the distributional effects of these shifted profits, but this chapter concentrates solely on the estimation procedure.

The estimation procedure could be biased when there are other reasons for a lower rate of return when a tax haven is involved, for instance, because tax havens are related to FDI in industries with lower rates of return. Another sensitivity is the tax haven classification, politically and for the estimation procedure. The paper uses three different tax havens lists which makes it not dependent on only one classification. Due to the estimation procedure, the paper cannot produce lost tax revenue estimates for tax havens themselves, since the tax haven related FDI is the comparison group.

5.4.4 Cobham, Janský, and Mareš (2019)

Cobham, Janský, and Mareš (2019) estimate the global trade reporting gap at 9,561 billion USD. The paper starts with identifying what the trade reporting gap consists of and develops strategies to estimate these components with the bilateral trade data of UN Comtrade. The components identified are country misalignment, product misalignment, true unmatched trade, abnormal prices, trade costs, and a residual category.

The first three happen when exports and imports cannot be matched in the database. It should be possible to match each export reported by A to B with the import reported by B from A. These cannot be matched when transit trade happens (products are moved from A to C via B, then A might report B as the destination, while C reports A as the origin), classified as country misalignment. It could also happen that the customs classify the product in the wrong category: product misalignment. All other unmatched trade is then labelled as true unmatched trade. For the trade flows that can be matched, we can again distinguish three categories: abnormal prices, trade costs, and a residual.

The paper has an identification strategy for each type of trade misreporting. Matching unmatched exports with unmatched imports identifies the transit trade, hence the country misclassification. Product misclassification is more likely to happen at the granular level than the broader level, thus giving an indication for product misclassification. Abnormal prices are identified when the price in a trade flow is two standard deviations away from the world average price. Trade costs are calculated with three different estimates of which percentage of the trade is expected to be trade costs. The true unmatched trade and the residual are the rest categories for all other discrepancies for unmatched and matched trade flows, respectively.

The six categories of trade misreporting are not all completely, and not in the same way, related to IFFs. Cobham, Janský, and Mareš (2019) therefore state that the estimations do not directly proxy the scale of IFFs.

5.4.5 Murphy (2019)

Murphy (2019) estimates the EU tax gap—the amount of tax loss due to unpaid taxes—between 750 and 900 billion Euro per year. The estimates are based on two data sources: estimates on the size of the shadow economy as a percentage of GDP and the official GDP statistics. The main question is then, whether the shadow economy is already included in the GDP statistics or not. This is why the estimate is a range. If the shadow economy would be included in the GDP statistics, the resulting size of the tax gap would be 20 per cent higher³ than when it is not.

³ $(900-750)/750=0.2$

Besides this unknown factor, the preciseness of the estimation directly depends on the preciseness of the shadow economy estimates that are used, namely those of the European Commission (EC DGT 2018), Medina and Schneider (2018) and Raczkowski (2015).⁴ The latter two are based on the MIMIC estimation method, critically discussed by Breusch (2005).

5.5 Comparative Analysis

We compare the estimations on which this chapter focuses along the following five relevant aspects: Conceptual (What is estimated?), Empirical (Which data is mainly used for the estimation?), Methodological (Which method is used?), Limitations (Which assumptions are needed? How sensitive are the results?) and the Results (What is the estimated amount?). Table 5.3 shows these five aspects for the four selected estimations.

Each of the estimations analysed here estimates a (very) different part of the illicit financial flows. Each estimation uses (very) different data sources and has its own estimation procedure, which leads to very different limitations. It is therefore not surprising that the estimates are very far apart. The highest estimate of 9,561 billion USD worldwide is almost 50 times larger than the lowest estimate of 125 billion USD.

5.6 Conclusion

Recent tax policies largely happened parallel and uncoordinated (see Chapter 1). The estimations of IFFs reflect a similar pattern. Each estimation has its own method, its own data source, and its own definition of what is measured. We now have many estimations—too many to draw insightful conclusions except for the fact that IFFs are big. It might be time to try and combine all the different insights to get a better overall view. An important first step might be to know what is exactly measured. The term ‘Illicit Financial Flows’ seems to have become a bit of a floating identifier, a term that is vague enough to be used for many different concepts, but it is, therefore, losing its meaning. The phenomenon illicit financial flow is a broad term in general. It might be time to disaggregate the term and specify what is measured exactly (see also Reuter 2017) and for which purpose it can be used.

The question is whether it is realistic that we can ever measure the size of these flows with precision since these flows are by definition hidden from authorities

⁴ The estimates of these three studies are averaged (with equal weight) to get the percentage on which the estimate of Murphy (2019) is based.

Table 5.3 Comparative table of COFFERS-related estimates

Study	Concept	Main data used	Methodology	Limitations	Result
Ferwerda et al. (2020)	Money Laundering	UN crime statistics and Dutch transactions suspicious of money laundering	Simulation with out-of-sample predictions based on money laundering logic uncovered with panel data regressions	Sensitivity of parameters taken from an earlier study and how representative the data of the Netherlands is	2,333 billion USD worldwide
Janský and Palanský (2019)	Lost tax revenues from FDI related profit shifting	Bilateral FDI stocks (incl. SPE related), FDI income, and three lists of tax havens	Fixed-effect panel data regressions to find how much lower the rate of returns are when FDI is related to a tax haven	Other reasons for lower rate of return, sensitivity of tax haven classification, model doesn't produce lost tax revenue estimates for tax havens	125 billion USD worldwide
Cobham, Janský, and Mareš (2019)	Trade misreporting	UN Comtrade	Match exports with imports and identify six different ways in which trade misreporting can happen (with an estimation strategy for each)	The six categories of trade misreporting are not completely, and not in the same way, related to IFFs, therefore the estimations do not directly proxy the scale of IFFs	9,561 billion USD worldwide
Murphy (2019)	Tax Gap	Shadow economy estimations and GDP statistics	Multiplying shadow economy estimates (as % of GDP) with (grossed up) GDP	Relies on estimates with limitations that transfer to this estimation	750–900 billion Euro for the EU

Source: Made by the authors. This summarizing table leaves out many details by definition.

and researchers and masked as other, legitimate, flows. Since the concepts contained within the container term of illicit financial flows are so different in nature, shape, and scale, it might also be unrealistic to think we will ever have one estimation model to estimate the whole phenomenon. However, this does not mean that different estimation procedures cannot learn from each other and that triangulation is not possible soon, after disaggregating what is estimated. In addition, estimates over time of the diverse approaches might give indications whether IFFs decline and tax policy has been effective.

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