UNODC-UNCTAD

Expert consultation on the SDG Indicator on Illicit financial flows

12-14 December 2017

Background paper[1]

Building a statistical framework to measure Illicit Financial Flows

Introduction

This background paper aims to propose a preliminary approach towards an internationally agreed statistical framework for the measurement of illicit financial flows (IFFs) at the country level. More specifically, the objective is to develop a statistical methodology for the measurement of the indicator "*Total value of inward and outward illicit financial flows (in current United States dollars)"*, which has been defined as a global metric for the monitoring of target 16.4 ("*By 2030 significantly to reduce illicit financial flows*") of the Sustainable Development Goals (SDGs).

A number of issues exist to develop a methodologically sound approach to measure IFFs: some pertain to the conceptual definition of IFFs as this broad term can take different meanings across various policy areas and stakeholders; other issues refer to the statistical feasibility of measuring IFFs as their underlying actions are hidden or disguised, which makes quantification difficult.

The paper is organised in two parts: the first part illustrates the overall statistical framework for measuring IFFs. The second part presents a preliminary approach to identify illicit financial flows associated with drug trafficking and to build a standardised methodology for their measurement.

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[1] This background paper has been prepared by UNODC

PART I

Background

In a broad sense, the full term '*Illicit Financial Flows*' (IFFs) is recognised as referring to value illicitly generated, transferred or utilized that is moved from one country to another. A number of challenges remain in defining more precisely what IFFs actually refer to.

The meaning of '**flows**' is generally understood[2] in the sense that the focus is on flows during a period of time (e.g., typically a year), while it is not on stocks (the accumulation of IFFs over history) at a point in time.

There is some discussion over the term '**financial**': reference is usually made to flows of money and other financial assets, but 'financial' can also be re-interpreted in a wider sense as encompassing the value of all flows across the border, be that money, finance or some other physical product or intangible asset, opportunity or gain.

There is more enduring debate over the term '**illicit**': this term is at least taken to mean 'illegal' (i.e., criminal, against the law) in terms or national or international law, with the assumption that anything that is illegal is also illicit ´. There is also recognition that countries may have different laws and clarity would be needed on how to consider flows that might be considered legal in one country and illegal in another jurisdiction,

Besides, 'illicit' has not only legal but also moral or customary connotations. For example, this applies to transfers across the border as a result of (legal) tax avoidance - in addition to illegal tax evasion - which should also be included as IFF.[3] In this paper, the approach taken in building the statistical framework for measuring IFFs is to take ´illicit´ in its broadest meaning.

Statistical framework to measure IFFs

As already said, illicit financial flows are cross-border movements of money and other financial assets that can be directly or indirectly associated with illicit activities. Three broad categories of IFFs can be identified:

- Legally generated funds in a country can become illicit financial flows because are associated with tax crimes or other fiscal practices, or because they are moved abroad in violation of financial transfer rules.
- Another component of illicit financial flows is represented by the proceeds of criminal activities that are eventually transferred cross-border; in these cases, illegal acts are at the origin of funds.

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[2] For a discussion on the definition of the term "illicit financial flows" see, for example, Forstater (2017) and the other background paper presented at this Expert Consultation.

[3] See Chowla & Falcao (2016), and Forstater (2017)

- A third class of illicit financial flows is represented by all the transactions that cross the border with the purpose of committing illegal activities (such as financing of terrorism or investing in drug trafficking activities), irrespective of their origin.

The approach adopted for the construction of a measurement framework identifies a set of illicit financial flows typologies, defined and grouped according to the nature (legal, illicit or illegal) of the origin, transfer or use of the funds.

The identification and definition of the key illicit financial flows typologies and their nature are illustrated in Figure 1. The main predicate licit, illicit or illegal activities are depicted on the left-hand side of the Figure, which take place within the borders of the country under analysis. A number of financial flows types derived from these activities and crossing the border are identified (see right-hand side) and are allocated to different categories and accordingly considered (or not) as Illicit Financial Flows.

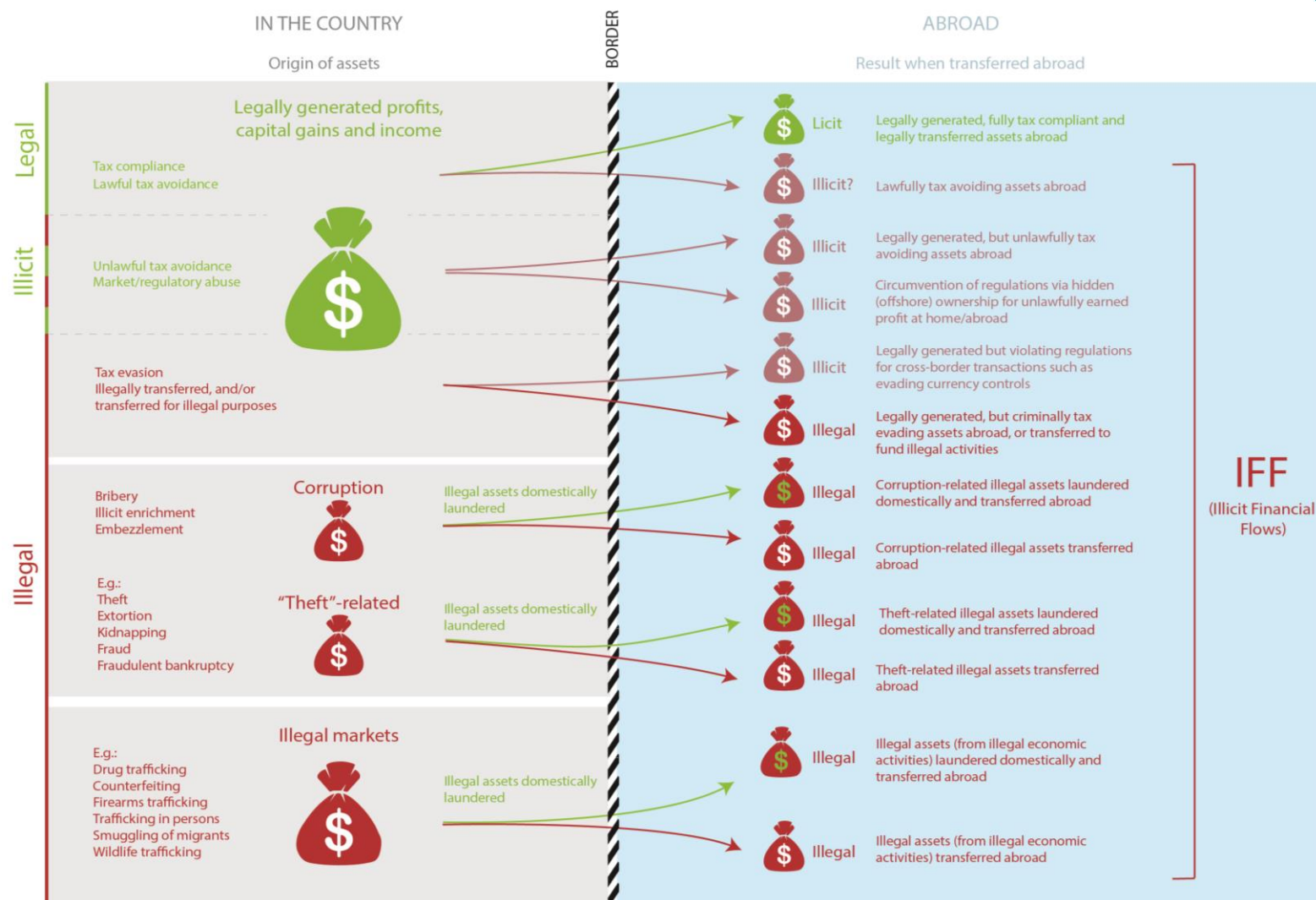The country's border in the centre of Figure 1 is a key element, because:

- Only if there is both an illicit activity **and** some value has crossed the border, is there an IFF.[4]
- IFF can be undertaken by anyone or any organisation (foreigners or nationals, non-residents or residents, by individuals/households or businesses or other institutional units, by organised units or less-organised units, by those in the formal economy and the informal economy, and by those in the private and the public sector) but an economic or illicit activity needs to take place in the country of analysis, from which a cross-border flow is generated.
- A domestic transaction associated with assets of illicit or illegal origin is not an IFF.

Channels for the transfer of IFF range from smuggled cash (still a frequently used method), smuggled goods including high value items (gold, gems, antiquities), international transfers through financial institutions and their infrastructure (e.g., SWIFT, other regulated electronic transfer mechanisms), alternative transfer mechanisms such as *hawalas* and *hundi*, trade mispricing (including abusive transfer pricing), trade misinvoicing and digital currency transfers (e.g., Bitcoin and others). Some crimes (e.g., trade mispricing and trade misinvoicing) are both crimes and channels for IFF.

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[4] Implicitly the flow will/should have been recorded in the Balance of Payments had it been properly accounted for (i.e. a change in foreign holdings of domestic financial assets or domestic holdings of foreign financial assets, or flows across the border of goods, services, primary income or secondary income).

Figure 1 - Illicit financial flows measurement framework

The various types of financial flows can be described as follows:

- ***Licit: Legally generated, fully tax compliant and legally transferred assets abroad***
  This typology refers to cross-border transfers of assets resulting from export (import) of goods or services, properly valued and declared to customs and taxed, with receipt (payment) of full value of inwards (outwards) funds transfer. Remittance (e.g. a dividend) from after-tax accumulated earnings of foreign-owned company, with matching decrease in accumulation of equity owned by foreign investors.

- ***Illicit (?): Lawfully avoiding taxes abroad***
  This typology refers to cross-border transfers of assets from lawful (successful) tax avoidance. It has to be discussed whether these types of transfer represent illicit financial flows or are fully legal transfers.

- ***Illicit: Legally generated, but unlawfully tax avoiding assets abroad***
  Examples of these activities are the shifting of undeclared (legally generated - licit) profits or income through related party lending and borrowing, abuse of export subsidy regimes, tariff evasion, export under-pricing, import overpricing, FDI (inward) under-pricing, FDI (outward) overpricing.

- ***Illicit: Circumvention of regulations via hidden (offshore) ownership for unlawfully earned profit at home/abroad***
  This typology refers to cross-border flows of assets resulting from export-overpricing, import under-pricing, FDI (inward) overpricing, FDI (outward) under-pricing, use of financial secrecy to understate/hide market dominance (inward FDI and public asset sales/public contracts).

- ***Illicit: Legally generated but violating regulations for cross-border transactions such as evading currency controls, or transferred to fund illegal activities (including terrorism)***
  This typology refers to refers to cross-border flows of assets resulting from export (import) of goods or services, with receipt (payment) of equivalent value of inwards (outwards) funds transfer, but either the export (import) itself or the inwards (outwards) funds transfer violated regulations for cross-border transactions such as avoiding currency controls.

- ***Illegal: Legally generated, but criminally tax evading assets abroad, or transferred to fund illegal activities (including terrorism)***
  This typology refers to cross-border flows of assets resulting from evasion of tariffs, capital/currency controls, and to transfers used to fund illegal activities, such as terrorism.

- ***Illegal: Corruption-related illegal assets domestically laundered and transferred abroad***
  This typology refers to cross-border flows of proceeds from corruption activities, such as bribery, embezzlement, illicit enrichment and other related illegal activities (for a detailed description, see the United Nations Convention Against Corruption), that leave the country as transactions that appear linked to legitimate economic activities.

- *Illegal: Corruption-related illegal assets transferred abroad*
  This typology refers to cross-border flows of proceeds from corruption activities, such as bribery, embezzlement, illicit enrichment and other related illegal activities (for a detailed description, see the United Nations Convention Against Corruption).

- *Illegal: 'Theft'-related illegal assets domestically laundered and transferred abroad*
  This typology refers to cross-border flows resulting from a group of illegal activities such theft, extortion, kidnapping, fraud, fraudulent bankruptcy, that leave the country as transactions that appear linked to legitimate economic activities. They are separated from the activities conducted in the illegal markets, as they do not belong to illegal economic activities, because the condition for which the actors need to be willing parties in the transactions is violated (and for this reason, these criminal acts are not considered part of the national accounts production boundary)[5].

- *Illegal: 'Theft'-related illegal assets transferred abroad*
  This typology refers to cross-border flows of assets resulting from a group of illegal activities such theft, extortion, kidnapping, fraud, fraudulent bankruptcy. They are separated from the activities conducted in the illegal markets, as they do not belong to illegal economic activities, because the condition for which the actors need to be willing parties in the transactions is violated (and for this reason, these criminal acts are not considered part of the national accounts production boundary)[6].

- *Illegal: Illegal assets (from illegal economic activities) laundered domestically and transferred abroad*
  This typology refers to cross-border flows of assets resulting from illegal economic activities, conducted by an individual or a group of people, that have been domestically laundered and then transferred outside the country. A typical case is represented by profits that organised crime produce from drug trafficking activities, which are laundered domestically, and are then transferred abroad as transactions that appear to refer to "clean" economic activities.

- *Illegal: Illegal assets (from illegal economic activities) transferred abroad*

  This typology refers to cross-border flows of assets associated with illegal economic activities conducted by an individual or a group of people. Examples of this type comprise money smuggled from one country to another for the purchase of illicit drugs and the transfer abroad of profits from criminal activities for the purpose of concealing and/or utilizing them.

Considerations to develop methodological approaches to estimate IFFS

The implementation of this measurement framework requires two separate - though connected - steps:

1. To identify and describe the individual IFFs components, as based on specific legal, illicit or illegal activities and associated cross-border flows

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[5] See for example the European System of Accounts (ESA 2010) (Eurostat, 2013a, p. 310)
[6] See for example the European System of Accounts (ESA 2010) (Eurostat, 2013a, p. 310)

2. To develop solid measurement approaches for each IFF component, which will be eventually integrated to produce estimates respectively of inward and outward illicit financial flows at country level.

By disaggregating IFFs in their multiple components it is possible to develop dedicated statistical methodologies that can best adapt to measuring very diverse phenomena and, importantly, disaggregated data can be produced to respond to specific policy issues on the various IFFs types.

This approach can also build on studies and approaches developed to measure IFFs-related topics, such as:

i. Studies linking IFFs with the estimated produced on the value of informal/shadow/non-observed economy, which includes some consideration of those sectors' taxes avoided/evaded and illegal activities[7].

ii. Research on specific tax issues, with important analysis of total tax evasion and/or avoidance, including a focus on the 'tax gap' (both for policy and compliance) for types of taxes (direct and indirect), but it is only in recent times that there has been great focus on the split between domestic and international missing tax flows.[8]

iii. Research on aspects of organised crime networks, including drugs, wildlife, forestry, fisheries and human trafficking/smuggling of migrants[9].

iv. Research to estimate IFF or capital flight through focusing on balance of payments errors and omissions (NE&O) and mismatches in bilateral trade data[10][11].

The recent work conducted in the framework of national accounts and balance of payments in relation to incorporating illegal economic activities into such frameworks is also extremely valuable and it has produced important practical experiences by including estimates of some illegal activities in some countries' GDP and balance of payments.[12]

In particular, the work on developing the statistical framework on IFFs will benefit from considering the definitional structure and methodological approaches developed respectively by the National Accounts and the Balance of Payments. These very large and complex frameworks evolve continually (System of National Accounts 2008, SNA 2008 and Balance of Payments and International Investment Position Manual, IMF BPM6)[13], but at their core they have established sound concepts for estimating the production boundary of the economy and the national balance sheet/net worth and residents' interaction, with and claims over and owed to the rest of the world. While some of the concepts and methodological approaches used in these frameworks may not always fit the specific requirements of IFFs framework (e.g. the concept of mutual agreement used in national accounts to define economic activities may be too tight to identify illegal activities generating IFFs), it is important to assure complementarity with them – to the extent possible – when developing IFFs estimates.

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[7] For instance, several exercises conducted by Schneider (Schneider, 2012, 2013).
[8] For instance, Australian Taxation Office (2017) and Khwaja & Iyer (2014).
[9] For a reference, see UNODC (2011), GFI (2011) and GFI (2017).
[10] Virtually annual reports since 2009 (GFI, 2017a)
[11] See Ndikumana and Boyce and other papers on *Capital Flight from Africa* (like the *Algorithm for Computation of Capital Flight*) at https://www.peri.umass.edu/capital-flight-from-africa, and Ndikumana, Boyce, & Ndiaye (2014)
[12] See for instance Eurostat (2013b), Eurostat (2016), Eurostat (2017)
[13] See United Nations (2009)

PART II

Estimating IFFs from illegal markets - A preliminary application to drug trafficking

Estimating IFFs resulting from illegal markets

The measurement framework illustrated in PART I of this paper maps the illicit financial flows typologies and their relative origins. The distinct nature of illicit financial flows typologies and their respective origin – licit, illicit, illegal - requires adopting specific measurement approaches for each of them. Therefore, three broad distinct approaches will be developed to measure IFFs from licit, illicit and illegal activities.

Within the category of illicit financial flows with *illegal origin*, it is envisaged that distinct methodological approaches will be developed respectively for IFFs deriving from corruption, 'theft'-related crimes and from those associated with illegal markets. In this chapter, the focus is on illicit financial flows resulting from illegal market activities, with a preliminary application to the illicit drug market.

In general terms, the measurement of illicit financial flows resulting from illegal market activities will require to undertake the following steps:

I. **Identify the main illegal markets** that produce relevant criminal proceeds
II. For each illegal market identified, **measure the monetary value** in terms of
    a. Revenues
    b. Intermediate costs
    c. Profits

   The methodology to estimate the three components needs to be adapted according to the type of illegal activity, to the domestic or transnational nature of the market, to the type and role of market players and their geographical location. In relation to revenues and intermediate costs it will be important to distinguish domestic from transnational flows as the latter constitute a first type of IFFs.

III. Among the profits generated in the illegal markets, assess the amount spent or reinvested domestically in licit or illicit activities and the **amount** (or **share**) **that crosses the border** for the purpose of profit laundering (including those assets laundered domestically before being moved abroad).

IFFs related to drug trafficking

Every day, big quantities of illicit drugs are moved across borders and traffickers earn significant amounts of money and other financial assets. These activities can affect international financial flows in different ways: international trade of illicit drugs generate corresponding international payments; moreover, activities related to production, trade and consumption of drugs generate proceeds that are available for being moved across international borders for profitable investments after being laundered[14].

A substantive body of literature exists - both from academic and other sources - that aims at estimating the size and nature of illegal drug markets from various approaches (e.g. demand based or supply based estimates) by making the best possible use of available information and data sources. More recently, there has been also specific interest on the financial dimension of the drug trade[15]. However, no standardized approach has been devised to collect data on and assess the size of illicit financial flows related to drug trafficking in an internationally comparable way.

In order to build a globally valid statistical methodology to estimate illicit financial flows resulting from drug trafficking at the country level, two initial steps are needed:

- Identify the types of illicit financial flows associated with trafficking of drugs, in line with the typology of illicit financial flows discussed in part I of this paper
- Develop a common approach towards a standardised methodology to produce national estimates of illicit financial flows originating from illegal drugs markets.

The methodology illustrated in this background paper can be modified and adapted to reflect certain market characteristics, regional trafficking features and the *modus operandi* of the actors involved.

What to measure

In general terms, drugs that are internationally traded leave the country of origin and are then trafficked through an often large number of countries until they reach their final destination where they are consumed. This is in particular true for cocaine and heroin, where a limited number of countries produce the raw material, coca or opium, in very large quantities. For other substances, such as cannabis or synthetic drugs, the markets have a more decentralized structure as drugs are produced in a large number of countries and are traded – both nationally and internationally – following routes that are more difficult to capture. The following approach is conceptually applicable to all types of illicit drugs but is more directly applicable in the cases of heroin or cocaine trafficking.

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[14] The United Nations Convention against Transnational Organized Crime (UNTOC) refers to the laundering of proceeds of crime as the intentional *"conversion or transfer of property, knowing that such property is the proceeds of crime, for the purpose of concealing or disguising the illicit origin of the property or of helping any person who is involved in the commission of the predicate offence to evade the legal consequences of his or her action"* and the *"concealment or disguise of the true nature, source, location, disposition, movement or ownership of or rights with respect to property, knowing that such property is the proceeds of crime"* (United Nations, 2000, p. 8).
[15] see for example UNODC (2015) UNODC,(2011), EMCDDA & Europol (2016)

Illicit financial flows from and to a country are generated in relation to the illicit drug trade and transaction of money that are not related to a physical movement of drugs but to the transfer of drug-related profits.

The **illicit drug trade** comprises revenues associated with the transnational purchase or sale of illicit drugs. In general, outward IFFs are generated from imports, while inward IFFs occur when drugs are exported to another country. The country of physical departure, transit or destination of illicit drugs is not necessarily the country where the corresponding inflows and outflows of money or assets used for the settlement take place. [16]

Transactions of money that are not related to a physical movement of drugs are generated when an entity based in a country (e.g. an organised crime group) transfers abroad or receives from abroad profits derived from drug trafficking.[17] These flows of assets can be associated with money laundering activities. Profits from drug trafficking are generated from international and domestic – both wholesale and retail – trade.
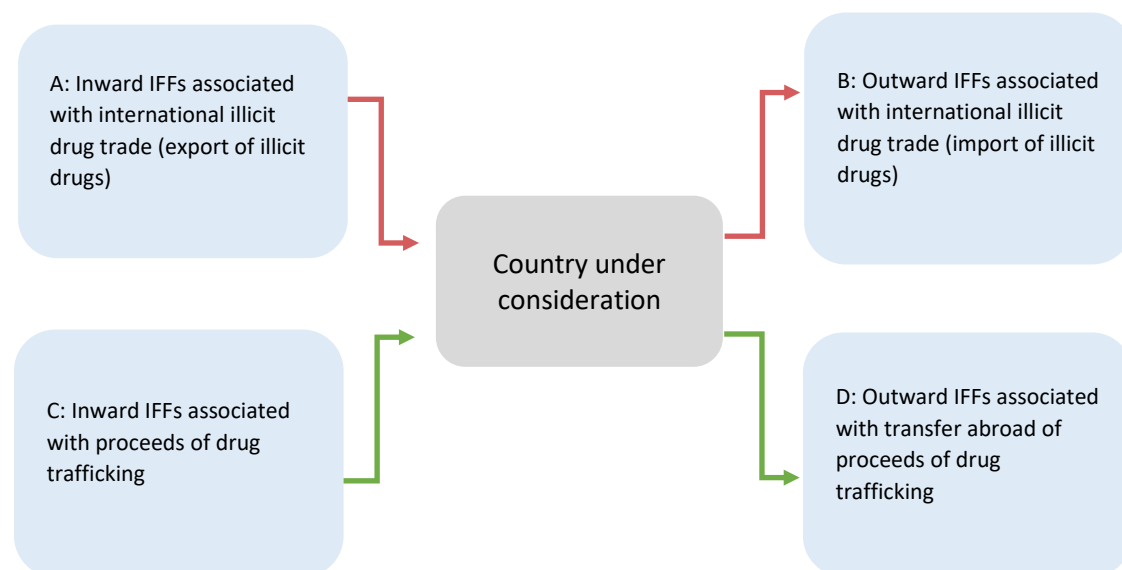
The following figure depicts types of illicit financial flows resulting from drug trade in greater detail: inwards and outwards flows associated with the illicit trade of drugs (flows A and B; import and export) and in- and outward flows associated with transfer of drug trafficking proceeds (flows C and D).

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[16] In the legal trade, the concept is residency: revenues made from import, export and refinement of goods are accounted for by the country of residency of the company. As in the legal trade, the nationality of the drug traders is not relevant, it is the country from where the operation is organised. This holds as well if a trader travels to another country to make the physical transaction, the proceeds are to be accounted for in the country of residence of the trader.

[17] These monetary flows may enter the country either as illegal funds by using informal channels or by first being laundered such that the funds appears clean and then cross borders. The flows are in either case classified as illicit.

Figure 2 - Inwards and outwards illicit financial flows from drug trafficking
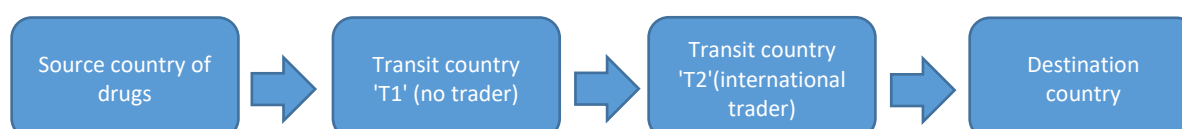

Flows A, B are directly related to the physical import and export of drugs in a country as they are met with a corresponding exchange of illicit drugs. Flows C and D are financial flows not related to an international trade with goods. In particular, inflow C to a country is a purely financial flow that has no corresponding trade with illegal goods, but where the origin of the money is in a different country and of illegal nature. Type D flows are outward IFF flows of funds of illegal nature that have been generated within the country under consideration.

Interestingly, illicit financial flows of types A and B are matched with corresponding flows of illicit drugs, while flows from/to a country that are not met with an exchange of illegal goods (i.e. IFF types C and D) always need to be matched by an illicit financial flow in the opposite direction for the corresponding country. This feature is valuable when estimating specific flows.

An illustrative example

An example involving drug trafficking among four countries can be useful to illustrate the above, with a source country of illegal drugs, a transit country where no trade is taking place, a transit country that is host to a major drug trafficker,[18] and a destination country, where the drugs are consumed.

Figure 3 - Drug trafficking route from source to destination

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[18] In the licit world, the drug trafficking group would have its enterprise registered in country T2.

In the example the trader, based in country T2, purchases a kilogramme of heroin for USD 1,000 in the source country and sells it for USD 10,000 in the destination country. This trader accrues USD 9,000 of profit (ignoring intermediate costs for transportation or modification of the product along the way). To this point, four illicit financial flows are generated: an inflow of USD 1,000 to the source country (type A), an outflow of USD 1,000 from country T2 (type B), an outflow of USD 10,000 from the destination country (type B) and an inflow of USD 10,000 to country T2 (type A) since the trader is based in that country. Country 'T1' – where the drug transited physically - is not affected by any illicit financial flows as drugs are not traded therein, in the sense that no change in ownership takes place and no added value is realised.[19]

Furthermore, the drug trader in country T2 is also involved in the local drug market. The trader purchases another kilogramme for USD 1,000 in the source country and sells it domestically for USD 5,000 to drug users in T2. In this transaction, two illicit financial flows are generated, namely an inflow of USD 1,000 (type A) to the source country and an outflow of USD 1,000 (type B) from country T2.

After all this, the drug trader has a disposable income of USD 9,000 + USD 4,000 = USD 13,000 (ignoring costs), which is then re-utilised. For example, USD 5,000 are used for immediate consumption (e.g. cost of living in T2) which enter the local economy. From the remaining USD 8,000, USD 2,000 are re-invested into the domestic drug business, and USD 6,000 are transferred abroad to another jurisdiction where the illegal origin of funds can be more easily disguised (e.g. a secrecy jurisdiction). Accordingly, four more illicit financial flows occur: an outflow from T2 of USD 6,000 and an inflow of the same amount to the secrecy jurisdiction.

The results of all transactions described in the example are illustrated in Table 1, which depicts destination and origin of IFFs related to drug trafficking in concerned countries.

Table 1- Synopsis of inward and outward Illicit Financial Flows described in the example

IFF type	Source country	Transit T1	Transit T2	Destination country	Secrecy jurisdiction
Type A (trade-related inward IFFs)	USD 1,000 + USD 1,000	-	USD 10,000	-	-
Type B (trade-related outward IFFs)	-	-	USD 1,000 + USD 1,000	USD 10,000	-
Type C (profit-related inward IFFs)	-	-	-	-	USD 6,000
Type D (profit-related outward IFFs)	-	-	USD 6,000	-	-
Total inward IFFs	**USD 2,000**	**USD 0**	**USD 10,000**	**USD 0**	**USD 6,000**
Total outward IFFs	**USD 0**	**USD 0**	**USD 8,000**	**USD 10,000**	**USD 0**

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[19] Strictly speaking, the country could account for a transportation fee that may benefit the local economy.

How to measure

In order to build estimates for the various IFFs types associated with drug trafficking, the first step is to define the structure and estimate the economic size of the illicit drug market. Taking into account the inter-organizational relationships of criminal firms involved in drug trafficking, a model that reflects the supply-chain of illicit drugs as organised in different trafficking phases can be taken as the starting point[20]. According to this model, the trafficking chain of illicit drug markets can be broken down into four major stages, which begin with production in the source country, followed by international trade through transit countries to the destination country where the product is consumed[21]. In the destination country, drugs are transported and distributed from domestic wholesale traders to small-scale dealers who sell the product to drug users.

Figure 4 - Components of drug market

PRODUCTION (Cultivation or manufacture)	INTERNATIONAL WHOLESALE TRADE	DOMESTIC WHOLESALE TRADE	DOMESTIC RETAIL TRADE

While these components are relevant for any country and any drug type, it can be challenging for an individual country to develop methodologies and identify relevant data sources that can reliably produce estimates on the various types of IFFs connected with drug trafficking without an international picture of the drug market. This applies particularly for drugs where the transnational nature of trafficking is predominant, as for example for cocaine and heroin. In such cases, a model able to quantify size of drug trafficking flows and of domestic markets can be a valuable instrument to estimate relevant IFFs (UNODC, 2015).

Estimating the value of drug production

The scale of which drugs produced domestically produce illicit financial flows depends on the nature and the scale of the market. In main drug producing countries, the export value of all drugs produced can make up a significant share of GDP (e.g. in Afghanistan or Colombia) and thus result in significant inflows of illicit financial flows due to drug trade alone. For example, the farm-gate value of opium alone in Afghanistan was estimated at 7% of the countries' GDP in 2017 and the value of all opiates produced and sold abroad is worth between 20 – 30 per cent of national GDP.

In other contexts, the drug economy may be a localised phenomenon that may have a limited impact on illicit financial flows. The cannabis market is in many countries a localised market where small-scale producers sell directly to end-consumers. In such cases, the average profits made by producers may be so small that it may not result in significant outward illicit financial flows.

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[20] See the framework described in Sallusti (2014)

[21] It has to be noted that, in some countries and for certain illicit drugs types, production and consumption can occur in the same country. In the case of a fully domestic drug market (without any illicit drug inflow or outflow) the economic value generated from international wholesale trade would be equal to zero.

To assess the value of all drugs produced in a country and the share of funds that potentially result in illicit financial flows is thus depending on

- The scale of drug production
- the share of the domestically produced drugs that is exported
- and the share of the locally generated revenues and profits that are transferred abroad

The feasibility of building such estimates depends strongly on the type of drug and its market structure. In particular, this can be challenging for illicit drugs that are produced and distributed in a decentralized way - e.g. cannabis or many synthetic drugs – as the production source is often concealed or unclear.

Estimating the value of international drug trade

At this stage, the volumes traded and their economic value have to be estimated. In the lack of direct data on imports and exports of illicit drugs, a modelling approach to estimate such values is required. The most relevant data for estimating flows of illicit drugs and their economic value are:

- Production estimates
- Data on trafficking routes (e.g. origin and destination of seized substances)
- Data on actors (including the main location where they operate)
- Price data at retail and wholesale level
- Seizure data (aggregated data of substances seized)
- Demand (consumption) estimates at national level

Using this information, a model – either demand or supply based - can be adopted to build estimates of drug flows. The demand-based approach, well established in scientific literature, takes the quantity of drugs consumed in destination countries as the starting point. Estimates of the drug demand of all countries under consideration together with seizure data are used to assess the total quantities of drugs trafficked along the trafficking route by following a simple flow equation,[22] where "drugs entering country X" and "drugs leaving country X" is referred to as international drug trade, and the quantities "drugs produced in country X" and "drugs consumed in country X" are referred to as the domestic market (which includes all intermediary steps along the value chain that make up domestic trafficking). This model has been applied to model trafficking of opiates originating in Afghanistan that are being trafficked from source country to end-consumer markets in Europe[23].

Figure 5 - Flow of drugs trafficked through individual countries

Drug T produced in country X + Drug T entering country X − Drug T consumed in country X − Drug T seized in country X = Drug T leaving country X

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[22] The study assumes that the sum of drugs consumed plus the quantity drugs seized resulted in the total amount of drugs trafficked along the route.
[23] (UNODC, 2015)

The above mentioned study used drug price data in combination with information from seizure data to estimate size and direction of individual trafficking flows. In particular, by using price data of each country and price data of its 'neighbours' in the trafficking chain, the study estimated the value added from the trade with illicit drugs in all countries under consideration. The model resulted in estimates of the volume trafficked along each route and the value added along each step of the trafficking chain. These findings makes a model like this very valuable but some refinements would be needed for the purpose of estimating IFFs related to international drug trade. In particular, as illicit financial flows are not necessarily attached to the geographical movement of the drugs, detailed information on how the drug trade is organised and on where the profits are realised would be needed to assess the transfers associated with the international trade of drugs. Moreover, after estimating where profits are made, it is necessary to understand how they are used and which share is transferred abroad as an IFF.

Estimating the value of domestic wholesale and retail trade

For assessing the illicit financial flows associated with domestic trade, detailed information on the structure of the market is necessary. It makes a difference if there is a small number of players that make a large amount of money (e.g. oligopoly structure), or if it is more a decentralized, competitive structure, where the single players are not accruing funds large enough to set up mechanisms for transfer abroad. The estimate of the revenues generated in this phase needs detailed information on indicators related to drug consumption, such as the prevalence and the frequency of drug use, the quantity used and the expenditure on illicit drugs. Such data are available for many countries from different types of drug use surveys.

Estimating illicit financial flows related to drug trafficking and consumption

Illicit financial flows related to the international trade with drugs

While international trade of drugs can be quantified, especially when information is available to build a comprehensive model on drug trafficking flows, a key issue is that related financial flows do not necessarily follow the movements of drugs. While drug trafficking routes can be designed by making adequate use of demand, seizure and price data, corresponding information is lacking that can shed light on where buyers and sellers are located and how payments are regulated.

Beside knowing drug trafficking routes it is therefore important to understand nature and location of main actors active in drug trade. For example, different models exist: in a 'cartel-like' structure, the drug trade is organised by one cartel from origin to main destination markets without intermediate transactions taking place. In a ´multiple market´ structure, a shipment may be bought and sold multiple times, creating at each step an illicit financial flow. For example, it is believed that the cocaine trade to North America tends to follow a cartel-like structure, whereas the trade of heroin from Afghanistan to Europe is organised according to a multiple market structure.

Detailed knowledge of market structure is needed for building IFF estimates of drug trade related IFFs. The challenge in obtaining these estimates is the lack of data on the organisation of drug trade across countries. Data on arrests can provide some insights on the nationality of the drug traffickers, but this may not be sufficient for making conclusions on the countries where the profits are realised. Case studies on drug trafficking groups and their financing structure may provide valuable insights on drug

trafficking hubs. Such studies require an international effort and a close collaboration between countries affected by the drug trade.

Illicit financial flows associated with the transfer of profits from drug trafficking

Assuming that profits generated by domestic drug market and international trade can be estimated at the country level, the unknown element to estimate outflows generated by drug trafficking is the actual share of such profits that is used for cross-border illicit financial flows.

A simple equation can be useful for estimation purposes: any profit made in a country is either used for domestic consumption (e.g. daily expenses), domestic investment/savings (including domestic money laundering activities), or is moved abroad in some way. To assess the latter flows, it would be necessary to estimate the share of illegally earned funds that is moved abroad or – using simple accounting – estimate the share of illegally earned funds that is consumed, saved or invested domestically.

Currently, very little information is available on consumption and savings patterns of drug dealers and organised crime groups involved in the drug trade. It has been hypothesized[24] that drug dealers, with shorter life expectancy and at risk of spending a portion of their career in prison (at least in some countries) are likely to have lower savings rates and higher consumption rates than the others, but other than that only limited information seems to be available.

In absence of research on these topics, estimates can based on assumptions: for example, it can assumed that profits of large scale operators are moved abroad to a larger extent than those accrued by retail dealers. If this is true it would imply that while retail accounts for the majority of overall profits made in the drug trade, it may contribute only little to illicit financial flows, as retail markets are often characterised by many players who make relatively small profits.

Clearly, if following the approach presented here for estimating illicit financial flows originating in the drug business, more research would be needed on the supply side of drugs, specifically on how large and small-scale operations are handling their finances.

Conclusions

Given the transnational nature of drug trafficking and the paucity of data usually available at country level, the development of regional models depicting drug trafficking routes and structure in relation to specific drug markets appear as a promising practice. Market size estimates and estimates on the value added generated along the value chain of drugs can provide insights on the total amounts of money that is potentially available for illicit financial flows and of that used to for international drugs trade. For developing accurate estimates of illicit financial flows at the country level, however, the current understanding of the illicit markets seems not to be sufficient.

In particular the following issues appear to be crucial to develop comprehensive methodology to estimate IFFs related to drug trafficking:

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[24] See Reuter (2017)

- Once drug trafficking flows are estimated, how to estimate the associated financial flows determined by payments between drug market operators? In relation to this, which elements should be considered to determine origin and destination of the financial flows (e.g. residence of the 'operators', 'centre of interest' of organised criminal groups or origin-destination of financial transfers)?
- Once drug trafficking profits are determined, which approach can be used to assess their use and particularly to determine which share is transferred abroad for laundering purposes (including funds that are laundered within the country and then transferred abroad)?

Importantly, these challenges on measuring IFFs associated to drug trafficking remain fully relevant also in relation to IFFs determined by other illegal markets, as for example smuggling of migrants or of counterfeited goods.

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