Experience in Measuring Tax and Commercial IFFs and Establishing Inter-agency Collaboration

The Case for South Africa

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Overview of the South African Case

Global standards and definitions. Review of the PEP and BO definitions and recommendations (soft law)
A Strategy to Curb IFFs

Research and measurement – the key to understanding IFFs

- A strategic unit was set up in the FIC, to run pilot project, reporting to the Director and providing advisory work to the Minister of Finance.
- The pilot quantified the extent of the illicit economy (IE) and illicit financial flows (IFFs) using a number of different approaches and models.

- Due to the clandestine nature of the illicit economy and IFFs we used a variety of models, at a macro-, meso- and micro-economy level, developing an integrated approach, creating a threat and risk assessment tool.
- The research filtered through from the macro research level, using National Accounts and other macro data, through the meso analysis, down to micro level analyses using transactional data, guiding investigations.
# Models and Data Tools

## Research Key:
- Commercial IFFs
- Corruption
- Theft-type and Terrorism
- Illegal Markets
- Illicit Economy
- Non-specific IFFs

## Illicit Economy

<table>
<thead>
<tr>
<th>Macro-Level</th>
<th>Meso-Level</th>
<th>Micro-Level</th>
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<tbody>
<tr>
<td><strong>Black Money Models</strong></td>
<td>Meso-sector Models or Research Papers</td>
<td>Micro-sector Models or Research Papers</td>
</tr>
<tr>
<td>Currency Demand Model</td>
<td>Follow the Money (research paper)</td>
<td>Narcotics assumption base model. Rhino poaching</td>
</tr>
<tr>
<td><strong>Shadow Economy Model</strong></td>
<td>Illicit Economy and Illicit Flows:</td>
<td>Wildlife trade including:</td>
</tr>
<tr>
<td>Multiple Indicators Multiple Causes (MIMIC) model</td>
<td>Microsimulation using the General Household Survey and Income and Expenditure Survey</td>
<td>- Elephant ivory smuggling</td>
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<td></td>
<td>Work in progress: replication of the World Bank Columbian IFF Study</td>
<td>- Tiger and lion bone smuggling</td>
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<td>Timber and coal smuggling</td>
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## Illicit Financial Flows

<table>
<thead>
<tr>
<th>Macro-Level</th>
<th>Meso-Level</th>
<th>Micro-Level</th>
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<tbody>
<tr>
<td><strong>Illicit Flows Macro Models</strong></td>
<td><strong>Illicit Flows Meso Models</strong></td>
<td><strong>Illicit Flows Micro Models or Research Papers</strong></td>
</tr>
<tr>
<td>SARS Tax Evasion Model (Tax GAP model)</td>
<td>Trade Mis-invoicing by country and by product category (99 sectors – HS level 2)</td>
<td>Crypto currencies and BITCOIN</td>
</tr>
<tr>
<td>Gravity Money Laundering Model – without trade</td>
<td>Transfer Mis-invoicing background research paper</td>
<td>Corruption Analysis Report</td>
</tr>
<tr>
<td>Gravity Money Laundering Model with Trade (TBML)</td>
<td>TBML background research paper and TBML Model (hybrid DOTS-Walker Gravity Model)</td>
<td>Occupational fraud and fraud profiling reports</td>
</tr>
<tr>
<td>Hot Money Model</td>
<td></td>
<td>Cybercrime Report</td>
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</table>

## Databases:
- Narcotics (macro crime stats)
- StatsSA narcotics survey including drug use survey, and micro survey data of seizures
- Crime statistics at municipal level for the by country, by police precinct and municipality
- Macro data on tax, crime, money supply, tax evasion, etc.
- Trade (SIC level 4) for South Africa trading with the rest of the world (sector and product) including FOB stats from the South African Revenue Service (SARS)
IFFs Modelled in South Africa

Macro, micro and meso models

- **Total Economy** = IE + Formal Economy
  - Conservative CDA estimate of the illegal economy
  - MIMIC estimate includes illegal and informal

- **Illicit Economy**:
  - CDA (conservative: illegal)
  - MIMIC (includes illegal and informal)
  - *The WB Columbian Money and Asset Laundering Model estimates the shadow economy*

- **Hot Money (Capital Flight = Licit + Illicit)**
  - Capital outflow using the Balance of Payments data

- **Illicit Financial Flows**
  - The GFI approach includes Hot Money plus Trade Mispricing

- **Trade Mispricing**
  - GFI focuses on 35 developed countries plus estimate for ROW trade mispricing
  - FIC estimates trade mispricing for all countries due to large role for China. Add Attractiveness weights to explain direction of trade between developing countries (Trade Based Money Laundering)

- **Money Laundering (Gravity Model)** estimates the proceeds of crime and the ML destinations (Threat and risk model). Updated the model with narcotics and trade.
  - *Columbian Money Asset Laundering Model (WB)*

- **Criminal Activity**
  - Narcotics, wildlife crime, illicit mining...
Illicit Economy and IFFs for South Africa

2012 Results

- ML - Walker Gravity Model: 1.1%
- Illicit Narcotics (conservative): 3.2%
- TBML - Walker Gravity Model: 3.8%
- Trade Mis-invoicing (GFI-IMF data): 6.5%
- Illicit Financial Flows (GFI): 7.6%
- WNW Trade Mis-invoicing Net Flows (UNCOMTRADE): 11.2%
- Trade Mis-invoicing (GFI-UNCOMTRADE): 11.2%
- Bilateral Trade Mis-invoicing (All countries): 18.5%
- Hot Money (Capital Flight=Licit and Illicit): 5.6%
- ML - Walker Gravity Model: POC: 4.9%
- TBML - Walker Gravity Model: POC: 9.9%
- Currency Demand Approach (Black money): 8.0%
- MIMIC Shadow Economy: 22.9%
### Illicit Economy and IFFs for South Africa

**Cooperative Governance can be formal**

<table>
<thead>
<tr>
<th>Formal engagements: MOUs/MOAs</th>
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<tbody>
<tr>
<td>• Between local and foreign government departments in the tax, customs, law enforcement and AML/CFT arenas</td>
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<tr>
<td>• Necessary for accessing data for threat and risk assessments, investigations/cases.</td>
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<td>• South Africa has more than 80 MOAs with FIUs in other countries. There is an MOA between FIU and the Central Bank but not the Revenue Authority. Investigations result in a more collaborative approach.</td>
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<table>
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<tr>
<th>MOAs/Task forces/Inter-departmental workings groups for specific purposes</th>
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<tbody>
<tr>
<td>• The IFF unit at the FIC had an <strong>MOA with GFI to implement a real-time benchmark pricing tool</strong>.</td>
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<td>• A separate MOA was developed to <strong>access skills through a skills exchange programme</strong>.</td>
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<tr>
<td>• <strong>Working groups/Task teams/Task Forces</strong> were established for specific purposes: research, policy, capacity building, information sharing, strategic interventions for international engagements/commitments.</td>
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<td>• Formalised through cabinet/ministerial approval.</td>
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<tr>
<td>• Inter-departmental <strong>Working groups on IFFs, Illicit narcotics and Bitcoin/Cryptocurrencies</strong></td>
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Illicit Economy and IFFs for South Africa

Cooperative governance can be informal or provide training

- **Informal working groups**
  - Topic-specific working groups (trade mis-invoicing)
  - Support from organisational leadership but **no cabinet approval**.
  - Research working groups on illicit narcotics, environmental crime and information sharing.

- **Technical support or expertise to other government departments**
  - Knowledge sharing and leveraging in-house capacity and expertise to: quantify the size of the illicit narcotics sectors; cryptocurrencies, bitcoin, cybercrime and the role of the digital economy; quantifying environmental and wildlife crime and trafficking routes; tackling Trade Mispricing (including assessment of data) with SARS and analysing non-reporting export income; technical support to parliament and DIRCO regarding IFFs in the G20.

- **Capacity Building and Training**
  - Information sharing of research findings through **bi-annual workshops and dialogues**.
  - Capacity building, training and advocacy to other government departments, parliament and government departments in other countries on: IFFs, narcotics, trade mispricing, cybercrime, digital economy, cryptocurrencies, capital flight, financial regulation, Tax and Good Governance Programme; etc.
## Latest Commercial IFF Models for South Africa

**Insights from the South African IFF Measurement Guideline**

<table>
<thead>
<tr>
<th>Data Source/Type</th>
<th>IFF Estimate and Type</th>
<th>IFF Indicator Accuracy</th>
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<tbody>
<tr>
<td><strong>Data</strong></td>
<td><strong>Top down - Estimate</strong></td>
<td><strong>HIGH</strong></td>
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<tr>
<td>SNA MACRO DATA</td>
<td><em>Kar and Smith (2010)</em>, <em>Ndikumana, Boyce and Ndiaye (2014)</em></td>
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<tr>
<td>MACRO DATA</td>
<td><em>FDI (2015)</em>, <em>Janský &amp; Palanský (2019)</em></td>
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<tr>
<td>Country Statistical</td>
<td><em>GFI (2015, 2020)</em></td>
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<tr>
<td><strong>Data</strong></td>
<td><strong>Bottom up - Measurement</strong></td>
<td><strong>LOW</strong></td>
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<tr>
<td>MESO DATA</td>
<td><em>Zucman (2013)</em>, <em>Clausing (2016)</em></td>
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<tr>
<td>Commodity/Sectoral Analytical</td>
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<tr>
<td>MICRO DATA</td>
<td><em>Ndikumana, Naidoo, and Aboobaker (2020)</em>, <em>Nicolaou and Wu (2016)</em></td>
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<tr>
<td><strong>Data</strong></td>
<td><strong>Structural model</strong></td>
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<td></td>
<td><em>Villa, Misa, and Loayza (2016)</em></td>
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<tr>
<td><strong>Data</strong></td>
<td><strong>Trade and transfer</strong></td>
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<td><em>Hines and Rice (1994)</em>, <em>Huizinga and Laeven (2008)</em></td>
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<td><em>Bernard, Jensen, and Schott (2006)</em>, <em>Boyrie, Pak, &amp; Zdanowicz (2005)</em></td>
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<td></td>
<td><em>Alexopoulos, Dellaportas, Gyoshev, Olhede, Kotsogiannis &amp; Pakov (2020)</em></td>
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<td></td>
<td><em>Cobham (2014)</em>, <em>Nicolaou (2018a,b)</em>, <em>Nicolaou, Desjardins &amp; Oguttu (2019)</em></td>
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<td><em>Profit shifting</em></td>
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<td><em>Trade and transfer</em></td>
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<td><em>Network Analysis</em></td>
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<td></td>
<td><em>Risk-based model</em></td>
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**Consistency and comparability**

Globally available and consistent

**HIGH**

**LOW**
Latest Commercial IFF Models for South Africa

Insights from the South African IFF Measurement Guideline - 2021

Top-Down Estimate

**Indicator A**

**MACRO Estimate**

- **BOP – Capital flight** (Ndikumana et al, 2014)
- **Income Shifting** (Hines and Rice, 1994)
- **Network Analysis of Bilateral Flows** (van’t Reit and Lejour, 2018)

**Data Source:**
- SNA MACRO
- Bilateral FDI data

**Indicator B**

**MESO Estimate**

- **Trade Anomalies (PCM-PFM)**
  - UNECA/UNCTAD study drawing on WCO methodologies, with updated c.i.f at product and country level to understand the underlying issues

**Data Source:**
- SNA MACRO
- UN Comtrade (product)
- Granular c.i.f.

**Indicator C**

**MICRO Measure**

- **Income Shifting** (Huizinga & Laeven, 2006)
- **Phantom Trade** (Amaral & Barcarolo 2020)
- **Network Analysis – VAT and Customs** (Alexopoulos, et al, 2020)

**Data Source:**
- OECD CRS
- Transactional customs and VAT data, experiment with tax, FDI etc.

Bottom-Up Measurement
**Risk Assessment**

Analyse your various IFF risks. UNCTAD has an IFF self assessment questionnaire. GIZ has developed an IFF Risk Assessment tool for governments, which highlights the IFF legislative, policy, operational, capacity, M&E, enforcement and information sharing weaknesses.

**IFF Task Force**

The Task Force should be an inter-departmental working group focusing on IFFs at a strategic, tactical and operational level. The TF should receive it's mandate from the highest office in the country or Cabinet.

**Measure IFFs**

Research and quantify IFFs. The research should look at new techniques to move monies out of a country and measurement to quantify the problem. Macro, meso and micro studies should be performed. Micro being the most ideal.

**Link and Analyse**

It's imperative to work with administrative and other data sources. Data needs to be cleaned, maintained and linked. Linking transactions to legal entities, individuals, PEPs and identity information is necessary. Social Network Analyses and transaction chain analyses are critical. Using AI&ML with big data is the key to curbing IFFs. Individuals to transactions

**Build Capacity and Raise Awareness**

There is a desperate need to raise awareness on IFFs and its various components in the broader government community. A government wide public and private drive to address IFFs is important. It's not just for statisticians, but politicians, policy makers and citizens.

**Cooperative Governance is the Key to Addressing IFFs**

Working together, sharing information within a country, across government, the private sector and civil society is key to addressing IFFs. Cooperative governance requires working across agencies, across jurisdictions, across disciplines and across institutions.
Questions