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Methods for Measuring Illicit Financial Flows (IFFs)

Monitoring Anticorruption Policy Implementation tool

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Outline:

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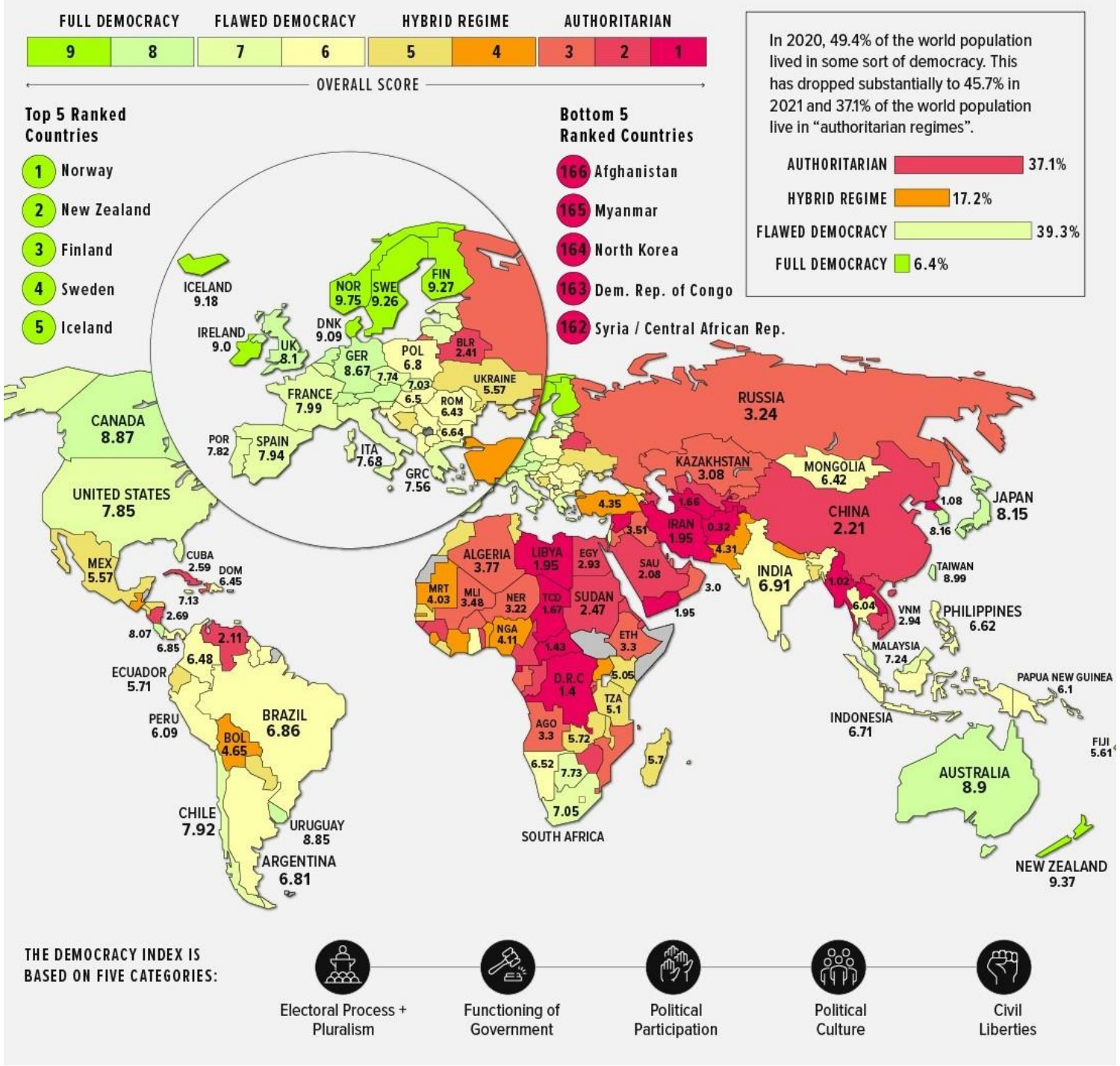
Understanding and estimating IFFs is quite a challenge!

- IFF: dirty money that crosses an international border.
- Illegally earned, moved, or used
- IFFs take many forms and go through different channels → measurement is hard both conceptually and in practice.

- Obstacles: measurement problem; overlapping methods; biased estimates

- Two general approaches:
  - Top-down methods
  - Bottom-up approaches

Why measure IFFs?


FULL DEMOCRACY
FLAWED DEMOCRACY
HYBRID REGIME
AUTHORITARIAN
9 8 7 6 5 4 3 2 1
OVERALL SCORE
Top 5 Ranked Countries
1 Norway
2 New Zealand
3 Finland
4 Sweden
5 Iceland
Bottom 5 Ranked Countries
166 Afghanistan
165 Myanmar
164 North Korea
163 Dem. Rep. of Congo
162 Syria / Central African Rep.
In 2020, 49.4% of the world population lived in some sort of democracy. This has dropped substantially to 45.7% in 2021 and 37.1% of the world population live in "authoritarian regimes".
AUTHORITARIAN 37.1%
HYBRID REGIME 17.2%
FLAWED DEMOCRACY 39.3%
FULL DEMOCRACY 6.4%
ICELAND 9.18
NOR 9.75
SWE 9.26
FIN 9.27
IRELAND 9.0
DNK 9.09
UK 8.1
GER 8.67
POL 6.8
BLR 2.41
UKRAINE 5.57
FRANCE 7.99
ROM 6.43
POR 7.82
SPAIN 7.94
ITA 7.68
GRC 7.56
CANADA 8.87
UNITED STATES 7.85
RUSSIA 3.24
KAZAKHSTAN 3.08
MONGOLIA 6.42
CHINA 2.21
JAPAN 8.15
IRAN 1.95
INDIA 6.91
TAIWAN 8.99
PHILIPPINES 6.62
MEX 5.57
CUBA 2.59
DOM 6.45
ALGERIA 3.77
LIBYA 1.95
EGY 2.93
SAU 2.08
MRT 4.03
MLI 3.48
NER 3.22
TCD 1.67
SUDAN 2.47
NGA 4.11
ETH 3.3
D.R.C 1.4
TZA 5.1
AGO 3.3
SOUTH AFRICA
ECUADOR 5.71
PERU 6.09
BOL 4.65
BRAZIL 6.86
CHILE 7.92
URUGUAY 8.85
ARGENTINA 6.81
VNM 2.94
MALAYSIA 7.24
INDONESIA 6.71
PAPUA NEW GUINEA 6.1
FIJI 5.61
AUSTRALIA 8.9
NEW ZEALAND 9.37
THE DEMOCRACY INDEX IS BASED ON FIVE CATEGORIES:
Electoral Process + Pluralism
Functioning of Government
Political Participation
Political Culture
Civil Liberties

Balance-of-Payment (BoP) Methods
Capital Account Methods

- Developed in the capital flight literature
- Researchers often use macroeconomic identities, specifically balance-of-payment statistics, to determine when capital is shifting overseas.

- **Sources-and-uses Method** *(Claessens and Naudé, 1993)*
- **Hot-money-narrow Method**
- **World Bank Residual Model**

Sources-And-Uses Method

- A country's BOP identity must hold: sources of capital inflows should only exceed the uses of capital inflows when capital is moving overseas.
- Sources > Funds ∴ Outward capital flight (vice-versa for inward capital flight)

-CA = FDI + STC +PI + BA + CPR + NEO + LTC

CA= current account
FDI = foreign direct investment
STC = short-term capital flows
PI = portfolio investment
BA= deposit banks' foreign asset change
CPR = change in central bank foreign reserves
NEO = net errors and omissions
LTC = long-term capital flows of the government sector

Sources-And-Uses Method

-CA = FDI + STC +PI + BA + CPR + NEO + LTC (1)

The identity in (1) implies that if there is a current account deficit (meaning that -CA is positive), it needs to be financed by the items at the right-hand side.

Rewriting the identity gives:

-(LTC + FDI + CA + CPR) = STC + PI + BA + NEO (2)

- On the left, if sources (LTC + FDI) exceed uses of capital (CA + CPR), this is due to capital flight: **(LTC + FDI) > (CA + CPR) ∴ IFFs**
- Because of the balance of payments identity, capital flight can also be measured using the right-hand side of (2): **STC + PI + BA + NEO**
- Limitation: includes many legitimate investments, captured by PI and BA, maybe also STC.

Hot-Money-Narrow (HMN) Method

- More narrowly defined: takes into account only NEO (net errors & omissions), presumably reflecting illicit deviation.

  NEO = -(LTC + FDI + CA + CPR) – (STC + PI + BA)

  -/+ NEO = illicit outflows/inflows

- In some variants, HMN includes also STC (short-term capital):

HMN = - (NEO + STC) or

HMN = - (NEO + STC + PI)

- Noisy data: compilation errors, incomplete measurement, or inadequate currency conversions.

  How much of the NEO entry is made up by noise in the data or by IFFs?

World Bank Residual (WBR) Method

← Source of Funds → Minus ← Use of Funds →

IFF = [Δ External Debt + FDI (net)] – [CA Deficit + Δ Reserves]

Illicit *OUTFLOWS*: Source of Funds > Uses of Funds

Illicit *INFLOWS*: Source of Funds < Uses of Funds

- **Change in External Debt (CED):** a version of the WBR model that includes change in external debt as an indicator of new loans (i.e., a source of funds for a country).
- CED only includes gross illicit OUTFLOWS!
  - **Uses of Funds > Source of Funds → Illicit inflows = 0!**

Trade Gap Analyses

- First introduced by *Bhagwati (1964),* the country-partner trade analysis is still a dominant approach to detect customs fraud and trade mispricing.

- Trade Mispricing/Misinvoicing: the act of misrepresenting the price or quantity of imports or exports in order to hide or accumulate money in other jurisdictions.
- One of the largest components of measurable IFFs!

- "Importers and exporters deliberately falsify the declared value of goods on the invoices they submit to their customs authorities in order to illicitly transfer money across international borders, evade tax and/or customs duties, launder the proceeds of criminal activity, circumvent currency controls, and hide profits in offshore bank accounts" (GFI, 2021).

Trade Gap Analyses

- This methodology is based on the principle of double-counting in trade statistics.
- Any discrepancy in mirrored trade statistics that indicate an over-invoiced/ under-invoiced export/import is an IFF.
- The declared price and quantity of an export country should match the officially recorded price and quantity as an import. The only legitimate deviations between these two records should come from shipping and insurance costs or an error in recording the export/import value or quantity.

➢ **Partner Country Method**

➢ **Gross Excluding Reversals**

Partner Country Method (PCM)

- Compare import (or export) values reported by one country with the corresponding export (or import) values reported by its partner country.

(EX of A to B) vs. (IM of B from A)

(IM of A from B) vs. (EX of B to A)

- Assumption: partner's trade statistics are sufficiently accurate and comparable!
- Many factors contribute to trade asymmetries:
  - Different criteria of partner attribution in EX/IM statistics;
  - CIF and FOB valuation;
  - Application of different trade systems (General vs. Special Trade System);
  - Time lags; Goods entering Customs warehousing for several months;
  - Misclassification;
  - Statistical measurement differences and errors; etc.

Partner Country Method (PCM)

- Overcoming the limitations:
  - Compare national data with (major) trade partners;
  - Use granular national data to reduce uncertainty about the source of bilateral trade asymmetries;
  - Resolve CIF-FOB differences;
  - Analyze remaining bilateral asymmetries after CIF-FOB differences have been accounted for;
  - Validate results with qualitative methods – interviews with customs and trade experts.

Inbound Trade	CAN imports	CHN exports
Official data	3 329	1 362
Published asymmetry		1 967
Adjustment: *CAN imports of CHN goods from countries of export (consignment) other than CHN	1 280	
Adjusted official data	2 049	1 362
Remaining asymmetry		687

Partner Country Method (PCM)

$$K = \left[X_i - \frac{M_j}{\beta}\right] + \left[\frac{M_i}{\beta} - X_j\right]$$

K = component of IFF

X_i = EX from country i

M_j = IM by county j

β = CIF to FOB factor (≈ 10%)

- CIF-FOB differences: EX are usually reported as FOB and IM as CIF;
- It is better to apply country and region-specific ratios rather than common ratios; In some instances, commodity-specific CIF/FOB ratios are needed

CIF (Cost, Insurance, Freight): trading conditions required by seller to determine cost of transport by sea to its destination, and to provide necessary documents until the goods reach the buyer.

FOB (Free on Board): conditions required by seller in the relevant vehicle that is used to send goods to the buyer.

Gross Excluding Reversals (GER)

Illicit *OUTFLOWS* = EX under-invoicing + IM over-invoicing
Illicit *INFLOWS* = EX over-invoicing + IM under-invoicing
IFFs = Illicit *OUTFLOWS* + Illicit *INFLOWS*

- GER: method of calculating gross illicit outflows

EX Under-invoicing: A country's EX to the world are compared to world IM from that country (adjusted for COF). Illicit outflows: whenever exports of goods from that country are understated relative to the reporting of world imports from that country.

Import Over-invoicing: A country's IM from the world (adjusted for COF) are compared to world EX to that country. Illicit outflows from a country will be indicated if the country's IM are overstated with respect to world EX to that country.

- GER calculations are based on the sum of discrepancies between:

(i) a country's EX and world IM from that country and

(ii) a country's IM and world EX to that country.

GER estimate = |EX under-invoicing| + IM over-invoicing

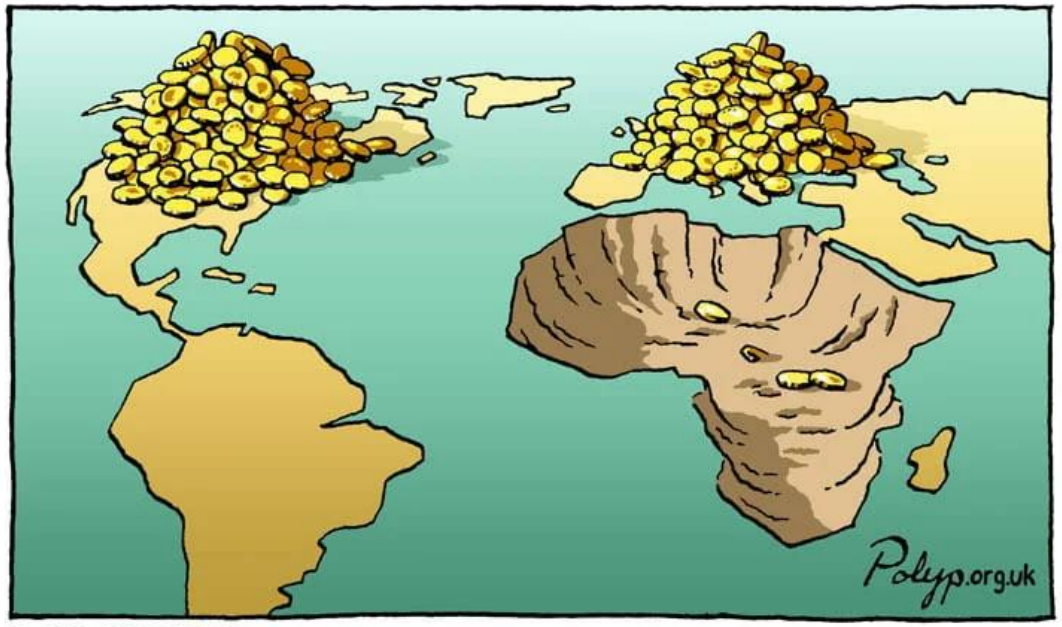
Gross Excluding Reversals (GER)

- *Global Financial Integrity (GFI)* Approach:

IFF =K + NEO

K = IFFs through trade misinvoicing (GER)
NEO = Net errors and omissions

- GFI: trade misinvoicing is <u>the largest portion of IFFs</u>!
  - It drains USD 800 billion from developing countries annually (GFI, 2015).
  - USD 50 billion of IFFs from Africa (HLP, 2015)

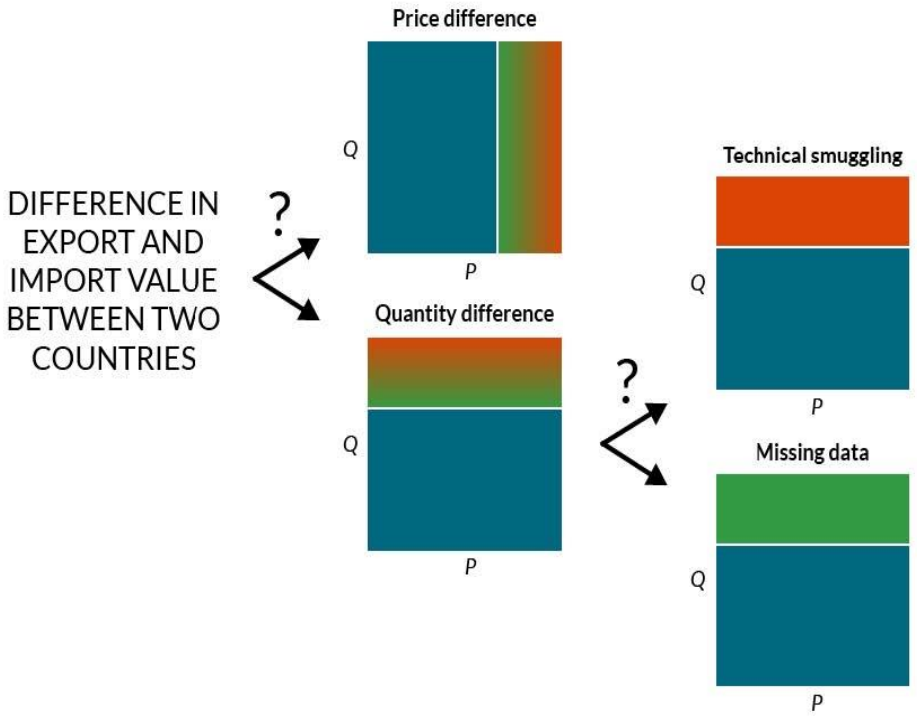


'GOLD DIGGERS'

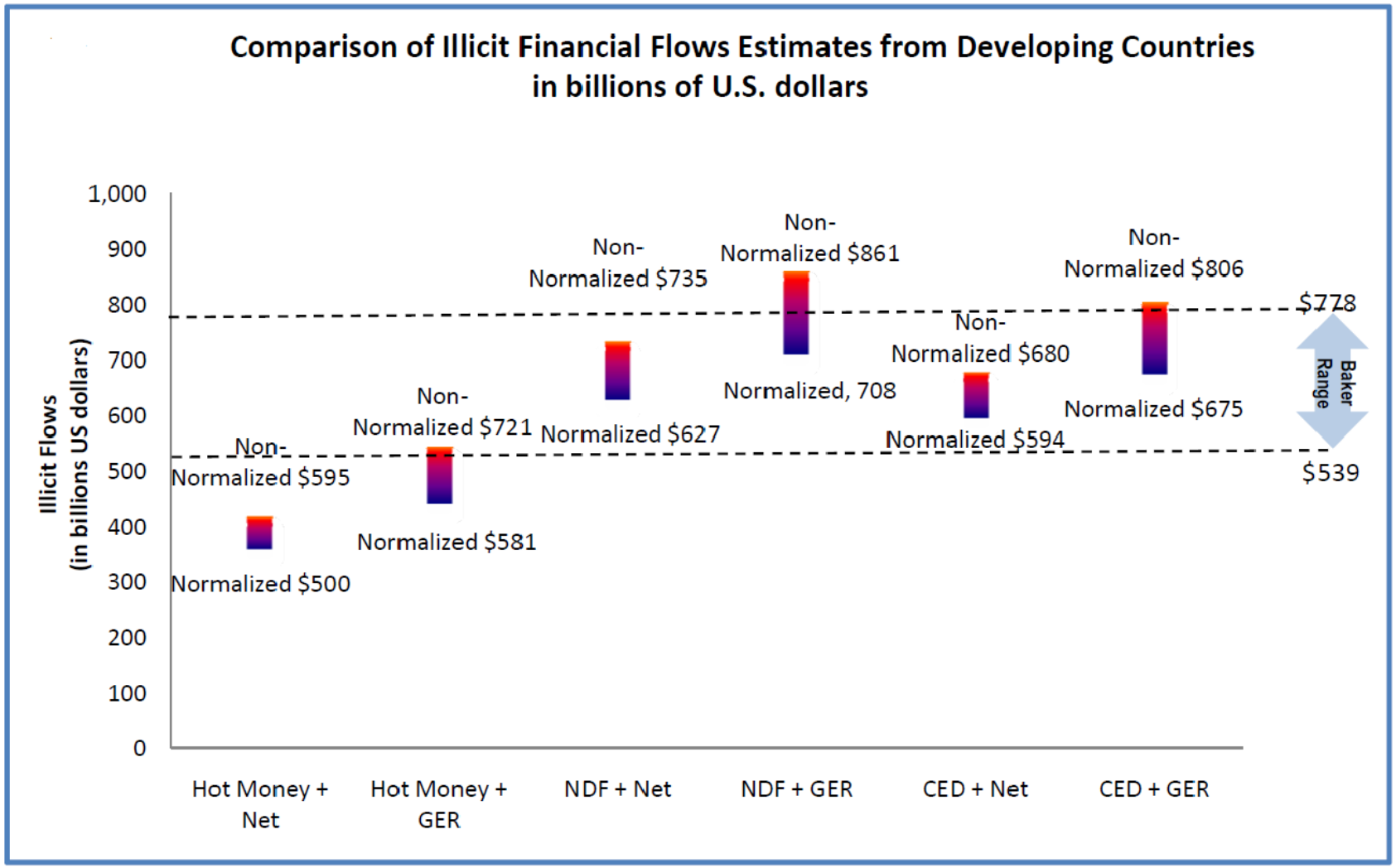
- Promptly disputed by the South African Chamber of Mines and the South African Revenue Authority: public agencies do report gold exports, just not in the right format for COMTRADE.
- Eunomix (2016): ¾ of the observed discrepancy could be explained just by looking up the official statistics!

- UNCTAD: "virtually all gold exported by South Africa leaves the country unreported," ∴ mining companies are smuggling billions of dollars' worth of gold!

Food for Thought: Misinvoicing Scenarios



Misinvoicing scenario		Behaviour by tax payer	Ease of detection by customs
Pricing difference	Large/ concentrated	Tax evasion/ Customs fraud	**Relatively easy** (requires some price knowledge but easy to spot, particularly for commodities)
	Marginal/ widespread	BEPs/ transfer price abuse? Could reflect ordinary costs/ variance?	**Hard** (requires detailed price knowledge)
Quantity/ commodity difference	Large/ concentrated	Tax evasion/ Customs fraud	**Very easy** (gross physical inspection)
	Marginal/ widespread	Tax evasion/ Customs fraud?	**Medium** (precise physical inspection, minerals monitoring)
Destination difference	Large / concentrated	Smuggling? Ordinary transit/ merchanting trade?	**Relatively straightforward** to investigate large scale smuggling by major corporations—through tax audit, minerals monitoring
	Small/ widespread	Smuggling? Ordinary transit/ merchanting trade?	**Hard** to detect small scale cross-border smuggling


Comparison of Illicit Financial Flows Estimates from Developing Countries
in billions of U.S. dollars
Illicit Flows
(in billions US dollars)
1,000
900
800
700
600
500
400
300
200
100
0
Non-
Normalized $595
Normalized $500
Non-
Normalized $721
Normalized $581
Non-
Normalized $735
Normalized $627
Non-
Normalized $861
Normalized, 708
Non-
Normalized $680
Normalized $594
Non-
Normalized $806
Normalized $675
$778
$539
Baker
Range
Hot Money +
Net
Hot Money +
GER
NDF + Net
NDF + GER
CED + Net
CED + GER

Trade Price Deviation Analyses

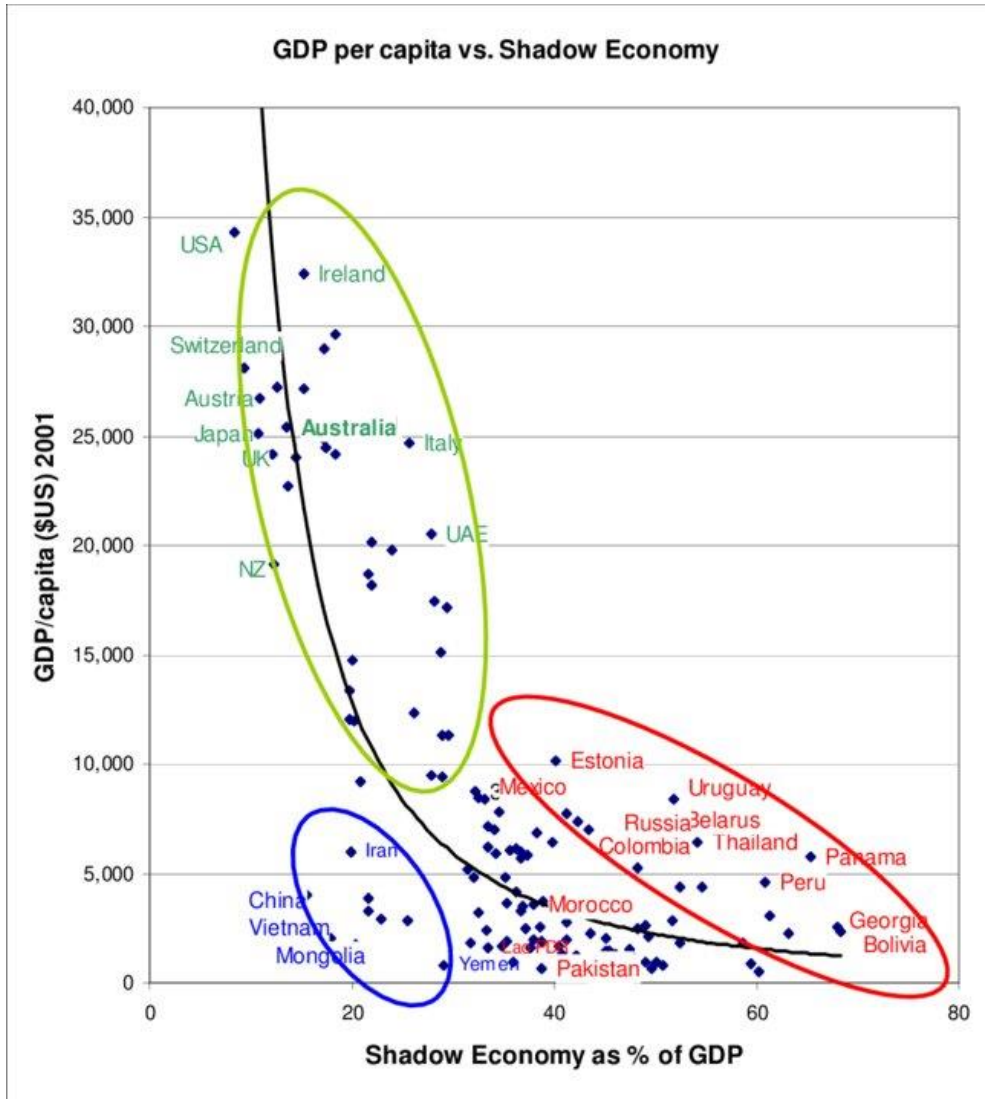
- Alternative methodology proposed by *Zdanowicz et al. (1999)*
- IFFs: deviations of EX/IM from some reasonable price range
  - transfers for which the price exceeded a particular distributional margin (e.g., 50% of the average price of the upper/lower quartile) are plausibly the result of illicit behavior;
  - distinguish between normally and abnormally priced transactions: set up on a country's transaction-level trade microdata on product-type, quantity and unit value;
- Limitation: mismatches might reflect ordinary deviations in price (and underlying quality differences within some commodity categories) as well as errors in the data!

Constructed Money Laundering Estimates

- The Walker model: first large-scale effort of gauging money laundering worldwide (*Walker, 1999*)
- Observes crime indicators (e.g., estimates of drug proceeds, corruption indicators, suspicious transaction reports, etc.) and estimates relationships between observed crime statistics and money laundering in a country.
- The share of laundered money sent abroad is linked to a country's rating on the *Transparency International Corruption Perception Index.*
- The most corrupt countries transfer 70-80% of criminal money generated abroad.
- Multiple factors: GNP/cap, government efforts against money laundering, and levels of banking secrecy and corruption
- Criticism: arbitrary assumptions

Global Flows	Low ($US bn)	High ($US bn)
Drugs	$120	$200
Counterfeit goods	$80	$120
Counterfeit currency	$3	$3
Human trafficking	$12	$15
Illegal arms trade	$6	$10
Smuggling	$60	$100
Racketeering	$50	$100
Crime Subtotal	$331	$549
Mispricing	$200	$250
Abusive transfer pricing	$300	$500
Fake transactions	$200	$250
Commercial Subtotal	$700	$1000
Corruption	$30	$50
Grand Total	$1061	$1599

(Source: Baker, 2005)



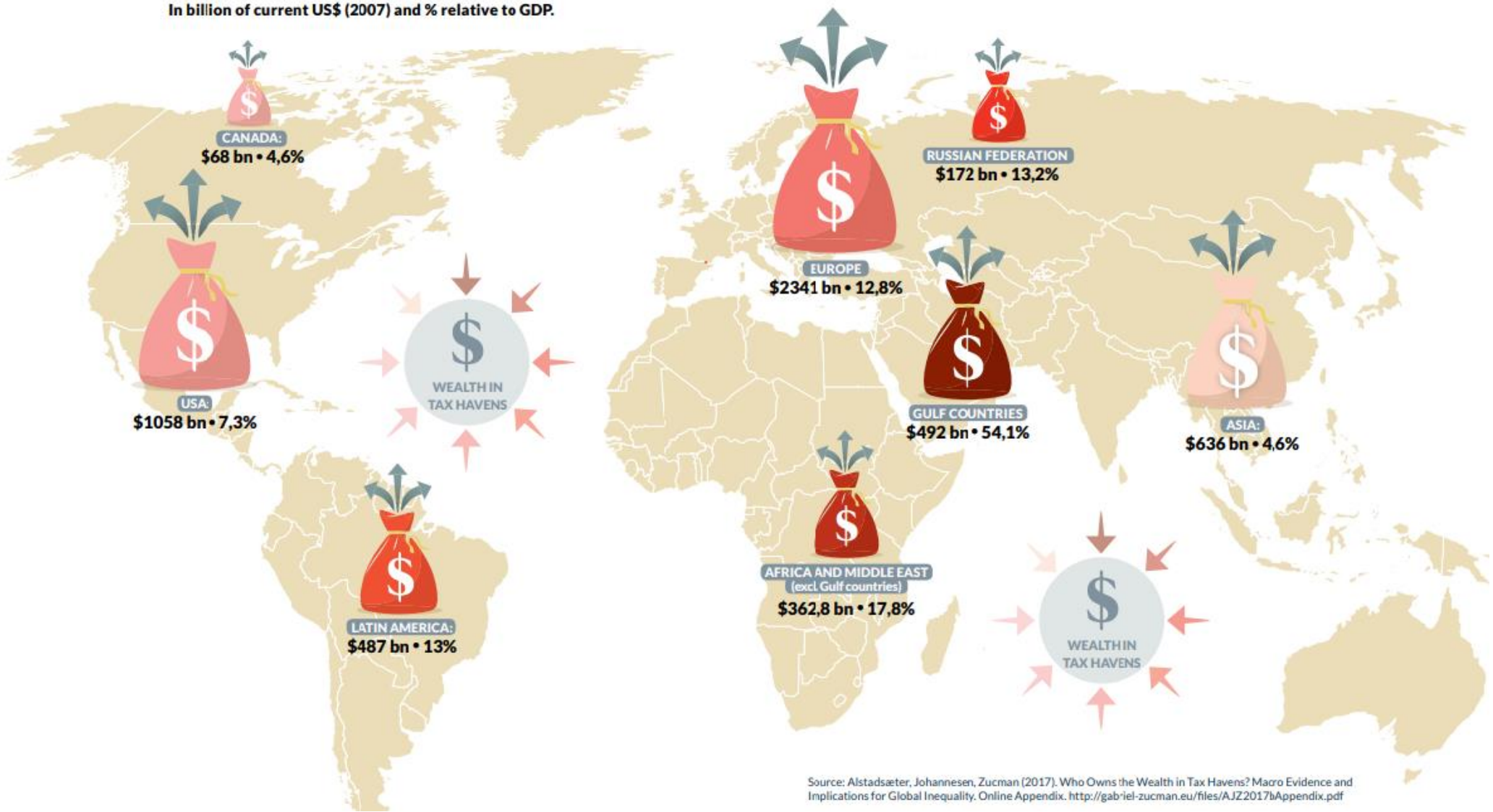
Zucman Method

- *Zucman (2013)* used the differences in the assets and liabilities of all countries in the world to estimate the extent of missing wealth owned by individuals.
- Gap between total assets and total liabilities:
  - Each country reports its international portfolio holdings. The destinations of investment are reported by countries as their liabilities.
  - The asset ownership is registered using the residence principle.
  - Some liabilities appear to have no owners in official statistics, whereas in reality these securities are handled via tax havens.

- In his 2015 book "The Hidden Wealth of Nations", Zucman estimated that USD 7,600 billion were invested in tax havens (8% of global private financial wealth)
- Limitations: assumptions (China, oil exporters, Cayman islands)

Wealth in tax havens per continent:

In billion of current US$ (2007) and % relative to GDP.



Source: Alstadsæter, Johannesen, Zucman (2017). Who Owns the Wealth in Tax Havens? Macro Evidence and Implications for Global Inequality. Online Appendix. http://gabriel-zucman.eu/files/AJZ2017bAppendix.pdf

Indices Indicating the Risk of Illicit Flows

Indices to reveal the possible exposure to IFFs:

- *Financial Secrecy Index* (FSI) /*Tax Justice Network/:* evaluates both the level of financial secrecy in a given jurisdiction and the scale of financial activity based there. Four key components:
  - beneficial ownership transparency,
  - regulation of corporate transparency,
  - efficient tax and financial regulation, and
  - compliance with international standards.

- *Bilateral Financial Secrecy Index (BFSI)*

- *Basel Anti-Money-Laundering Index* /*International Centre for Asset Recovery/:* an annual ranking of countries based on their risk regarding money laundering/terrorism financing.

- USD 800 billion from developing countries annually *(GFI, 2015)*
- USD 1.6 trillion of illicit funds flows *(Baker, 2005)*
- USD 385 billion per year from developing countries *(Cobham, 2005)*
- USD 160 billion per year from developing countries *(Christian Aid, 2008)*

Consensus?

The challenges differ across countries, depending on main types of IFFs affecting the country, data availability, national policy priorities, statistical capacity, etc.

This calls for country-specific solutions and the flexible application of methods, but still in line with a common framework.

Iceland Liechtenstein Norway grants

Norway grants

Thanks for watching!