Illicit Financial Flows and the Global South:

A Review of Methods and Evidence

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Why study IFFs?

- Tax revenues relative to GDP remain low in the Global South (World Bank 2020).
- Inherently associated with international transactions ⇒ Unfair competition and misallocation of resources.
- Strong over-representation of wealthy households ⇒ Higher inequality (Alstadsæter et al. 2019).
- Perception about other people evading (complying with) taxes ⇒ Increasing risk of evading (complying) oneself (Alm et al. 2017; Hallsworth et al. 2017).

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Concept of IFFs

- *"If there is already a clear global consensus around the wider definition, it is a well-kept secret."* – Forstater (2018)

- 'Illicit' = 'Illegal'?
    - Oxford Dictionary: *"Forbidden by law, rules, or customs"*.
    - Cambridge Dictionary: *"Illegal or disapproved of by society"*.
    - Counter-argument: Spatial and temporal differences in customs. More pragmatic with legality.

- 'Financial' = Cash, profits, loans, or equity.
  What about real estate and luxury goods? More appropriate considering all assets.

- 'Flows' ⇒ Assets moving from one person or place to another.

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- All agree IFFs include activities related to illegal markets, terrorism, tax evasion, corruption, deliberate misreporting, and illegal trade practices.
- OECD, IMF, and the World Bank use a narrow definition of IFFs, but acknowledge there is a global discussion on whether to include illicit activities.
- The European Union, the African Union, and the United Nations further acknowledge legal practices, such as abusive transfer pricing, as IFFs.
- Where does this leave us? In the paper, I advocate for the broad definition.

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Theoretical framework

- The present framework applies the profit shifting terminology, but can be thought of in more general tax avoidance terms.
- Traditionally, studies tend to focus on the marginal gains and costs of shifting profits $\Rightarrow$ Interior solutions.
- Recent studies emphasize the importance of fixed costs (Davies et al. 2018; Johannesen et al. 2019) $\Rightarrow$ Corner solutions more likely.
- Profit shifting may further depend on whether activities are illegal or illicit.

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$$\Gamma = (\tau_i - \tau_j) \times PS_{legal} - C_{legal} + (\tau_i - \tau_j) \times PS_{illegal} - C_{illegal} - \alpha \times \beta \times (\tau_i - \tau_j) \times PS_{illegal}^{\gamma}$$

Where:

$$\begin{aligned} \Gamma &= \text{Additional profits.} \\ \tau_i - \tau_j &= \text{Tax rate gap between countries } i \text{ and } j. \\ PS_{legal} \text{ and } PS_{illegal} &= \text{Profits shifted legally and illegally.} \\ C_{legal} \text{ and } C_{illegal} &= \text{Fixed costs of legal and illegal profit shifting.} \\ \alpha &= \text{Capacity of the tax authorities.} \\ \beta &= \text{Punishment if being caught.} \\ \gamma &= \text{Potential convexity in risk of being caught.} \end{aligned}$$

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- Optimal illegal profit shifting:

$$\frac{\partial \Gamma}{\partial PS_{illegal}} = (\tau_i - \tau_j) - \gamma \times \alpha \times \beta \times (\tau_i - \tau_j) \times PS_{illegal}^{\gamma - 1} = 0$$

$$\Rightarrow \gamma \times \alpha \times \beta \times PS_{illegal}^{\gamma - 1} = 1$$

$$\Rightarrow PS_{illegal}^{\gamma - 1} = \frac{1}{\gamma \times \alpha \times \beta}$$

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- In order to shift profits illegally, three conditions must be met:

1. $(\tau_i - \tau_j) \times PS^*_{illegal} > C_{illegal} + \alpha \times \beta \times (\tau_i - \tau_j) \times {PS^*_{illegal}}^{\gamma}$
2. $PS^*_{illegal} \leq \Pi - PS^*_{legal}$ **or**
$$(\tau_i - \tau_j) \times \left(\Pi - PS^*_{legal}\right) > C_{illegal} + \alpha \times \beta \times (\tau_i - \tau_j) \times \left(\Pi - PS^*_{legal}\right)^{\gamma}$$
3. $\Gamma^* > 0$

- In order to shift profits legally (illicitly), *either* of the two conditions must be met:

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  - Balance of payments
  - Aggregate liabilities and assets (‘Zucman’ method)
  - Aggregate domestic versus foreign firms
  - Aggregate corporate income tax bases
  - Phantom FDIs
- Trade misinvoicing
- Intra-firm profit shifting
- Other approaches to study IFFs

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Findings (macroeconomic statistics)

- Capital flight from developing countries of $150-200B in 2010 and $172B in 2014 (Henry 2012; Spanjers and Salomon 2017).
- Around $7.6T held in unrecorded wealth by individuals in tax havens in 2014 (Zucman 2015).
- Pre-tax profits to wages ratios are substantially higher in low-tax countries for MNEs. Not for domestic firms (Tørsløv et al. 2018).
- Annual global tax loss of $500–650 billion (Crivelli 2016; Cobham and Janský 2018).
- Almost 40% of FDIs were not related to any real activity in 2017 (Damgaard et al. 2019).

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Findings (intra-firm profit shifting)

- Semi-elasticity of profitability relative to the CTR gap ranges between -1.3 to -0.8 (Huizinga and Laeven 2008; Heckemeyer and Overesch 2017; Beer et al. 2019).
- Less-developed countries more exposed to profit shifting (Fuest et al. 2011; Johannesen et al. 2019).
- 'Zero-profit-firms' account for a substantial part of profit shifting estimates (Bilicka 2019; Johannesen et al. 2019).
- In line with high fixed costs of setting up a tax-optimizing scheme, profit shifting is concentrated among a few large MNEs (Davies et al. 2018; Wier and Reynolds 2018).
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Findings (other approaches)

- Rent seeking following windfall gains in the oil industry and aid disbursements (Andersen et al. 2017; Andersen et al. 2020).
- Tax haven secrecy services are of high value to firms (O'Donovan et al. 2019).
- Following wealth tax reforms, individuals in Colombia hid assets in tax haven entities (Londoño-Vélez and Ávila-Mahecha 2018).
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Suggestions for future work

- Indirect and direct evidence of profit shifting in the Global South. Further, how to tax MNEs?
- Effects of anti-IFF legislation and information exchange treaties in the Global South.
- Effects of improving capacity of tax authorities, and in particular, evaluating different types of technical assistance.
- Advance on the precision of shipping and insurance costs to improve validity of the trade misinvoicing methodology.
- Meta-analysis of the tax semi-elasticity in which the validity of each estimate is scrutinized rather than included automatically.
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Conclusion

- No consensus on the IFF concept. I prefer a broad concept in order to follow the definition and avoid downplaying the issue.
- Studies measuring the extent of IFFs by individuals rely heavily on macroeconomic statistics.
- Macroeconomic statistics also used to fathom the extent of profit shifting by MNEs and 'phantom FDIs'.
- Despite heavy media attention, I argue estimates based on trade misinvoicing method are too imprecise to report.
- Ample evidence of profit shifting by large MNEs.
- Countries in the Global South are more exposed to IFFs.
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References I

Alm, James, Kim M. Bloomquist, and Michael McKee. 2017. "When You Know Your Neighbour Pays Taxes: Information, Peer Effects and Tax Compliance." *Fiscal Studies* 38 (4): 587–613. https://doi.org/10.1111/1475-5890.12111.

Alstadsæter, Annette, Niels Johannesen, and Gabriel Zucman. 2019. "Tax Evasion and Inequality." *American Economic Review* 109 (6): 2073–2103. https://doi.org/10.1257/aer.20172043.

Andersen, Jørgen Juel, Niels Johannesen, David Dreyer Lassen, and Elena Paltseva. 2017. "Petro Rents, Political Institutions, and Hidden Wealth: Evidence from Offshore Bank Accounts." *Journal of the European Economic Association* 15 (4): 818–860. https://doi.org/10.1093/jeea/jvw019.

References II

Andersen, Jørgen Juel, Niels Johannesen, and Bob Rijkers. 2020. *Elite Capture of Foreign Aid: Evidence from Offshore Bank Accounts.* Policy Research Working Paper 9150. Washington, D.C: World Bank.

Beer, Sebastian, and Jan Loeprick. 2015. "Profit Shifting: Drivers of Transfer (Mis)Pricing and the Potential of Countermeasures." *International Tax and Public Finance* 22 (3): 426–451. https://doi.org/10.1007/s10797-014-9323-2.

Beer, Sebastian, Ruud de Mooij, and Li Liu. 2019. "International Corporate Tax Avoidance: A Review of the Channels, Magnitudes, and Blind Spots." *Journal of Economic Surveys,* no. Special Issue, https://doi.org/10.1111/joes.12305.

References III

Bilicka, Katarzyna Anna. 2019. "Comparing UK Tax Returns of Foreign Multinationals to Matched Domestic Firms." *American Economic Review* 109 (8): 2921–2953. https://doi.org/10.1257/aer.20180496.

Buettner, Thiess, Michael Overesch, Ulrich Schreiber, and Georg Wamser. 2012. "The Impact of Thin-Capitalization Rules on the Capital Structure of Multinational Firms." *Journal of Public Economics* 96 (11): 930–938. https://doi.org/10.1016/j.jpubeco.2012.06.008.

Clifford, Sarah. 2019. "Taxing Multinationals beyond Borders: Financial and Locational Responses to CFC Rules." *Journal of Public Economics* 173:44–71. https://doi.org/10.1016/j.jpubeco.2019.01.010.

References IV

Cobham, Alex, and Petr Janský. 2018. "Global Distribution of Revenue Loss from Corporate Tax Avoidance: Re-Estimation and Country Results." *Journal of International Development* 30 (2): 206–232. https://doi.org/10.1002/jid.3348.

Crivelli, Ernesto. 2016. "Base Erosion, Profit Shifting and Developing Countries." *FinanzArchiv* 72 (3): 268–301. https://doi.org/10.1628/001522116X14646834385460.

Damgaard, Jannick, Thomas Elkjaer, and Niels Johannesen. 2019. *What Is Real and What Is Not in the Global FDI Network?* IMF Working Paper No. 19/274. Washington, D.C: IMF.

References V

- Davies, Ronald B., Julien Martin, Mathieu Parenti, and Farid Toubal. 2018. "Knocking on Tax Haven's Door: Multinational Firms and Transfer Pricing." *The Review of Economics and Statistics* 100 (1): 120–134. https://doi.org/10.1162/REST_a_00673.

- Egger, Peter H., and Georg Wamser. 2015. "The Impact of Controlled Foreign Company Legislation on Real Investments Abroad. A Multi-Dimensional Regression Discontinuity Design." *Journal of Public Economics* 129:77–91. https://doi.org/10.1016/j.jpubeco.2015.07.006.

- Forstater, Maya. 2018. *Illicit Financial Flows, Trade Misinvoicing, and Multinational Tax Avoidance: The Same or Different?* CGD Policy Paper. Washington, DC: Center for Global Development.

References VI

Fuest, Clemens, Shafik Hebous, and Nadine Riedel. 2011. "International Debt Shifting and Multinational Firms in Developing Economies." *Economics Letters* 113 (2): 135–138. https://doi.org/10.1016/j.econlet.2011.06.012.

Hallsworth, Michael, John A. List, Robert D. Metcalfe, and Ivo Vlaev. 2017. "The Behavioralist as Tax Collector: Using Natural Field Experiments to Enhance Tax Compliance." *Journal of Public Economics* 148:14–31. https://doi.org/10.1016/j.jpubeco.2017.02.003.

Heckemeyer, Jost H., and Michael Overesch. 2017. "Multinationals' Profit Response to Tax Differentials: Effect Size and Shifting Channels." *Canadian Journal of Economics* 50 (4): 965–994. https://doi.org/10.1111/caje.12283.

References VII

Henry, James S. 2012. *The Price of Offshore Revisited.* Technical report. Chesham: Tax Justice Network.

Huizinga, Harry, and Luc Laeven. 2008. "International Profit Shifting within Multinationals: A Multi-Country Perspective." *Journal of Public Economics* 92 (5-6): 1164–1182. https://doi.org/10.1016/j.jpubeco.2007.11.002.

Johannesen, Niels, and Dan Thor Larsen. 2016. "The Power of Financial Transparency: An Event Study of Country-by-Country Reporting Standards." *Economics Letters* 145:120–122. https://doi.org/10.1016/j.econlet.2016.05.029.

References VIII

Johannesen, Niels, Thomas Tørsløv, and Ludvig Wier. 2019. "Are Less Developed Countries More Exposed to Multinational Tax Avoidance? Method and Evidence from Micro-Data." *The World Bank Economic Review,* https://doi.org/10.1093/wber/lhz002.

Johannesen, Niels, and Gabriel Zucman. 2014. "The End of Bank Secrecy? An Evaluation of the G20 Tax Haven Crackdown." *American Economic Journal: Economic Policy* 6 (1): 65–91. https://doi.org/10.1257/pol.6.1.65.

Lohse, Theresa, and Nadine Riedel. 2013. *Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals.* CESifo Working Paper Series No. 4404. CESifo.

References IX

Londoño-Vélez, Juliana, and Javier Ávila-Mahecha. 2018. *Can Wealth Taxation Work in Developing Countries? Quasi-Experimental Evidence from Colombia.* Job Market Paper. University of California, Berkeley.

Menkhoff, Lukas, and Jakob Miethe. 2019. "Tax Evasion in New Disguise? Examining Tax Havens' International Bank Deposits." *Journal of Public Economics* 176:53–78. https://doi.org/10.1016/j.jpubeco.2019.06.003.

O'Donovan, James, Hannes F. Wagner, and Stefan Zeume. 2019. "The Value of Offshore Secrets: Evidence from the Panama Papers." *The Review of Financial Studies* 32 (11): 4117–4155. https://doi.org/10.1093/rfs/hhz017.

References X

- Overesch, Michael, and Georg Wamser. 2010. "Corporate Tax Planning and Thin-Capitalization Rules: Evidence from a Quasi-Experiment." *Applied Economics* 42 (5): 563–573. https://doi.org/10.1080/00036840701704477.
- Spanjers, Joe, and Matt Salomon. 2017. *Illicit Financial Flows to and from Developing Countries: 2005–2014.* Technical report. Washington, D.C: Global Financial Integrity.
- Tørsløv, Thomas R, Ludvig S Wier, and Gabriel Zucman. 2018. *The Missing Profits of Nations.* Working Paper 24701. National Bureau of Economic Research. https://doi.org/10.3386/w24701.

References XI

Wier, Ludvig. 2020. "Tax-Motivated Transfer Mispricing in South Africa: Direct Evidence Using Transaction Data." *Journal of Public Economics* 184:104153. https://doi.org/10.1016/j.jpubeco.2020.104153.

Wier, Ludvig, and Hayley Reynolds. 2018. *Big and 'Unprofitable': How 10 per Cent of Multinational Firms Do 98 per Cent of Profit Shifting.* WIDER Working Paper 2018/111. Helsinki: UNU-WIDER.

World Bank. 2020. *World Development Indicators: Tax Revenue (% of GDP).* https://data.worldbank.org/indicator/GC.TAX.TOTL.GD.ZS. Accessed June 22, 2020.

References XII

Zucman, Gabriel. 2015. *The Hidden Wealth of Nations: The Scourge of Tax Havens.* Chicago: University of Chicago Press. ISBN: 978-0-226-24542-3.