

POLICY TOOLKIT

Corporate tax havens and their impact on development

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Corporate tax havens impede economic development by eroding tax revenues in developing countries. Multinational enterprises shift profits to low-tax jurisdictions, resulting in an estimated global annual tax revenue loss of over US\$ 200 billion. Effective policies and enforcement are urgently needed to address this ongoing issue and promote sustainable growth.

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There is a close link between a country's economic development and its capacity to collect tax revenue. Tax administrations in developing countries often face a shortage of resources and a large informal sector, which limits the possibility of enforcing a broad tax base. Within this context, the taxation of large formal firms has traditionally been of major importance. By focusing their efforts on a few sizable taxpayers, a developing country's tax authority has (historically) been able to collect substantial tax revenue with few audit costs (Besley and Persson, 2009; Kleven, Kreiner, and Saez, 2016).

However, this source of revenue is increasingly at risk from international tax avoidance. Across the world, multinational enterprises (MNEs) are shifting their earnings from affiliates in high-tax countries to those in low-tax ones (a phenomenon known as "profit shifting"). A large body of systematic empirical research has confirmed that this behaviour is systemic and widespread, and that developing countries are particularly at risk. The most recent evidence suggests that the world as a whole lost around 10% of all corporate tax revenue, or more than US\$ 200 billion, in tax revenue each year (Bratta, Santomartino, and Acciari, 2021; OECD, 2020; Tørsløv, Wier, and Zucman, 2023b; Wier and Zucman, 2022).

Despite substantial efforts by policymakers and tax authorities in the last two decades, profit shifting continues to rise. The question at the research frontier is therefore no longer the diagnosis, but instead coming up with an effective treatment – that is, finding tangible policies and enforcement efforts that can curb profit shifting. This policy brief summarises the existing research and elaborates the questions at the research frontier.

1. What is profit shifting?

How is it that companies can use tax havens to avoid paying taxes altogether? The answer lies in the current international tax code, which treats a multinational firm not as one firm but rather as a collection of national entities. For today's global companies, each dollar of reported income in (for example) Nigeria will be taxed at close to 30%, whereas income reported in Bermuda will be taxed at 0%. Tax-minimising strategies that shift profits to various low-tax regimes have been documented at major multinationals, including **Amazon, Google, IKEA, Nike**, and many others.

There are three forms of profit shifting (see Beer, De Mooij, and Liu, 2020 for a survey).

- 1. Multinational groups can manipulate intra-group exports and import prices:** subsidiaries in high-tax countries can try to export goods and services at low prices to related firms in tax havens, and import from them at high prices (Wier, 2020).
- 2. Affiliates in high-tax countries can borrow money (at high interest rates) from affiliates in tax havens** (Huizinga and Laeven, 2008).
- 3. Multinationals can move intangibles** – such as patents, algorithms, or financial portfolios – produced in high-tax countries to affiliates in tax havens, which then earn royalties or other payments (that otherwise would have been booked in high-tax countries).

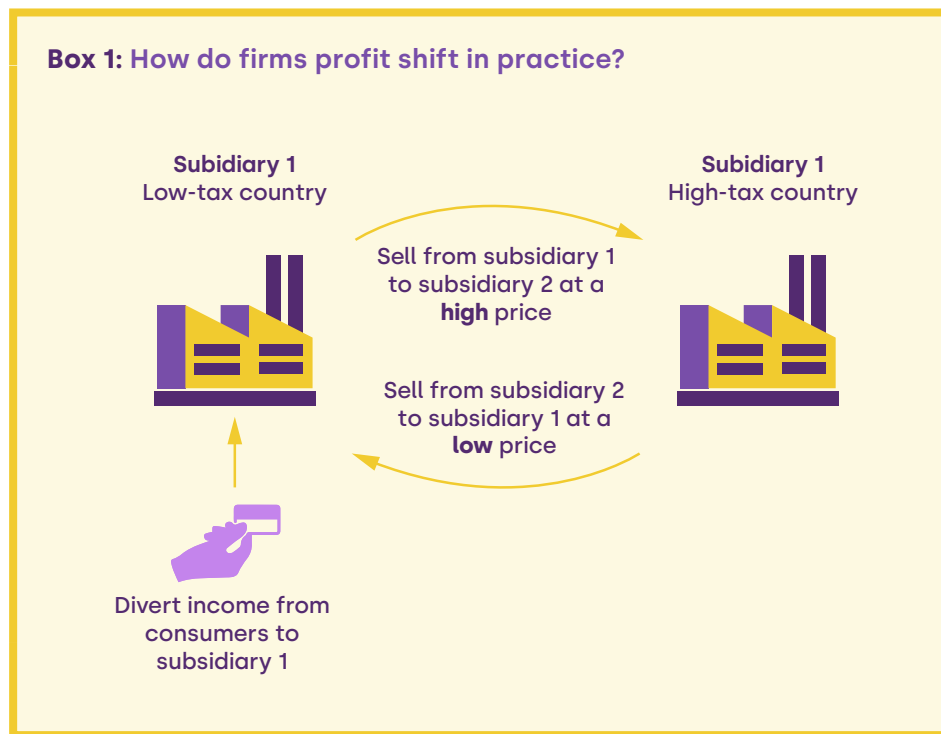
In theory, all these channels of profit shifting could be stopped by enforcement of the "arm's length principle". This principle states that all transactions within multinational firms should be priced as they would have been in a transaction with an external third party. In practice, capacity-constrained tax agencies struggle to enforce the arm's length principle (see Tørsløv, Wier, and Zucman, 2023a), and in the case of intangible transactions, the principle is often not even conceptually well-defined (Devereux and Vella, 2017).

2. Which firms engage in profit shifting?

The degree to which firms engage in this behaviour is highly unequal. Most firms are small and local, with no subsidiaries abroad, and no ability to shift profits. Of the ones that are multinational, the majority will not shift any profits, but a few very large ones will shift a lot (Wier and Erasmus, 2022; Dyreng, Hills, and Markle, 2022). Since the largest firms have the lion's share of all profits, the world as a whole loses a lot. Most firms engaging in profit shifting are ultimately headquartered in the US (accounting for 50% of all profits shifted to tax havens) and other high-income countries (Tørsløv, Wier, and Zucman, 2023b; Johannesen, Tørsløv, and Wier 2020).

Multinational firms will tend to shift a larger share of their profits from developing countries to low-tax jurisdictions (as opposed to profits made in high-income countries), and at higher frequency report zero

profits in developing countries (Johannesen, Tørsløv, and Wier, 2020). In South Africa, Hayley Erasmus and I found that 10% of foreign-owned firms did 98% of all profit shifting – and that 10 firms did 50% (Wier and Erasmus, 2022). Firms operating in the extractive industry accounted for roughly one-third of all profit shifting, despite accounting for only 2% of the workforce.



3. How do researchers measure profit shifting?

There are two empirical approaches for measuring profit shifting: direct and indirect evidence.

- Direct evidence zooms in on the specific channels, for example, by measuring abnormal prices in transactions with tax havens. This type of evidence is limited in developing countries (with essentially no coverage in low-income countries), but notable exceptions include recent studies from Ecuador (Brounstein, 2021), Chile (Bustos et al, 2022), and South Africa (Wier, 2020).
- In the indirect approach, the incentive to shift profits (measured, for instance, as the tax-differential between two subsidiaries) is correlated with reported profits (after controlling for economic activity). A systematic correlation between the incentive to shift profits and low reported profits is taken as indirect evidence of profit shifting. The literature relying on this approach is voluminous (in the hundreds of papers), with some coverage in developing countries (for instance, Johannesen, Tørsløv, and Wier, 2020; Wier and Erasmus, 2022; OECD, 2020) – see Beer, De Mooij, and Liu, 2020 and Brandt, 2020 for an overview.

Questions at the research frontier: Relying on direct evidence of profit shifting, which profit shifting channels are most important in developing countries (and what are the differences between low-income and middle-income countries)? That is, using transactional data on (for instance) goods and services trade or internal interest payments, are there patterns consistent with transfer mispricing? If so, which firms are most likely to engage in this behaviour?

4. How are international tax rules enforced in practice?

To ensure profits are taxed according to the prevailing internationally agreed rules, tax authorities in high-tax countries routinely audit companies. This work is usually carried out by dedicated transfer pricing units. These units can ask for transfer pricing documentation, that is, detailed reports prepared by firms to justify their internal transactions. These reports are usually long and time-consuming to audit.

With limited resources available, the tax authorities must prioritise which companies are asked to deliver transfer pricing documentation. This choice is guided by the data available to the tax authorities, which is often scarce. In most cases, this is based on a screening of firms' financial and tax return data. After receiving the documentation, the transfer pricing unit checks that intragroup transactions are conducted at arm's length. When they consider this is not the case, they can ask multinationals to correct transactions. These units are often located in "Large Taxpayer Offices" (See EY, 2014).

As stated by the OECD (2010), "transfer pricing is not an exact science." Several methods are used to determine the correct arm's-length price: cost-plus pricing, comparable unrelated transactions, comparable-related transactions, and profit splits (see Wier, 2020 for an in-depth explanation). Moreover, in some cases—such as the purchase of intellectual property like brands—the correct arm's-length price is not conceptually clear (Devereux and Vella, 2017).

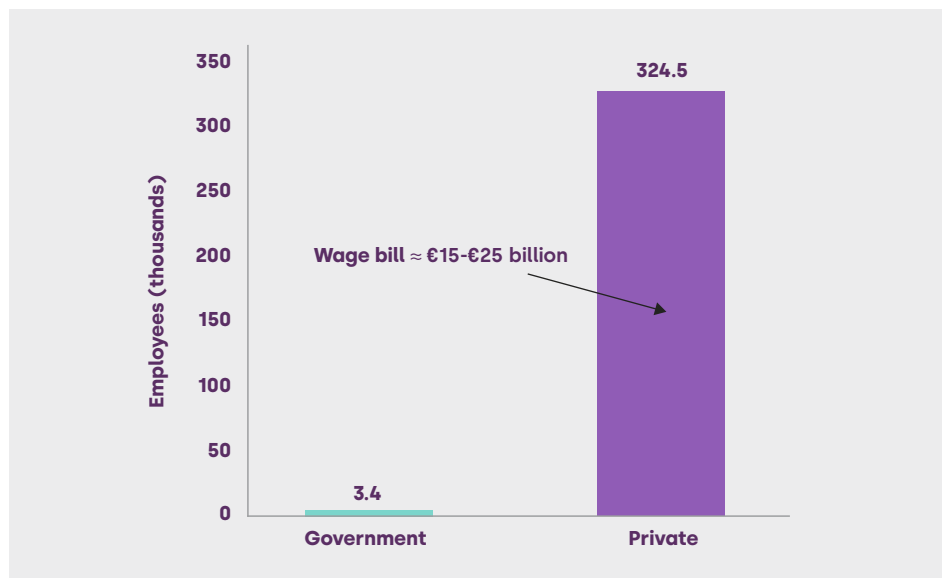
There is thus uncertainty in determining what the correct arm's length price is. This implies that firms will, at times, be at odds with tax authorities – even when they do not voluntarily engage in profit shifting. To conduct an adjustment, the tax authorities must first argue that the arm's length principle has not been applied well. Concretely, the authorities must be able to point to specific transactions that would have been priced differently if they had been conducted at arm's length (that is, by unrelated parties). Firms can appeal such corrections, and courts may overturn the decisions of tax authorities.

This system is in many ways set up to fail, simply because of the enormous resource requirements it would take for any country to police these rules. Take the case of Denmark: more than 40,000 multinationals operate in Denmark, with millions of internal

transactions conducted each year. Of these 40,000 multinationals, less than 1% will have their transfer price documentation audited, and less than 0.25% will receive a transfer price correction (Tørsløv, Wier, and Zucman, 2023a). Most of these corrections will be challenged in court, and/or by counterpart countries, implying that less than 50% of the initial corrections are finalised each year. Of the finalised corrections, only a fraction will involve transactions with tax havens. The bottom line: 99% of multinationals go unchecked, and 99.9% will not face any changes to their transfer prices. Denmark is a rich country with a very capable transfer pricing unit, implying that the audit rate and success in most developing countries is lower.

Globally, as shown in Figure 1, around 330,000 people work in transfer pricing, of which about 1% are employed by tax authorities. For each person working in transfer pricing within tax authorities, there are about 100 working in the private sector. Intragroup transactions are not systematically monitored by tax authorities; enforcement relies primarily on self-regulation, which comes at a cost for the private sector. This implies that it is key not just to come up with clever policies theoretically limiting profit shifting, but simultaneously to take a very close look at actual enforcement. A key question for future research would be to follow transfer pricing authorities in developing countries, to investigate the practical experiences with enforcing tax rules.

Figure 1: Private and public employment in transfer pricing globally in 2020



Notes: This figure shows the share of transfer pricing specialists working in the public and private sector. 328,261 is the number of individuals that LinkedIn highlights when searching “transfer pricing” under “people” (as of January 4, 2020). Spot checks confirm that LinkedIn correctly identifies working with transfer pricing. The number of individuals working in government with transfer pricing is first identified by filtering the search by industry to “government administration” only (3,368 as of January 4, 2020) and corroborated by the head count in EY’s Transfer Pricing Tax Authority Survey from 2104. The wage bill is estimated using the average base salary of a transfer pricing specialist (\$74,000 as of January 2020) computed by Glassdoor. Sources: LinkedIn (n.d.), EY (2014), and Glassdoor (n.d.)

Source: Tørsløv, Wier, and Zucman, 2023a

In **Table 1**, I use LinkedIn data to investigate the differences in enforcement resources across country-income groups. The patterns are quite striking: High-income countries – that account for one-sixth of the global population – employs three-quarters of the transfer pricing specialists working in government globally. The average number of transfer pricing specialists working for the government in a high-income country is 22, compared to around five in middle-income countries, and one in low-income countries.

Studying the consequences of running a transfer pricing enforcement effort with as little as one employee is key in understanding the impact of future transfer pricing reforms outside of high-income countries. The number of privately-employed transfer pricing specialists in developing countries are also lower, which somewhat levels the playing field. However, this still means that government staff in developing countries are badly outgunned, since the bulk of private transfer pricing specialists a government official will face are employed centrally in the headquarter country (which is often a high-income country).

Table 1: Transfer pricing staff across country-income groups

	Low-income	Lower-middle income	Upper-middle income	High-income
Transfer pricing staff (Government)	24	283	240	1729
Transfer pricing staff (Private)	546	34453	29736	203610
Population (Millions)	618	3103	2591	1272
Transfer pricing staff (Government)				
Pct. of staff in private	4.4%	0.8%	0.8%	0.8%
Pr. million population	0.04	0.09	0.09	1.36
Avg. staff pr. country	1	7	5	22

Notes: LinkedIn data from 2018. Search "Transfer pricing" under people. "Government" defined as industry "Government Administration" on Linked search. "Private" defined as the residual between the total and government count in each country. Totals do not match Figure 1, as not all LinkedIn profiles include country of origin. Table generated by the author.

Questions at the research frontier: How are developing countries' transfer pricing units functioning in practice, with markedly fewer employees? How effective are their efforts compared to "best-in-class" countries? How can developing countries manage the potential lack of specialised personnel to handle these complex cases?

Box 2: The missing profits of nations

In my research with Thomas Tørsløv and Gabriel Zucman, we document the global scope of profit shifting behaviour (Tørsløv, Wier, and Zucman, 2023b). We estimate that 40% of multinational profits are shifted to tax havens, based on new macroeconomic data known as foreign affiliate statistics. These statistics record the amount of wages paid by affiliates of foreign multinational companies, and the profits these affiliates make. They allow us to break down national accounts' aggregates (wages paid by corporations, operating surplus of corporations) into "local firms" and "foreign firms". We draw on these statistics to create a new global database, recording the profits reported in each country by local versus foreign corporations.

Using this database, we construct and analyse a simple macro statistic: the ratio of pre-tax corporate profits to wages. Thanks to the new data exploited in our study, we can compute this ratio for foreign versus local firms separately in each country. Our investigation reveals spectacular findings.

In non-haven countries, foreign firms are systematically less profitable than local firms. In tax havens, by contrast, they are systematically more profitable – and hugely so (see Figure 2, below). For local firms, the ratio of taxable profits to wages is typically around 30%-40%; for foreign firms in tax havens, the ratio is an order of magnitude higher – as much as 1600% in Ireland. In other words, we find that enormous profits are reported by multinational firms in tax havens, and that these profits do not match the actual economic activity in those tax havens. Overall, we find that the world loses 10% of corporate tax receipts, or US\$ 200 billion, every year.

5. The world's major economies decided to crack down on tax havens – it didn't go as expected

In June 2012, world leaders at the G20 meeting in Los Cabos attested to the need to curb the corporate practice of using tax havens to avoid paying taxes. The OECD was put in charge of developing a plan for addressing this issue; that plan ended up consisting of 15 tangible actions they believed would significantly limit abusive corporate tax practices. The plan was called the "Base Erosion and Profit Shifting" (BEPS) project. Three years later, the G20 adopted the plan officially, and implementation began across the world in 2016.

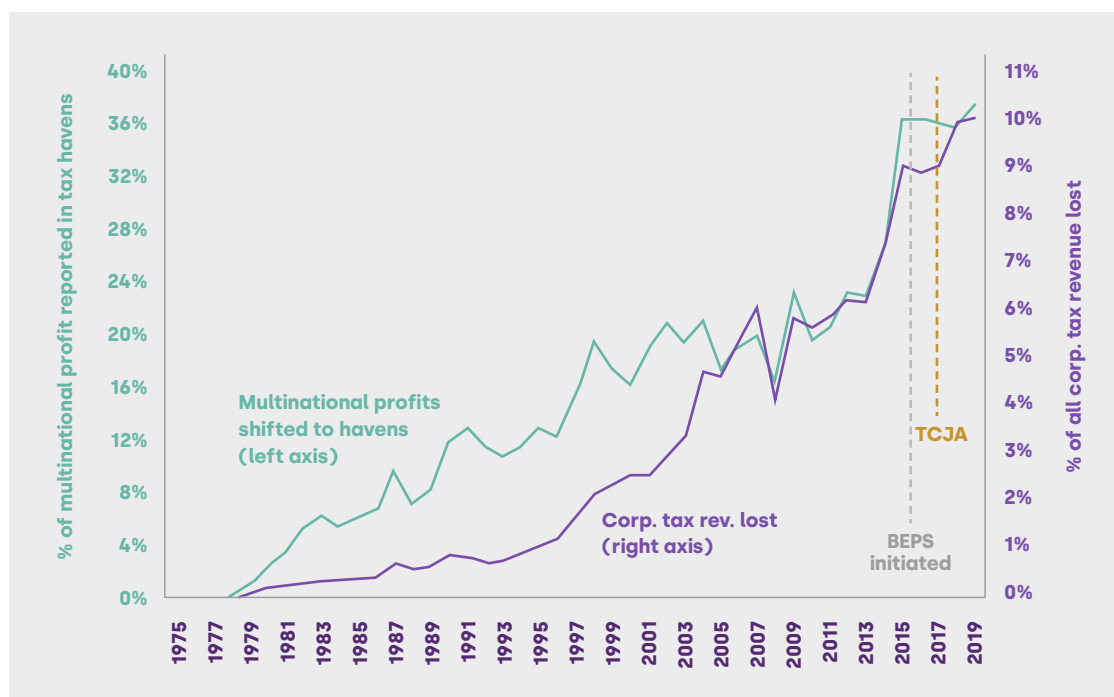
In the immediate aftermath of this landmark agreement, leaks of questionable corporate tax practices flooded the media: Panama Papers, Paradise Papers, and many more. This bolstered public outrage, and led to further political action across the world. In the US, the Trump administration passed the Tax Cuts and Jobs Act (TCJA) in late 2017, which almost halved the corporate tax rate in the US, and simultaneously cracked down on profits located in tax havens (by imposing new taxes on companies with low effective tax rates abroad), both actions intended to lower the incentive to shift profits

to tax havens. At the same time, Margrethe Vestager (named “the tax lady” by Donald Trump) started going after EU member states granting preferential tax deals to multinationals. Finally, lowering profit shifting to tax havens became a part of the Sustainable Development Goals (SDG 16.4.1).

So, did all these plans work? Was profit shifting to tax havens curbed by these global efforts? My research, together with Gabriel Zucman, suggests not (Wier and Zucman, 2022). We find that the increase in artificial shifting of paper profits to tax havens by corporations has been relentless since the 1980s. We measure this as the excessive profits reported in tax havens that cannot be explained by economic activity (such as employees, factories, and research). Figure 4 (below) shows the striking pattern.

By our estimates, the fraction of multinational profits (made outside of the headquarter country) shifted to tax havens has increased, from less than 2% in the 1970s to 37% in 2019. By 2019, this equals to the amount of nearly US\$ 1 trillion. Since multinational profits have been rising much faster than global profits, the fraction of global profits (multinational and non-multinational) shifted to tax havens has risen, from 0.1% to about 7%, resulting in a tax loss of roughly US\$ 250 billion globally. This does not imply that the policies of the past have not been effective – the counterfactual may have been an *even larger* increase in profit shifting – merely that the policies of the past were not substantive enough to reverse the path of increasing use of tax havens.

Figure 2: Multinational profits shifted to tax havens and corporate tax loss, 1975-2019



Notes: The green line (left axis) shows the share of multinational profits (as defined in the text) shifted to havens. This share increased from about 2% in the late 1970s to about 37% in 2019. The purple line (right axis) shows our estimate of the amount of corporate tax revenue lost due to profit shifting globally, expressed as a fraction of global corporate tax receipts.

Source: Wier and Zucman, 2022.

6. How could policymakers fix this?

So far, the world as a whole has been trying to solve this problem by cutting or scrapping corporate taxes, albeit in a very gradual way. In the past 40 years, the global effective corporate tax rate has fallen from 23% to 17% (Bachas et al, 2024). At the same time, governments have relied more heavily on consumption taxes (Piketty, Saez, and Zucman, 2023), which are regressive and tend to increase income inequality.

However, the root cause of profit-shifting is the incentives involved, such as generous or lenient corporate tax rates in other countries. If countries could agree on a global minimum corporate tax rate of, say, 20%, the problem of profit-shifting would largely disappear, as tax havens would simply cease to exist.

This type of mechanism is exactly what more than 130 countries signed onto in 2021 (**brokered by the OECD**), with implementation of a 15% minimum tax set to begin in 2024 in the EU, UK, Japan, Indonesia and many other countries. While the Biden administration has helped spearhead the global effort to implement the tax, the US has notably not been able to get legislation through Congress.

This type of reform should theoretically lower profit shifting (Barake et al. 2021; Johannesen, 2023; Devereux, 2023), and studying the success or failure of this reform in real-time (as it is implemented in 2024) will be essential for future research.

There is further criticism that the G20 and OECD-led reforms of international tax practices are not benefitting poorer countries sufficiently (Ocampo, 2019; ICRICT, 2022), as they tend to favour taxing rights to headquarter countries (predominantly rich countries) and not market economies (predominantly developing countries). The United Nations (UN) has released an advance version of a report from Secretary-General António Guterres, which criticises the OECD's past and proposed base erosion and profit shifting (BEPS) reforms. They suggest that the UN should take over the mantle.

Questions at the research frontier: Will the global minimum tax curb profit shifting when implemented in 2024 – and how are developing countries affected?

7. What unilateral actions can effectively limit profit shifting?

While there is theoretical and empirical evidence on the appropriate multilateral efforts taken to curb profit shifting (in particular, harmonising corporate tax rates), there is less clarity on which unilateral actions can actually limit profit shifting. Unilateral action is, nonetheless, often what policymakers have to work with while waiting for global reforms.

Unilateral actions can take two forms: 1) changing tax laws (by tightening up grey zones, imposing higher taxes on profits in tax havens (so called CFC-rules) and yielding more powers to the authorities) and 2) ramping up enforcement of existing tax laws (hiring more auditors and giving the auditors better tools). In recent years, a nascent literature on unilateral efforts to changing tax laws have found some impact on profit shifting in high-income countries (Knoll, Kruse-Becher, and Riedel, 2023), but mixed evidence for developing countries (Brounstein, 2021; Bustos et al., 2022; Wier, 2020; Laudage Teles, Riedel, and Strohmaier, 2023).

The mixed evidence on unilateral policy actions in developing countries is likely to be explained by enforcement capabilities. Any new ingenious tax rule is only as good as the resources devoted to enforcing it; this is particularly true in the case of transfer pricing, where the odds are stacked against auditors at the outset. That is why, in my view, the most pressing questions for research on international tax and development are how to best enforce existing rules with limited resources, and how to create rules that are enforceable.

BOX 3: New algorithms might be a cost-effective way of curbing the issue

There might be a very cost-effective way to curb transfer mispricing of goods. Tax authorities around the world find themselves in a situation where information is in abundance but not efficiently exploited. When a firm prices a product differently in related and unrelated transactions, does it lead to an automatic audit; or – at a minimum – a flag gets raised and an email sent to the firm, cautioning them to stop this behaviour?

The short answer is no. To the best of my knowledge, no tax authority has set up an automated flagging system that tests for deviations in the pricing of related and unrelated transactions. This seems to be a low-hanging fruit for tax authorities globally to pursue. In many cases, the data is already there, stored in a raw format on a server which is used in the calculation of import statistics.

It took two weeks to set up the data in South Africa such that it could automatically flag companies with systematic deviations from estimated arm's length pricing (Wier, 2020). The costs of doing this is in the thousands of dollars, while the potential tax gain is in the tens of millions of dollars.

The actual design of auditing strategies has historically been outside the scope of economists but deserves much more attention. How do we make the best use of the resources available to tax authorities to minimise evasion/avoidance? Machine learning models (sometimes referred to as Artificial Intelligence or AI) could allow tax authorities to screen all transactions and flag suspicious behaviour. These are already being used by banks for fraud detection. However, such analytics are very rarely used by tax authorities (in high-income and low- and middle-income countries alike).

I have been part of Technical Assistance Missions conducted by the International Monetary Fund where we demonstrated how such methods could be deployed easily relying on existing data sets, using free software (such as R, Python, or KNIME) with remarkable gains in auditing accuracy. Private companies in large numbers have already started offering **"AI-powered" transfer pricing solutions**. Getting systematic peer-reviewed research to the public sphere on the efficacy of these systems is, in my view, immensely important.

Questions at the research frontier: How do developing countries best enforce existing international tax rules with limited resources, and how can they create rules that are easily (and purely domestically) enforceable? Should all countries adopt similar international standards, or are there relevant constraints that may suggest different approaches in low- and middle-income countries?

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