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Curbing Illicit Financial Flows from Resource-rich Developing Countries: Improving Natural Resource Governance to Finance the SDGs

This project is funded through the Swiss Programme for Research on Global Issues for Development (www.r4d.ch) by the Swiss Agency for Development and Cooperation (SDC) and the Swiss National Science Foundation (SNSF).

The report benefited from useful comments and suggestions from Gilles Carbonnier, Fritz Brugger and Rahul Mehrotra. Language editing: Anu Lannen. Cover page and Figure 1 by Simone Kummer.

Swiss Programme for Research on Global Issues for Development

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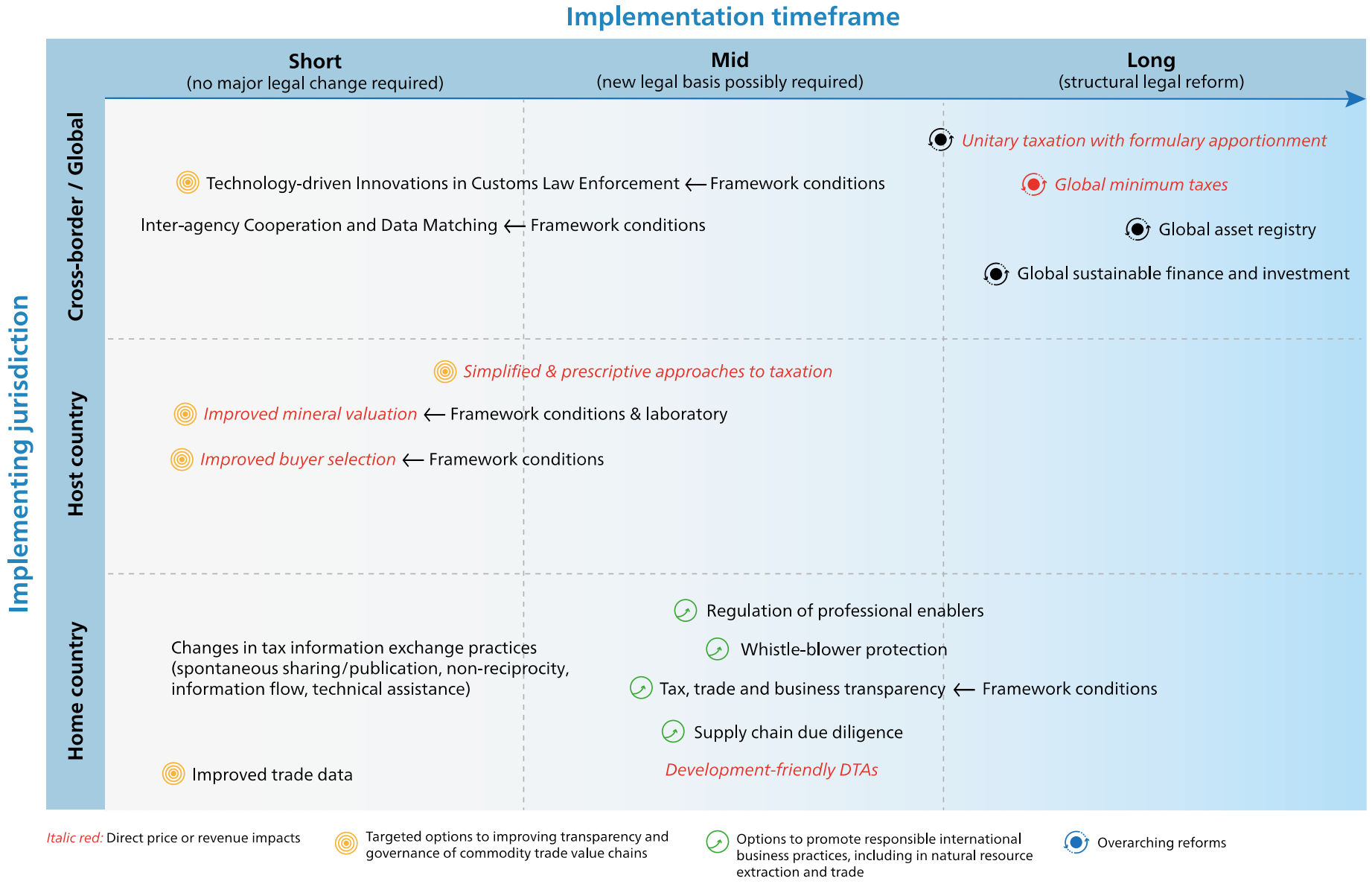
Summary

Illicit financial flows (IFFs) are broadly understood as cross-border transfers of funds that are illegally earned, transferred, and/or used. They stem from corruption, illicit trade, tax evasion, or tax avoidance and are associated with a considerable variety of methods that range in sophistication, including everything from smuggling of cash to exploiting tax loopholes or use of shell companies. Of particular concern for sustainability and development, IFFs can deprive vulnerable countries of much-needed foreign exchange and tax revenue, hindering the mobilization of domestic resources for development and causing wide-ranging societal harms.

The present paper outlines some the most promising regulatory responses and policy innovations to curb IFFs. Our particular focus is on IFFs arising from commodity trade mispricing. However, several of the measures described could be used effectively against various types of IFFs, whether tax-related, corruption-related, or originating from transnational criminal activity. Our analysis considers a spectrum of policy options ranging from short-term to long-term interventions and varying in implementation complexity (Figure 1). We first consider some relatively uncontroversial short-term measures that could be implemented immediately (Section 1). The analysis then turns to policy options that could still be implemented in the short- to mid-term, but would require additional political and organizational efforts – and possibly establishment of new legal bases (Section 2). Finally, our analysis considers long-term structural reforms that would require concerted action at the multilateral level (Section 3). We distinguish between unilateral and multilateral options to curb IFFs as well as between "host" country measures, "home" country measures, and measures that would require transnational coordination. Emphasizing the revenue concerns of lower-income countries, particular priority is given to easy-to-administer rules that could be implemented by countries in the short- to medium-term and have direct, positive revenue impacts. [1]

[1] While this paper's research findings are relevant to Switzerland, the paper is not specifically focused on Switzerland. For a discussion of Swiss policies in the fight against IFFs from a policy coherence for sustainable development perspective, the reader is referred to Musselli et al (2020).

Figure 1: Policy matrix

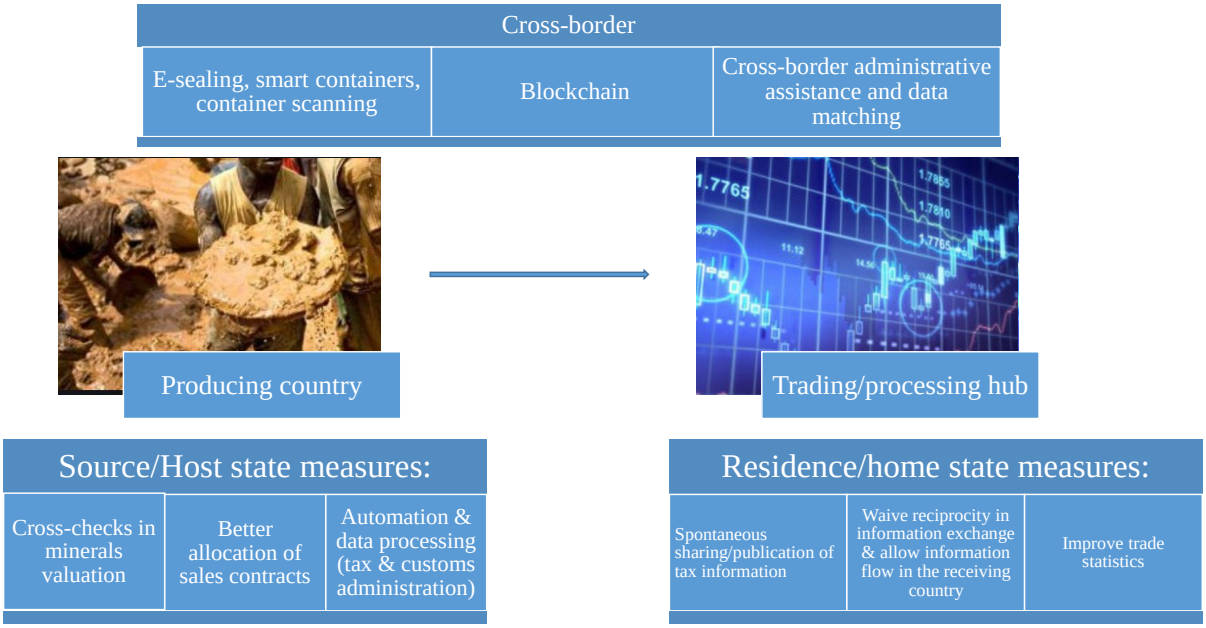


Source: Authors (graphic: Simone Kummer).

1 Short-term Responses

From a political and practical standpoint, a sensible course of action is to reap low-hanging fruits while laying the foundations for longer-term policy responses. This section focuses on practical, short term interventions that could be put in place immediately while simultaneously moving forward towards longer-term, more structural reform options. The focus here is on technology-driven innovations in customs law enforcement, enhanced inter-agency cooperation and data processing, improved trade data, and strengthened export valuation and buyer selection processes. These interventions are relatively uncontroversial from a political standpoint and require no or only minor adjustments to existing legal frameworks. As discussed below, they are promising and may catalyse positive, transformative change in the short to mid-run. Yet some of them tend to be technology- and capital-intensive, posing challenges for countries with limited technical and financial capacity. Some of the options discussed, for example improved trade transparency, hinge on policy improvements in trading hubs (referred to here as "home state" measures). Others, for example improved buyer selection processes, essentially involve developing countries where raw materials are produced ("host state" measures). The analysis below thus distinguishes between "host" and "home" state measures, and cross-border options of interest to both.[2]

Figure 2: Selected short-term options



Source: Authors

1.1 Cross-border Measures

IFFs which exploit the international trade system can occur via multiple channels, including over-invoicing of imports and under-invoicing of exports (World Customs Organization 2018).[3] Such misinvoicing practices tend to shift profits abroad and hence reduce corporate taxes paid in commodity exporting countries. Polices to detect and prevent fraudulent manipulation of trade transactions

[2] The term "home" country refers to the country where the multinational company locates its headquarters whereas "host" country refers to the foreign countries where the company invests. In fiscal term, they are referred to as "residence" and "source" states. The terms are both used through this report.

[3] Over-invoiced imports disguise capital flight as a form of trade payment, while under-invoiced exports conceal trade profit abroad. For an in-depth study of IFFs via trade mispricing, the reader is referred to World Customs Organization (2018).

generally require coordinated efforts along the chain and involve both importing and exporting countries. The policy options presented below concern both the countries of origin and the countries of destination of trade flows. Some technical options can be unilaterally implemented – the example of container scanning. Others require interaction and cooperation between agencies and actors in different countries – for example, cross-border data matching. A few are private sector-driven and transnational in nature and are implemented within the supply chain – such as blockchain solutions.

1.1.1 Technology-driven Innovations in Customs Law Enforcement

In the debate on curbing trade-related IFFs, the spotlight is increasingly on "smart" technologies that combat customs fraud while facilitating cross-border trade. The most promising options include use of *electronic sealing*, *smart containers* and *container scanning*, as well as *blockchain technologies* (Box 1).

Box 1: Electronic sealing, smart containers, container scanning, and blockchain technology

Electronic sealing enables real-time monitoring of the location and trajectory of cargo, identifying and tracking any stop or deviation from the assigned itinerary. The data are stored in the seal chip or on cloud-hosted platforms. Since 2017, for example, Indian customs authorities require "trusted" exporters to replace one-time use mechanical container seals with electronic seals for containerized cargos intended for export (Indian Customs 2019). The resulting "e-seal" is a radio-frequency identification device (RFID) that transmits container information when interrogated by RFID portal or mobile readers. The seal is virtually fool-proof: any tampering event is stored in the e-seal chip's memory and triggers a tamper alarm.

Going one step further, some supply chain stakeholders are using ***smart container*** solutions (UNECE 2020) to combat trade fraud. Smart containers are equipped with tracking devices and interconnected sensors that can provide real-time data on the container position, temperature, movement, shocks, door opening, etc. The devices communicate information directly to the rest of the supply chain without human intervention. All containers can become "smart" containers because the necessary electronics can be "retrofitted to all types of existing containers, or embedded within the contents of the container" (UNECE 2020, at 4). This technology can be combined with other innovations such as blockchain.

Fixed ***scanners*** are installed at the point of import/export for systematic or targeted scanning of containers. For example, in September 2016, three fixed scanners with a scanning capacity of 150 containers per hour were installed at the Port of Douala, Cameroon (Cameroon Customs 2019). The scanners were deployed for systematic two-dimensional X-ray scanning of all imports and exports, upstream of the clearance procedure, within the framework of a partnership between the port operator and the inspection company.

A ***blockchain*** is "a decentralized, distributed record or 'ledger' of transactions in which the transactions are stored in a permanent and near inalterable way using cryptographic techniques" (Ganne 2018). It provides "a tamper-proof, decentralized and distributed digital record of transactions" to track and verify the full chronology of transactions, which ensures the integrity of invoices and other transaction documents against tampering and fraud (Ganne 2018).

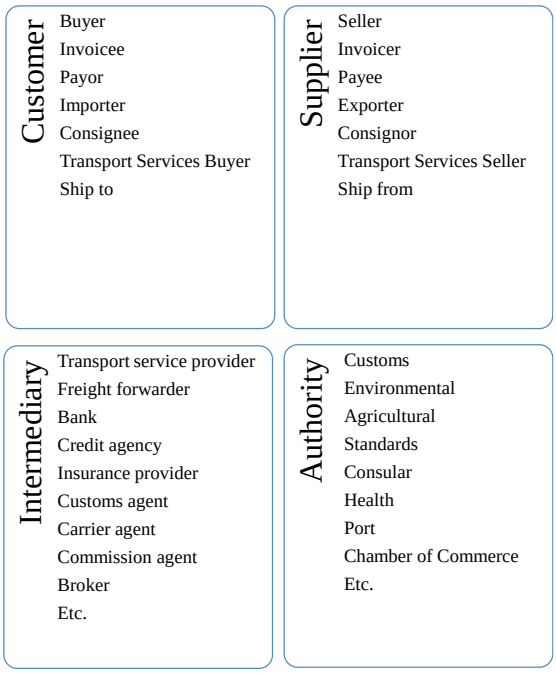
Technology-driven innovations can be a game changer in the fight against trade-related IFFs. Use of so-called e-seals or smart containers can reduce the risk of pilferage or theft of cargo that can take place at any point in the journey from source to destination. Systematic scanning of containers is a potentially effective mechanism to counter smuggling and misreporting of cargo contents, particularly regarding heavily taxed or prohibited goods. Finally, blockchains can be employed to ensure the integrity of invoices and other transaction documents against tampering and fraud. If scaled up and used in a systemic way, these technologies could catalyse positive – possibly transformative – change against trade fraud in the short- to medium-term.

Nevertheless, questions remain about the practical implementation and effectiveness of such technology-based solutions in respect of trade mispricing. There are also open issues regarding their relevance, cost implications, and technological suitability in low-income countries.

First, questions arise as to whether the technologies under discussion provide a solution to fraudulent mispricing practices at source, or "at the gate". E-sealing and smart containers do not enable monitoring of how the cargo is filled at factory premises or warehouses and are thus of limited use to detect cargo manipulation at this entry point into the value chain. Indeed, they are useful to detect tampering of goods in transit, but play no role in countering mispricing at source. Blockchains face a similar issue: blockchain can prevent tampering with documents once they have entered the "safe space" of the blockchain, but it does not provide a verification mechanism at the "gate", i.e. the point where the document is registered (Brugger 2019). By contrast, container scanning goes some way towards ensuring integrity at the "entry gate". However, there are difficulties in effectively deploying the technology in all contexts, including technical difficulties – for example, complex procedures inherent to scanning protocols, as well as poor maintenance and breakdown of equipment over the years. Note also that even the most sophisticated scanners are of little use if officers are negligent in viewing scanner images, or if cargo pilfering takes place after scanning.

Second, there are questions about the costs involved and their equitable sharing. Any cost–benefit analysis must carefully weigh the expenses associated with use of "smart" technologies – both in terms of initial capital outlay, for example the costs of replacing mechanical seals with e-seals, as well as ongoing future costs. Another question concerns who should bear the costs for upgrading equipment. Trade logistics are complex and involve many stakeholders (Figure 3). A key issue is that of cost-sharing and operational agreements that can be arranged between relevant stakeholders, including port operators, inspection companies, as well as exporters/importers and their authorized carriers. A related issue is how governments in low-income countries can fund their budgetary share of annual operational and maintenance costs – such as with port authority charges or other levies.

Figure 3. Business partners in international trade



Source: UNECE Buy-Ship-Pay Reference Model, http://tfig.unece.org/contents/buy-ship-pay-model.htm

Emphasis on costs also raises questions about the right design of technology deployment – e.g. what approach is more cost-effective – general or targeted/risk-based? For example, customs authorities could require systematic scanning of all containers (general approach) or only of high-risk containers

(targeted approach). In the latter case, the port authorities and/or customs officials must have in place a risk management strategy to identify potential high-risk containers. Likewise, customs may require all operators to replace one-time use mechanical container seals with electronic seals for export cargos, or set the requirement for authorized economic operators/exporters working under specific streamlined procedures.

Finally, questions remain over the general suitability of technology-based solutions in low-income countries. The assessment should cover the technical requirements for smart customs technology and how they work. Technical and procedural analyses could pinpoint the most important obstacles to deployment of specific technologies in lower-income countries. These may include bad connectivity, power limitations, and similar infrastructural and operational constraints.

The issues above are ripe for empirical inquiry.

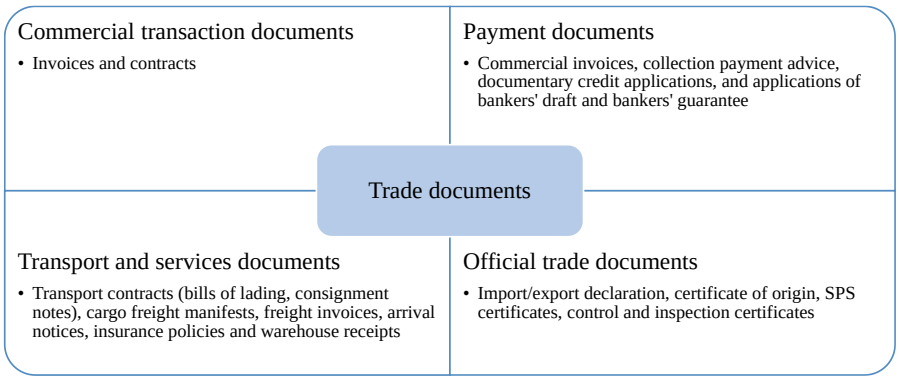
1.1.2 Inter-agency Cooperation and Data Matching

A key technique for use in establishing cases of value manipulation in cross-border trade is that of *data matching*: tracking inconsistencies between trade documents (Figure 4) and between trade and tax records (

Figure 5). It consists of cross-matching different sets of documents to spot discrepancies that may point to *trade misinvoicing*. It can be deployed in both the countries of origin and destination of trade flows and generally requires interaction and co-operation between the two.

Data matching may involve comparing specific sets of trade documents. For example, export (sale) documents could be compared with import (purchase) documents to uncover mismatches in export and import values. Likewise, customs declarations may be crosschecked with commercial, payment, and transport documents to identify mismatches indicative of value manipulation.

Figure 4: Trade documents

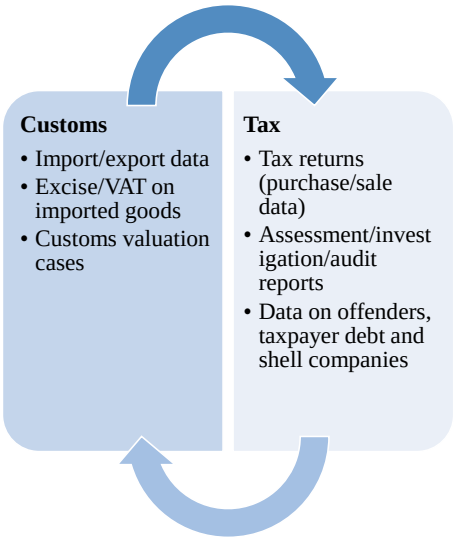


Source: United Nations Centre for Trade Facilitation and Electronic Business, Taxonomy of Trade Documents (UN/CEFACT 2002).

Going a step further, trade documents could be cross-matched with tax filings. For example, customs declarations could be crosschecked with the income tax return filed by the buyer in the importing country to spot discrepancies between values set for customs versus tax purposes. This may occur, for example, when the purchased inputs are income-deductible costs in the importing country: in this case,

the purchaser has an incentive to *undervalue* the goods with respect to customs duties, value-added taxes, and excise taxes, while stating the *correct price* for income tax purposes.

Figure 5: Exchange of information between Customs and Tax authorities



Source: WCO 2016.

There are technical obstacles to meaningful "document matching" for the purpose of curbing trade-related IFFs. Technical impediments may include, for example, lack of electronic filing necessitating costly matching by hand, inconsistent taxpayer identifiers across sectors and countries, non-comparable documents due to different filing formats or accounting asymmetries, use of symmetrically forged documents in cases where parties collude, as well as use of identical forged documents for commercial, payment, logistics, and official purposes. Key advancements to overcome these obstacles and accelerate data matching include: electronic filing of harmonized forms across jurisdictions; use of a consistent, unified identifier for individuals and business entities across sectors and jurisdictions; and the automatic exchange/sharing of transaction-level data with trade-partner countries, in particular using blockchain technology. Some of these solutions, for example filing forms electronically, could be implemented in the short-term by leveraging technology improvements. Other solutions, like setting up unified identifiers for actors across sectors and jurisdictions, will require more long-term reform (see Section 2).

From a legal point of view, data matching implies rules and procedures for the flow of information between customs authorities, tax authorities, and banks – as well as between and within governments (Musselli and Bürgi Bonanomi 2018). At the national level, the legal bases (e.g. legal acts/ministerial decrees or decisions) for the internal flow of information between separate administrative entities – e.g. tax and customs authorities – are often already established even in less-developed states.[4] In these

[4] In most jurisdictions, tax authorities already have the regulatory power to gather or compel information for tax assessment purposes from banks, registrars or other information holders, unless stringent bank secrecy provisions inhibit the exchange. Likewise, Customs and Tax authorities generally have administrative arrangements for cooperation laying down information exchange mechanisms and designated contact points. This may occur through informal arrangements or more formal cooperation agreements, such as Guidelines/Instructions and/or a Memorandum of Understanding/Agreement. Finally, most countries have in place legal safeguards governing data privacy and protection, at least in some rudimentary form.

contexts, the key challenge is that of strengthening and operationalizing existing internal cooperation and information-exchange mechanisms. The main obstacles here are operational and technical in nature, rather than questions of law. The solutions include standardizing/harmonizing messaging and communication protocols; using information technology to electronically send/receive, exchange, process, secure, and store information/data; applying robust data analytics to decode bulk data and identify non-compliance patterns; and deploying robust information and security management systems to protect the integrity of data (World Customs Organization 2016). Interconnected/interoperable or integrated databases could enable further efficiency gains and synergies between tax and customs administrations if taxpayer identification numbers are consistently used when filing tax and customs declarations.

At the international level, however, encompassing flows of information between countries, more complex legal issues arise that go well beyond straightforward operational and information-exchange matters. The most vulnerable countries (low-income countries) have scarcely any legal basis with which to "pull" tax information from major offshore centres, including Switzerland. Indeed, this is essentially only possible for countries that are parties to official exchange treaties (bilateral or multilateral). Participation in exchange treaty networks is subject to stringent pre-requirements in terms of domestic laws, regulations, and operational procedures for securely gathering, storing, transmitting, and using any information shared. Establishing these foundations is costly for countries with underdeveloped legal frameworks and limited administrative and IT capacity, as detailed in Musselli and Bürgi Bonanomi (2018). Trading hubs like Switzerland may implement a set of targeted measures to ease the legal and procedural strictures that low-income countries face, as further discussed in Sections 1.3.1 and 2.

1.2 Focus on Host Countries

The policy options discussed above are relevant to both the countries of origin and destination of trade. Other options for short term improvement essentially involve developing countries where raw materials are produced ("host" states, in investment terms). They revolve around mineral valuation issues and sales procedures for publicly-owned oil, gas and minerals. Opportunities for mispricing arise in both areas, with significant impact on government revenue.

1.2.1 Minerals Valuation

In poor countries, local authorities often lack the technical expertise and equipment to value their minerals accurately and companies have a strong incentive to deliberately understate the value to pay less taxes. Since royalties and income taxes are generally assessed on the sale value of the mineral, which in turn reflects the value (grade and purity) of the mineral, undervaluation will result in revenue losses for the Government.

As reported by Readhead (2018), setting up an ISO-accredited laboratory to undertake direct measurements of minerals takes long, roughly 2 years at a minimum, and requires significant investment, between 2 and 5 million euros – plus running costs in the range of 300-500,000 euros per year.[5] The investment makes economic sense only in high-risk circumstances where the undervaluation (and revenue) risk is high.[6] Even in such circumstances, it may be more economical to set up shared (regional or sub-regional) laboratories, well-equipped and staffed, rather than independent national laboratories.[7]

[5] For a cost-benefit assessment in specific contexts, including the case of Tanzania, Readhed 2018.
[6] Undervaluation risks are particularly acute for high-value minerals that do not have transparent pricing and are mainly sold to related parties. For more details, see Readhed 2018.
[7] A discussion is contained in Readhead 2018.

Less costly options are available in the short run to mitigate undervaluation risks. For example, the government could contract a qualified mineral inspection firm to do the sampling and/or testing on its behalf, with the costs borne by the mining companies (Readhead 2018). The challenge is negotiating the deal with mining companies that already have in-house inspection services and may be reluctant to take on the cost of external expert valuation (Readhead 2018).

Alternatively, the government could levy a fixed annual inspection fee on mining companies to cover the costs of independent expert valuation (Readhead 2018). However, fiscal stabilisation clauses in long-term mining agreements may come in the way.

Governments may also cross-check results at multiple valuation points in the value chain. In Ghana, for example, assay values from the national assayer (the Precious Minerals Marketing Company, or PMMC) and the mining company are triangulated and reconciled with those from refineries abroad (Baku 2021).[8]

The options contemplated can be implemented in the short run even in contexts of limited technical capacity and poor equipment.

1.2.2 Allocation of Sales Contracts

Undervaluation of mineral exports can also result from misallocation of commodity sales by state-owned enterprises (SOEs), which may result in significant revenue losses for the government. In resource-rich developing countries, the sale of publicly-owned oil, gas and minerals often represents the largest revenue streams accruing to government (NRGI et al. 2014). In contexts of weak governance, corruption and political influence can unduly affect the buyer selection process. This may result in the selection of buyers who purchase the commodities at below their market value, or who lack capacity to meet their contractual obligations (OECD 2020). Setting in place transparent and competitive buyer selection procedures is a crucial step to prevent potential public revenue losses that can arise through sub-optimal sales allocation (OECD 2020).

Policy options that address the problem are extensively discussed elsewhere (see, e.g. OECD 2020). In the short-run, there is room to move forward pragmatically through immediate adjustments in SOEs' sales practices. Examples of operational measures that SOEs can take in the short run include: the establishment of autonomous buyer selection teams free from political influence; a clear pricing formula/policy derived from publicly quoted prices; pre-determined and quantifiable buyer selection criteria; standardised and automatic procedures for bid submission; and standardised models/guidelines for contractual terms in direct negotiations (OECD 2020). The information related to all stages of the bidding processes should be made publicly available to all (OECD 2020, EITI recommended disclosures of buyer selection procedures by SOEs, further discussed in section 2.3.3). Such reform options revolve around technical and procedural matters that can be addressed in the short-run through adjustments in policies and practices at the SOE level. Yet it requires support and framing conditions in terms of corresponding laws and regulations– a law reform process that fits in a mid-term timeframe, In particular, governments should ensure that robust governance arrangements for SOEs area in place to reduce discretion and opacity in the buyer selection process. Examples include robust auditing processes, regulatory oversight and disclosure requirements. The corresponding mid-term reform

[8] In practice, the holder of a licence to export, sell or dispose of gold or other minerals shall, after a shipment of minerals, submit the certified copies of the refinery returns to the Minerals Commission of Ghana. The volume and purity estimates from refineries abroad are compared to that of PMMC and the mining company in question and the highest values are used for valuation purposes (Baku 2021).

options are discussed in detail elsewhere (OECD 2020) and are not further discussed in the context of this report.

1.3 Focus on Home Countries

Some areas for short term action essentially involve the countries of destination of commodity trade flows. In investment terms, the focus is on the country where the multinational trading/extractive company locates its headquarters ("home" country) – in fiscal term, the residence country of the investor ("residence" state). This section focuses on actions that can be implemented in the short run essentially through changes in administrative practices. Longer-term solutions are instead discussed in section 2.

1.3.1 Exchange of Information

As discussed in Section 1.1.2, the most vulnerable countries have scarcely any legal basis with which to "pull" tax and accounting information from major offshore centres. When a legal basis exists, there are stringent limits on the flow and use of the information exchanged. Trading hubs like Switzerland may take immediate action to ease, in practice, the legal and procedural strictures that low-income countries face. Areas for short term action include the following.

1.3.1.1 Spontaneous Sharing / Publication

Very few low-income countries participate in exchange procedures; most of them still need to build the required capacity to do so (Musselli and Bürgi Bonanomi 2018). The requirements include implementation of necessary laws, operational procedures, and infrastructure to ensure confidentiality, data protection, and proper use of information shared. Meeting these requirements can be extremely costly, with high opportunity costs in countries with limited administrative resources, underdeveloped legal frameworks, and poor IT infrastructure (Musselli and Bürgi Bonanomi 2018).

In light of these hurdles, offshore wealth centres like Switzerland could consider spontaneously sharing aggregate, de-identified information with their lower-income partners, as stated in the Global Forum roadmap (Global Forum on Transparency and Exchange of Information for Tax Purposes 2014, at 20). Where a legal basis exists in Switzerland for the spontaneous exchange of information,[9] this is a matter of practice rather than law reform. For example, Switzerland could spontaneously inform its treaty partners that there are x number of depository accounts held in Switzerland by their residents, as well as the overall amount of the accounts. In this way, only anonymous totals would be revealed and no confidentiality rules would be breached. An alternative course of action would be to make such aggregate and de-identified information publicly available on a regular basis, as other countries, for example Australia, have decided to do (Meyer-Nandi 2018a).

1.3.1.2 Non-reciprocity

Another suggestion is that trading and financial hubs like Switzerland supply information – automatically or on request – to poor countries on a non-reciprocal basis (cf. Meyer-Nandi 2018a and Matteotti 2018). Officially lifting the reciprocity requirement would enable information exchange with countries that do not (yet) have the administrative capacity to gather and transmit equivalent information on their side.

As discussed elsewhere (Musselli and Bürgi Bonanomi 2018), "targeted" loosening of the reciprocity requirement would not be too costly for home countries. Take the example of Switzerland. Even regarding procedures of automatic exchange, the reciprocity requirement is not written into the law: a change in administrative practice could suffice to loosen the requirement enough to accommodate poor

[9] The Multilateral Convention on Administrative Assistance in Tax Matters (ratified by Switzerland and by many developing countries) provides a sufficient legal basis (Musselli and Bürgi Bonanomi 2018).

countries. In practice, with reference to current practices of exchange on request, Switzerland is already supplying information on a de facto non-reciprocal basis: in 2017, it received 18,164 requests, compared with 18 requests submitted from the Swiss side (Swiss Federal Tax Administration 2018).[10]

1.3.1.3 Ease Limits on Information Flows and Use

Under standard treaties on exchange of tax information, the information received may only be used for the purpose for which it is intended under the particular exchange treaty (specialty principle); and it may not be further disclosed beyond the tax administration (secrecy rules). In general, the exchange agreement stipulates that the information can only be used for tax assessment purposes, and not for additional (non-tax) purposes, for example, to combat corruption or trade-based money laundering. This in spite of the fact that the additional crime, e.g. money laundering, arises out of the same set of facts. The information exchanged for tax purposes can be shared with other law enforcement agencies and judicial authorities to investigate or prosecute the additional (non-tax) crimes only if the competent authority of the supply state specifically consents to it. Narrow interpretation of these principles could prevent the flow of information between, for example, tax and customs authorities or enforcement agencies in the receiving state, and prevent non-tax authorities from making legally valid decisions based on information/data which has been received and further transmitted by the tax authority (Musselli and Bürgi Bonanomi 2018). The flow of information between public entities/authorities within the receiving state should instead be allowed and facilitated, ending functional silos in information management for regulatory purposes.

Resident states can endorse a flexible interpretation of the "specialty" principle that facilitates the flow of the information transmitted within the receiving country, as well as its use for multiple regulatory purposes. There is room to move forward, pragmatically, through minor changes in administrative practices. For example, sending states may instruct their tax administrations to systematically consent to the further transmission of the information within the receiving state, from the receiving tax authority to other law enforcement agencies and judicial authorities – if so permitted in the receiving state under its laws. This approach could be endorsed as a matter of practice at least for the investigation and prosecution of certain high priority matters (e.g. combat money-laundering, customs fraud, corruption and terrorism financing).

1.3.1.4 Leverage Technical Assistance

Finally, trading and financial hubs should (continue to) leverage their technical cooperation programmes to build tax information capacity in poor countries For example, Switzerland, could volunteer and test pioneering exchange of information practices as a partner in a pilot project within the Global Forum, or outside of it in an independent capacity (Meyer-Nandi 2018a). Through interdepartmental synergies, its technical cooperation could pool expertise and resources to build tax information capacity in poor countries via peer-to-peer knowledge and technology transfer, in a progressive process of coaching and practice. The focus here is on peer-to-peer, transactional knowledge transfer, including by temporarily loaning out staff to tax administrations in developing countries. Moving from and beyond the Tax Inspectors without Border initiative, the apporach involves the operationalization of synergies between tax and development agencies in the sending state, and the direct involvement of the tax department (Musselli and Bürgi Bonanomi 2018). Another critical aspect is technical assistance to set up the needed IT infrastructure and operational procedures for tax information exchange and data matching. Key requirements have been discussed in section 1.1.2: the need for electronic fillings systems, effective inter-agency communication protocols, secured

[10] Due to secrecy obligations, the breakdown of requesting countries by income group is not made public by the Swiss administration.

information technology to exchange, process and store information, and robust data analytics skills to decode and cross-match bulk data.

1.3.2 Improved Trade Data

Another area for short-term action by home states involves the quality of trade data. There are several aspects that should be considered, as detailed by Carbonnier and Mehrotra (2020).

1.3.2.1 More Disaggregated Data

One aspect is the need for greater granularity of trade statics regarding precious metals. For gold-related customs tariffs, Carbonnier and Mehrotra propose establishing 10-digit categories under the Harmonized System (HS) that distinguish between different gold-purity levels, thus making it possible to select suitable reference prices and detect abnormally invoiced shipments (Carbonnier and Mehrotra 2020). For example, the Swiss customs tariff system currently uses 8-digit tariff headings, and imports fall under the gold category as soon as it contains 2 percent of gold or above – primarily for the sake of VAT-deductibility. Yet, the value of a shipment with 2 percent gold content is obviously quite different from another containing more than 70 percent of gold. Creating HS 10-digits sub-categories to discussing between different gold purity level would be a first step allowing to better ascertain what can be expected as a normal price range for a give import. This leaves room for reform through changes in administrative practice.[11]

1.3.2.2 Related-party Transactions

Another aspect concerns the introduction of statistical keys that identify related-party transactions (Carbonnier and Mehrotra 2020). Few countries, for example the US, record information in trade statistics that make it possible to distinguish trade transactions between related parties, on the one hand, and unrelated parties, on the other. In contrast, most administrations, including the Swiss Federal Customs Administration, do not require importers and exporters to indicate if a transaction occurs between related parties. However, this information is key for analytical and policy purposes, since mispricing in related and unrelated party transactions require different sets of regulatory responses. Customs administrations could reform their documentation requirements for importers and exporters so that this information is recorded and available at the level of transaction-level trade statistics (Carbonnier and Mehrotra 2020).

1.3.2.3 "Real" Origin

A further area for immediate action concerns the origin of gold. Trade statistics do not necessarily shed light on the true origin of gold. For example, the listed country of origin of Swiss gold imports is not always the country where the gold was actually mined, but rather the country from which the gold was shipped – often another trading hub like London or Dubai. However, even if the true origin of gold is not always reflected in gold import statistics, Swiss refiners generally know the origins of gold they receive. This information is required for instance as part of the London Bullion Market Association

[11] This is possible at for a single country without major reforms to be agreed at the level of the World Customs Organization, since the 10-digit extension is defined at the national level. As discussed in Carbonnier and Mehrotra (2020), the Swiss customs tariff system currently uses 8-digit tariff headings that could be extended to 10 digits. While the 8-digit system is specified in the law (Customs Tariff Act and TARE Ordinance), the supplementary subdivisions at 10 digits are administratively set by the Federal Customs Administration. Switzerland has submitted a proposal to the World Customs Organization (WCO) to amend the customs tariff classification for gold as of 1 January 2027. At national level, the proposal has been included in the customs statistics for imports into Switzerland since 1 January 2021. Supplementary subdivisions at 10 digits are being implemented to distinguish between recycled gold (above and below 99.5 percent purity) and mined gold for refining and processing. However, they still do not make it possible to distinguish between different qualities of mined gold imports based on the purity of gold and silver content.

(LBMA)'s responsible sourcing standard (Swiss Federal Council 2019, at 10).[12] Furthermore, under Switzerland's Precious Metals Control legislation, holders of a smelter's licence must always verify the identity of the supplier of the melt material, who shall prove its lawful acquisition.[13] If known, the origin of gold must be reported to the Customs Authority.[14] Major transparency advances could be made in this area by Customs Administrations and the private sector without necessarily reforming existing customs laws.[15] They involve both voluntary efforts by refiners and a more stringent enforcement of the requirement to disclose the origin of gold, if known by the refiner.

Developments in this area are associated with breakthrough innovation. A major step forward in the traceability of mined gold is the use of a "geoforensic passports" for gold shipments, whereby refiners take gold samples from a mine or supplier and create a chemical and physical blueprint for the material against which subsequent shipments are checked (SWI 2021). The technique is promising, with some limits. It is not suitable for recycled gold. Further, it fails to trace the origin of gold received from collectors that consolidate supplies from multiple sources, as it frequently occurs in artisanal/small scale mining (SWI 2021).[16]

1.3.2.4 Merchant Trade Data

A final area for short-term improvement centres around merchant trade statistics.[17] For example, Public Eye and other NGOs frequently highlight the alleged "opacity" of Swiss data on commodity merchanting. Net receipts from merchanting are recorded in Switzerland's Balance of Payments statistics, booked as receipts from goods trade in the current account. It is worth considering whether more granular merchant trade datasets could be published on a commodity-by-commodity basis. Since merchant trade data are recorded in the Balance of Payments statistics, this is an issue for the Swiss National Bank rather than the Federal Customs Administration.

[12] "[S]i elle n'est pas toujours reflétée dans les statistiques d'importation d'or, l'origine de l'or traité par les raffineurs suisses est connue par ces derniers et transmise à la LBMA dans le cadre de la mise en œuvre des standards qu'elle exige" (Swiss Federal Council 2019, at 10). All LBMA Good Delivery refiners selling gold into the London Market must comply with the LBMA Responsible Sourcing programme, which requires robust due diligence and third party audit in gold sourcing.

[13] As summarised in Tratschin et al 2017, the Swiss holders of a smelter's licence must always verify the identity of the supplier of the melt material, who shall prove its lawful acquisition. If the origin of the melt material or the supplier's identity is doubtful, the licence holder has to clarify the origin of the melt material in more detail and report suspicious transactions to the police. The licence holders have to take the necessary organisational measures to perform their due diligence duties. See Federal Act on the Control of the Trade in Precious Metals and Precious Metal Articles (Precious Metals Control Act, PMCA) of 20 June 1933, SR 941.31 and the Ordinance on the Control of Trade in Precious Metals and Articles of Precious Metals (Precious Metals Control Ordinance, PMCO) of 8 May 1934, SR 941.311

[14] "L'Administration fédérale des douanes (AFD) confirme que l'origine réelle des marchandises doit être annoncée dès lors qu'elle est connue" (Swiss Federal Council 2019, at 9).

[15] The private sector, in collaboration with the London Bullion Market Association (LBMA), is prepared to work with the Swiss government to establish ways to increase transparency regarding the origin of gold while guaranteeing the confidentiality of certain information for competitive reasons. It has made concrete proposals to this end (Swiss Federal Council 2019, at 10).

[16] For a more detailed description of the Geoforensic passport process, https://www.lbma.org.uk/alchemist/issue-101/the-origin-of-gold-geoforensic-passport ; https://serval.unil.ch/resource/serval:BIB_2D54743C0C75.P001/REF.pdf.

[17] Merchant trade occurs "offshore", with a resident trader buying goods from a supplier abroad and selling the good to a buyer who is also abroad; the good never enters the country where the trader is resident.

2 Medium-term responses

The previous discussion focused on short-term technical measures that do not pose significant challenges regarding legal reforms. Other policy options to curb trade-related IFFs could still be implemented in the short- to medium-term, but in some contexts might require reforms to the existing legal framework, which in turn could require a great deal of political negotiation. As regards host countries, the focus in the following section is on rule-based pricing methods and other prescriptive approaches that directly offset the revenue effects of trade mispricing practices. Turning to home countries, the analysis below further considers key leverage actions for change in relation to enablers and "pull" factors that attract IFFs into trading hubs like Switzerland. The focus here is on the professional "enablers" of IFFs, the complexity and opacity of business structures and the persistence of legally reinforced veils of secrecy, the role of tax incentives, as well as legally embedded limits on ways of holding firms accountable for their business conduct abroad.

2.1 Host Country Measures

The focus hereafter is on rule-based pricing methods and other prescriptive approaches that directly offset the revenue effects of trade mispricing practices. Such measures appear better suited than other approaches to achieve the goal of curbing IFFs, while being less costly to implement in contexts of limited technical and administrative capacity. Prescriptive approaches to taxation complement other mid-term reform options that are not further discussed here. As anticipated in Section 1, they include robust institutional arrangements for the sale of publicly-owned commodities (refer to OECD 2020), as well as mid-term policy options for improving government oversight of mineral valuation (refer to Readhead 2018).

2.1.1 Prescriptive Approaches to Taxation

As has been widely discussed in the tax and development literature, low-income countries need simple, context-specific ways to counter mispricing practices in commodity trade (Durst 2016 and 2019, Readhead 2017 and 2018, Picciotto 2018). They need easy-to-administer rules that reduce the administrative burden and staff requirements and leave little room for administrative discretion or corruption, in particular (Atupare Atudiwe and Kpebu 2019; Norasing et al. 2019).

The technology-driven innovations outlined in Section 1 represent promising simplification measures that could yield results in the fight against trade fraud. However, they tend to be resource-intensive, posing challenges for countries with limited technical and financial capacity. Further, while they are useful to detect smuggling and tampering of goods in transit, they play no role in countering mispricing at the source – where the price is first set and the first invoice is issued.

Low-income countries with limited taxation expertise should also consider alternative methods that appear capable of curbing trade mispricing, but are less costly to implement in contexts of poor IT infrastructure. To varying extents, these alternatives involve the regulatory use of reference prices and fixed margins for tax purposes, on behalf of administrative convenience and simplicity. They are referred to as "prescriptive methods" in light of their rule-based characteristics and because corresponding laws directly prescribe the price ranges, margins, pricing formulae, and profit allocation methods to be applied.

Prescriptive methods are simplified, targeted means to counter trade mispricing and prevent diverted profits. Several prescriptive approaches are available, as outlined in Figure 6.[18]

[18] For more details on the various approaches, see, e.g., Durst 2016 and 2019, Ezenagu 2019, Hearson et al. 2020, Ndajiwo 2020, Picciotto 2018, Readhead 2017 and 2018, Rukundo 2020.

Figure 6: Prescriptive approaches to taxation

METHODS FOR THE VALUATION OF TRANSACTIONS		PROFIT-BASED METHODS
Pricing of output (eg minerals)	Sixth method	
	Administered pricing	Shared net margin method and fractional methods
	Mandatory contract terms	Minimum profit margins/deemed profits
Pricing of inputs from related parties (supplies, services, equipment)	Rules on mark-ups or profit margins for transactions	Minimum taxes and other gross-based taxation models
	Interest limitation rules	
Intra-group financing	Disallow deductions for the use of intangible property	
	Withholding taxes	

2.1.1.1 Output Side: Valuation of Commodity Exports

Countries concerned about systemic trade mispricing can legislate the use of reference prices to determine the tax value of commodity sales. The focus here is on the *output side* of the commodity trade equation: the pricing of the commodity produced.

The law can provide for various tax-related uses of reference prices to this end, with different degrees of prescriptiveness. For example, the law may require taxpayers (in their tax returns) or tax authorities (in assessing taxpayers' return) to assess the value of commodity transfers between related parties based on publicly quoted prices (the so-called "sixth-method"). One step further, the law may directly set the value of transactions for tax purposes (what is called "administered pricing"). Or it may legislatively frame price terms in contracts (mandatory contract terms).

These options have different implications. For example, under the *sixth method*, it is up to the tax administration to demonstrate that the taxpayer's price determination is incorrect. By contrast, under *administered pricing*, the burden of requesting and proving adjustments is with the taxpayer. A line should be drawn between (1) the sixth method and fiscal administered pricing regimes, on the one hand, and (2) legislation of contract terms, on the other: the former generally set values for tax purposes – the parties are free to set the transaction prices they wish; the latter "frame" transaction prices in commodity contracts, for example when a country legislates the use of price terms in physical contracts.

2.1.1.2 Input Side: Valuation of Deductible Taxpayer Costs

Whereas the prescriptive techniques above essentially target the possible undervaluation of commodity exports, other schemes apply prescriptive elements to the valuation of deductible taxpayer costs (Durst 2016). The focus here is on the input side of the commodity trade equation: the pricing of services, supplies, and equipment obtained from related parties as well as the issue of intra-group financing (Durst 2016). Notably, operational subsidiaries in developing countries tend to procure extensive technical, management and marketing services, as well as supplies, and equipment from other group members, and tend to be heavily indebted to company headquarters/hubs located in low-tax jurisdictions. In this way, the overall multinational group has a strong incentive to inflate the value of goods and services supplied to operational subsidiaries so as to reduce the aggregate group tax liability.

As reviewed by Durst, some prescriptive methods introduce 'bright-line' restrictions on deductible taxpayer costs, aiming to preserve the taxable base at source.[19] The law may, for example, prohibit

[19] Durst, above n **Error! Bookmark not defined.**, at 11-14.

deduction of mark-ups on costs in intra-group transactions.[20] As a milder option, it may legislatively set fixed profit margins and mark-ups for tax assessment purposes.[21] Some schemes and model laws further disallow tax deductions for the use of intangible properties, for example technological know-how.[22] One step further, several countries have adopted bright-line interest limitation rules that limit deductible interests to a specified percentage of the company's earnings.[23] Withholding taxes on outbound payments is another blanket approach to compensate for the loss of taxable income due to excessive payments to foreign affiliates in respect of interest, service charges, etc.[24] Such rules set bright-line restrictions designed to preserve the taxable income of subsidiaries within multinational groups.

2.1.1.3 Overall Profit Allocation Methods

Other simplified rules focus on the *allocation of profits*, rather than on the valuation of transactions. In this direction are proposals for local subsidiaries to be assigned a profit margin in proportion to that of the corporate group, or multinational enterprise (MNE), as a whole (*shared net margin method*). More complex *fractional apportionment methods* would allocate a percentage of the MNE's global income to the local subsidiary or establishment, based on criteria that reflect its substantial activities in the jurisdiction, including numbers of employees, size of assets, and sales (Picciotto 2018). Other prescriptive approaches prescribe *minimum operating margins* for different businesses, in some cases as a safe harbour. This means that if taxpayers declare taxable incomes within the safe harbour level, they are shielded from transfer pricing scrutiny. Another related approach sets some form of *minimum tax*. The corresponding tax is calculated on a gross base, for example turnover, that is less prone to manipulation than net income. These approaches can all be implemented unilaterally by host countries. By contrast, other more ambitious alternatives would require coordinated international action, as discussed in Section 3.

Simplified prescriptive methods have proven both useful and practicable in countering the revenue effects of mispricing in poor countries. For example, research on Pakistan shows that switching to minimum taxes and other prescriptive methods increased overall tax revenue by 74 percent (Best et al. 2015). In Brazil, the sixth method and the use of fixed margins have resulted in increased revenue and a very low level of tax disputes, with low enforcement efforts (Calich and Rolim 2012). These methods have also been effectively deployed by developed countries as anti-abuse rules. In Norway, for example, the Petroleum Price Board (PPB) sets "norm prices" to calculate the taxable income for oil companies. Several developed countries, for example Germany, have adopted bright-line interest limitation rules

[20] For example, Article 7 (3) of the United Nations Model Convention disallows deductions for amounts 'paid' by a permanent establishment to its head office, beyond reimbursement of actual expenses incurred by the head office for the permanent establishment. See United Nations, *Model Double Taxation Convention between Developed and Developing Countries* (New York: United Nations, 2017).

[21] For example, Brazil's transfer pricing legislation sets forth fixed profit margins and mark-ups for related party imports and exports. For details, see, e.g. Isabel Calich and João Dácio Rolim, 'Transfer Pricing Disputes in Brazil', in Eduardo Baistrocchi and Ian Roxan (eds.), *Resolving Transfer Pricing Disputes* (Cambridge: Cambridge University Press, 2012), 519–54; Marcelo Ilarraz, 'Drawing upon an Alternative Method for the Brazilian Transfer Pricing Experience: The OECD's Arm's Length Standard, Pre-Fixed Profit Margins or a Third Way?' 2 British Tax Review 218 (2014); Sergio André Rocha, *Brazil's International Tax Policy* (Editora Lumen Juris, 2017); United Nations, above n **Error! Bookmark not defined.**, at 527–45; Marcos Aurélio Pereira Valadão, 'Transfer Pricing in Brazil and Actions 8, 9, 10 and 13 of the OECD Base Erosion and Profit Shifting Initiative', 70 (5) Bulletin for International Taxation 296 (2016); Marcos Aurélio Pereira Valadão and Rodrigo Moreira Lopes, 'Transfer Pricing in Brazil and the Traditional OECD Approach', 8 International Taxation 31 (2013).

[22] For example, Article 7 (3) of the United Nations Model Taxation Convention (see above n 20) disallows deductions for royalty payments in calculating the taxable profit of a MNE's permanent establishment.

[23] BEPS Action 4 recommends to limit an entity's net deductions for interest to a ratio of between 10 – 30 percent of a company's earnings before interest, taxes, depreciation and amortisation. See OECD, *Limiting Base Erosion Involving Interest Deductions and Other Financial Payments, Action 4 - 2015 Final Report*, OECD/G20 Base Erosion and Profit Shifting Project (Paris: OECD Publishing, 2015).

[24] Sathi Meyer-Nandi, *Preventing Tax Treaty Abuse – A Toolbox with Preventive Measures for Ghana, South Africa, and Nigeria* (Vienna: WU Vienna University of Economics and Business, 2018), at 7-11.

that limit deductible interests to a specified percentage of the company's earnings.[25] Furthermore, as further discussed in Section 3.1., fractional methods have been effectively used in some federal states to allocate a group's profits at the subnational level. Interestingly, the OECD Unified Approach to the digital economy is considering the introduction of fixed returns for tax purposes for routine marketing and distribution functions in user jurisdictions.[26]

Yet, simplified prescriptive approaches to taxation raise complex trade-offs between simplicity of administration, tax fairness, and economic efficiency. Further, they can give rise to revenue vs. investment trade-offs, since they may discourage inward investment (and further revenue) in the long run. Finally, prescriptive approaches may clash with certain terms and conditions of already ratified tax treaties. Countries attesting to implement many of these methods will face resistance from OECD/industrialized countries, as discussed in Brugger and Engebretsen 2020). To mitigate trade-offs, it is important to frame prescriptive methods in ways that minimize their distortive potential and their interference with economic liberties, while keeping their rule-based design. Technical options to mitigate trade-offs and achieve a balanced outcome are discussed in Musselli and Bürgi Bonanomi (forthcoming 2021).

2.2 Home Country Measures

The above analysis has considered approaches and measures that provide safeguards against abuse in host countries, at source. The following analysis turns to consider some strategic mid-term options for home, or residence countries. The focus is on key leverage actions for change in relation to enablers and "pull" factors that attract IFFs into trading hubs like Switzerland. While the measures contemplated can be adopted by all countries, home and host, their effectiveness in practice depends on their implementation in major trading/financial hubs. For this reason, we have labelled them "home country" measures.

2.2.1 Regulation of "Enablers"

The Panama Papers (ICIJ 2019b) reveal the key role of intermediaries located in Hong Kong, the UK and Switzerland, in facilitating tax avoidance structures – with details on 1,339 Swiss lawyers, financial advisors and other intermediaries that had set up more than 38,000 offshore entities over the past 40 years (SWI 2016). These revelations highlight the role of the "offshore finance industry" as key "enabler" of complex tax avoidance arrangements that draw resources out of developing countries. The term "enabler" here refers to actors who design, manage, market or otherwise facilitate aggressive tax arrangements in the course of their business. The focus here is on lawyers, accountants, fiduciaries, notaries, and other service providers who benefit financially from designing, marketing or otherwise facilitating cross-border tax avoidance or evasion schemes.

By supplying the accounting and legal solutions that shift MNE profits out of where they are created, enablers act as "active strategists" (Ajdacic et al. 2020) of tax avoidance and evasion. Yet they remain largely unaccountable for the tax risks they create. Under criminal law, professional companies and partnerships are hard to prosecute for white-collar frauds for which corporate officers, employees, and agents are individually liable. When the wrongdoing is exposed, the company will easily attribute the fraud to individual employees presented as rough operators acting alone inside an otherwise law-abiding environment (Enrich 2017).[27] It is even more difficult to keep professional enablers (criminally) liable

[25] BEPS Action 4 recommends to limit an entity's net deductions for interest to a ratio of between 10 – 30 percent of a company's earnings before interest, taxes, depreciation and amortisation (OECD 2015).
[26] Amount B under the OECD 'Unified Approach' (OECD 2019).
[27] Under most criminal statutes, corporations and other legal entities may be criminally liable for the crimes of their employees and agent. However, in order to attribute criminal liability to a company, the prosecutor will typically need to prove (e.g.,

for aggressive tax avoidance, which exploits tax loopholes and mismatches to circumvent a tax law without directly violating the "letter of the law" (for a discussion, Musselli and Bürgi Bonanomi 2020). In most cases, such avoidance schemes do not amount to a criminal tax offense.[28] If defeated by the tax administration, the arrangement triggers administrative adjustments to the taxpayer's tax position and, possibly, civil penalties for the taxpayer. The enabler stands clear.

Targeted, catalytic interventions are needed to make professional firms accountable for the arrangements they facilitate, whether abusive or ostensibly fraudulent.

2.2.1.1 Corporate Criminal Offence for "Failure to Prevent the Facilitation of Tax Evasion"

In this direction, some jurisdictions have codified a new corporate criminal offence of "failure to prevent the facilitation of tax evasion". In 2017, for example, the United Kingdom introduced a new corporate criminal offence that holds professional service firms – companies and partnerships – criminally liable when they "fail to prevent" their employees, agents, or service providers from facilitating criminal tax evasion.[29] To hold the company accountable, prosecutors no longer need to prove that the most senior members of the company instructed or were aware of the misconduct (identification, directing mind, or alter ego test).[30] If the company cannot demonstrate that reasonable preventive procedures were in place to prevent its associated persons from facilitating tax evasion, then it could be held criminally liable for the acts of its agent(s).

A key point under these schemes is the standard of defence. Under the UK provision, the company shall have a defence, if it proves that "reasonable" preventive procedures were in place. However, the bar could be set higher, by requiring businesses to demonstrate that they had "adequate procedures" in place to prevent associates from facilitating tax evasion. This goes beyond the canonical "reasonable" procedures threshold. It implies that the procedures in place would normally have been sufficient to prevent the criminal conduct, but were deliberately undermined by the agent. An even more radical solution would be that of counting the existence of reasonable preventive procedures as mitigating factor, but not as an excuse. The challenge is to strike the right balance "between ensuring corporations can effectively prevent and detect criminal wrongdoing by their representatives whilst not requiring

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under English and Welsh criminal law) that the most senior members of the company instructed or were aware of the misconduct. This has resulted in a business model where decision making is ostensibly decentralised at a level lower than that of the Board of Directors, and direction is implied but not stated in written form, so as to shield the company from criminal liability. In some systems, the company may only be found guilty if no natural person may be prosecuted (*subsidiary liability).* Under Swiss law, for example, the company is held subsidiarily liable if a felony or misdemeanour is committed within a company in the exercise of its commercial activities and it is not possible to attribute the offence to any specific individual due to the inadequate/inefficient organization of the company (Article 102 of the Swiss Criminal Code (SCC)). In both the UK and Switzerland, specific economic offences of high seriousness trigger the direct (primary) criminal liability of the company, independent of and parallel to the liability of the individual offender, but only if the company fails to take the adequate organizational measures to prevent the offence. Under Swiss law, for example, the company has primary liability for the most serious economic offences - criminal organization (Article 260ter of the SCC), financing of terrorism (Article 260quinquies of the SCC), money laundering (Article 305bis of the SCC), and bribery (Article 322ter, Article 322quinquies, Article 322septies § 1, and Article 322octies of the SCC). The company may only be deemed liable when it fails to take the adequate organizational measures to prevent the offence. Under Swiss law, the enabling of tax evasion does not trigger the direct (primary) liability of companies, unless it amounts to a predicate offence to money laundering. This occurs only if the evasion qualifies as tax fraud/aggravated tax misdemeanour under Swiss tax law, typically involving false or forged documents, if the tax evaded in any tax period exceeds 300,000 Swiss FRancs(Article 305ter § 1 and 1bis SCC).

[28] For a brief discussion of tax avoidance, tax evasion and tax fraud in Swiss law, see Oberson 2008.

[29] Introduced by the Criminal Finances Act 2017, the new offence came into effect on 30 September 2017. For further details, see Dawson et al. 2016 and 2017.

[30] Under this test, only those who carry out managerial and top-ranking functions (the board of directors, managing directors, and perhaps senior officers) directly engage the company responsibility. Only in some areas – bribery of public officials, money laundering and the financing of terrorism – the introduction of new laws has made the company criminally liable for 'failure to prevent' crime by a person associated with the company. In many jurisdictions, unqualified tax evasion does not constitute a predicate offence to money laundering. Hence, it does not trigger 'fail to prevent' obligations on the part of the company.

overly burdensome supervision that unduly hinders their activities" (HM Revenue & Customs 2015, para 3.101).

A second key aspect is sanctions. In the lucrative area of financial crime, corporate fines must be punitive enough to have deterrent effect. As regards monetary sanctions, this only occurs when sanctions pose a sufficient threat to the profits of a corporation. In economic terms, "whether a particular sanction has any deterrent value will depend on whether the costs of the criminal sanction to the corporation outweigh the benefits of continuing the illegality" (Yoder 1978, at 48). This means that *fines must be calibrated to the size of the corporation*. They should be set at a percentage of a corporation's assets or profits for a given period of time, for example 10 percent of profits over a certain period, rather than as absolute maximum fines (ibid, at 51). Further, criminal enforcement should be complemented by administrative measures, such as a disqualification order, revoking of licences, or entity dissolution.

2.2.1.2 Extension of Anti-money Laundering Duties to Non-Financial Professions

Trade– and trade finance – is receiving increasing attention as a conduit for money laundering. Trade-based money laundering is defined as "the process of disguising the proceeds of crime and moving value through the use of trade transactions in an attempt to legitimise their illicit origin" (FATF 2006). For example, this could arise when the exporter sells metals to a colluding importer at a price below the fair market price as a way to transfer value offshore: the colluding importer will then sell the metal on ten open market and deposit the difference between the invoiced price and the "fair market" value into a bank account to be disbursed according to the exporter's instructions. Such fraudulent transactions are recurrent in the commodity trade (FATF 2006).

A relevant policy option in this area is the extension of anti-money laundering (AML) duties to legal professionals, accountants, and service providers. AML obligations have traditionally targeted financial intermediaries – banks, asset managers, etc. The Financial Action Task Force (FATF)[31] recommends that countries extend AML laws to the activities of lawyers, notaries, and fiduciaries related to the creation of legal persons and legal arrangements (FATF 2016). Lawyers, trust providers, etc. would then be required to identify the beneficial owner concealed behind the scheme they facilitate, keep accurate records, and report suspicious transactions to officers.

Many jurisdictions have moved in this direction. For example, the EU AML framework[32] imposes anti-money laundering obligations on legal professionals assisting in the planning or execution of client transactions, including property transactions, the management of client money or other assets, and the creation of companies and trusts. It further extends AML obligations to auditors and external accountants, art dealers, as well as estate agents acting as intermediaries in renting luxury property (rents higher than EUR 10,000 per month).

Other AML frameworks are narrower, by comparison. For example, the Swiss Anti-Money Laundering Act, AMLA, is narrow in terms of subjects covered: lawyers, notaries, accountants, estate agents, tax advisors, and trust providers are *not* required to report suspicious transactions[33] unless they act as financial intermediaries on behalf of their client. A package of reforms aimed at expanding the Swiss

[31] The Financial Action Task Force (FATF) is an inter-governmental body setting international standards to ensure a co-ordinated global response to prevent organised crime, corruption and terrorism.
[32] EU AML framework, as updated by Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU (AML 5) (OJ L 156, 19.6.2018, p. 43–74).
[33] However, they are subject to criminal sanctions under the Swiss criminal code if they engage in money-laundering.

AML framework[34] was subject to heated debate, with surprising pushbacks coming from actors in key areas slated for reform. A Swiss parliamentary committee voted against new rules that would extend AML obligations to professionals providing services in connection with the creation, management, or administration of domiciliary companies and trusts. There was also pushback against a threshold of CHF 10,000 in cash transactions after which AML obligations would be triggered: the measure failed to pass and luxury good vendors will only have to alert authorities only if a client seeks to spend over CHF 100,000 in cash on goods. Such pushbacks essentially reflect the vested interests and lobbying influence of those segments of the Swiss legal profession that benefit financially from the "shadow economy". At the same time, resistance to reform may also reflect genuine concerns about the cost-effectiveness of AML frameworks.

Some observers emphasize the need to strike a balance between the burden on businesses and effective deterrence of money laundering activities. From a cost–benefit standpoint, expanded and tightened AML frameworks have arguably been advocated for without providing clear evidence of likely efficacy or proper cost–benefit analysis (Geiger and Wuensch 2007). Some analyses find that the benefits of AML prevention are small compared to the AML compliance cost burden associated with increasing compliance workloads, lost productivity and delayed customer on-boarding, leading overall to reduced transaction volumes (Geiger and Wuensch 2007; Cuéllar 2003; Pol 2020). Where compliance costs exceed recovered criminal funds, there is need for a thorough review of the current AML approach.

2.2.1.3 Penalties for Enablers of Defeated Tax Avoidance Schemes

The criminal law responses discussed above do not concern aggressive cross-border tax avoidance schemes, which generally do not result in criminal offences being committed.[35] Additional legislation is needed, outside of criminal law, to sanction the facilitation of costly tax avoidance practices.

A model is offered by the new UK penalties for enablers of defeated tax avoidance schemes.[36] Under the UK enabler legislation, when a tax arrangement is found abusive by the tax administration, any person who enabled the defeated scheme is charged a penalty. The penalty is set equal to the total amount received for enabling the arrangement. The sanction impacts any person who, in the course of their business, enables abusive tax arrangements – the designer, manager, or marketer of the arrangement; an enabling participant in the arrangement; or a financial enabler in relation to the arrangements (HM Revenue & Customs 2018). When the enabler is an "employee" of a firm, the enabler is the employer, not the employee.

In this area, a proper balance must be struck between deterring facilitation of aggressive tax planning schemes and not hindering the activity of the majority of lawyers, accountants, etc. who adhere to professional standards. The UK law includes two sets of safeguards that help mitigate and manage this trade-off. First, the tax arrangement must be "defeated" to trigger enabler sanctions, which means that is has been effectively counteracted by the tax authority, and the counteraction is final.[37] Second, the

[34] On 26 June 2019, the Federal Council adopted the dispatch on the amendment of the Anti-Money Laundering Act (AMLA). Under the revised AMLA, all professional service providers in connection with the creation, management or administration of domiciliary companies and trusts would be subject to the AMLA due diligence and reporting obligations. The threshold above which precious metals and gemstone traders would undertake due diligence in case of cash payments would be lowered to CHF 15,000 (previously CHF 100,000). The Central Office for Precious Metals Control would take over anti-money laundering supervision for certain financial intermediaries in the area of trading in banking precious metals (trade assayers).

[35] For a discussion of the distinction between tax evasion and tax avoidance and the scope of IFFs, see Musselli and Bürgi Bonanomi (2020).

[36] Schedule 16 Finance Act (No.2) 2017.

[37] A scheme is counteracted when the tax administration has made adjustments to the taxpayer's tax position or its own tax position, or has entered into a contract settlement with the taxpayer; or a tribunal or court has made adjustments to the taxpayer's tax position. The counteraction becomes final when the adjustments can no longer be varied either on appeal or in any other way.

defeated scheme must be "abusive". Under the UK General Anti-Abuse Rule (GAAR), tax arrangements are abusive if they "cannot reasonably be regarded as a reasonable course of action in relation to the relevant tax provisions" (narrow "double reasonableness test"). The UK tax authority considers the opinions of a committee of independent specialists – the GAAR Advisory Panel – to assess abusive arrangements based on established guidelines and cases. Note also that an adviser who merely gives a client a second opinion on abusive arrangements is not an enabler, unless the adviser steps in the design of arrangements.[38] Overall, anti-avoidance measures in the UK, including the enablers penalties, have been effective in driving many promoters out of the market: The annual amount of tax lost through avoidance fell from £3.7 billion in the tax year 2005-2006 to an estimated £1.7 billion in 2018-2019 (HM Revenue & Customs 2021).

2.2.1.4 Mandatory Disclosure of Aggressive Tax Avoidance Schemes

Transparency-related measures may also promote more risk-averse attitudes among intermediaries such as law firms and advisors. One example is the introduction of mandatory disclosure requirements on intermediaries to detect potentially aggressive cross-border tax arrangements. For example, the new EU tax directive, DAC6,[39] imposes mandatory disclosure requirements on taxpayers and intermediaries for their cross-border tax arrangements that display certain "hallmarks" mentioned in the directive, or where the main or expected benefit of the arrangement is a tax advantage. Intermediaries are required to report down to the level of individual client names. EU-wide automatic exchange of information is planned for such reportable cross-border schemes via a Common Communication Network. Mandatory disclosure is triggered by any cross-border arrangement that affects at least one EU member state. Firms with headquarters outside the EU but operations within the EU may also be subject to the disclosure rule if they possess reportable information about a cross-border arrangement that affects EU countries.

The UK has pioneered a similar approach. Under the Disclosure of Tax Avoidance Schemes (DOTAS) legislation,[40] any person who promotes or uses an arrangement designed to provide a tax advantage must report the scheme to the revenue authority within five days of the scheme being made available or implemented. The legislation specifies a number of hallmarks and tests to determine whether disclosure is required. Non-disclosure triggers penalties. As reported by the UK revenue authority, the scheme, coupled with the enablers penalties regime, has played a part in persuading a number of promoters to exit the tax avoidance market (HM Revenue & Customs 2021).

These measures increase scrutiny of intermediaries and seek to effect behavioural change in law firms and among other advisors who benefit financially from designing and marketing aggressive tax planning schemes. This leads us to the second set of "home country" measures in the fight on IFFs: transparency.

2.2.2 Transparency

While there have been major advances in transparency in recent years (Musselli and Bürgi Bonanomi 2018), a number of stumbling blocks still limit the operational significance of several transparency initiatives implemented so far. Some key obstacles – and ways to overcome them – are discussed below

[38] Under relevant Guidelines, if the advisors suggest changes to the arrangements they would be an enabler "unless their advice goes on to set out the risks associated with implementing those suggestions, such that the advice as a whole can reasonably be read as recommending against anything that advice or opinion puts forward for consideration" (HM Revenue & Customs 2018).

[39] Council Directive (EU) 2018/822 of 25 May 2018 amending Directive 2011/16/EU as regards mandatory automatic exchange of information in the field of taxation in relation to reportable cross-border arrangements (OJ L 139, 5.6.2018, p. 1–13).

[40] Finance Act 2004, Part 7 (s.306 to s.319) (as amended by s108 of FA2007, s116 of and Sch38 to FA2008, s56 of and Sch17 to FA2010 , s215 of FA2012, s223 of FA2013 , s284 of FA2014, s117 of and Sch17 to FA2015 and s104 FA2016). For details, HM Revenue & Customs 2014.

with respect to three transparency dimensions: transparency of business structures and arrangements; tax transparency; and trade transparency.

2.2.2.1 Transparency of Business Structures and Arrangements

One of the biggest hurdles in tax transparency is identifying the "beneficial owner" behind opaque business structures. A beneficial owner is the physical person who ultimately owns, controls, or benefits from a legal vehicle or arrangement.

There is growing momentum regarding enhanced beneficial ownership disclosure. Member states of the G8, G20, and the EU pledged to establish beneficial ownership registries in 2013, 2014, and 2015, respectively (OGP 2018). At the 2016 Anti-Corruption Summit in London, several states (e.g. Britain, Afghanistan, Kenya, France, the Netherlands, and Nigeria) committed to set up public beneficial ownership registries. A strong push in this direction also comes from the fifth EU Anti-Money Laundering Directive, which requires EU members to provide public access to their registers.

In practice, there are proportionality concerns that relate to the costs and benefits of effective beneficial ownership disclosure systems. In fact, the identity of the beneficial owner can be easily concealed behind opaque and multi-layered business structures and arrangements that are effectively combined across jurisdictions to mask corruption, conceal assets, and launder money.[41] Pinpointing the beneficial owner behind such complex business structures requires extremely far-reaching disclosure requirements across multiple jurisdictions.

Enhanced beneficial ownership disclosure involves deepening and broadening the current approach to disclosure in at least three respects. First, disclosure obligations must apply to all legal entities – including companies, but also trusts, foundations, partnerships, association, and cooperative societies. Second, threshold approaches to determine the beneficial owner (for example any person owing 25 percent of a company's share) are largely insufficient, as control structures can effectively subvert these with contracts, nominator, personal connections, financing, and beneficiation. Relatedly, there must be stringent disclosure requirements vis-à-vis nominee shareholders and directors, bearer shares, and ultimate control in chains of companies. Third, there must be robust information verification mechanisms to crosscheck the information filed. If these conditions are not met, legal requirements for beneficial ownership disclosure can be easily circumvented in practice.

The above requirements entail high costs for businesses, costly verification systems for administration, and extensive granular reporting that can dilute the value of reports. In particular, the costs associated with properly verifying the information filed in a beneficial ownership register are virtually prohibitive: accurate verification of any information fed into the system is almost impossible at reasonable cost.

The high costs involved are justified only when the returns are higher in terms of recovered funds and/or deterrence. Automation and interconnection are key in this respect: The information should be centralized and interoperable to enable machine-based data processing and matching. At the national level, this implies setting up a centralized beneficial ownership register with verified and updated beneficial ownership information across various legal vehicles and arrangements, while ensuring the interoperability of the register with other commercial repositories (e.g. real estate registers, company registers, public procurement data). Far-reaching changes at the international level envisage complete cross-border interoperability of the national registers, as outlined in Section 3.

[41] The Panama papers (ICIJ 2019b), Paradise Papers (ICIJ 2019a) and Luanda Leaks (ICIJ 2020) illustrate the use of complex company structures to evade and avoid taxes. The African Union (UN ECA 2015) estimates that Africa could recover 50 billion USD each year by stemming IFFs facilitated by opaque corporate structures (potential synergies (+2) with SDG 17.4).

2.2.2.2 Tax Transparency

Transparency and exchange of information in tax matters are key to fight IFFs, including trade-related IFFs (for details, see Musselli and Bürgi Bonanomi 2018). Through the *exchange of tax information on request*, a country's tax authority can access ownership, accounting, and bank information held offshore in other jurisdictions, for a variety of tax assessment-related purposes.[42] When effectively implemented, the *automatic exchange of financial account information* is a powerful tool for developing countries to track (and recover) undeclared wealth kept in offshore bank accounts.[43] *Country-by-country (CbC) reports* can be effectively used by local tax authorities to track misalignments between where MNE economic activity takes place, and where taxable profits are declared.[44] In order for these benefits to be realized and scaled up, trading hubs like Switzerland need to ease a number of restrictions on access to and use of the tax information exchanged. Some short-term options have been discussed in Section 1.2.1. The following analyses present some options that could still be implemented in the short- to mid-term, but would require additional political and organizational efforts.

Ease legal limits on access to and use of CbC reports

CbC reporting requires MNE parent companies (consolidated group revenue ≥ EUR 750 million) to provide data about their operations in every country, including the names and locations of each entity, along with aggregate information on tangible assets, turnover, employee numbers, profits declared, and taxes paid in each jurisdiction. The MNE files the report with the home/headquarter country, who in turn shares it with qualifying exchange partners.

There are built-in limits on access to and use of CbC report data. The OECD CbC standard allows the use of CbC report data for risk-assessment purposes, but disallows the direct use of CbC data for automatic adjustments of tax returns or as a basis for apportionment of taxes across the jurisdictions where an MNE operates (see below, Section 3.1.1). Further, under the OECD model, the parent company does not send the CbC report directly to its subsidiaries for local filing, but rather files the report with the headquarter country that in turn shares it with qualifying exchange partners.

It is worth considering introducing some flexibility to allow capacity-constrained countries to use the data from the CbC reports to adjust taxpayer income on the basis of income allocation formulas. Further, developing countries could be given better access to CbC data by making CbC reports public or filing them locally. Amended in this way, CbC reporting could be part of a wider strategic shift towards implementation of simplified transfer-pricing methods in poor countries that lack the fiscal capacity for sophisticated transfer-pricing risk assessments and audits (see Sections 2.1.1 and 3.1.1).

Re-considering the "unilateral route" to information exchange

[42] Pursuant to the 'exchange on request' procedure, one country's tax authority asks for particular information from another country's tax authority. The exchange is not confined to tax returns filed with the tax authority, but can cover all foreseeably relevant information for tax assessment purposes, including ownership information (e.g. the identity of the shareholders and/or beneficial owners of a company), bank information, or accounting and transaction-level records. The information sought may already be at the disposal of the requested tax authority, or it may be held by a third party, such as for example a bank or a fiduciary (Musselli and Bürgi Bonanomi 2018).

[43] Under the automatic exchange of financial account information, or AEOI, procedure, banks collect financial information on their clients residing abroad and transmit the information once a year to the tax authority, which forwards the data to the respective tax authority abroad. For more details, see Musselli and Bürgi Bonanomi (2018).

[44] CbC reporting requires MNE parent companies (consolidated group revenue ≥ €750 million) to provide data about their operations in every country - names and locations of each entity, along with aggregate information on tangible assets, turnover, employee numbers, profits declared and tax paid, in each jurisdiction. The MNE files the report with the headquarter country that shares it with qualifying exchange partners.

Regarding the exchange of tax information, financial centres like Switzerland could reconsider the "unilateral route" to information exchange, whereby exchange would be based on a domestic law provision "operationalized" by Memoranda of Understanding (MoU) rather than bilateral exchange treaties. Operationalized by ad hoc MoU, the domestic provision could enable a tailormade approach to implementation that goes beyond the "one size fits all" solutions of existing treaty-based exchange of information standards (Musselli and Bürgi Bonanomi 2018).

Eventually, a domestic law provision may provide a legal basis to exchange information with low-income countries only and on a trial basis, in the context of pilot technical-assistance projects aimed at establishing a foundation for full-fledged exchange of information (Musselli and Bürgi Bonanomi 2018). Based on such a provision, for example, Switzerland, could volunteer and test pioneering exchange of information practices as a partner in a pilot project with low-income countries, as discussed in Section 1.3.1.4.

Assistance in the collection of taxes

Home countries may also assist other countries in the collection of taxes owed to them. They may consider a limited type of collection assistance in favour of the less developed countries that lack capacity to assess and reclaim diverted profits.

A viable approach is the retention tax agreed between Switzerland and the European Union (EU) in the taxation of savings agreement[45] entered into force on 1 July 2005 (Bürgi Bonanomi and Meyer-Nandi 2014). Under that arrangement, Switzerland agreed to levy a withholding tax at source on all interest payments made by paying agents located on the Swiss territory – for instance a bank – to natural persons fiscally resident in an EU member country.[46] The withholding tax rate was 15 percent initially, with gradual increases to 20 percent (1 July 2008) and 35 percent (since 1 July 2011). Seventy-five (75) percent of the revenue generated by the retention tax was then allocated to the EU and its member states, with the rest allocated to Switzerland to cover collection expenses (Federal Department of Finance 2017). The objective was to prevent taxpayers from EU countries from circumventing the directive on the taxation of savings income[47] by investing in financial centres outside the EU.

Withholding taxes and corresponding transfers offer an interesting alternative to complex exchange of information and administrative assistance procedures for developing countries. They are discussed in more detail in Bürgi Bonanomi and Meyer-Nandi (2014), which the reader is encouraged to consult.

2.2.2.3 Payment and Contract Transparency

A key transparency issue is the extension of payments-to-governments (PtG) disclosure requirements to traders. Under the existing PtG disclosure regimes,[48] extractive companies are required to report payments to governments by project, whether in money or in kind. Disclosure requirements only cover payments related to upstream exploration and extraction activities. They do not cover trading activities, which remain shrouded in significant opacity and secrecy.

[45] *Agreement between the European Community and the Swiss Confederation providing for measures equivalent to those laid down in Council Directive 2003/48/EC on taxation of savings income in the form of interest payments - Memorandum of Understanding* (OJ L 385, 29.12.2004, p. 30–49).

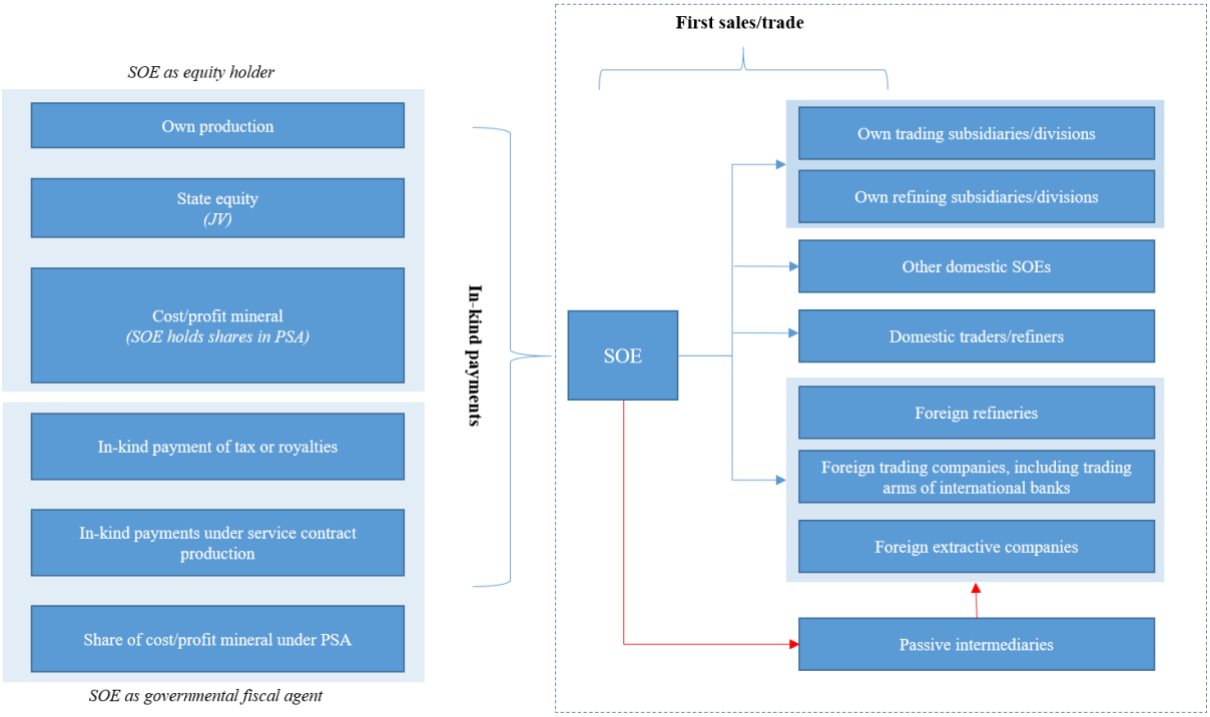
[46] The retention tax applied to investment income including interest from bonds and similar debt instruments, interest on domestic bank deposits, as well as dividends and liquidation distributions from shares.

[47] Council Directive 2003/48/EC of 3 June 2003 on taxation of savings income in the form of interest payments (OJ L 157, 26.6.2003, p. 38–48). The directive provided for the taxation of cross-border interest payments to natural person.

[48] See, in particular, Section 1504 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, the EU Accounting Directive (Directive 2013/34/EU) and the EU Transparency Directive (2013/50/UE), and Canada's Extractive Sector Transparency Measures Act (ESTMA).

The issue is hotly debated (Malden and Williams 2018, EITI 2017) with respect to "first purchase" payments and volumes, or "first trades"– i.e. when traders buy oil, gas, and minerals from a government agency or SOE (Figure 7). If PtG disclosure were extended to traders, traders would have to publicly report on the purchase side of the "first trade" transaction: what they buy, from whom, and at which price.

Figure 7: "First trades" in minerals



Source: Author, based on EITI Guidance note 26 (EITI 2017).

Payment disclosure by traders is technically possible. The Extractive Industries Transparency Initiative (EITI) has developed a reporting template for SOE "first sales" that can be applied, on the purchase side, to traders.[49] A major trading company, Trafigura Beheer B.V., voluntarily discloses payments to governments in EITI implementing countries. Trafigura publicly discloses direct "first purchase" payments (in USD) and volumes (tonnes) for crude, products and gas. The information is disclosed with a one-year time lag. It is disaggregated by counterpart in the case of payments to national oil companies in EITI implementing countries where the load-port is the same EITI country.

However, views diverge concerning the ideal level of granularity of disclosed information, and there is substantial disagreement over the type of contextual information to disclose about the commodity sale process. Complex trade-offs arise in this area between usefulness/relevance and confidentiality. On the one hand, detailed and contextual information disclosure is needed for efficient data interpretation and effective data use. For example, it is not enough to disclose volumes purchased and values paid: the information should be disaggregated by individual seller, contract and cargo/sale, with additional information regarding grade and quality of product, type of contract (spot or term), specific International Commercial Terms (Incoterms) governing the trade, as well as fees, charges and credits. On the other

[49] Under Requirement 4.2 of the EITI Standard (EITI 2019), a state-owned enterprise/other government agency in charge of marketing the state's oil, gas and minerals must disclose the revenues that it collects from sales of such resources. The requirement encourages buying companies to disclose information regarding the volumes received and payments made to governments/SOEs for the purchase of oil, gas and/or mineral resources.

hand, this level of disclosure could expose sensitive data, sometimes protected under confidentiality clauses in contracts and supply agreements. Such trade-offs raise questions as to who is better positioned to disclose: The selling entity – a government agency or state-owned enterprise (SOE); or the buyer – a commercial entity. The EITI approach envisages that both parties disclose and that their reports are cross-matched and reconciled. Open questions remain on a number of technical issues (Box 2).

Box 2: Key issues regarding "first trade" disclosures

Selling entities to be covered: Which selling entities should be covered – government agencies, SOEs, and/or third parties/contactors appointed by the state to sell on their behalf? What about indirect "first sales" through intermediaries? In some countries, the regulator appoints the SOE and/or private contractors to sell the oil. Many SOEs sell to "passive intermediary companies", including banks, which pass on the product on to, among others, international traders. Traders, on their side, can insert middlemen into deals so as to avoid dealing directly with SOEs. If disclosure were limited to direct "first sales" by a government agency or SOE, the disclosure requirements could be easily circumvented by selling through intermediaries. If the scope of reporting requirements covered indirect "first purchases" through intermediaries, traders would need to change their traceability systems, which pick up the data thread from the point at which they take title.

Materiality: Which purchases from governments or SOEs should be considered material and should be covered by disclosure? How best to establish a materiality level for disclosure in relation to commodity trading transactions? As observed in relation to the minimum level of reporting for extractive companies, setting the threshold too high "would leave important payment streams undisclosed and could encourage companies and governments to structure payments in future contracts in a way that would avoid the disclosure requirement"; setting the threshold too low would cloud the data with irrelevant information and result in undue compliance burdens (Letter from Rep. Frank et al., SEC Final Rule 2012).

Dataset to be disclosed: Particular issues arise as regards long-term contracts, "in-kind payments" and "unconventional sales" – for example swap sales in the form of "crude-for-petroleum products", pre-payment deals, and oil-backed loans.[50] For these deals, efficient interpretation and use of disclosed data on volume purchased and value paid require knowledge of key terms of the underlying arrangements, with some conflation between "payments disclosure" and "contract transparency".

Reporting template: The EITI has developed a reporting template for "first sales" by SOEs that can be applied, on the purchase side, to traders. The application of the reporting template to traders is not straightforward. For example, it could be difficult for traders to specify a shipment destination, as destinations are often switchable and defined *en route*, unless when specified in contract. As regards payments, traders can easily disclose the payment, i.e. the cargo value, but it could be difficult to specify charges and fees deducted, for example, demurrage costs. This is due to the fact that certain costs are not specifically incurred for a trade and their shipment-by-shipment recording would require accounting/record-keeping changes in the trade.

2.2.3 Whistle-Blower Protection

Whistle-blowers have effectively exposed secretive information on opaque business structures and arrangements that mask corruption, money laundering, and tax evasion/ avoidance. Misdeeds uncovered in the Panama Papers and Luxleaks, for example, were brought to light by whistle-blowers. Developing countries' request for assistance in tax-dodging probes often arise from information leaked by whistle-blowers.[51] Creation of strong protective frameworks for whistle-blowers can indirectly aid detection of

[50] See also EITI requirement 4.3 (Infrastructure provisions and barter arrangements) (EITI 2019).
[51] For example, an information request submitted by India to Switzerland, upon which the Swiss highest Court ruled in 2018, involved information leaked by whistle-blower Herve Falciani, a French citizen who had worked for HSBC's Swiss private bank.

illicit flows from developing countries associated with corruption, unlawful tax evasion/avoidance, and money laundering.

Major offshore wealth centres lack an adequate protection framework for whistle-blowers. For example, the OECD Working Group on Bribery has consistently highlighted the inadequacy of Switzerland's legal protection framework for whistle-blowers. Switzerland does not have specific legislation to protect whistle-blowers in the private sector. Private sector employees are subject to several legal obligations of secrecy,[52] which are strongly enforced. If an employee reports suspicious transactions to a body or a person outside the company, under case law protection is only available where there is a general or third-party interest to disclose that takes precedence over the legitimate interest of the employer. As pointed out in the OECD peer review of Switzerland, these criteria are imprecise and subject to the discretion of the court on a case-by-case basis (OECD 2018). By contrast, if an adequate regulatory framework to protect whistle-blowers were put in place, it would include the following features (OECD 2018): a clearly defined framework to ensure the confidentiality of reports on suspected wrongdoing and protection of the identity of whistle-blowers; safeguards other than compensation for unfair dismissal, including protection from being fired, demoted, or discriminated against; shifting of the burden of proof onto the employer to justify dismissal or any other discrimination against an employee; sanctions for those who take retaliatory measures against whistle-blowers; exemption from violation of professional confidentiality; exemption from liability in the event that a whistle-blower is the subject of a claim for civil, administrative, or criminal liability in connection with her/his report; coverage of employees whose contract or working environment is not covered by an employment contract within the meaning of the Code of Obligations, including volunteers, retirees, the self-employed, etc. (OECD 2018).

There are perceived trade-offs between enhanced whistle-blower protection, on the one hand, and secrecy or confidentiality concerns, on the other. However, these trade-offs can be managed by means of qualified exceptions and defences introduced in secrecy and confidentiality provisions. Note also that whistle-blower protection does not imply going public straightaway. A three-tier reporting system is generally foreseen consisting of internal reporting channels, reporting to competent authorities, and public/media reporting as a measure of last resort – if other channels do not work or could not reasonably be expected to work.

2.2.4 Supply Chain Due Diligence

Companies in major headquarter states like Switzerland have come under increased scrutiny for their alleged links to corrupt intermediaries sourcing commodities from high-risk countries (see, for example, Global Witness and Public Eye 2018 and Public Eye and TRIAL 2020). The concerns raised centre around allegations of corruption and complicity in pillage, human rights violations, and environmental abuse. They raise IFF issues associated with illegal commodity trade and corruption, when funds are illegally earned and/or utilized across borders.

The developing countries where MNEs operate often lack the institutional capacity to effectively enforce national laws and regulations against transnational businesses, or they may feel constrained from doing so by having to compete internationally for investment. Against this background, there is growing international recognition of the legal obligation of home states to prevent abuses by their companies overseas. This is reflected in a number of opinions of UN Treaty Bodies and Special

[52] Under Swiss law, the duty of care and loyalty (Article 321a(4) Code of Obligations (CO)), commercial secrecy (Article 162 Swiss Criminal Code (SCC)), professional secrecy for certain professions (Article 321 SCC), bank secrecy, which is binding under certain circumstances (Article 47 of the Federal Banking Act), and secrecy for those in the accountancy profession, referred to as "duty of discretion" (Article 730b(2) CO)

Procedures (UN Committee on Economic, Social and Cultural Rights 2011; UN Committee on the Rights of the Child 2013; UN Human Rights Committee 2004) and in expert opinion (ETO Consortium 2013).[53]

In practice, home states can influence corporate conduct abroad through a variety of regulatory actions (cf. Zerk 2010). They typically involve domestic measures with extraterritorial implications – including reporting and due diligence obligations variously enshrined in company law, accounting laws, and securities rules. In relation to primary commodities, the diverse array of policy domains through which home states have acted include mandatory due diligence requirements, mandatory sustainability reporting, legislative requirements on institutional investors and financers, listing requirements and accounting obligations, and redefinition of directors' fiduciary duties. Some examples of measures are given in Box 3.

Box 3: Home country measures to promote corporate due diligence abroad

Mandatory due diligence requirements and responsibility rules. In March 2017, France adopted a law that requires parent and subcontracting companies to identify and prevent negative environmental and human rights impacts stemming from their own activities or those of their subsidiaries, suppliers, or subcontractors.[54] The law has extraterritorial reach, since the "duty of vigilance" must be exercised by a company throughout its entire global supply chain, and victims are entitled to seek justice in a French court even when the harm occurred elsewhere (Cossart et al 2017). The European Commission announced that it would present a legislative proposal on mandatory human rights and environmental due diligence in 2021. The introduction of a mandatory human rights due diligence law is being discussed in Germany. In Switzerland, a similar initiative (the Responsible Business Initiative) was rejected by the majority of the cantons, despite gaining 50.7 percent of popular vote.

Supply chain due diligence requirements for responsible sourcing of commodities potentially originating from conflict-affected and high-risk areas ("conflict commodities"). For example, the Regulation (EU) 2017/821 of the European Parliament and of the Council of 17 May 2017 lays down supply chain due diligence obligations for EU importers of tin, tantalum, and tungsten, their ores, and gold originating from conflict-affected and high-risk areas.[55] Following the EU model, Switzerland is introducing human rights due diligence requirements for enterprises processing or importing conflict minerals or e having a reasonable suspicion of child labour (Parliament's indirect counterproposal to the Responsible Business Initiative).

Legislative requirements on institutional investors and financers to perform human rights impact assessments. An example is the obligation imposed on pensions funds in the UK by the Occupational Pension Schemes (Investment) Regulations 2005[56] to provide a Statement of Investment Principles, stating whether, and to what extent, environmental, social, and governance (ESG) issues were considered when making investment decisions. Mutual funds in France are similarly required to report the precise criteria used to analyse ESG issues, in their rules and prospectus, as well as the implementation of ESG mechanisms, in their annual reports. Norway, for its part, has gone one step further: Norway's parliament agreed in June 2019 to strengthen existing limits on coal investments by the Norwegian wealth fund, by excluding companies that mined more than 20 million tonnes of coal a year or generated more than 10 gigawatts of power from coal. As a consequence, the Fund promptly divested from Glencore, Anglo American, and other utilities and petrochemical companies.

[53] The extraterritorial dimension of this obligation, however, remains contested by a few States. Nor is it enshrined in the UN Guiding Principles on Business and Human Rights (Ruggie 2011).

[54] Law No. 2017-399 of 27 March 2017 'relative au devoir de vigilance des sociétés mères et des entreprises donneuses d'ordre'. Article 1 specifies that "*Le plan comporte les mesures de vigilance raisonnable propres à identifier les risques et à prévenir les atteintes graves envers les droits humains et les libertés fondamentales, la santé et la sécurité des personnes ainsi que l'environnement, résultant des activités de la société et de celles des sociétés qu'elle contrôle au sens du II de l'article L. 233-16, directement ou indirectement, ainsi que des activités des sous-traitants ou fournisseurs avec lesquels est entretenue une relation commerciale établie, lorsque ces activités sont rattachées à cette relation*."

[55] Regulation (EU) 2017/821 of the European Parliament and of the Council of 17 May 2017 laying down supply chain due diligence obligations for Union importers of tin, tantalum and tungsten, their ores, and gold originating from conflict-affected and high-risk areas (OJ L 130, 19.5.2017, p. 1–20). EU importers of minerals or metals shall adopt and disclose supply chain policy for minerals and metals potentially originating from conflict-affected and high-risk areas; incorporate their supply chain policy into contracts and agreements with suppliers; operate a chain of custody or supply chain traceability system and collect, disclose and verify information on the mineral's origin and chain of custody; and structure their respective internal management systems to support supply chain due diligence. Standard compliance is verified through third party audit and ex-post checks by Member State competent authorities.

[56] Occupational Pension Schemes (Investment) Regulations 2005 SI 3378, 2005.

Mandatory sustainability reporting by large enterprises. For example, in the EU, Directive 2014/95/EU[57] requires that large business entities include in their management report a non-financial statement containing information covering, at minimum, environmental, social and employee matters; respect for human rights; as well as anti-corruption and bribery matters. The Directive does not specifically set due diligence requirements or responsibility rules, even if companies are required to report on the due diligence processes they implement, "also regarding, where relevant and proportionate, its supply and subcontracting chains" (Preamble, 6)). The Directive applies to "large undertakings",[58] in excess of 500 employees, admitted to trading on a regulated market in the EU. Following the EU approach, upcoming regulation in Switzerland provides for non-financial reporting obligations for large publicly listed companies and prudentially supervised financial institutions (Parliament's indirect counterproposal to the Responsible Business Initiative).

Payment to governments (PtG) disclosure laws. In the United States, Section 13(q) of the Exchange Act required US-listed companies to annually disclose cash or in-kind payments made to foreign governments or the US federal government for the purpose of commercial development of oil, natural gas, or minerals. Disclosure was required on a country-by-country and project-by-project basis. The EU Accounting Directive (Directive 2013/34/EU) and the EU Transparency Directive (2013/50/UE) similarly require oil, gas, mining, and logging companies to disclose specified payments to governments. The legislation covers "large undertakings" incorporated in the EU or the EEA, as well as publicly listed companies on EU-regulated markets. Similar PtG disclosure obligations were introduced by Canada's Extractive Sector Transparency Measures Act (ESTMA) for companies listed on a stock exchange in Canada or "large" Canadian companies.

S*pecific disclosure and reporting obligations for certain companies under accounting laws and listing requirements*. In the United States, pursuant to Section 1502 (the ''Conflict Minerals Provision'') of the Dodd-Frank Act, the US Securities and Exchange Commission (SEC) issued disclosure and reporting regulations regarding the use of conflict minerals from the Democratic Republic of the Congo and adjoining countries.[59] General accounting law may also require consideration of social, environmental and non-financial risks. In Switzerland, for example, accounting legislation requires companies subject to ordinary audit – namely listed companies, companies that exceed defined turnover/balance sheet total/employee thresholds, and groups – to include a general assessment of risk in their management report. This may also include human rights risks, where relevant (Tratschin et al. 2018, at 49; Swiss Government 2016, at 20).

A redefinition of fiduciary duties, requiring directors to demonstrate regard for social, environmental, and non-financial issues. For example, the revised Section 172 (1) (d) of the United Kingdom Companies Act (2006) requires directors to "have regard" to such matters as "the impact of the company's operations on the community and the environment". Under Swiss law, the obligation to assess human rights impacts can also be derived from the duty of care and loyalty of the board of directors (art. 717 Code of Obligations), although only "under restricted circumstances" (Tratschin et al. 2018, at 49).

These mechanisms may effectively influence and promote behavioural changes in corporate governance, triggering improvements across the whole supply chain. However, much depends on their design and implementation. For example, mandatory sustainability reporting is of little use if companies are free to report any information they wish. But it could be a useful policy tool if the law narrowly defines the type and format of information that must be disclosed and links it to listing requirements and accounting frameworks. The information should make it possible to consistently and objectively measure companies' performance regarding such issues as tax avoidance and evasion, anti-money laundering, and corruption.

Further, there is a need for more impact measurement and performance analysis of supply chain transparency and due diligence initiatives. Indeed, there is significant policy emphasis on such initiatives despite a lack of empirical scrutiny of results. Some research findings offer a cautionary tale

[57] Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups Text with EEA relevance (OJ L 330, 15.11.2014, p. 1–9).

[58] "Large undertakings" are defined by reference to the average number of employees, balance sheet total and net turnover.

[59] The proposed rules, then repealed, applied to publicly listed companies for which "conflict minerals" were "'necessary to the functionality or production of a product manufactured by such person" (Exchange Act Section 13(p)(2)(b)). The term ''conflict mineral'' is defined in Section 1502(e)(4) of the Act as covering a) coltan (the metal ore from which tantalum is extracted); cassiterite (the metal ore from which tin is extracted); gold; wolframite (the metal ore from which tungsten is extracted); or their derivatives; or b) any other mineral or its derivatives determined by the Secretary of State to be financing conflict in the DRC countries. The covered issuer should disclose annually whether the company used any conflict minerals in the RDC or an adjoining country and, if so, the measures taken by the issuer to exercise due diligence on the source and chain of custody of its conflict minerals (Securities and Exchange Commission 2010).

about possible unintended consequences of well-intended schemes.[60] More generally, there is a risk of due diligence and risk-assessment procedures being used defensively to shield companies from liability. In other words, companies might effectively establish protection from criminal charges and civil penalties thanks to having standard preventive procedures in place, independent of their actual effectiveness.

2.2.5 Tackling Distortive Tax Incentives Pending Coordinated Responses

Favourable tax rates and other tax incentives are a significant "pull" factor behind profit shifting. Tax differentials affect both real investment ("genuine" profit shifting) and the shifting of financial flows on paper ("artificial" profit shifting). The former concerns the allocation of real activities by MNEs; it considers the impact of tax differentials on the location of foreign direct investment. The latter considers where profits are booked for tax purposes, irrespective of where the value added is actually created. The link between tax rate differentials and profit shifting is well documented in the literature (see IMF 2014 and Heckemeyer and Overesch 2013). Regarding real investment flows, for example, the IMF has suggested that a one-point reduction in the statutory corporate income tax rate in all other countries reduces a country's revenue base by 3.7 percent (IMF 2014, at 10). Turning to artificial profit shifting, "it is simply cross-country differences in statutory tax rates that matter, together with the ease with which they can be exploited" (IMF 2014, at 19).

Pending definition of a coordinated set of rules to tackle tax competition (see beyond Section 3.1), advanced economies could consider application of short- to medium-term unilateral action to protect the tax base of least-developed countries. For example, taxes paid at source in low-income countries could be made tax deductible/creditable against the tax due in the country of residence of the investor: by granting tax credits for taxes paid at source, headquarter countries like Switzerland could partly shield least- developed countries from the pressure to offer inefficient tax incentives, without increasing the overall tax burden on businesses (Meyer-Nandi 2018a).

A related course of action would be that of MNE home (residence) countries mitigating the "tax aggressiveness" of their double tax agreements (DTAs) with low-income countries who are recipients of investment flows (source states). DTAs can lead to revenue losses or gains in source countries, depending on their terms and investment effects. A development-friendly tax treaty will preserve source countries' taxing rights over foreign investment, for example by leaving unaffected the capacity of developing countries to levy withholding taxes on outbound payments made to foreign entities in respect of interest, dividends, royalties, and service fees.[61] The need for a more coherent approach between DTAs and development commitments is discussed in some detail in Musselli et al. (2020). One readily available solution would be to adopt the UN Double Tax Treaty template (United Nations 2017), which is less restrictive of source countries' taxing rights than the OECD Model (OECD 2017). Indeed, the UN Double Tax Treaty should become the "minimum standard" in negotiating tax treaties with low-income countries.

[60] Some research, for example, casts doubts on the "conflict minerals" narrative of resource governance interventions. Some empirical research points to criminal displacement effects of due diligence schemes, with armed groups switching to unregulated commodities or looting civilians, and unemployed miners in regulated sectors switching to criminal activities in order to provide for a living – with increased incidence of thefts, robberies, armed attacks and murders in regulated areas. See, e.g., Parker and Vadheim 2017; Stoop et al. 2018.

[61] Other development-friendly clauses expand the definition of permanent establishment (PE); grant tax credits at residence for the withholding taxes paid in the developing countries; make income from technical services taxable at source through a service PE definition or a service fee; allow source taxation of indirect transfers of property; and ease the requirement for corresponding transfer pricing adjustments (Meyer-Nandi 2018b, Oguttu 2018, Musselli et al. 2020)

Another pragmatic solution is that of headquarter states subjecting their resident MNEs to stringent controlled foreign companies (CFC) rules. CFC rules offer a means by which subsidiaries located in low- or zero-tax jurisdictions are subject to home-country taxation by the resident country of the parent company.[62] While CFC rules essentially protect the tax base of the resident country of the investor, they have beneficial "spillover" effects for "source" countries, where the operational units of MNEs operate (Durst 2019). This is due to the fact that CFC regimes remove the fiscal incentives MNEs have to pull income from their foreign operational subsidiaries into offshore conduit entities in zero- or low-tax jurisdictions: the profits diverted into the low-taxed entity would be subject to taxation in the home country of the ultimate parent, as if they were being repatriated. If all capital-exporting countries adopted strict CFC rules in concert, there would be little scope for profit-shifting practices through controlled entities in low-tax jurisdictions (Durst 2019, at 42). This highlights the need for international cooperation and concerted action, as discussed below.

Finally, Carbonnier and Mehrotra stress the need to address fiscal incentives that lead to miscategorise goods for customs purposes. In Switzerland and the EU, for example, silver is subject to value added tax (VAT), while gold is exempt from VAT. As pointed out by Carbonnier and Mehrotra (2020), such fiscal incentive may have the unintended effect of encouraging misclassification of silver as gold in trade statistics.[63]

[62] CFC regimes vary substantially with regard to the level of "substantial influence" or "control" to designate a company as CFC; the type of income or activities of the CFC that will be subject to taxation by the resident country; whether the foreign tax rate is relevant to the operation of the CFC regime; and the approach adopted in taxing the CFC, whether a deemed dividend approach or a "pass-through"/"pierce the corporate veil" approach. For an introduction, Avi-Yonah 2019, 36 ss.
[63] Alloys containing 2 percent or more of gold can be exported as "gold" for customs classification purposes.

3 Long-term responses

More ambitious alternatives to curb tax-motivated IFFs require cooperation and agreement at the plurilateral or multilateral level. They require coordinated responses across all major trading and financial hubs. Several options are discussed below. They are aspirational in nature as they require long-term structural reform of legal frameworks across jurisdictions. Yet they are not excessively idealistic or unrealistic: They can be implemented incrementally by interconnecting national instruments (e.g. national registries, towards the establishment of a global asset registry), or by scaling up solutions that have been effectively tested at the subnational level (e.g. unitary taxation with formulary apportionment). Overall, the major stumbling block to such reform is lack of political will.

3.1 Unitary Taxation and Minimum Taxes

Section 2 has outlined some simplified profit-allocation methods that can – at least in theory – be unilaterally implemented by low-income countries in the short or medium term. Other, more ambitious alternatives would instead require concerted international action. This is notably the case with unitary taxation of MNEs based on formulary apportionment across tax jurisdictions.[64] A related issue is the development of a co-ordinated set of rules to ensure that all internationally operating businesses pay a minimum level of tax.

3.1.1 Unitary Taxation with Formulary Apportionment

Under global formulary profit-split approaches, the profits of a corporate group would be consolidated and apportioned across jurisdictions on the basis of factors that reflect the group's *real economic activity* in each jurisdiction (e.g. sales, assets, payroll, and/or employees). This approach establishes a multijurisdictional enterprise's tax base on a "unitary" basis, and requires cooperation and agreement at the plurilateral or multilateral level (BEPS Monitoring Group 2019, Faccio and Fitzgerald 2018, Faccio and Picciotto 2017, IMF 2014).

Unitary taxation with formulary apportionment is less utopian than its detractors claim: It is a pragmatic solution that has been effectively used in some federal states to allocate a group's profits at the subnational level. In various forms, it has been used in the United States, Canada, Germany, Japan, and Switzerland to address transfer pricing at the federal level. In the US, for example, group profits are splits across state jurisdictions based on a balanced formula with three components – payroll costs, tangible assets, and sales at the state level (Avi-Yonah 2010). In Switzerland, the profits resulting from a corporate group's activities are apportioned to the Cantons on the basis of measurable, sector-specific allocation factors, such as turnover, wages and capitalised rents (Schmidheiny 2020). Today, formulary apportionment is also being considered at the supra-national level. In the European Union (EU), the European Commission has published a proposal for the consolidation and apportionment of companies' taxable profits in the EU between Member States, known as the common consolidated corporate tax base, or CCCTB. The proposal is currently under evaluation by the European Parliament. Further, unitary taxation with formulary apportionment is currently being discussed in the OECD context in relation to the apportionment of a residual non-routine profit earned by some MNEs.[65] Prospects for more ambitious adoption of international formulary apportionment at the global level currently appear

[64] Beyond "formulary apportionment", several alternative approaches are available that treat multinationals as unitary firms. They include "residence-based worldwide taxation" and the concept of a "destination-based cash flow tax". The three alternatives (unitary taxation with formulary apportionment, residence-based worldwide taxation and a destination-based cash flow tax) are discussed in Faccio and Picciotto 2017.

[65] Formulary apportionment is being discussed in relation to the apportionment between "user jurisdictions" of a residual non-routine profit that accrues to MNEs in highly-digitalized, user-interfaced lines of business - amount A under the OECD "Unified Approach" Proposal (OECD 2019).

remote, but this mainly reflects lack of political commitment rather than unsolvable technical/practical problems.

Unitary taxation merits close study as a promising approach to counter manipulative transfer pricing. Yet it is not panacea for lower income countries: Indeed, its revenue implications for poor countries would depend on the apportionment criteria agreed upon at the multilateral level, as well as their precise definitions and weighting. For example, it matters a great deal to low-income countries whether labour is defined as *payroll costs* or as the *number of employees*, or whether sales are measured on a *destination* (by residence of the purchaser) or *origin* base (by residence of the seller). IMF research stresses that, whichever allocation factor is used, advanced economies would generally increase their tax base, substantial tax proceeds would move out of conduit countries, and developing countries would gain tax flows only if major emphasis is placed on labour (IMF 2014, at 40). Note, however, that extractive sectors are not labour intensive but rather capital intensive, contrary to textile and clothing or electronics. To meet the interests of commodity-producing countries, it would be necessary to find criteria that give due credit to the fact that the natural capital of the country has been exploited to extract or produce the resources to be exported and transformed. If not, commodity exporters may stand to lose. It has also been pointed out that formulary apportionment would limit conventional transfer-pricing problems, but could create new avoidance problems relating to the factors used to apportion profits across jurisdictions: Countries would have a strong incentive to compete and attract whatever factors are given significant weight in the allocation formula (IMF 2014). In addition, consolidation could enable greater offset of losses in one part of the corporate group against profits in others, possibly reducing the overall tax liability of individual MNEs (Devereux and Loretz 2008). To sum up, unitary taxation is a promising option to curb IFFs arising from corporate tax evasion and avoidance, but it will not solve all valuation and avoidance issues. Further, its revenue impacts will vary across different groups of developing countries and will depend on the specifics of the allocation formula. The risk is that the latter will likely reflect the preferences of those states powerful enough to enforce them in negotiations.

3.1.2 Minimum Effective Taxation of MNEs

Unitary taxation intertwines with the work programme on "minimum effective taxation" of MNEs. The idea is that an internationally agreed minimum tax would reduce the incentive to shift profits for tax reasons to low taxed entities. It could effectively shield developing countries from the pressure to offer inefficient tax incentives to attract foreign investment, and in doing so help them in better mobilising domestic resources (OECD 2019b). The objective is to counter excessive tax competition and stop a harmful race to the bottom.

A systematic solution designed to ensure that all MNEs pay a minimum level of tax has been discussed by the Members of the Inclusive Framework under the so-called "Pillar Two" on the "global anti-base erosion, or GloBE proposal. Under that framework, the Members of the Inclusive Framework have agreed to explore an approach that leaves jurisdictions free to determine their own tax system, including where they set their tax rates, but allows other jurisdictions to "tax back", where income is taxed abroad at an effective rate below a minimum tax rate (OECD 2019b, at 25). This can be achieved by different means, including "income inclusion rules", "under taxed payment rules" and other technical options.[66]

[66] This objective can be achieved by different means: (1) an "income inclusion rule" that would permit a residence jurisdiction to tax the income of a foreign branch or a controlled entity if that income was subject to tax at an effective rate that is below a minimum rate; (2) an "undertaxed payments rule" that would allow states to deny a deduction or impose source-based taxation (including withholding tax) for a payment to a related party if that payment was not subject to tax at or above a minimum rate; (3) a "switch-over rule" in tax treaties that would permit a residence jurisdiction to switch from the exemption method to the credit method where the profits attributable to a permanent establishment (PE) or derived from immovable property (which is

Negotiations eventually stalled, due to political disengagement by key actors and disagreement on key technical issues, such as the level of "blending",[67] thresholds and carve-outs, and the minimum tax rate itself. Recently, an US proposal (US Department of the Treasury 2021) has given new impetus to a global agreement that implements minimum tax rules worldwide. The US has suggested a 21 percent minimum corporate tax rate on a country-by-country basis, then revised downward to a less ambitious 15 percent. The scheme would essentially operate to deny US resident corporations US tax deductions for payments to related parties in a low-tax regime – in a similar fashion to the "under taxed payment rules" under Pillar Two of BEPS 2.0. If implemented, the scheme would provide a strong incentive for countries to join a global agreement that implements minimum tax rules worldwide.

The theoretical and empirical literature remains divided about the efficiency and distributional effects of international tax competition and minimum taxes. Some argue that excessive tax competition results in net efficiency losses from a global welfare perspective, by distorting investment location decisions and leading to under-provision of public goods and services (see, for example, Zodrow and Mieskowski 1986, Zucman et al 2020). Others contend that tax competition is efficient and welfare improving, at least if its intensity is not too high (for a review of the literature, see FFA and FTA 2005). Proponents of this view argue that sub-optimally high corporate income tax rates may be harmful for investment and innovation and negatively associated with growth rates, regardless of other jurisdiction's tax policy.

3.2 A Global Asset Registry

As discussed in Section 2.2.2, transparency of beneficial ownership is key to curb IFFs from developing countries, in particular by shedding light on the opaque business structures and arrangements that are used to mask corruption, conceal assets, and launder money. Significant progress has been made through tax transparency measures, such as the automatic, multilateral exchange of bank account data, exchange between tax authorities of CbC reports from MNEs, and the establishment of public registries of beneficial ownership. Yet these systems remain scattered, disconnected, and narrow in scope, and the data is held privately by a limited number of tax authorities. A global asset registry (GAR) has been proposed "to link the existing data and provide missing wealth data" (ICRCT 2019, at 3).

The GAR should be seen "as a feasible and sensible extension of current transparency approaches" (ICRCT 2019, at 6). The global registry should interconnect national asset registries (e.g. registries of land, companies, trusts, and foundations; and central depositories of securities' ownership), and combine the information with consistent legal entity and taxpayer identifier numbers. It should cover all relevant assets – securities and other financial assets, real estate, as well as luxury items that are already subject to some form of registration, for example luxury cars, planes, and ships. The register could be public, in open data format, or made accessible to developing countries' authorities on lenient terms – for example, by granting access to parties to the amended Convention on Mutual Administrative Assistance in Tax Matters, without the need to conclude further competent authority agreements. A potential first step towards establishing a GAR would be piloting a sectoral GAR in major financial centres in relation to specific types of wealth that are already subject to registration, for example real estate or securities (ICRICT 2019).

As discussed in Section 2.2.2.3, setting up verified beneficial ownership registries is extremely costly at the national level. A global GAR would make it possible to capitalize on these existing costs while

not part of a PE) are subject to an effective rate below the minimum rate; and (4) a "subject to tax rule" that would allow source countries to grant certain treaty benefits if the item of income was subject to tax at a minimum rate" (OECD 2019b).

[67] "Blending" refers to the extent to which a MNE can combine high- and low-tax income from different sources in determining the effective tax rate. Blending can be worldwide, jurisdictionally (on a country-by-country basis, and on an entity level.

creating economies of scale in detecting and recovering undeclared offshore wealth, with relatively moderate incremental costs linked to making the national systems inter-operational.

3.3 Leveraging Sustainable Finance and Investment

There is growing attention to banks, insurers, and institutional investors as possible levers to promote a corporate culture that respects social, environmental, and governance (ESG) standards. Put simply, financial institutions should fund, invest in, and provide insurance for activities that fulfil specific sustainability metrics and processes. By redirecting money into sustainable activities, institutional and private investors can proactively restructure business incentives and catalyse long-term structural reform in corporate conduct. The approach has been tested in project financing,[68] trade finance,[69] with respect to listing requirements,[70] and for institutional investors such as mutual funds, pension funds, and insurers[71] through a mix of legislative initiatives and voluntary action.

There are various approaches to incorporating sustainability criteria in investment decisions, ranging from "exclusion" to "integration" (UBS 2015). Under exclusionary approaches, specific firms are removed from investment portfolios based on their sector of activity (tobacco, alcohol, arms, etc.) or other criteria (e.g. carbon emissions). By contrast, integration approaches combine ESG information with traditional financial considerations when screening investments through a traditional risk assessment lens. Investors may rely on ESG ratings (absolute ratings and best-in-class screening) to select securities, or incorporate sustainability considerations into traditional financial analysis of costs and revenue.

While integration approaches are becoming the state of the art in sustainable finance, exclusion approaches are comparatively easier to administer and particularly relevant in the IFF area. A hypothetical exclusionary approach that levers finance in the fight against IFFs would be one that bans

[68] The Policy and Performance Standards on Social and Environmental Sustainability adopted by the International Finance Corporation (IFC), define IFC clients' ESG requirements for receiving and retaining IFC support (http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards). The standards include requirements relating to labour rights, community relations and indigenous peoples' rights, as well as pollution and biodiversity. The Equator Principles (http://www.equator-principles.com) were adopted in June 2003 by 10 financial institutions as a bank industry framework for addressing environmental and social risks in project financing. The Principles require the adhering banks (known as Equator Banks) to categorise projects according to social and environmental impacts. Depending on categorisation, there are requirements on borrowers for social and environmental impact assessment and environmental action plans.

[69] For example, as of 1 January 2016, the Swiss Export Risk Insurance (SERV) requires applicants to conduct human rights due diligence and denies insurance/guarantee cover if the applicant's project does not meet international human rights standards (See Art. 8 (of) the Ordinance on Swiss Export Risk Insurance [SERV-O]). When deciding whether or not to grant cover, SERV also takes account of the findings made by the National Contact Point for the OECD Guidelines for Multinational Enterprises (Swiss Government 2016). In the United States, Ex-Im Bank and the State Department have developed consultation procedures on human rights (Export-Import Bank of the United States, Report to the U.S. Congress on Export Credit Competition and the Export-Import Bank of the United States, June 2007 (Appendix G: Human Rights and Other Foreign Policy Considerations); Chafee Amendment to the Export-Import Bank Act of 1945 (P.L. 95-630, 92 Stat. 3724, as amended in 2002 by P.L. 107-189); Halifax Initiative). OECD countries have adopted a Recommendation that sets environment-related requirements for export deals to qualify for export credit backing from their governments' ECAs (OECD Revised Council Recommendation on Common Approaches on the Environment and Officially Supported Export Credits (TAD/ECG(2007)9), adopted by the OECD Council on 12 June 2007). A number of export credit agencies, including Export Development Canada (EDC), Ex-Im Bank in the United States, and the UK Export Credits Guarantee Department (UK), report that they routinely examine human rights and other foreign policy considerations in their assessment of the risks associated with transactions in specific countries, as part of their due diligence process.

[70] In Switzerland, listed companies are required under Article 53 of the SIX Swiss Exchange Listing Rules to report on human rights matters where these might affect the company's share price (Swiss Government 2016). In the United States, certain publicly listed companies are subject to special due diligence obligations and disclosure requirements in relation to "conflict minerals" and payments to governments (Sections 1502 and 1504 of the Dodd Franck Act). Similar requirements exist in the EU. These requirements apply to domestic and foreign companies that are listed on the exchange, wherever they are registered or incorporated, thus playing an important role in levelling the playing field and overcoming collective action problems.

[71] For instance, the Norwegian Government Pension Fund has black-listed and publicly divested from a number of companies based on their alleged complicity in human rights abuses.

companies convicted of tax evasion, bribery, or money laundering from finance, insurance coverage, and equity investment. The process, whether voluntary or mandatory, would involve the following steps: (1) financial investors screen existing/prospective clients for financial crime convictions, possibly relying on a database (easy to set up and maintain, since corporate crimes are recorded and public); (2) convicted companies are removed from existing portfolios and banned from finance/investment/insurance coverage; (2) the process is repeated annually for existing clients. Exclusion would be based on objective criteria – verdicts of courts of law. The question of materiality (determining the applicable materiality threshold that only capture serious violations) is straightforward: the criminal threshold already sets the bar high because only serious forms of business misconduct (bribery, money laundering, tax fraud) qualify as crimes. If the screening relied on a database and were automated, the operational costs of the scheme would be low.

While ESG approaches in finance remain mostly voluntary,[72] the nature of the challenge requires transitioning to mandatory framework conditions, complemented by targeted self-regulation (WWF and PwC 2020). Soft commitments should turn into legal obligations for financial actors, starting from such institutional investors as pension funds, insurers, and state banks. A prescriptive approach is needed to set up a coherent enabling framework that proactively restructures business incentives in harmonized ways across countries.

Multilaterally agreed mandatory framework conditions are needed to overcome a number of structural obstacles, in at least three respects:

First, the law is needed to proactively restructure business incentives and disincentives, and catalyse behavioural change towards optimal societal outcomes. The short-term mindset of financial markets is an issue. As emphasized by one commentator, "[t]here is a structural and intellectual roadblock in the investment management industry […] that leads to discounting the costs of environmental issues – short-termism (also known as investment myopia). When portfolio managers are hired and paid under mandates to outperform over the following few quarters or year, they tend to ignore longer-term issues that have tremendous future costs for their fund investors, society and portfolio companies" (UNEP Finance Initiative and Freshfields 2005, at 28). Further, investors hold broad market indices and do not consider the specific record of individual companies. From an investor perspective, sector-specific risks are unlikely to comprise a significant risk variable in a large diversified portfolio. The state should step in to proactively restructure business incentives in this area.

Second, concerted legal reform is needed across countries to diminish the scope for regulatory arbitrage. Investors and financers, as much as their clients, are trapped in competitive concerns and first-mover dilemmas. Banks and other financial intermediaries are already strictly regulated under multiple frameworks and resist the introduction of additional requirements that would overburden financers in high-standard jurisdictions and decrease their competitive edge vis-à-vis unregulated competitors. Take the example of using stock exchanges to promote sustainability standards by companies: The costs and burdens associated with compliance with expanded sustainability disclosure may push quoted

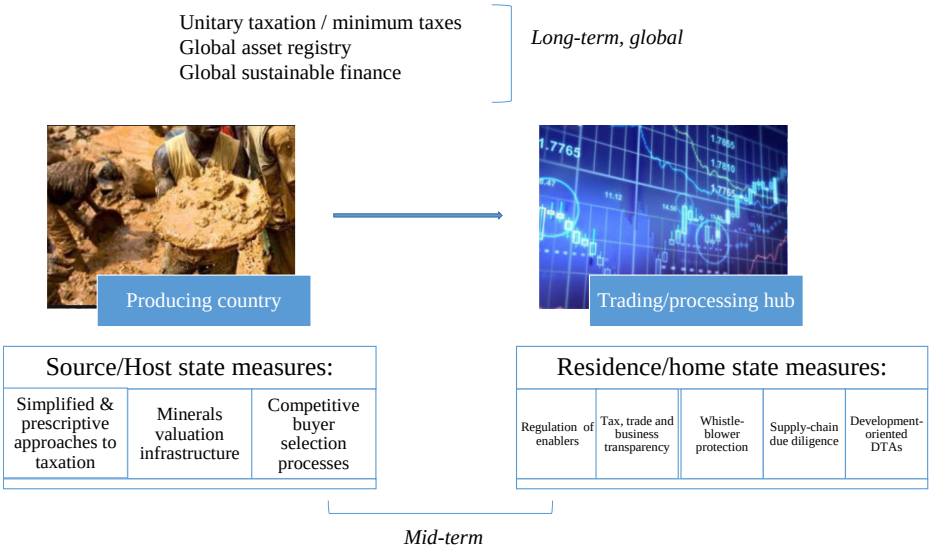
[72] Yet there is a trend towards mandatory framework conditions. See, e.g., the EU regulatory frameworks in the area of sustainable finance (Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector; Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups; Regulation (EU) 2019/2089 of the European Parliament and of the Council of 27 November 2019 amending Regulation (EU) 2016/1011 as regards EU Climate Transition Benchmarks, EU Paris-aligned Benchmarks and sustainability-related disclosures for benchmarks; Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.

companies to delist, or to list on less-regulated exchanges in non-OECD countries. A mandatory common approach by all major trading and financial hubs is key to level the playing field.

Finally, a coordinated mandatory approach is needed to ensure the consistency, comparability, transparency, and overall quality of sustainability metrics and processes. The current ESG system of industry self-regulation has resulted in proliferation of sometimes conflicting sustainability frameworks, with over 1,700 ESG-related procedures and 360 different ESG standards across the world (The Reporting Exchange, quoted in The Economist 2020). There is competition between framework providers, as evidenced in the area of environmental standards and guidance: The Sustainability Accounting Standards Board (SASB), the Task Force on Climate-related Financial Disclosures (TCFD), the Carbon Disclosure project (CDP), and private agencies such as MSCI, Standard & Poor's and Refinitiv all provide sustainability metrics and benchmarks that compete with the dominant global framework by the Global Reporting Initiative (Pavoni 2020). There is a need for a unified approach, and regulators should drive this process, in consultation with the private sector.

Since the lack of consistent and reliable sustainability disclosure is a key obstacle to integrating ESG into companies' investment processes, the integration process should go hand in hand with mandatory sustainability reporting. A more radical option is that of "hard coding" (Pavoni 2020), in which ESG requirements are incorporated into accounting standards so that they are factored into a company's financial results. This would close the time lag between financial disclosures and less frequent sustainability disclosures, and enable investors to automatically factor sustainability data into their current investment model (Financial Times 2020). Yet it would require a fundamental redefinition of accounting standards, which raises practical challenges in terms of consistent reform efforts across jurisdictions. The role of financial supervisory authorities is also in question: To what extent supervisory authorities can address ESG risks as part of their mandate to protect investors and avert financial instability. [73] The issue needs to be examined in further depth.

Figure 8: Mid- and long-term responses



Source: Authors

[73] For example, a supervisory authority may consider ESG aspects when assessing if the supervised institutions are managing the financial risks associated with "unsustainable" investment. It could also step in to ensure that consumers are not deceived by exaggerated or misleading claims about "sustainable" investment. The Swiss Financial Market Supervisory Authority is considering both aspects with respect to climate risks.

4 Concluding Remarks

The preceding analysis has presented a spectrum of options for curbing trade-related and tax-motivated IFFs. The measures outlined vary in key respects. Some can be introduced by individual states unilaterally, while others require coordination in the context of bi-, pluri- or multilateral action. Some have direct tax revenue impacts, while others have indirect impacts, mediated by several factors. Some are easier and quicker to establish, while others require structural reform in the long run. The table below categorizes and ranks the different measures based on three criteria: (1) their implementation timeframe (short, mid and long-term), (2) their revenue impact (direct or indirect), and (2) their regulatory and implementation/administration costs (high, moderate or low). For reasons of policy convenience and cost-effectiveness, four sets of measures rank as "priority" options for lower-income countries: *better allocation of sales contracts, improved mineral valuation, prescriptive approaches to taxation,* and *pro-development double tax treaties*. Such measures have direct revenue effects, in contrast to most of the other schemes, and can be implemented unilaterally (and bilaterally for double tax treaties) in the short- to medium-term. While they raise revenue–investment trade-offs, these can be easily managed if developing countries act in a coordinated way at the regional or sub-regional level.

	Implementation Timeframe	**Revenue impact**	**Investment and administrative/regulatory costs**
	short (3), mid (2), long-term (1)	Indirect (1), direct (3)	high (1), moderate (2), low (3)
Better allocation of sales contracts & improved minerals valuation (short-term options)	3	3	3
Prescriptive approaches to taxation	2	3	3
Development-friendly DTAs	2	3	3
Smart technologies	3	1	1 or 2
Improved trade data	3	1	2
Automation and enhanced data processing (tax & customs); inter-agency cooperation	3 and 2	1	2
Whistle-blower protection	2	1	2
Unitary taxation /global minimum taxes	1	3	1
Regulation of enablers	2	1	2
Transparency	2	1	1
Supply chain due diligence	2	1	1
Global sustainable finance	1	1	1
Global asset registry	1	1	1

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