

Resource-Rich Developing Countries and International Tax Reforms

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INTRODUCTION

Resource-rich countries can collect revenues from natural resources to support economic development and structural transformation, although often the revenue potential is not fully realized. Profit shifting often poses a challenge undermining the ability to effectively apply the fiscal regime.¹ Multinational enterprises through tax planning and transfer pricing may shift profits away from the source country, conflicting with the government's objective of collecting a fair share of economic rents realized from the resource extraction. Further complicating this, the concept of where value is added as natural resources are extracted is not always straightforward to establish.

This chapter examines the international tax debate focusing on the extractive industries in resource-rich developing countries.² Often developing countries are finding it challenging to effectively collect revenue from multinational enterprises, including in the mining and petroleum sectors.³ This has led to consideration of a more fundamental overhaul of the global corporate tax regime (IMF 2019). There are particular characteristics of the extractives sector, not least the globally integrated supply chains and the prevalence of multinational enterprises as well as the commonly higher tax rates, that increase vulnerabilities to profit shifting. While the physical nature of commodities reduce some monitoring challenges, commonly encountered profit-shifting risks relate to the valuation of commodities, transfer pricing affecting services and goods used during the development and production phases, and intracompany financing arrangements.

¹ The fiscal regime includes tax and nontax instruments to collect the government share of the cash flow generated by a mining or petroleum project. See, for example, the discussion in IMF (2012).

² The IMF has contributed to the international debate (for example, *International Taxation and The Extractive Industries*, IMF 2017) in addition to its country level work providing technical assistance to developing countries on fiscal issues relating to extractive industries.

³ See, for example, United Nations (2013).

This chapter contributes to the tax debate by proposing reforms to extractive industries fiscal regimes that could complement a more fundamental overhaul of the international tax architecture.⁴ Current proposals for reforms of the international corporate tax architecture recognize that the potential location-specific economic rents from nonrenewable resources provide a justification for having a special fiscal regime for the extractives. However, it is generally left unstated whether this implies maintaining the current status quo or rather if this provides a springboard for sector-specific reforms.

This chapter considers what such a reformed extractives fiscal regime might look like for developing countries, taking into account international profit shifting channels, local capacity constraints, and the importance of balancing investment attractiveness with revenue mobilization. It is premised on the sector being “carved out” of wider international tax reform.

The reform proposal preserves the primary taxing rights for mining and petroleum upstream activities at the level of the source country by replacing the corporate income tax on extractive industries with a cash flow tax targeted at resource rents, combined with a royalty to ensure a reasonable minimum tax payment. Disallowing interest deductions would close one profit-shifting channel, while other safeguards—including benchmark commodity pricing, safe harbor rules, and non-resident withholding taxes—would reduce, albeit not eliminate, the risk of profit shifting. A less fundamental reform variant would retain the corporate income tax but more carefully sequence the interaction with the cash flow-based resource rent tax using the latter as a backstop against corporate income tax profit shifting.

CHARACTERISTICS OF EXTRACTIVE INDUSTRIES AND TAX IMPLICATIONS

Structural Characteristics

Natural resource extraction provides a desirable tax base from both an efficiency and equity perspective. Notable features of natural resources relevant for tax policy formulation include the following:

- *Location-specific rents that reflect the fixed supply of nonrenewable resources:* When producers are awarded the exclusive right to extract resources, they are often able to sell those resources above their cost of extraction (including a normal return on the investment). The associated economic rents can be taxed, in principle, without distorting investment decisions.
- *High-risk/reward:* Exploration is highly uncertain and may not necessarily lead to commercially viable discoveries. In return for carrying this risk, the investor would expect a higher return. Fiscal regimes that provide for fiscal certainty and a relatively faster investment recovery reduce investor risk.

⁴ The latter was the topic of a 2019 IMF Policy Paper and is also covered in Chapters 11–14.

- *Substantial capital outlays*: The costs of developing a resource and bringing it to production are large, and the investment recovery period can be long. This implies that revenue from profit-based taxes tend to be more back loaded.
- *Cyclicity and the sensitivity of project profits to prices*: The economic rents can vary considerably over the life of a project as commodity prices and other parameters change. This means government revenues can also fluctuate significantly over time.

To realize the potential benefits from extracting mineral and hydrocarbon assets, developing countries frequently seek the technical expertise and financial investment capital of multinational enterprises. This generally allows for the most efficient development of the natural resources. These companies allocate business functions to achieve the most efficient and financially advantageous corporate structures (for example, marketing functions can be located closer to customers and borrowing sourced where there are more efficient capital markets), but these structures can also facilitate profit shifting.

Fiscal Regimes for Extractive Industries

The main economic motivation for having a special fiscal regime for extractive industries is to tax potential economic rents. The fiscal regime, therefore, is the main tool for sharing risk and reward between government and investors. Host governments must consider three aspects when designing these regimes:

- *Type of fiscal regime*: For mining, usually countries use a combination of tax and royalty. For petroleum, some countries use a tax–royalty combination, whereas others have a contractual production-sharing regime. Hybrid fiscal regimes that combine production sharing with tax and royalty are also common, while many countries also include direct state participation in projects.
- *Legislative and contractual arrangements*: Some countries include fiscal terms as part of project-specific contracts with resource companies, others in generally applicable legislation. To reduce the risk associated with their large upfront investments, many investors seek protections against future tax changes.⁵ Policymakers need to avoid unduly limiting the room for subsequent policy adjustments. A more flexible fiscal regime that ensures the government take adapts automatically to different profitability outturns will provide more predictability and hence reduce the need for explicit stability provisions.
- *Fiscal instruments*: These range from royalties imposed on the value of production, specialized resource rent taxes that are usually assessed on a cash-

⁵ Stabilized fiscal terms may serve to prevent future changes in law from applying to the investor or to restore the investor to approximately the same economic position if a change adversely affects the profitability of the project (Daniel and Sunley 2010).

flow basis for each project, and corporate income tax that is often (but not always) levied on consolidated corporate income rather than ring-fenced within a project or license area. In production-sharing contracts, the profit oil is also calculated on a cash-flow basis. It is common to have withholding taxes on outbound payments (for example, interest, dividends, and subcontractor service payments).

The current international tax architecture gives producing countries a mandate to tax resource extraction. Producing countries (that is, the source countries) effectively have the right to tax resource extraction, with the mine or well constituting a fixed place of business. This is recognized in UN and OECD model tax treaties by including mines and wells in the definition of permanent establishment.⁶ But residence-country tax arrangements are also important: this is because they impact the final tax burden imposed on a project. As more countries move their corporate income tax toward a territorial basis, this is diminishing as an issue, but may strengthen the pressures for tax competition.

Revenue from Extractive Industries in Developing Countries

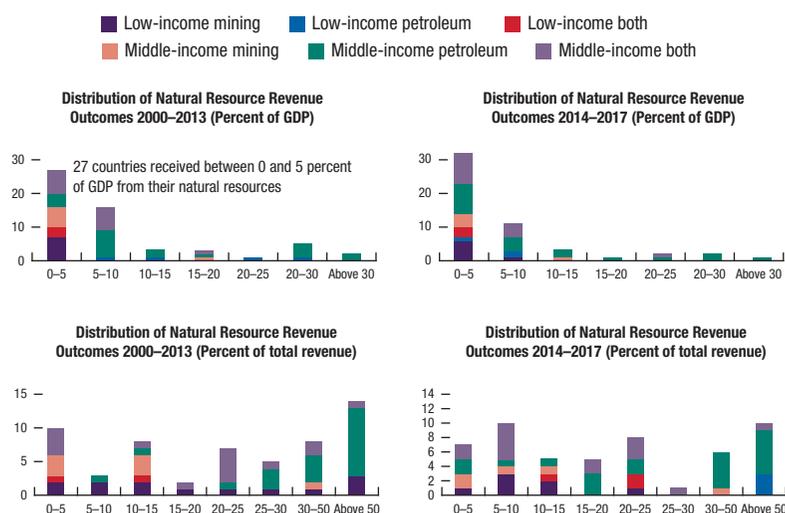
Resource revenues collections vary across developing countries. Countries with petroleum have generally higher revenue collections than those with mining, and middle-income countries, which tend to have higher capacity in policy and administration, are faring better than low-income countries (see Figure 15.1):

- *Low-income economies:* Countries with mining receive relatively little resource revenue; most are below 3 percent of GDP. Countries with petroleum production are generally collecting more resource revenue (around 9 percent of GDP or higher). This pattern is reflected in a lower resource revenue share in total revenue in mining (most countries at 13 percent or lower) relative to petroleum (most above 50 percent of total revenue).
- *Middle-income economies:* With one exception (Botswana), countries with mining receive no more than approximately 3 percent of GDP in resource revenues. Again, those countries with petroleum generally fare better—some have very low revenue (9 of 20 countries at less than 5 percent of GDP), but others are higher (4 countries at 20 percent or more). As a percentage of total revenue, countries with mining are receiving at most 11 percent of total revenue (Botswana again is the exception), while for petroleum producers, revenues make a larger contribution to the budget with 13 countries at 20 percent of total revenue or higher.

The different revenue patterns of countries with mining and petroleum sectors may be explained by several factors. Effective tax rates for petroleum are generally

⁶ Article 5.2 of the UN Model Double Tax Treaty defines a permanent establishment to include “a mine, an oil or gas well, a quarry or any other place of extraction of natural resources.” This would typically be interpreted also to include an offshore installation used to extract and process oil and gas.

Figure 15.1. Number of Countries Sorted by Resource Revenue Collections in Percent of GDP and of Total Revenue
(Percent of GDP and of total revenue)



Source: IMF based on forthcoming dataset.

higher than for mining,⁷ perhaps reflecting an expectation of lower economic rents and more employment and other non-fiscal benefits from the latter.⁸ Mispricing of oil products may be harder than for many mineral products, given their transparent international markets; the use of norm pricing to determine the value for tax purposes; and, because upon exiting the upstream, petroleum products often do not require much additional spending on transformation (for example, refining) as a proportion of their final price.⁹ Some also argue that the greater prevalence of joint-venture arrangements in petroleum, whereby joint-venture partners monitor each other closely, indirectly assists revenue authorities.¹⁰

⁷ An IMF (2012) policy paper, entitled “Fiscal Regimes for Extractive Industries—Design and Implementation,” found that effective tax rates are commonly higher in petroleum (approximately 65–85 percent) than in mining (45–65 percent).

⁸ As noted by Cameron and Stanley (2017) p.41: “[at the time of writing, t]here is nothing in mining that equates to . . . US\$8 per barrel production costs of Saudi Arabia and the Islamic Republic of Iran.” Indeed, Saudi Aramco’s 2019 Initial Public Offering prospectus estimated the company’s lifting costs at \$2.80 per barrel.

⁹ An exception may be long-term contractual pricing for gas deliveries (in particular, liquefied natural gas).

¹⁰ See Delahay and Schmalz (2019). “No profit” rules prevent any partner from charging a markup above the cost of providing a good or service to the group, limiting scope for inflated costs (Calder 2014).

INTERNATIONAL TAX CHALLENGES FACING RESOURCE-RICH DEVELOPING COUNTRIES

In many developing countries, there is a perception that revenue collected from mining and petroleum does not provide a “fair” compensation for the extraction of their natural resources. Often this is directly related to revenue risks from transfer pricing and international tax challenges. It is common to encounter pessimism by fiscal authorities regarding the capacity to effectively counter profit shifting or hear concern that the tax base has been eroded either in legislation or in contracts.¹¹ In response, some countries are reconsidering the balance between profit-based and production-based fiscal instruments, as the latter provide more certain revenue from the start of production.¹² However, unless handled in a measured fashion, this may increase distortions that will discourage investment or limit the scope of government sharing fully in the upside of more profitable projects. This section discusses common challenges in resource-rich developing countries, while the following section, “A Tax Reform Proposal for the Extractive Industries Sector,” presents a novel approach on how to address these concerns.

Profit Shifting

Profit shifting can occur through the mis-pricing of transactions between related parties (that is, vertically integrated entities within the same corporate structure or with shared ownership). Companies can transfer profits to low-tax jurisdictions in order to avoid the typically higher tax burden imposed by the source country in the upstream (where the extraction of the commodity takes place). The three common channels for transfer pricing are to lower the valuation of commodities extracted, inflate costs incurred, or charge excessive financing costs.

Challenges

The value of the extracted commodity can be underpriced when sold to related parties. Through associated sales to a nonresident affiliate, a multinational enterprise can undervalue the minerals or oil and gas production by applying discounts or charging marketing fees above the cost of services provided.¹³ The challenge for

¹¹ “Base erosion” refers to policies that narrow the tax base (for example, tax incentives), while “profit shifting” refers to strategies to shift profits abroad to lower-tax jurisdictions (for example, through transfer pricing).

¹² For example, dissatisfaction with the capacity to control costs in Indonesia led to a switch in the model production-sharing contract from a profit oil calculation to a gross production split in 2018 (effectively turning the production sharing into a royalty arrangement). Nigeria has been considering fiscal regime changes that would introduce additional price-based royalties for example, as evidenced in amendments to the Deep Offshore Act in 2019).

¹³ For some commodities such as oil and gold, norm pricing—either determined in legislation or contracts—can limit these opportunities, but these come with their own risks if poorly designed or implemented.

developing countries of verifying the pricing arrangements becomes more difficult where products are not openly traded or there is substantial vertical integration of the supply chain. This makes it more difficult to find comparable sales prices between unrelated parties on terms that match the characteristics and economic context of the transactions under review.¹⁴ Identifying an appropriate benchmark price poses specific challenges for sales of natural gas, which are often based on long-term contracts, and for unrefined minerals, where downstream smelting and refining costs may be large.

Multinational enterprise entities can also inflate payments for goods, services, and assets provided within the firm or procured from associated parties. It is common practice for extractive industries to make extensive use of nonresident subcontractors to provide services and equipment for developing and operating mining and petroleum projects. A transfer pricing risk arises whenever the subcontractor is an associated party to the multinational enterprise, and it can be nontrivial for the tax authorities to establish this if the corporate structures are complex. A parent company may also charge a subsidiary in the source country a royalty for the use of intellectual property or specialized knowledge, or payments for support services, including an allocation of overhead costs or a management fee. Alternatively, offshore entities may sell assets to the local entity at inflated prices or with financing embedded, reducing taxable income and circumventing interest withholding tax.

A perennial challenge arises from the use of related-party debt financing.¹⁵ Given the high risk, exploration activities are usually financed by equity-funded capital injections, but it is common for a multinational enterprise to use debt financing for the substantially higher investment costs during the development phase of an extractives project. Large multinational enterprises can raise corporate finance on global capital markets, which in turn can be on-lent to subsidiaries to finance individual project development. In principle, this reduces the cost by having the most efficient project-level financing. But the benefits of lower financing costs may not necessarily flow through to the source country. In practice, by charging an interest premium above their corporate level cost of financing in the subsidiary, the multinational enterprise may shift profits by inflating interest deductions at the project level in the source country. This can be achieved by increasing the interest rate, the amount of debt, or both. It can be challenging for many tax authorities to analyze these financing transactions and establish whether they are in line with usual industry practice. The origin of financing can also be hidden through “back-to-back” financing arrangements, where a third party is inserted into a transaction between the affiliates to disguise the underlying related party dealing.

¹⁴ See Calder (2017) and Platform for Collaboration on Tax (2018) for discussion.

¹⁵ See a general discussion in de Mooij and Hebous (2017).

Possible Safeguards

Countries, however, can implement safeguards to reduce the risk of commodities being undervalued. To maximize fiscal benefits, it is generally preferable to value production for fiscal purposes as close as possible to the actual point of sale or delivery. For exports of oil and minerals, this would usually be based on the free-on-board value (excluding freight and insurance costs only); for commodities with domestic processing, it may be based on the inlet point to an oil refinery or liquefied natural gas plant or the net smelter return for minerals.¹⁶ To provide more certainty, the legislation or project agreement can specify a benchmark price or formula to use for the valuation when assessing royalty, income tax or profit oil payments. This can either take the form of a general valuation rule for all sales of a particular commodity or only apply to associated party sales (Calder 2017).¹⁷ A benchmark approach is more feasible for commodities with international price indices (for example, quoted prices on the London Metal Exchange for gold or for different types and qualities of oil by Platts or other price-reporting services). For commodities without a relevant price index or with subsequent smelting costs incurred after the fiscal valuation point, an alternative is to articulate a valuation formula to be applied through an advance pricing agreement.

For the use of subcontractor services, the mining or petroleum subsidiary in the source country should report related party transactions. Tax legislation or contracts should specify that transactions be valued at market prices (guided by transfer pricing rules). This, however, can be challenging to effectively enforce as the specialized nature of goods and services used for extractive industries projects makes it difficult to identify comparators.¹⁸ Withholding taxes on payments for services provided by nonresidents can provide a blunt safeguard mechanism (albeit the lower withholding tax rates still provide a tax saving compared to the higher taxes in the extractive industries fiscal regime). A particular challenge arises when services are rendered outside of the source country even if they relate directly to the extractive industries project in the source country. Some countries have sought to overcome this through a source rule deeming that a service even if provided abroad falls within the scope of the withholding tax if payments for the service originate from the entity in the source country.¹⁹ Withholding taxes can also be applied on payments to the parent company for management fees, royalties, and other technical service fees. Contracts or even legislation can also provide

¹⁶ In cases involving associated sales there is a need for rules to clarify allowable treatment and refining cost to calculate permissible netback costs for unrefined commodities, or a mechanism to value gas as an input into a liquefaction plant (Calder 2017).

¹⁷ There may be a need to detail transparent adjustments for differences in quality and grade differences.

¹⁸ In response, tax authorities are often interested in establishing cost benchmarks, but this is also challenging, as they may have incomplete information (Calder 2017).

¹⁹ But, in turn, this can give rise to disputes with tax authorities where the service provider is resident.

a safe harbor by capping certain parent-related payments to a percentage of total costs or revenue.²⁰

Clear tax rules establishing when a subcontractor has a permanent establishment also provide certainty. Usually this is based on whether the subcontractor is incorporated in the source country or has a fixed place of business; there may be rule-of-thumb guidance on the minimum period of time required to be present in a country to trigger a permanent establishment (and an antifragmentation rule to prevent a splitting of contracts between related parties). This is important for delineating the scope of the nonresident-withholding taxes versus taxing economic activity by subcontractors under the corporate income tax. Without these legislative provisions—which are reinforced in tax treaties—substantial economic activity may go untaxed. Although if withholding taxes on gross payments exceed the corresponding corporate tax on net income, there may, of course, be an incentive for subcontractors to set up a permanent establishment in the source country. This is particularly an issue during the exploration and development phases of a project.

For financing, tax legislation can limit allowable deductions for interest and other financing costs. The traditional approach has been to have a debt leverage limit capping the allowable project debt to equity at a certain ratio (say, 2:1 or 3:1). While the cap limits the volume of debt, it does not provide protection against excessively high interest rates but can be combined with a requirement that the interest rate shall reflect comparable arms-length market rates. In some cases, the contract or legislation may even specify a numerical interest rate cap, usually linked to a specific cap above a market rate (for example, LIBOR). Challenges with the debt leverage limit relate to the definition and measurement of debt and equity (best practice is to follow international financial reporting standards).

A more recent variant is an interest limitation rule based on company-earnings. This effectively caps deductible net interest payments as a share of earnings before interest, tax, depreciation and amortization allowances (EBITDA) (see OECD 2014a). It is a broader measure reducing the risk of both high volume of debt and high interest rates. The downside is that the limit can become procyclical, potentially denying interest deductions during price downturns when earnings are lower, while permitting excessive deductions when prices are high.²¹ This is a particularly relevant issue in the extractives sector, where commodity price boom and bust cycles are prevalent. In both variants, it is common to apply withholding taxes on nonresident interest payments as an additional safeguard.²²

²⁰ With the inherent risk that the “ceiling quickly becomes the floor” (Calder 2017, p. 100).

²¹ The procyclical effect can be mitigated by allowing denied interest deductions to be carried forward for future years. However, this, in turn, implies the cap has more of an impact on the timing of revenue rather than protecting total revenue over the life of the project.

²² Although project-specific exemptions may limit effectiveness.

Protecting Source Country Taxing Rights

Source countries often do not effectively protect taxing rights in double tax treaties. Countries primarily negotiate tax treaties to promote crossborder investment, but sometimes also for political or diplomatic reasons (see also Chapter 8). Treaties that reduce withholding taxes (sometimes set to zero), remove an important backstop to the corporate income tax, an outcome hard to rationalize for mainly capital-importing countries. Developing countries may not effectively analyze the relative strengths of different treaty models, inadvertently leading to a greater allocation of taxing rights to residence countries, or omit safeguards such as on treaty shopping.²³ There may also be unanticipated interactions with contractual stability obligations, as Mongolia experienced (see Box 15.1).

Transfers of interests in mining and petroleum agreements have international tax implications. Following a significant natural resource discovery, there may be subsequent changes in ownership of the right to exploit those resources. Exploration companies may sell their interests, or smaller companies may bring in other partners with capital and technical expertise to develop the resources. The original owners of the resource rights may realize significant capital gains which, if the transaction occurs offshore or if it involves changes higher up in the ownership structure, can be hard for the source country to detect and to tax.²⁴ Model tax treaties recognize that source countries have taxing rights over gains from direct and indirect transfers of immovable property, including interests in mining or petroleum rights (in Article 13(1) and 13(4)). The key to effectively exercise this taxing right is to ensure these clauses are included in treaties, and that domestic tax legislation is carefully designed by determining the scope of taxation of the associated capital gains.²⁵

Base Erosion and Tax Competition

Adding to these potential profit-shifting revenue losses are policy decisions related to tax competition. Many developing countries continue to offer tax incentives and tax holidays, perhaps responding to pressure from investors and with an eye on regional developments. These incentives can come at a direct cost to revenue, but they can also inadvertently weaken the domestic tax system. The incentives can extend to reduce or completely remove withholding taxes either in extractive industries contracts or in treaty negotiations.

Responding to these (self-inflicted) revenue losses, some countries attempt to claw back revenue in ways that may harm the overall fiscal regime. This may be through imposing other levies on the project or by delays in processing VAT

²³ Older tax treaties may also reflect outdated treaty models unless subsequently updated and renegotiated.

²⁴ An example of an indirect transfer is if ownership of a mine changes through the sale of shares in a company that owns the mining operation rather than the direct sale of the mine asset.

²⁵ *The Taxation of Offshore Indirect Transfers: A Toolkit* explores both the policy and legislative aspects in more detail (Platform for Collaboration on Tax 2020).

Box 15.1. Mongolia's Canceled Double Tax Treaties

Tax treaties are an important element in encouraging inbound investment. But these investment benefits need to be evaluated against any tax revenue losses from withholding tax reductions and any associated risk of increased international profit shifting.

In the case of Mongolia, the government became concerned with the treaty shopping by investors via several treaties, including the treaty with the Netherlands, which had been used by some mining investors to structure their inbound investments. There was a perception that this may have been motivated by the desire to benefit from reduced withholding tax rates (in particular on dividends at a zero tax rate).¹ Following a review and some attempt at renegotiations, Mongolia took the extraordinary step of canceling its existing tax treaties with the Netherlands, Luxembourg, Kuwait, and the UAE from the beginning of 2013 (PWC 2012), arguing they were susceptible to treaty shopping.

However, in the case of the inbound mining investor agreements, authorities had afforded the stabilization of fiscal terms extending to tax treaty provisions. This meant the change to the treaty (effectively increasing withholding taxes on the investor) was not actually applied to the mining project that had primarily triggered the authorities' concerns.

¹ Hubert (2017) refers to estimates that 70 percent of foreign direct investment into Mongolia at the time was via the Netherlands.

refunds to exporters. These measures, however, can have unintended effects, adding to project costs and worsening the investment climate.

Stabilization provisions benefiting investments can also unintentionally hinder tax system improvements. Given the substantial investments required, long repayment period, and risk involved, it is understandable why investors might seek assurances against unforeseen changes to the tax system. But these stabilization provisions, if written broadly, can limit the ability of countries to update their legislation in benign ways (for example, in line with international peers such as under the BEPS process, or to correct legislative errors) (Readhead 2018). They can also complicate a tax system transition, since typically, the country must either attempt a renegotiation or wait for the clause to expire.

Gaps in Local Capacity

Lower than expected revenue collections can be attributed to several causes, but a lack of capacity is common. Many developing countries struggle to implement and administer fiscal regimes that could limit both base erosion and profit shifting.

Countries may have deficiencies in the fiscal regime that applies to resource extraction. A legislative framework that is piecemeal or poorly drafted opens opportunities for multinational enterprises to find legal loopholes to exploit. This risk may be further exacerbated in countries with contractually agreed, project-specific fiscal terms that can introduce additional loopholes (while recognizing that these agreements, if well designed, can also close them and provide certainty for both taxpayers and tax authorities). Legislative gaps can also extend to

measures such as those that help ensure taxpayer compliance (for example, to encourage information provision).²⁶

Countries also often lack capacity in revenue administration to gauge and prioritize revenue risks, detect profit shifting, and audit multinational enterprises. Tax authorities often have highly constrained budgets, leading to a shortfall of officers allocated to audit roles,²⁷ and often those auditors lack the skills and time needed to review the complex structures and contracts that multinational enterprises may adopt. In addition, lengthy court cases to challenge profit shifting may constrain available resources of many authorities, even where there is a reasonable prospect of success. There are also cases where contracts limit audit rights more than is permitted under the general tax legislation. Underlying this is a difficult trade-off: ensuring tax compliance of an extractive industries project requires auditing expenditures from the start of the development phase before a project is profitable for tax purposes; while the overall revenue implications may be large in the longer run, for a cash-constrained government it may be more appealing to focus audit resources on activities with more immediate revenue benefits.

Another difficulty is keeping track of subcontractors for income tax purposes. Companies may bring in expertise employed by another arm of the business abroad. Depending on the length of stay, it may be legally possible to connect the income of these subcontractors to the source country, but it can be difficult to keep track of these employees and time intensive for tax authorities to review their activities and apply domestic income tax law.²⁸

A TAX REFORM PROPOSAL FOR THE EXTRACTIVE INDUSTRIES SECTOR

Reinforcing the concerns regarding the revenue contribution of the mining and petroleum sectors, the international architecture for corporate taxation is under increased scrutiny. The push for international tax reform reflects challenges in applying the arm's length principle and limitations in using the physical presence concept in establishing the basis for taxation. For mining and petroleum, the former is arguably more of a challenge than the latter. There are three broad reform directions: ensuring minimum taxes on inbound (Chapter 11) and outbound investment (Chapter 12); allocation based on formulae, including through taxing the normal return in the source country and allocating residual profit using a

²⁶ According to an Ernst and Young survey, only 21 percent of multinational enterprise survey respondents said they were fully compliant with transfer pricing laws in every country they operate in. See Ernst and Young (2016).

²⁷ For example, tax authorities in Democratic Republic of the Congo, The Gambia, Guinea, Liberia, Mozambique, Sierra Leone, Uganda, and Zambia each have less than 10 auditors for the extractives sector.

²⁸ Since their legal employer is abroad, many subcontractors may not register under the local tax system.

formulaic basis (Chapter 14); or allocating taxing rights to destination countries (Chapter 13).

Notably, these fundamental reform options carve out natural resource activities for special treatment. This recognizes the principle that the location-specific economic rents provide a basis for the primary taxing rights remaining with the source country. This is best realized by having a special fiscal regime for extractive industries predominantly geared toward taxing rents, recognizing that rents may be project specific and vary over time (Annex 15.1 provides comments on the implications of these options if no carveout was made). Sufficient safeguards against profit shifting are also necessary to ensure that there is a reasonable minimum tax payable from the start to the end of production.

This section presents a conceptual proposal for extractive industries fiscal regime reform that could accompany reforms to the international tax architecture (although it could also be implemented in the absence of wider international reform). The proposal envisages the replacement of the corporate income tax for upstream resource projects with a simplified cash-flow tax and royalty system. The proposed fiscal regime would meet policymakers' dual objectives of (1) capturing a share of the location-specific economic rents via a cash-flow-based fiscal mechanism; and (2) ensuring a reasonable minimum revenue stream from the start of production. Depending on country preference, this could either be designed as a tax-royalty or a production-sharing fiscal regime.

An alternative proposal retaining the corporate income tax is also examined. The sequencing of the cash flow tax relative to the corporate income tax then becomes critical: if the resource rent tax applies to the cash flow after corporate income tax payments, profit shifting through the corporate income tax will be partly offset by higher payments of the cash-flow tax, providing a backstop against revenue leakage in the corporate income tax.

A New Fiscal Regime for Resource-Rich Countries

For the taxation of upstream production (i.e., the extraction of commodities at source), a fiscal regime package could combine several elements:

- Royalty on the value of mining and petroleum production, providing a minimum revenue share from the start of production, or, under a petroleum production sharing fiscal regime, a cost recovery limit having a similar effect.
- Resource rent tax targeted at project cash flows with appropriate ring fencing arrangements; importantly, with the cash flow base providing for immediate expensing of capital expenditure, there would be no basis for allowing interest deductions. The cash flow tax could also be implemented through an equivalent production sharing arrangement.
- Either replacing the corporate income tax entirely from mining and petroleum activities in the source country by the resource rent tax or applying the resource rent tax to the cash flow after the corporate income tax payment.

- Norm pricing for valuing production for royalty and tax calculations based on international price indices or independent analysis for product sales to related and unrelated parties.
- Withholding taxes on dividends, interest, and service payments to nonresidents, and management fees and other intracompany payments.

Benefits from this proposal are as follows:

- The fiscal regime can be designed to ensure that the resource rent tax provides a higher share of rents from more profitable projects, offsetting the regressive impact of the royalty, and vice versa for less profitable ones; as a rule of thumb, the higher the royalty rate, the more progressive the resource rent tax structure needs to be to ensure that the government take of rents is broadly the same across a range of pre-tax project profitability levels.²⁹
- The fiscal regime would ensure a reasonable minimum tax payment, from the start of production, providing a bulwark against tax avoidance and evasion. This would be by either a royalty or, in a production sharing arrangement, a ceiling on cost recovery in each period with any excess costs carried forward.³⁰ The minimum tax payment reduces the political economy risk a government may face if extraction takes place from a low profitability project with no revenue payable and serves as a minimum “reserve price” on the option of keeping the resources in the ground.³¹ On the other hand, if the royalty rate is set too high, this would lead to earlier shutdown of extraction.
- The regime would be attractive to investors by providing immediate expensing of capital expenditure, facilitating a faster investment recovery and less distortive impact of the tax regime.
- An important vulnerability to profit shifting would be eliminated by removing the interest deductibility or cost recoverability, although the risk of financing costs being embedded in financing leases would remain (Annex 15.2 examines impact of debt on different regimes).³²
- The regime would be simpler to administer by having fewer tax instruments, which could all be managed by the revenue authority (collaborating as needed with the sector regulator). Moreover, increased use of benchmark pricing and safe harbor limits on certain deductions should also lessen the compliance burden on authorities by reducing the number of related-party transactions.

²⁹ An IMF working paper revisited conceptual issues related to the progressive taxation of extractive resources (Wen 2018).

³⁰ It is common in a production-sharing contract to have a ceiling on the amount of petroleum produced in each monthly or quarterly “tax” period that can be applied by the contractor to recover incurred cost. Any unrecovered costs will be carried forward to the next period. When combined with a minimum government share of profit oil, the impact is equivalent to a royalty—see IMF (2016).

³¹ For fossil fuels, the reserve price could be higher, reflecting the carbon price, if this were to be imposed at the point of production rather than consumption.

³² See Devlin (2018), Case Study 5, where interest charges are embedded into mine asset purchases.

Design and Implementation Issues

Compared to current fiscal regimes for extractives, the proposed reform package could be made broadly revenue neutral in terms of the overall government take. That said, the time profile of profit-based revenue could change; in particular, the resource rent tax may be more “back loaded” relative to corporate income tax because the latter limits the deduction of investment expenses (that is, capital equipment is depreciated). In countries with accelerated depreciation, this timing difference would be less significant. The removal of interest deductions would broaden the base for the resource rent tax. The overall timing effect on revenue could be counterbalanced by adjusting the royalty rate.

The royalty will play an important role by ensuring that there is a minimum tax payment due from the start of production. In addition to the usual interpretation of the royalty as a compensatory payment to the resource owner for the right to extract the resource (usually the government), it provides a minimum tax on inbound investment. To provide such a safeguard, the tax base for the royalty should be as broad as possible, minimizing any deductions of expenses. If combined with price benchmarking, this may be best achieved by assessing the royalty on the gross value of production at the point when the commodity changes ownership (usually the free-on-board value of exports excluding freight and insurance costs). If the royalty is instead imposed on a net basis (for example, on the mine-head or well-head value), it is important that the netback calculation is aligned with the fiscal valuation point and the ring fence. If the price used for the royalty calculation is determined by an international price index, a comparable netback mechanism would allow deductions for transportation and other operating expenses incurred beyond the fiscal ring fence. However, this runs the risk that the benefits from using benchmark pricing be undone by inflated costs claimed through the netback mechanism.³³

The design of the resource rent tax is crucial, and it must be robust to international profit-shifting strategies. The cash-flow base simplifies the tax calculation by allowing immediate expensing of capital expenditure rather than applying depreciation allowances. Correspondingly, this removes the justification for providing deductions for interest expenses, directly removing incentives for profit shifting by intracompany financing.

An essential policy design matter is whether to apply an uplift on the negative cash flow, and, if so, at what rate. The theoretically first best option is to apply an uplift on negative cumulative cash flow at the rate of the investor “normal investment return,” ensuring that the tax will only apply on economic rents.³⁴ The challenge is, however, that the normal return is not observable. If the uplift is set

³³ In addition, the same valuation practices should be used as much as possible for both royalty and rent tax (or corporate income tax) purposes, so that analysis to ascertain these pricing methods are only done once.

³⁴ A “pure” cash-flow tax would require refunding tax losses (an example is the Brown Tax), which can be approximated by alternatively providing an uplift on losses carried forward at a rate reflecting the investor’s targeted minimum return.

too high, the tax will rarely, if at all, apply. In practice, countries that have introduced rate-of-return-based rent taxes often set the uplift quite high, which, in turn, may explain the disappointing experience with rate-of-return-based rent taxes from a revenue perspective.³⁵ This experience contrasts with profit oil calculations under production sharing contracts, which typically are cash flow based and in most cases without an uplift, without adverse implications on investments. A practical solution would be either not to provide an uplift on the balance of negative cash flows carried forward or to apply this at a suitably low rate (for example, a risk-free international interest rate with a reasonable country risk premium).

The cash flow tax would be underpinned by ring fencing at the project or license area, rather than allowing consolidation of activities at the corporate entity level. Ring fencing prevents a taxpayer from reducing tax paid on a producing mine or petroleum field by offsetting losses from other activities by the corporate entity (including other projects under development). While partly a timing issue, ring fencing plays a key role in preserving the economic rents at the upstream project level and ensuring the fiscal regime captures a fair share of that rent.³⁶ A well-designed ring fence is especially important if the tax rate is higher for upstream activities than for midstream or downstream activities. If the resource rent tax or profit oil sharing rates are progressive, consolidation across multiple projects may lower the overall revenue; if the rates are proportional (fixed), the impact of consolidation may be a deferral of revenue (reducing the value of revenue in discounted terms).

With a resource rent cash flow tax in place, it is not immediately obvious why a corporate income tax should also apply to upstream activities. The rent tax would target the location-specific rents more directly than a corporate income tax. One argument favoring retaining the corporate income tax is to tax the normal return on an investment in addition to the excess return. But especially with some rebalancing in the fiscal regime toward a higher contribution from royalty, the benefits from having two profit-based taxes are likely to be outweighed by the additional complexity and economic distortions.³⁷

Still, if policymakers are uncomfortable removing the corporate income tax on extractive industries, an alternative would be to rethink the interaction with the resource rent tax. To preserve the tax base for the source country, the resource rent tax should be applied on cash flows *after* deducting payments of the corporate income tax. This will help shield the taxation of rents against profit shifting through

³⁵ Typically affording an uplift exceeding what the company likely would have required to undertake the investment, eroding the tax base. See, for example, discussion in Land (2010). In practice, countries apply uplift rates at 15 percent or even higher.

³⁶ Separating what is “upstream” from the later value chain can also be a thorny issue, with some natural resources—for example, natural gas—raising design questions of how to include midstream activities when there is no market-based transaction at an earlier point. This would need to be worked through for each commodity that would be subject to the new regime.

³⁷ Some aspects of the corporate income tax may need to be retained or replicated under the new rent tax, such as legislative definitions of key concepts for example, interest, income).

the corporate income tax: by applying the resource rent tax as a backstop on the cash flow after corporate income tax payments, any profit shifting that reduces corporate income tax liabilities will result in a larger tax base for the resource rent tax.

Some investors may have concerns that replacing the corporate income tax with a resource rent tax means they may not be able to receive tax credits in their residence country for the rent tax payments. Tax creditability may partly depend on whether the tax is comparable to the income tax in the residence country; uncertainty would be clarified by making it clear in tax treaties that such specialized resource rent taxes are covered.³⁸ Admittedly, with the general move globally toward territorial taxation, at least for active business income, this may become a lesser concern. But to the extent this remains an issue, this is another argument for sequencing the resource rent tax to be assessed on the post-corporate income tax cash flow. This would allow tax credits for corporate income tax payments while protecting the source-based taxation of rents on a post-corporate income tax basis. For production-sharing contracts, a pay-on-behalf scheme with a notional accounting of income tax paid out of the government's share of profit oil would provide the basis for tax credits.

Withholding taxes would be needed on payments to nonresidents on dividends, interest, and subcontractor services. This may at first seem odd since the corporate income tax would not apply to the extraction activities. However, the withholding taxes are targeted at income that originates from the natural resource asset but is otherwise not taxed by the source country; moreover, withholding taxes also provide a crude safeguard against profit shifting. In setting the rate, it is important to take into account that the withholding taxes may be passed on to the project cost if contracts allow for grossing up of withholding taxes (as is very common in extractives projects).³⁹

Norm pricing would reduce the scope for profit shifting via price adjustments for associated party sales. This could be implemented through pricing formulas set by the authorities either through legislation or negotiation including by advance pricing agreements. For commodities with readily available benchmark price indices or limited downstream transformation of the commodity, this would be relatively simple to implement. For others, the design of an appropriate pricing formula would require expert advice. The norm pricing could be applied to all transactions or as a minimum price that authorities would accept for royalty and tax purposes.⁴⁰ It would need to be complemented by safeguards on associated party payments,

³⁸ In the United States, this requires that the tax is imposed on net income by reducing gross receipts by attributable costs and expenses (see Box 13.1 in Mullins 2010). Model tax treaties generally apply to taxes on income and capital, but specific taxes covered under the treaty can be listed (usually under Article 2).

³⁹ This may reduce the resource rent tax payment but would still lead to more front-loaded tax payments. The impact in net present value terms depends on the tax rate differential and the discount rate applied for the analysis.

⁴⁰ To minimize disputes under double tax treaties, the actual price attained by the seller could be used for arm's-length sales, with the norm price applied to associated party sales (as a "sixth method"). Source countries must also ensure the pricing method used reasonably approximates an arm's-length price, so that treaty partners accept its approach (and make corresponding adjustments where needed).

such as fees or commissions to related parties. Norm pricing is not without its own complexities, however, and requires specialist expertise and transparency in both design and implementation to retain the confidence of taxpayers.

Despite the potential advantages of the proposed fiscal regime, some challenges would remain. Profit shifting could still take place, particularly via inflated costs through related-party provision of goods and services for the project. This is of particular concern if the cash-flow nature of the resource rent tax (with an uplift) incentivizes excessive investment. Interest charges could also pose a risk if embedded into purchases or financing lease arrangements for equipment. This is a reminder that there is no shortcut escaping the need to build capacity to effectively identify revenue leakage risks and to challenge these through regulatory oversight and risk-based audits.

There may be a need for additional ad hoc safeguards against profit shifting. An example is safe harbor limits on expenditure deductions (for example, on overhead payments to parent companies) with a general starting point that the onus is on companies to demonstrate their compliance with the safe harbor. Another necessary protection would be that the legal entity concerned could not earn income from other activities that would typically be subject to corporate income taxes.

Country Practice

The reform proposal entails changes compared to the fiscal regime for extractive industries currently in place in many countries. The most noticeable difference would be the replacement of the corporate income tax by a combination of royalty and cash-flow-based resource rent tax; countries that already have these two fiscal instruments could simply adjust the rates and base to offset the repeal of the corporate income tax. Generally speaking, to yield similar revenue the resource rent tax rate would be higher if the corporate income tax were replaced than in an alternative regime where both the corporate income tax and the resource rent tax were to apply.

Even in countries that may not be ready to pursue more ambitious reforms, there is scope to reduce vulnerabilities moving in the direction of the fiscal regime reforms advocated. This would include removing interest deductibility from existing cash flow-based taxes and applying these on the cash flows after deducting corporate income tax payments. In practice, of course, contractual stability clauses may reduce the room for maneuver, especially regarding the application of reform changes to existing extractive projects.

A closer look at structural features of the fiscal regime for main petroleum producers provides the following insights (see Table 15.1):

- For countries with a production sharing fiscal regime, it is common that profit oil is calculated before the corporate income tax (so called, pre-tax production sharing); this forgoes the potential safeguard from the profit oil share acting as a backstop against profit shifting in the corporate income tax by applying production sharing on a post-tax basis.

TABLE 15.1.

Selected Petroleum Fiscal Regimes, Key Structural Features																
	Royalty		Profit oil sharing					Resource rent tax					Corporate income tax			
	Rate (percent)	Profit oil sharing	Rate (percent)	Cost recovery limit	Capex	Interest cost recoverable	Interaction with CIT	RRT type	Tax rate (percent)	Capex	Interest cost recoverable	Interaction with CIT	Tax rate (percent)	Capex	Interest cost deductible	
Angola	n/a	ROR	30–90	50	Expensing	No	Post-tax	n/a					50	SL, 4-yr	Yes	
Australia	n/a	n/a						ROR	40	Expensing	No	Pre-tax	30	SL, 15-yr	Yes	
Azerbaijan	n/a	R-factor	40–90	100	Expensing	No	POB	n/a						DB	Yes	
Bolivia																
Brazil	10	n/a						DROP	10–40	SL, 10-yr	No	Pre-tax	34	SL, 10-yr	Yes	
Canada (Alberta)	10–40	n/a						Price-based royalty					27	DB		
Congo, Rep. of	15	DROP	40–60	60	Expensing	No	POB	n/a								
Egypt	n/a	DROP, Price	75–90	40	SL, 5-yr	Yes	POB	n/a								
Equatorial Guinea	13	DROP	10–70	70	Expensing	No	Pre-tax	n/a					35	SL, 5-yr	Yes	
Gabon	Variable	DROP	50–63	65–80	Expensing	No	Pre-tax	n/a					0	SL, 5-yr	Yes	
Ghana	5–12.5	n/a						ROR	15–25	Expensing	No	Post-tax	35	SL, 5-yr	Yes	
Guyana	2	Fixed	50	75	Expensing	Yes	POB	n/a								
Kazakhstan	5–18	n/a						Excess profi	10–60	SL, 5-yr	Yes	Post-tax	32	SL, 5-year	Yes	
Kenya		R-factor	50–75	60	SL, 5-yr	No	POB	n/a								
Indonesia (pre-2017)	20	Fixed		100	DB	No	Pre-tax	n/a					25	SL, 4-yr	Yes	
Iraq	10	R-factor	65–84	45	Expensing	No	Pre-tax	n/a					35	SL, 5-yr	Yes	
Israel	12.5	n/a						R-factor	20–50	Expensing	No	Pre-tax	26.5	SL, 7-yr	Yes	
Lebanon	5–12	R-factor	30–55	60–65	Expensing	No	Pre-tax	n/a					15	SL, 5-yr	Yes	
Liberia	5	DROP	40–60	70	Expensing	Yes	Pre-tax	n/a					30	SL, 5-yr	Yes	
Malaysia	10	DROP	30–60	70–75	Expensing	No	Pre-tax	n/a					38	SL, 5-yr	Yes	
Mauritania	n/a	R-factor	31–42	55	Expensing	Yes	Pre-tax	n/a						SL, 5-yr	Yes	

(continued)

TABLE 15.1. (continued)

Selected Petroleum Fiscal Regimes, Key Structural Features															
	Royalty		Profit oil sharing					Resource rent tax				Corporate income tax			
	Rate (percent)	Profit oil sharing	Rate (percent)	Cost recovery limit	Capex	Interest cost recoverable	Interaction with CIT	RRT type	Tax rate (percent)	Capex	Interest cost recoverable	Interaction with CIT	Tax rate (percent)	Capex	Interest cost deductible
Mexico (Entitlement)	Variable	Fixed	65	60	SL, 4-yr			n/a		n/a	n/a	Pre-tax	30	SL, 4-yr	Yes
Mexico (PSC)	Variable	ROR	Biddable	60	Expensing	No		n/a					30	SL, 4-yr	Yes
Mongolia	12.5	DROP	44–64	40	Expensing	No	POB	n/a							
Mozambique (EPCC Area 1)	3	R-factor	10–60	65	SL, 4-yr	Yes	Pre-tax	n/a					32	SL, 4-yr	Yes
Mozambique	10	R-factor	15–60	60	SL, 4-yr	No	Pre-tax	n/a					32	SL, 4-yr	Yes
Myanmar	12.5	DROP	60–85	60	SL, 4-yr	Yes	Pre-tax	n/a					25	SL, 4-yr	Yes
Nigeria JV	20	n/a						n/a					85	SL, 5-yr	Yes
Nigeria PSC (1993)	Variable	Cumulative	20–60	100	SL, 5-yr	Yes	POB	n/a					50	SL, 5-yr	Yes
Norway	n/a							SPT	55	Uplift	Yes	Post-tax	23	SL, 6-yr	Yes
Papua New Guinea	2	n/a						ROR	30	Expensing	No	Post-tax	30	SL, 10-yr	Yes
Russia								Export duty	0–45				20	SL, 5-yr	Yes
Saudi Arabia (2018 regime)	20–50												50–85	SL (b), 20 years	Yes
Senegal		DROP	15–40	75	SL, 5-yr	No	Pre-tax	n/a					25	SL, 5-yr	Yes
Timor Leste	5	DROP	50–70	100	Expensing	No	Pre-tax	ROR	32.1	Expensing	No	Pre-tax	30	SL, 5-yr	Yes
Trinidad & Tobago	12.5	n/a						Price-based	0–55	n/a	n/a	Pre-tax	50	DB	Yes
Trinidad & Tobago PSC	0	DROP			Expensing	No	POB	n/a							
Uganda	5–12.5	DROP	45–68	60	Expensing	Yes	Pre-tax	n/a					30	SL, 6-yr	Yes
United Kingdom	n/a	n/a						Cashflow w	32	Expensing + No		Post-tax	30	Expensed	Yes

Source: FARI Fiscal Regime Library and Sub-Models

Notes: DROP (daily rate of production), ROR (rate of return), POB (pay on behalf), SL (straight line depreciation), DB (declining balance depreciation), SPT (Special Petroleum Tax)

- Most petroleum fiscal regimes ensure early revenue through a royalty. In some countries without an explicit royalty, the similar impact is achieved by a cost recovery limit providing minimum government share of production (when the limit on cost recovery is binding).
- In a small number of countries, profit oil is calculated on a post-tax basis by having the corporate income tax paid out of the government share of profit oil under a “paid-on-behalf” production sharing (profit shifting through the corporate income tax therefore has no material impact on government revenue).
- Most production-sharing fiscal regimes calculate profit oil on a cash flow basis with immediate expensing of capital expenditure and no interest deduction. However, a few fiscal regimes in addition also redundantly allow cost recovery of interest expenses, providing a debt bias.
- For tax-royalty countries with a resource rent tax, it is common to have this apply to pre-corporate income tax cash flow, again not benefiting from the safeguard against corporate income tax profit shifting that the resource rent tax can provide. This risk is further accentuated by providing for reduced interest withholding rates.

Table 15.2 summarizes structural features of the fiscal regime in major mining countries. Countries with a resource rent tax are about evenly split between having this applied to the pre- and post-corporate income tax cash flows. Some countries also allow interest deductibility under the resource rent tax despite providing for expensing of capital expenditure. Moreover, a number of countries only apply the corporate income tax which allows for interest deductions, without a tax targeted at resource rents.

Countries with extractive industries are also vulnerable to profit shifting through reduced withholding tax rates. For the majority of countries, the tax treaty network provides withholding tax rates significantly below the generally applicable ones, in many cases with the rates at least in some treaties reduced to zero (see Annex 15.3).

TABLE 15.2.

Selected Mining Fiscal Regimes, Key Structural Features										
	Royalty		Resource rent tax					Corporate income tax		
	Rate (percent)	Base	RRT type	Tax rate (percent)	Capex	Interest cost recoverable	Interaction with CIT	Tax rate (percent)	Capex	Interest cost deductible
Argentina	3	Net	n/a					35	SL, 5-yr	Yes
Australia	Variable	Net						30	SL, 10-15-yr	Yes
Bolivia	Sliding scale	Gross	Mining surtax	25	SL, 8-yr	Yes	Post-tax	25	SL, 8-yr	Yes
Botswana	3–10	Net	Variable income tax	22–70	Expensing	Yes	n/a	n/a	n/a	n/a
Brazil	1–3.5	Gross	n/a					34	SL, 5-10-yr	Yes
Burkina Faso	Price-based	Gross	n/a					17.5	SL, 10-yr	Yes
Canada	n/a		Provincial mining tax	Varies	Expensing	No	Pre-tax	15 + 12	DB, 25%	Yes
Chile	n/a		Specific mining tax	5–34.5	SL, 9-yr	No	Pre-tax	27	SL, 9-yr	Yes
China	2.5–10	Net	n/a					25	SL, 10-yr	Yes
Colombia	4–10	Net	Rate of return	25	Expensing	No	Post-tax	27	SL, 5-yr	Yes
Congo, DR	1–3.5	Net	n/a					30	DB, 25%	Yes
Cote d'Ivoire	3.5	Gross	n/a					25	SL, 5-yr	Yes
Ghana	5	Net	Rate of return	10	Expensed	No	Pre-tax	25	SL, 5-yr	Yes
Guinea	3–5	Gross	n/a					30	SL, 3-yr	Yes
India	2–15	Gross	CIT surcharge	5–10				30	SL, 5-yr	Yes
Indonesia	3–10	Net	n/a					25	SL, 5-16-yr	Yes
Lesotho	7–10	Net	n/a					25	DB	Yes
Liberia	4.5	Gross	Rate of return	20	Expensed	No	Pre-tax	30	Expensed	Yes
Mali	3	Gross	n/a					25	SL, 3-yr	Yes
Mauritania	Price-based	Gross	n/a					25	SL, 3-yr	Yes
Mexico	n/a		Special mining right	7.5	SL, 10-yr	No	Post-tax	30	SL, 10-yr	Yes
Mongolia	5	Gross	Price-based royalty	Variable	n/a	n/a	Deductible	25	SL, 10-yr	Yes
Mozambique	3–6	Gross	n/a					32	SL, 7-yr	Yes
Namibia	3–10	Gross	n/a					37.5	Expensed	Yes
Niger	Variable	Gross	n/a					30	SL, 5-yr	Yes
Papua New Guinea	2.25	Gross	Rate of return	30	Expensed	No	Post-tax	30	SL, 10-yr, DB	Yes

(continued)

TABLE 15.2. (continued)

Selected Mining Fiscal Regimes, Key Structural Features										
	Royalty		RRT type	Resource rent tax				Corporate income tax		
	Rate (percent)	Base		Tax rate (percent)	Capex	Interest cost recoverable	Interaction with CIT	Tax rate (percent)	Capex	Interest cost deductible
Peru	1–12	Oper. income	Special mining tax	2–8.4	Expensed	No	Pre-tax	29.5	Expensed	Yes
Philippines	5	Net	Additional govt share			Yes		30	SL, 5-yr	Yes
Sierra Leone	4–7.5	Gross						30	DB	Yes
Solomon Islands	3	Gross	Rate of return	20	Expensed	No	Post-tax	35	Expensed, DB	Yes
South Africa	5–7	Gross	Variable income tax	0–32	Expensed	Yes			n/a	n/a
Tanzania	3–5	Gross	n/a					30	SL, 5-yr	Yes
Zambia	5–6	Gross	Export duty					30	SL, 4-yr	Yes
Zimbabwe	1–15	Net	Rate of return	28–31	Expensed	No	Post-tax	15	Expensed	Yes

Source: FARI Fiscal Regime Library and Sub-Models

Notes: SL (straight line depreciation), DB (declining balance depreciation). Net (gross value excluding transportation, refining and processing cost)

CONCLUSION

The international tax architecture is under new scrutiny, with an apparent willingness to explore more fundamental reform changes. Some reform options under consideration may leave natural resource-exporting developing countries vulnerable to a revenue loss. The tax reform options under consideration recognize this and emphasize the need for a special fiscal treatment or “carve-out” for extractive industries. This follows the principle that the location-specific rents should be taxed primarily at source by producing countries through a fiscal regime reform that provide a fair share to government of economic rents, while ensuring a reasonable minimum share of revenue from the start of production.

This chapter has presented a conceptual proposal for what such an extractive industries fiscal regime could look like. Based on international experience with fiscal regimes and the pressures facing the international tax system, this proposal emphasizes three elements to ease pressure on source countries: i) greater simplification wherever possible; ii) narrowing the instances where full transfer pricing analysis is required; and iii) narrowing the tax planning opportunities from related-party lending. It ensures a minimum government share of revenue from the start of production through a royalty (or in production-sharing regimes, by a cost recovery limit having the same effect), possibly with some rebalancing toward production-based taxes relative to current practice. To better target rents, the corporate income tax could be replaced by a cash-flow tax applied to each project allowing for immediate expensing of capital expenditure with no interest deduction, removing a perennial profit-shifting risk. The tax neutrality advantages from applying an uplift on losses should be weighed against how this may encourage tax avoidance if the uplift is set too high. The corporate income tax could be retained for extractives, either to tax the “normal” return or to facilitate tax credits, with the cash flow tax applied on cash flows after the payment of corporate income tax to provide a backstop against profit shifting through the corporate income tax. Additional safeguards would be provided through commodity price benchmarking for tax and royalty valuation, safe harbor rules on expenditure deductions, and withholding taxes on nonresident payments (for dividends, interest, sub-contractor services, and intracompany payments).

Some challenges would remain. A fiscal regime preserving taxing rights for the source country would be vulnerable to continued pressure for tax competition. While the natural resources are naturally not mobile, there is competition for technical know-how and investment capital. This may warrant some international coordination between producing countries including on minimum tax payments. The proposal also does not close all loopholes for revenue leakage (although it reduces the more problematic ones). There is no panacea that circumvents the need for strengthening capacity to effectively enforce tax rules, including by improving tax auditing of extractive industries. Care is also needed to ensure that a country’s tax treaty network preserves the domestic taxing rights, including for withholding taxes on nonresident payments and the taxation of gains on transfers of interest.

Fiscal regime reform should be carefully designed at the country level to provide a fair sharing of risk and reward between the investor and government without discouraging investment. Tax policies that are simple to administer and

comply with would be desirable for both investors and government. Wider changes to current fiscal regimes for extractive industries should involve consultation between governments and investors in current resource projects. This recognizes the prevalence of fiscal stability provisions in legislation and contracts that limit the flexibility to introduce reforms. International coordination may be necessary, as will finding the right forum in which to discuss the issues, given the intricacy and interconnected nature of the issues involved.

ANNEX 15.1. INTERNATIONAL TAX REFORMS AND IMPLICATIONS FOR RESOURCE-RICH DEVELOPING COUNTRIES

This annex briefly looks at alternative corporate tax regimes discussed in Chapters 11–14 of this book and the implications for resource-rich developing countries if considered for implementation.

Minimum Tax

For developing countries that are net recipients of investment into natural resources, the “inbound” version of a minimum tax is the most relevant variant to examine. A minimum tax may require companies to pay the greater of either their corporate income tax liability or an alternative tax calculation that, for example, has a lower rate but that disallows certain deductions on payments commonly associated with profit shifting. It can also simply be a minimum tax on turnover.

Royalties effectively serve as a minimum turnover tax, in that payments are received from the start of production, even if there is no taxable profit. In principle, royalties could be made to work more like a minimum tax by making them creditable against income tax,⁴¹ effectively smoothing corporate income tax collections. Alternatively, maintaining the tax deductibility of the royalty makes the tax marginally more distorting than the crediting option, but entails more revenue.

In a more ad hoc fashion, there may be scope to have some (arguably arbitrary) limits on expenditure deductions for payments to related parties abroad. Safe harbors could also apply to overhead or management charges paid by a subsidiary to the parent company.

A Destination-Based Cash-Flow Tax

A destination-based cash-flow tax (DBCFT) combines a destination base with cash-flow treatment. The country where the purchaser is located is allocated some taxing right, while there is immediate expensing of investment. Based on cash flows, these taxes target economic rents, much as resource rent taxes do. But a key difference is that there are “border adjustments,” whereby the tax is adjusted to

⁴¹ As was the case for example in Papua New Guinea until 2017, and which Australia contemplated in tax reform in 2012. For the latter, see Australian Government (2012).

ANNEX TABLE 15.1.1.

Comparison of Corporate Income Tax, DBCFT, and Resource Rent Tax			
	Corporate Income Tax	DBCFT	Resource Rent Tax
Tax Concept	Income	Cash flow	Cash flow
Tax base	Total income less allowable deductions	Company receipts less expenses with border adjustments	Sales of mine or well production minus all costs of production
Capital Spending	Depreciated over time	Immediate expensing	Immediate expensing
Interest expenses	Deductible (but can be limited)	Excluded	Excluded
Losses	Carried forward to offset profits in future years	May be refunded or carried forward (with or without an uplift)	Usually carried forward (often with an uplift)

apply where products are sold, on the basis that the buyer is contributing to profitability via their purchase (see comparison of taxes in Annex Table 15.1.1).

A DBCFT presents some compatibility difficulties for the taxation of extractive industry projects, especially predominantly export-oriented ones. The border adjustments under a DBCFT typically entail the exclusion of exports from the tax calculation and, likewise, either the exclusion of imports from deductions or the taxation of imports, with a deduction for imports used in the production process. A country with a foreign-owned export-oriented natural resource sector would find itself with little left to tax under the DBCFT. Indeed, this is the primary reason the 2019 IMF Board Paper recognized the need for a separate tax treatment of extractives (IMF 2019).

The design of the extractives fiscal regime would be crucial, in particular the interaction with the DBCFT. Applying a cash-flow-based profit oil sharing or resource rent tax on a post-DBCFT basis would provide some protection against revenue loss in the producing country if the corporate income tax is replaced by a DBCFT—the resource rent tax would then tax any rents not captured by the DBCFT. An even simpler solution would be simply to apply the cash-flow tax on an origin basis for extractives (as is proposed in the preceding section).

Formulary Apportionment

An alternative is formulary apportionment, consolidating the accounts of all affiliates of a multinational enterprise, with the tax base then apportioned across jurisdictions according to a formula. This apportionment could be based on, for example, the shares of assets, payroll, employees, or sales located in each jurisdiction. Each country would then apply its own tax rate to the apportioned base.

For developing countries, this approach appears to have some simplicity advantages and reduces the need for defenses against international profit shifting. Whether this is advantageous from a revenue perspective depends on the design of the formula. Profits that have been moved artificially to intermediary low-tax countries as part of sales could be potentially reallocated based on the allocation metrics but depending on the metrics used (the “allocation key”), it would not necessarily all be afforded to the resource producing country. Moreover, as IMF (2019) notes, specific metrics used could stoke international competition to attract those factors. Alternatively,

profit allocation connected to employee numbers may unintentionally strengthen the lure of mine automation and reduce local mine employment levels.

Special apportionment rules would be required to preserve the taxing rights of the location-specific rents in resource projects. As an example, the EU 2016 proposal for a common consolidated corporate tax base proposed that the sales of production from resource projects should be allocated based on source rather than destination.⁴² This would (from the perspective of producing countries) be preferred relative to an allocation based on payroll or number of employees, given the capital-intensive nature of the industry, and would also capture the cyclical impact of price fluctuations.

But a sales basis would raise questions of how to value those sales, requiring careful design across several dimensions. Issues related to natural resource production would include determining how to allocate the profits of diversified resource companies. If based on total sales from each resource project, this could benefit countries with projects that have recently commenced production. Since it is common to have a long investment recovery production after production commences, this implies that formulary apportionment based on sales may lead to more front-loaded revenue relative to current arrangements.⁴³ But this could result in some thorny situations (for example, if a multinational enterprise made a loss in one country, how would remaining profits be shared?).⁴⁴

Another question relates to mining or petroleum intangible assets (specifically the value associated with the license to extract natural resources within a certain area and time period). The EU proposal only includes tangible assets; if all intangible assets instead were to be included, this would open another avenue for tax planning, given how easy it is to move these intangible assets.

Residual Profit Allocation

Residual profit shifting splits the actual profit of a multinational enterprise between a notional routine return and a residual profit. The tax would make a distinction between allocating a rate of return to each function of the multinational enterprise (which would be, broadly speaking, the minimum return required for companies to undertake that activity), with any additional profits allocated across jurisdictions by some mechanism. This has conceptual parallels to a resource rent tax that only applies to resource rents after the investor has realized a minimum return on the investment.

The IMF (2019) acknowledges that for natural resources, associated residual income should largely be allocated where the natural resources are located. One question is how this would be most easily done, with similarities to the discussion of formulary apportionment.

⁴² Proposal for a Council Directive on a Common Consolidated Corporate Tax Base, European Commission, October 2016.

⁴³ A formulary apportionment based primarily on sales would also be expected to have a similar economic impact on royalties since taxes are based on sales, not project economics.

⁴⁴ There may be also profit-shifting risks based around the boundary of the consolidated group that would need to be watched for (for example, by creating entities that just fall outside the control test).

Moreover, setting the normal return to functions may keep developing countries beholden to transfer pricing analysis.⁴⁵ Depending on implementation, affected countries might need to undertake this analysis themselves. Alternatively, it might be possible for a third party to do the analysis for all. The latter approach would lessen the administrative burden but would raise questions concerning how the analysis would be coordinated as well as who that third party would be.

ANNEX 15.2. ANALYSIS OF VULNERABILITY OF DIFFERENT OPTIONS TO DEBT LEVERAGE

Fiscal modeling is useful to illustrate the benefits from the reform proposal presented in this chapter and, in particular, how the reform proposal reduces the risk of profit shifting through related-party debt financing.⁴⁶

With a representative offshore petroleum project, the IMF's Fiscal Analysis of Resource Industries (FARI) model is used to evaluate the impact of the government take and investor return of increasing debt financing. Starting from a base case of 50 percent of development cost at a market interest rate (LIBOR plus 3.5 percent), debt is then increased to 100 percent of development costs, financed through intra-company loans at an above-market interest rate (LIBOR plus 8 percent).

The following four fiscal regime types are modeled. These are stylized but still representative of fiscal regimes that countries can apply to mining and petroleum.

- *Corporate income tax regime:* The base case fiscal regime is a tax–royalty regime combining a 10 percent royalty with a 44 percent corporate income tax rate (it is assumed that a higher tax rate applies to extractives to capture resource rents). There is no interest withholding tax applied, and no limitations on interest deductibility. The generally applicable dividend withholding tax applies.
- *Corporate income tax/resource rent tax regime:* This regime combines the 10 percent royalty with corporate income tax at the ordinary rate of 26 percent and a resource rent tax of 30 percent that applies after the investor has realized a return on the investment of 15 percent. The resource rent tax is applied on the cash flow on a post-tax basis (that is, the tax base is the cash flow after corporate income tax payments).⁴⁷ Importantly, there is no deduction of inter-

⁴⁵ In practice, it might be necessary to analyze what the normal return would be for each and every business function in the corporation, unless a general rate is adopted.

⁴⁶ Multinational mining and petroleum companies often finance projects through intracompany loans. In fiscal regimes with few safeguards against excessive debt leverage or interest rates charged, this can, from the company perspective, be a tax-optimizing strategy that effectively shift profits out of the source country. Common safeguards in the income tax include applying interest withholding tax on payments to nonresidents, or other limitations on interest deduction either from a ceiling on net interest deductions relative to income, a cap on the debt-to-equity ratio, or a requirement that the interest rate will be commensurate with market costs.

⁴⁷ The resource rent tax could also be applied on a pretax basis, but this will reduce the safeguard benefits if there is concern about profit shifting reducing the base for the corporate income tax.

est costs under the resource rent tax. This regime also preserves the generally applicable withholding tax of 10 percent on dividend payments.

- *Resource rent tax regime:* This regime departs from common practice by replacing the corporate income tax with a 10 percent royalty and a 50 percent resource rent tax on positive cash flows after the investor has realized a 15 percent return on the initial investment. There is no deduction of interest expenses under the resource rent tax as this provides for immediate expensing of capital expenditure. The regime also applies a 10 percent withholding tax on interest and dividend payments.
- *Production sharing contract regime:* This models a production sharing agreement (common for petroleum) with a progressive sharing of profit oil with rates rising from 36 to 50 percent linked to the R-factor (an indicator of investment recovery). There is no corporate income tax or alternatively only a notional allocation of the corporate income tax amount paid out of the government's share of profit oil. The base for the profit oil calculation is effectively the cash flow with no interest expense being recoverable to the contractor, and with the additional limitation that recovered cost can only reach 60 percent of petroleum production in any period (any unrecovered costs are carried forward to the next period). The generally applicable 10 percent withholding tax applies to interest and dividend payments.

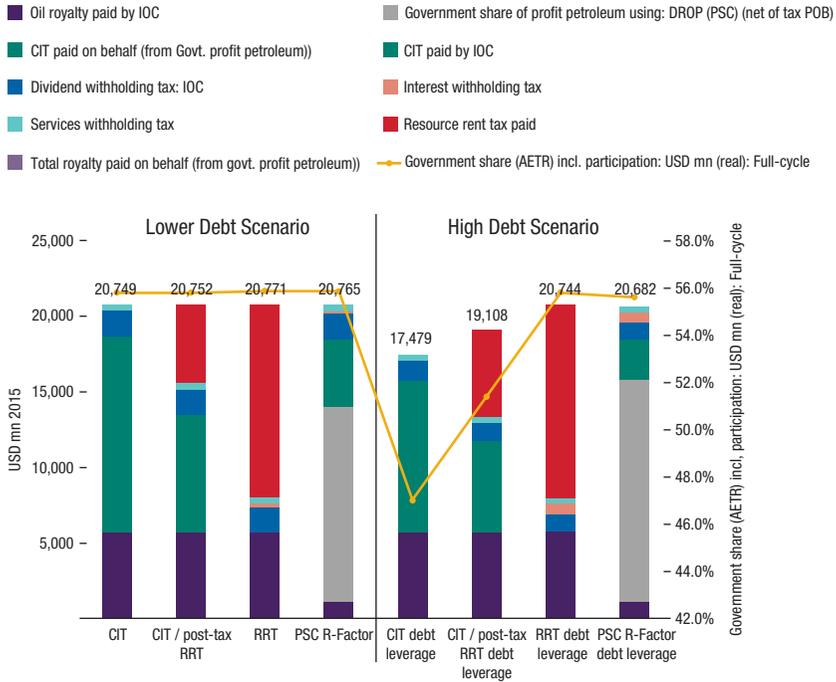
In the base-case scenario with moderate debt financing at market cost, the simple tax–royalty regime performs adequately, and in line with alternative cash-flow based regimes. The government take as measured by the average effective tax rate amounts to about 56 percent of cumulative cash flow from the project (in undiscounted terms) (Annex Figure 15.2.1). The alternative fiscal regimes have been parameterized to result in similar average effective tax rates.

When taking account of the risk of profit shifting from excessive debt leverage however, the assessment of the fiscal regime alternatives changes.

- In the debt leverage scenario, the government take falls to 47 percent of cumulative cash flow (undiscounted) as the investors take advantage of the tax planning opportunities by the unrestricted deductibility of interest costs.
- The fiscal regime having a resource rent tax applied on a post-tax basis without deductibility of interest (corporate income tax/resource rent tax) provides some limited safeguards, and the average effective tax rate only drops to 51 percent of cumulative cash flow (undiscounted).
- However, the government would be better off by replacing the corporate income tax entirely with either a royalty–resource rent tax combination or a production-sharing arrangement. In those alternative regimes, the government take is almost unchanged despite the excessive debt leverage (see Annex Table 15.1.1).⁴⁸

⁴⁸ Despite interest payments not being deductible for tax purposes, the higher related-party debt financing reduces the dividends payments, which, in turn, reduces withholding tax on those payments that is only partially offset by higher interest withholding tax.

Annex Figure 15.2.1. Government Take under Different Fiscal Regime and Debt Assumptions



Source: Author's calculations.

ANNEX TABLE 15.1.1.

Comparison of Fiscal Regimes Using a Stylized Offshore Petroleum Project (Change in parentheses are under a high debt scenario)			
	AETR	Total Revenue	Breakeven Price
CIT	47.0% (-9.0%)	17.5 bn (-3.3 bn)	28.7 US\$/bbl (-3.6 US\$)
CIT/Post-tax RRT	51.5% (-4.5%)	19.1 bn (-1.6 bn)	28.7 US\$/bbl (-2.0 US\$)
RRT	56.0% (..)	20.7 bn (-0.03 bn)	29.6 US\$/bbl (..)
PSC R-Factor	56.0% (..)	20.7 bn (-0.08 bn)	33.5 US\$/bbl (..)

Source: Author's calculations.

Note: .. denotes not zero but rounded to zero. Calculations of AETR/total revenue based on undiscounted cash flows.

ANNEX 15.3. WITHHOLDING TAX RATES IN EMERGING ECONOMY TAX TREATIES

ANNEX TABLE 15.3.1.

	Dividends		Interest		Royalties		Number of treaties
	Generally applicable	Lowest Treaty rate	Generally applicable	Lowest Treaty rate	Generally applicable	Lowest Treaty rate	
Algeria	15	0	10/40	0	4.8/24	5	32
Australia	0/30	5	10	10	30	5	45
Brazil	0	12.5	0/15/25	10	15/25	10	33
Canada	25	5	0/25	10	25	10	92
P.R. China	10	3	0/10	3	10	3	101
Colombia	7.5	0	0/5/15/20/33	10	20/33	10	12
R. Congo	15	0	20	0	20	0	8 (a)
Cote d'Ivoire	10/15	10	1–18	10	20	5	18 (d)
Egypt	10	0	0/20/32	5	20	0	58
Equatorial Guinea	25	n/a	10	n/a	10	n/a	1
Gabon	20	15	0/15/10/20	10 (e)	0/20	0	6 (b)
Ghana	8	10	8	0	15	8	9
Guinea	10	0	10	0	15	0	3
Guyana	20	0	20	15	20	10	3 (f)
Indonesia	20	7	20	5	20	5	66
I.R. Iran	0	0	0/3	5	2.5–10 (g)	5	47
Israel	25/30	0	0/24	0	24	0	54
Kazakhstan	15	5	15	10	15	10	52
Kenya	10	5	10	10	15/25	10	13
Kuwait	0/15	0	n.a.	n.a.	n.a.	n.a.	65
Lebanon	0/5/10	0	5/10	0	7.5	0	28
Liberia	5/15	15	0/5/15	20	15	20	1
Malaysia	0	0	15	5	10	0 (h)	79
Mali	7/10	5	0–18	5	30	0	12 (d)
Mauritania	10	10	10	10	0	0	4 (i)
Mexico	10	0	4.9–40	0	5/25/35/40	0	59
Mozambique	20	0	20	0	20	5	9
Myanmar	0	5	15	10	15	10	8
Namibia	20	10	10	10	10	0	10
Niger	7	10	0–20	15	16	0	2 (d)
Nigeria	10	7.5	10	7.5	10	7.5	13
Norway	25	0	0	0	0	0	87
Russian Federation	15	5	9/15/20	0	20	0	84
Senegal	10	0	8/13/16/20	0	0/20	0	15
Sierra Leone	10	0	15	0	25	0	3
Tanzania	10	0	0/10	0	15	0	9
Thailand	10	10	15	10	15	5	62
Timor-Leste	10	10	10	10	10	10	1
Trinidad and Tobago	5	0	15	10	15	5	6 (f)
Uganda	15	0	15/20	10	15	10	9

Source: IBFD database. Dividend rates are for direct investments with >10% ownership Interest WHT rates do not include lower rates for payments from public bodies or banking in several treaties.

a) excludes OCAM Treaty 1971 countries, as treaty was terminated

b) CEMAC Treaty includes 4 partner countries

c) so long as taxable in state of recipient

d) treaty with WAEMU has 7 partner countries

e) also zero rates, but unclear what qualifies

f) CARICOM treaty includes 9 partner countries

g) rate is 25%. applicable to 10% to 40% of total annual receipts, resulting in effective tax rates of 2.5%–10%.

h) royalty rate not applied to petroleum sector payments

i) excludes Arab Maghreb Union treaty, which has no withholding tax limitations

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