IGF

INTERGOVERNMENTAL FORUM
on Mining, Minerals, Metals and
Sustainable Development

OECD

BETTER POLICIES FOR BETTER LIVES

Ring-Fencing Mining Income

A toolkit for tax administrators and policy-makers

This work is published under the responsibility of International Institute for Sustainable Development and the Secretary-General of the Organisation for Economic Co-operation and Development (OECD). The opinions expressed and arguments employed herein do not necessarily reflect the official views of the member countries of the OECD and the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF).

The names and representation of countries and territories used in this joint publication follow the practice of the OECD. This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city, or area.

This practice note has been prepared under a program of cooperation between the OECD Centre for Tax Policy and Administration Secretariat and the IGF's Global Mining Tax Initiative as part of a wider effort to address the challenges developing countries are facing in raising revenue from their mining sectors, particularly on the topic of mineral pricing. It complements action by the Platform for Collaboration on Tax and others to produce practice notes on top-priority tax issues facing developing countries.

It reflects a broad consensus between the OECD Secretariat and IGF and should not be regarded as the officially endorsed view of either organization or of their member countries. The examples included in the practice note are for illustrative purposes only. They are not intended as a presentation of a recommended approach.

The OECD's work on this publication was co-funded by the governments of Germany, Ireland, Japan, Luxembourg, the Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom, and the European Union. The IGF's work on this publication was funded by the Government of the United Kingdom's Foreign, Commonwealth and Development Office. Its contents are the sole responsibility of the IGF and OECD and do not necessarily reflect the views of the governments funding the publication or the European Union.

IISD HEAD OFFICE

111 Lombard Avenue
Suite 325
Winnipeg, Manitoba
Canada R3B 0T4

IISD.org
X @IISD_news

IGF/IISD OTTAWA OFFICE

123 Slater Street
Suite 1001
Ottawa, Ontario
Canada K1P 5G4

IGFMining.org
X @IGFMining

OECD HEAD OFFICE

2, rue André Pascal
75775 Paris Cedex 16
France

OECD.org
X @OECD

ACKNOWLEDGEMENTS

The lead authors of this publication are Tomas Balco, Senior Advisor, BEPS Capacity Building Team of Global Relations and Development Division, OECD, and Jaqueline Taquiri, Senior Policy Advisor, Tax and Extractive Industries, IGF.

The authors would like to recognize the contributions made by the governments of Kenya, Liberia, Papua New Guinea, South Africa, Tanzania, the United Kingdom, and Zambia as well as Thomas Baunsgaard from the International Monetary Fund, and the International Council on Mining and Metals. The authors were ably assisted in their research work by members of the IGF's Global Mining Tax Initiative, including Kudzai Mataba, Alexandra Readhead, and Ekpen Omonbude, and colleagues from the OECD, including Andrew Viola.

OECD: http://www.oecd.org/en/about/programmes/beps-in-mining

IGF: www.igfmining.org/financial-benefits/

LIST OF ABBREVIATIONS

APT	additional profit tax
BEPS	base erosion and profit shifting
CAPEX	capital expenditure
CIT	corporate income tax
EPZ	export processing zone
IGF	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development
IMF	International Monetary Fund
IRR	internal rate of return
MNE	multinational enterprise
OECD	Organisation for Economic Co-operation and Development
OPEX	operating expenditure
PNG	Papua New Guinea
PSA	production-sharing agreement
RRT	resource rent tax
SCA	Supreme Court of Appeal

TABLE OF CONTENTS

1.0 Introduction

For most economic sectors, corporate income tax (CIT) is levied at the business entity level. This means that the income derived from various projects or commercial activities undertaken by a single business entity is merged or consolidated into a single tax base. This approach is commonly referred to as consolidation of the tax base of a taxpayer.

In mining, a company may carry on multiple projects and/or undertake several activities along the mining value chain or be involved in non-mining activities, such as transport, manufacturing, or even sophisticated financial investment activities. In these cases, where consolidation rules are in place, the company may use costs incurred in one project (e.g., during exploration) and/or activity (e.g., when undertaking manufacturing activities) to offset profits earned in another.

Such consolidation is fiscally attractive for mining taxpayers because it allows tax savings resulting from the deduction of costs related to one project/activity against the income generated by another project/activity. These tax savings reduce the after-tax costs of investments. They can, in turn, encourage mining companies to invest in exploration and continue other mining and non-mining activities because they can recover their costs sooner, which may improve their cash flows.

For governments, attracting investments is an important policy objective, and these considerations related to consolidation play an important role in the decisions of investors. However, such consolidation can postpone government tax revenues. By offsetting costs or losses against the income of producing mines, companies can defer the payment of CITs—sometimes for very long periods or indefinitely. Consolidation can also result in revenue loss if exploration projects are unsuccessful or when a mining investor undertakes non-mining activities, such as speculative and high-risk financial investment activities. Furthermore, where mining investors engage in base erosion and profit shifting (BEPS) practices, consolidation might accelerate those effects and may result in permanent losses of tax revenues for the host jurisdiction.

Balancing these potentially conflicting objectives through careful tax policy design is essential to ensure that investors do not lose the deductibility of legitimate expenses incurred, and governments ensure the collection of economic rents.[1]

[1] Economic or resource rent has been defined as "the excess of the total project lifetime value arising from the exploitation of a deposit over the sum of all costs of exploitation including the compensation to all factors of production." See Land (2008, p. 5).

In developing countries, a delay in tax payments or permanent revenue loss could undermine government expenditure required to finance public needs. The pressure on governments to raise revenues increases further in mining-rich countries that offer generous industry-specific tax incentives—for example, the immediate deduction of exploration or development costs, irrespective of whether the given mining operations are completed and produce revenue.

Officials of resource-rich governments sometimes respond to these risks and pressures by designing a tax system that limits such consolidation by operators in the mining sector—a practice known as ring-fencing. Ring-fencing does the opposite of consolidation—it limits the ability of the mining investor to offset expenditures and revenues between projects and activities, which accelerates government revenues from mining and protects the mining tax base against permanent revenue losses. In addition, it may level the playing field between new and existing investors. While not a response to all BEPS practices, ring-fencing can discourage investors from structuring base erosion arrangements, artificially inflating exploration or development expenditures, or abusing specific tax incentives.

There are also downsides associated with ring-fencing. Ring-fencing slows down or postpones the potential tax savings that can result from consolidation, which can discourage mining investment, particularly in marginal ore bodies—projects near the lower limit of commercial workability. Depending on its design, ring-fencing can increase the administrative burden on tax authorities and raise the cost of tax compliance for taxpayers. The implementation of these rules can also be a challenge, for instance, where the apportionment of general and indirect expenditures and revenues must take place between different mines and/or activities. Tax uncertainty may occur, and disputes have arisen in applying and interpreting such rules, especially when the legislative guidance is unclear, which left room for varying interpretation.

Ring-fencing is a common feature of most tax systems that use a schedular tax system—a system where separate taxes are imposed on different categories of income. This note reviews and analyzes this prevailing practice and highlights the benefits and risks of ring-fencing, as well as the conditions that need to be in place for the benefits to outweigh the downsides. This note also covers the design and administration considerations of such an approach. The note will benefit those who are considering whether and how to use ring-fencing as a tax policy response to deal with delayed government revenues and BEPS practices, as well as those that are looking to enhance and improve existing ring-fencing rules by improving their effectiveness and minimize any negative spillovers due to design, implementation, and application. Ring-fencing may not be an appropriate policy option for all resource-rich countries, and each jurisdiction will have to consider the suitability of this approach for their existing tax system in the context of development of the mining sector, capacities of the tax administration, and positive and negative aspects of a potential ring-fencing regime prior to implementation.

1.1 About This Practice Note

This practice note aims to clarify what ring-fencing means in mining, the advantages of adopting ring-fencing rules where certain conditions are in place, and how to mitigate potential challenges through good tax policy design and effective tax administration practices. It describes and evaluates the different options for designing ring-fencing rules based on the experience of resource-rich countries and highlights key implementation issues that have emerged.

1.2 Who Is This Practice Note For?

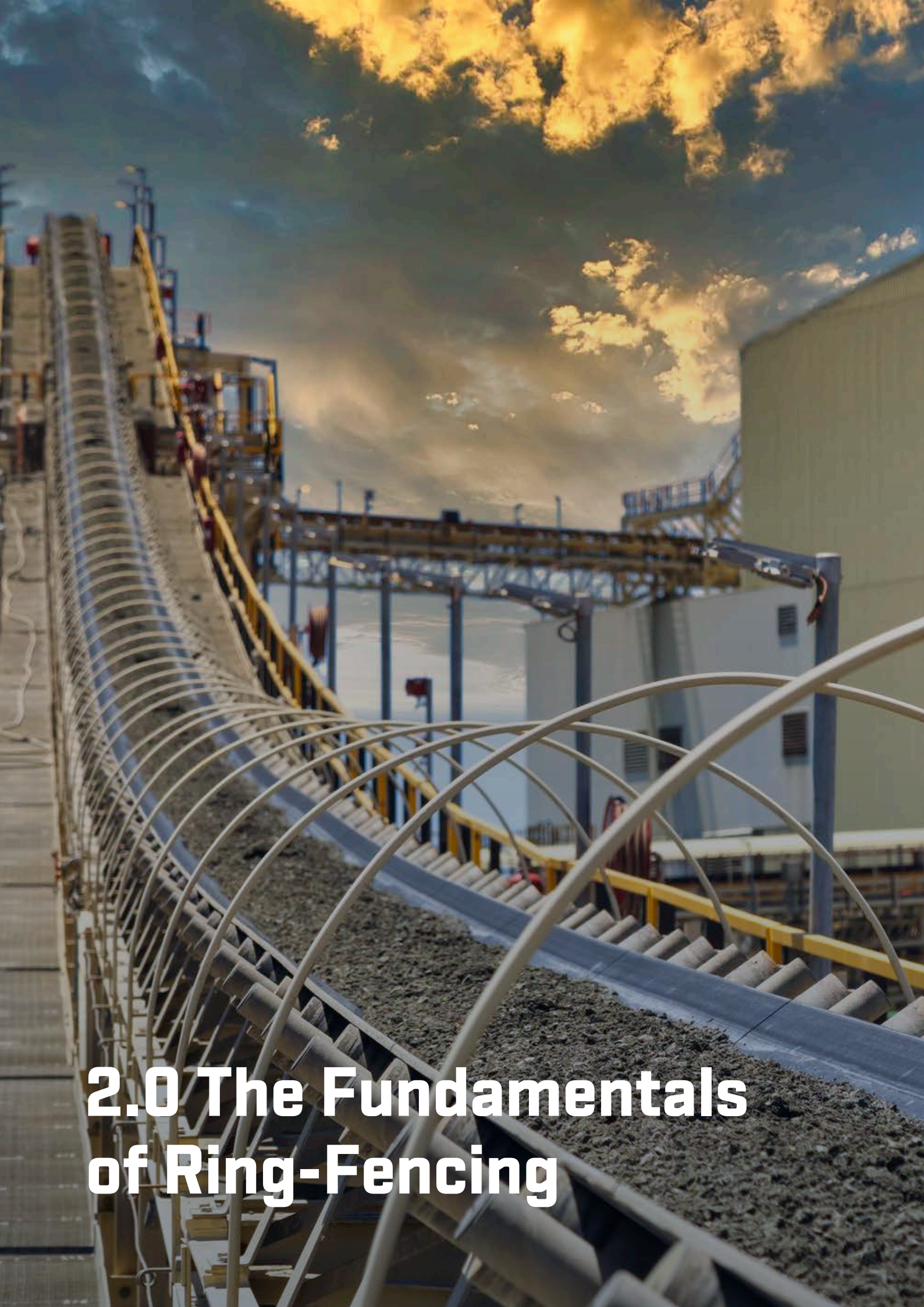
This practice note is primarily intended for government policy-makers of resource-rich developing countries that are considering introducing ring-fencing rules for their mining sector or governments that are seeking to improve the design and implementation of existing ring-fencing rules. It aims to generate informed, well-grounded decisions, particularly with respect to decisions on introducing ring-fencing rules into mining tax regimes (and on their design), by identifying the benefits and risks and how to address them. It may also be used by tax administration officials to improve the implementation and administration of ring-fencing rules. Finally, the practice note may help international organizations advise resource-rich developing countries on the design and implementation of ring-fencing rules and enable civil society groups to examine existing rules to strengthen government and industry accountability.

1.3 What Gap Does This Practice Note Fill?

This practice note seeks to bridge two gaps. The first is a lack of comprehensive guidance for government officials in resource-rich developing countries about designing and implementing ring-fencing rules in the mining sector. The second is a lack of insights into the implementation challenges faced by resource-rich countries with ring-fencing rules in mining—insights that could help other governments avoid similar occurrences.[2]

This practice note analyzes mining fiscal regimes and mining contracts with ring-fencing rules to provide concrete examples that may be enlightening for resource-rich developing countries. The examples included in the practice note are for illustrative purposes only. They are not intended as a presentation of a recommended approach, which would require taking into account the specificity of the tax and regulatory framework of each country. The note is based on desk research combined with interviews that identified day-to-day challenges faced by government officials when implementing ring-fencing rules.

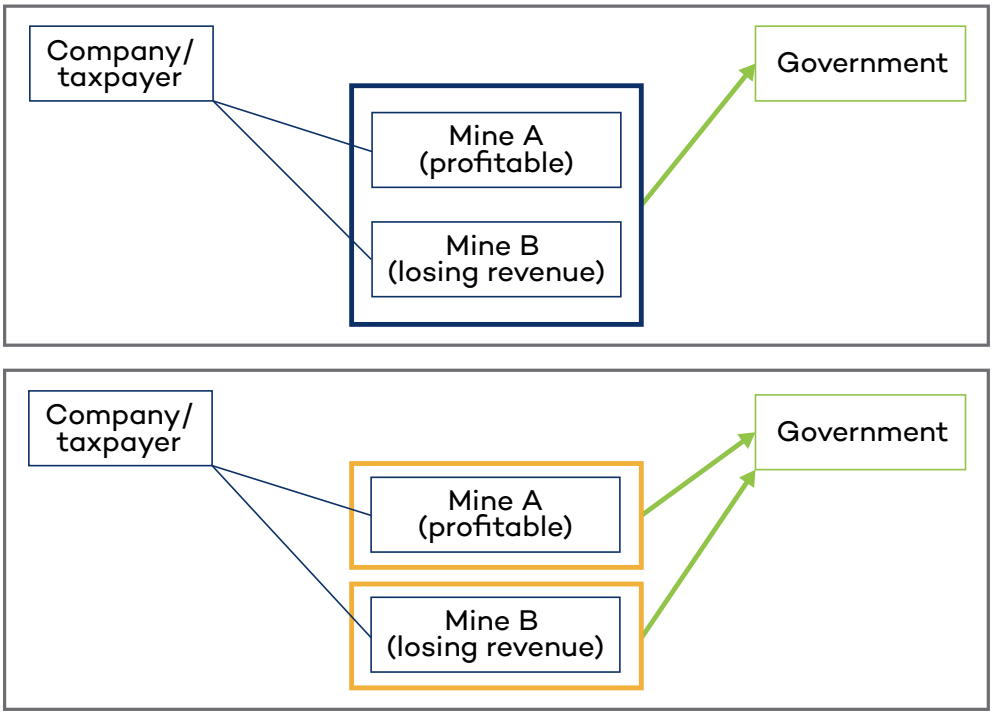
[2] There is some guidance available on the purpose of ring-fencing rules in mining and its advantages and disadvantages. Readers should refer to the following texts: International Monetary Fund (IMF) (2010a, 2014, 2017); Otto (2000).



2.0 The Fundamentals of Ring-Fencing

In the mining sector, it is common for governments to ring-fence mining income. The IMF defines ring-fencing as "a limitation on consolidation of income and deductions for tax purposes across different activities, or projects, undertaken by the same taxpayer" (IMF, 2010a). In other words, when ring-fencing rules are in place and applied, governments tax the mining sector with reference to a tax base determined at the level of an individual project or activity rather than on the level of a company or branch. All tax-deductible costs associated with a given project or activity must be deducted from revenues derived from that project or activity, not from other projects or activities undertaken by the same taxpayer.

FIGURE 1. How ring-fencing works



Note: Without ring-fencing (top), profits from a mining activity can be offset by losses from non-mining activity, reducing government revenue. With ring-fencing (bottom), profits from mining activity and tax payable on this operation cannot be offset in this way.

Source: Author's elaboration.

2.1 The Source of Ring-Fencing Rules

Ring-fencing rules are typically found in the general income tax code, which may include special provisions for taxation of mining activities, or in the mining law. Some countries that negotiate project-specific fiscal terms negotiated ring-fencing rules that go beyond the primary law (see the example from Sierra Leone in Box 1). Guinea[3] and Papua New Guinea[4] (PNG) also include a specific ring-fence in their mining contracts. This practice may be especially relevant where the primary law contains no provisions on ring-fencing or only narrow ring-fencing provisions. It is also relevant if a particular project presents specific fiscal risks that could be addressed or managed by well-designed ring-fencing rules.

BOX 1. RING-FENCING IN MINING CONTRACTS: THE CASE OF SIERRA LEONE

Sierra Leone introduced ring-fencing rules for mining in 2009. The ring-fence is applied per mining licence: "the chargeable income for any year of assessment of a holder of a large-scale mining licence shall be calculated separately for each large-scale mining licence under which licence such holder shall maintain separate balance sheets, statements and books of accounts for each large-scale mining licence under which mining operations are carried on."[5]

The country also negotiated ring-fencing rules in some mining contracts that go beyond the general rules. Under the SierraMin Bauxite Limited, Concession, 2017 and the Tonguma Limited Concession, 2012, the government negotiated a further operational level of ring-fencing. Any activities carried out by the mining company that are separate from the mining operations contemplated in the contracts shall be considered "non-project activities." Such non-mining activities will be accounted for separately, as if they were carried out by a separate corporate entity and shall be subject to the law of general application.

[3] ResourceContracts.org - Winning Consortium Simandou SAU, Exploitation License, 2020.

[4] ResourceContracts.org - Ramu Nickel Limited, Orogen Minerals (Ramu) Limited, JVA, 2000.

[5] S.155 (1), Sierra Leone Mines and Minerals Act, 2009.

2.2 The Prevalence of Ring-Fencing Rules in the Extractive Sectors

Ring-fencing rules are widespread worldwide. They are particularly prevalent in the mining sector in developing countries. The findings in Box 2 are based on a survey of ring-fencing rules undertaken by the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF).

BOX 2. IGF'S ANALYSIS OF RING-FENCING RULES IN MINING: DETERMINING RING-FENCING PRACTICE

The analysis and guidance in Parts 3 to 5 of this note are based on a survey of existing ring-fencing rules by the authors of this toolkit.

The countries surveyed were selected for their economic reliance on mining revenue based on the International Council of Mines and Minerals' Mining Contribution Index. The 25 countries with the highest mineral rents as a percentage of GDP were selected as the initial sample jurisdictions, and 13 more were added through further research. through desk-based research, the laws and regulations of 38 resource-rich jurisdictions were considered, and mining ring-fencing rules were identified in 25 of them (see Figure 1). The survey further identified five mining contracts from three resource-rich countries that include ring-fencing provisions. Once ring-fencing rules were identified, the text of the rules was analyzed to identify policy objectives, legislative design, and policy implications. The methodology involved purely desk-based research supplemented by interviews with government officials where ring-fencing rules were found.

A comparison of the ring-fencing rules in these 25 countries facilitated the analysis of most common legislative designs of ring-fencing rules applied by resource-rich countries.[6] Most jurisdictions in our sample introduced ring-fencing rules after 2000.[7] PNG, South Africa, and Tanzania have all applied ring-fencing rules for mining for over 40 years.

Lastly, we observed and identified that the ring-fencing rules are also frequently used in the oil and gas sector. The Ernst and Young 2019 *Global Oil and Gas Tax Guide*, which summarizes the oil and gas corporate tax regimes in 86 countries, was used to scope the prevalence of oil and gas ring-fencing. Through this report and further research, ring-fencing rules for oil and gas were identified in 34 jurisdictions. This is indicative of similar issues and considerations being present in the oil and gas sector, and they can be considered as a source of inspiration from which the mining sector can learn valuable lessons.

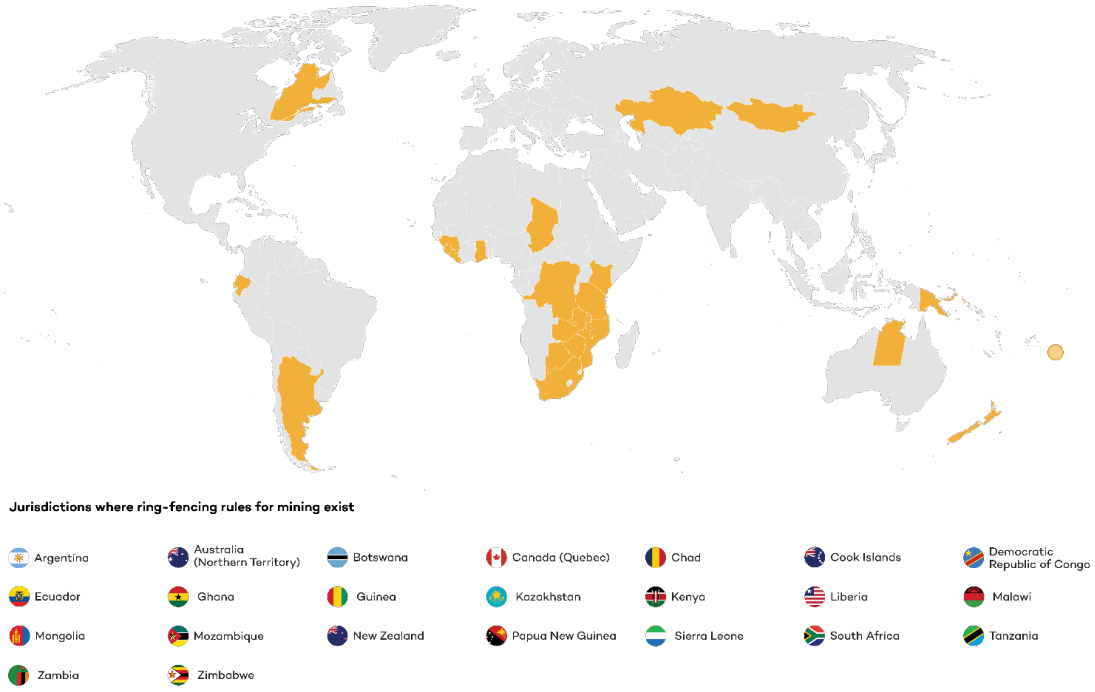
[6] Some country-specific case studies have been included in this practice note to provide practical examples of the economic effects of implementing ring-fencing rules. These studies provide a strong empirical basis for other resource-rich countries to consider similar options when deciding whether to implement ring-fencing rules.

[7] The use of mining tax incentives peaked during the 1990s. The experience granting tax incentives was mixed during the 2000s, when jurisdictions decided to accelerate extractive revenues using different tax measures, including ring-fencing rules.

2.2.1 Ring-Fencing Worldwide: Geographical spread

Based on the survey, ring-fencing rules for mining were found to be more common in Africa than in the Americas or the Asia-Pacific region. Of sampled jurisdictions with ring-fencing rules for mining, 64% are in Africa. This is not surprising given the importance of the mining sector to many African economies and the drive to mobilize more domestic revenue. Ecuador and Argentina are the only countries identified with ring-fencing rules in the Americas, although the Dominican Republic intends to introduce ring-fencing rules in its new mining code.[8] Large mining countries, such as Peru, Chile, Brazil, and several provinces and states in Canada and Australia, respectively, do not have ring-fencing rules.

FIGURE 2. Jurisdictions where ring-fencing rules for mining exist



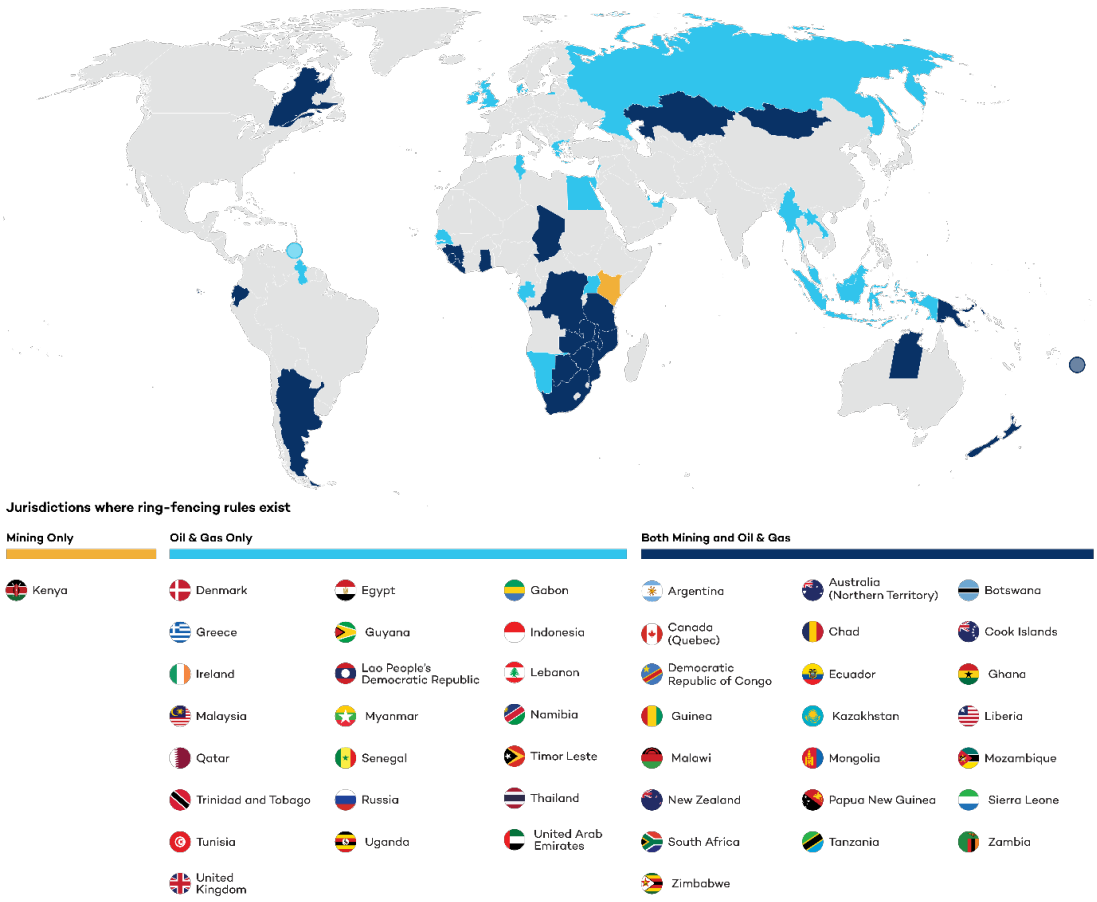
Source: Authors, based on data from the IGF survey.

2.2.2 Ring-Fencing in Oil and Gas and in Mining

Ring-fencing rules are more prevalent in oil and gas than in mining. For oil and gas, ring-fencing typically limits the consolidation of revenues and expenditures between wells, fields, or activities. Several countries have ring-fencing rules for both the mining and oil sectors; however, some countries only provide ring-fencing rules for oil and gas. Kenya is a resource-rich country that only provides ring-fencing rules for mining (see Figure 3).

8 Articles 101 & 102, *Proyecto de Ley de Mineria Nacional, 10 de Junio de 2019*.

FIGURE 3. Jurisdictions where ring-fencing rules exist



Source: Authors, based on data from the IGF survey.

There may be several reasons why ring-fencing is more common for the oil and gas sectors, including the following:

- The oil and gas sector has typically been more vertically integrated than mining. Countries may be concerned with preventing oil and gas companies from consolidating income between different stages of the value chain, particularly where these stages are subject to different tax rates (e.g., higher taxes for upstream; lower taxes for downstream).
- Production-sharing agreements (PSAs) are the most common type of contractual arrangements for petroleum exploration and development. PSAs cover individual fields/projects (Bindeman, 1999). The fiscal liability is then determined with reference to specific contracts, which results in a de facto ring-fencing outcome. The burden of implementing ring-fencing rules could be perceived to be lower due to this contract-by-contract approach to the fiscal administration of oil projects. Cost recovery is typically ring-fenced, as explained in Box 3.
- PSAs have not taken hold in mining. This issue is explored in Readhead et al. (2023).

BOX 3. RING-FENCING AND PSAS

PSAs are typically designed to include cost recovery and production-sharing instruments.[9] Revenue sharing between the host government and the investor is normally determined by arrangements for assigned shares of production volumes. The obligation to pay CIT and other taxes may be placed on the investor or on a state-owned company on the investor's behalf. Cost recovery is often ring-fenced around the exploration and/or development licence within a contract area, which means that exploration and/or development costs associated with a particular licence must be recovered from revenues generated within that block or licence (Nakhle, 2010). In other words, if ring-fencing rules for different licences covered by a PSA exist, an investor should not be able to consolidate revenues and losses derived from different licences covered by a PSA.[10]

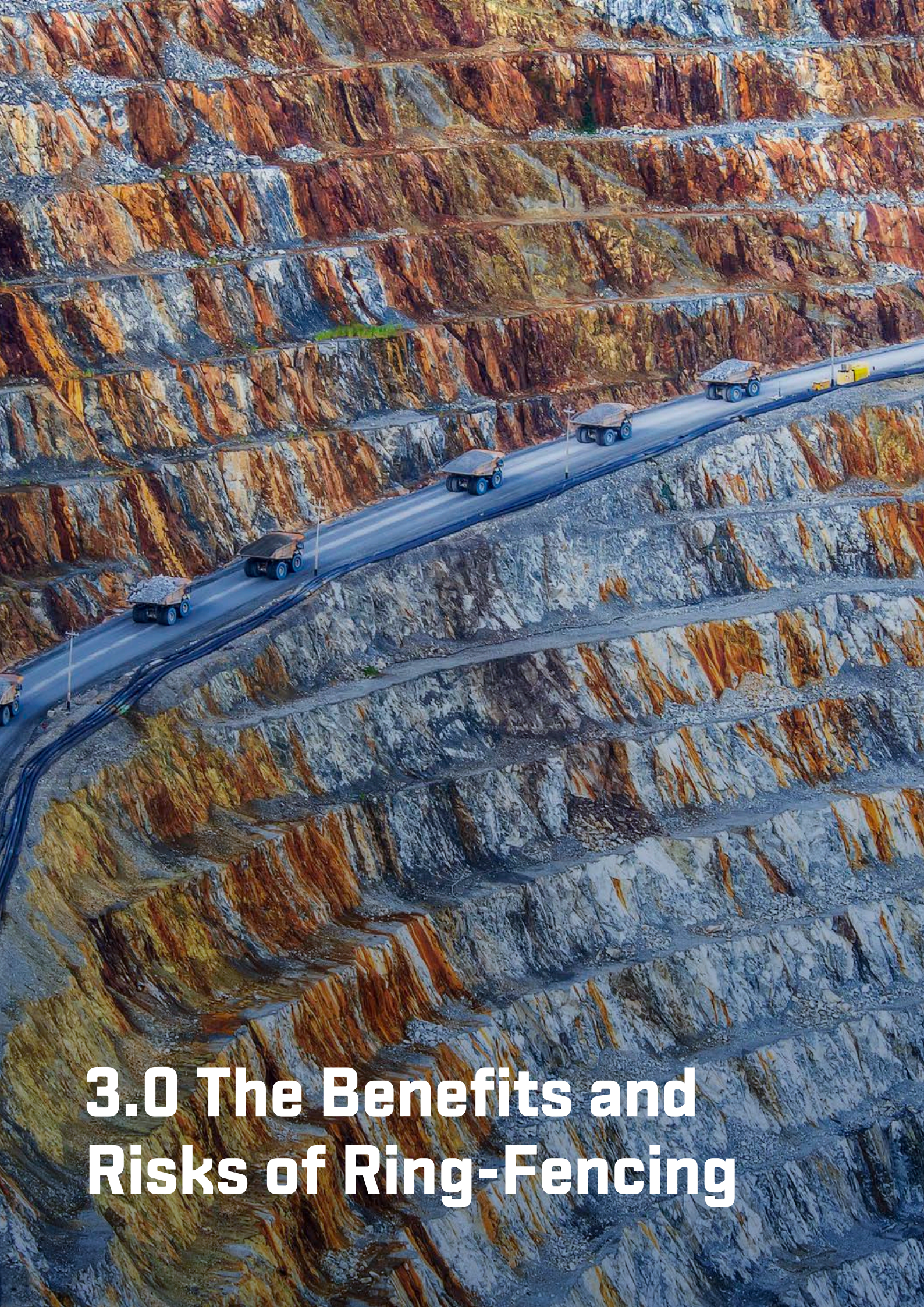
In summary, for most sectors of the economy, the corporate tax base is determined at the subsidiary or branch level, not at the project or activity level. In the mining sector, however, it is common for governments to ring-fence mining projects, and/or mining income from other sources of income. This allows them to administer the specific tax regime for each project and/or mining activities separately from other commercial activities, accelerating government revenues and protecting the tax base. The application of ring-fencing rules is not exclusive to the extractive sectors. Some countries also apply the ring-fencing rules in the finance[11] and energy sectors.[12] In deciding whether ring-fencing rules are adequate for their mining tax regime, governments in resource-rich countries should be aware of the benefits and challenges of ring-fencing rules and how they would fit into the overall structure of the taxation framework, as well as of the preconditions that should be in place for ring-fencing benefits to outweigh its costs.

[9] See Article 11 sub-article 11.2 of the model Production Sharing Agreement in Uganda. Available here: https://www.unoc.co.ug/wp-content/uploads/2018/06/MPSA.pdf

[10] Ring-fencing of PSA has been discussed in Guyana in regard to its Stabroek PSA. See Ram (2019).

[11] The United Kingdom requires banks with more than GBP 25 billion in deposits to separate their domestic retail banking operations from riskier wholesale and investment banking operations. This is done to insulate core banking services, such as deposit-taking, from the effects of a future global financial crisis.

[12] Australia has ring-fencing in the energy sector to ensure the financial separation of electricity and gas distribution and retailing activities. The goal of ring-fencing is to facilitate the provision of effective retail competition by preventing the exercise of leverage by the monopoly service provider in the sector (Australian Energy Regulator, 2023).



3.0 The Benefits and Risks of Ring-Fencing

Resource-rich developing countries should weigh the benefits and challenges of introducing ring-fencing rules and carefully consider ways to reduce potential risks, as explained below.

3.1 The Benefits

3.1.1 Ring-Fencing Delivers Early Government Revenues

In a typical mining project, substantial upfront costs are incurred when a new mine is explored and developed before production begins. Once production starts, these costs will be recouped through the successful exploitation of the mine. In the absence of ring-fencing rules, a company that undertakes two or more mining projects in the host country can offset exploration and development costs from one mine against the profits of another mine, which is potentially already generating taxable income, thus accelerating the tax savings while deferring tax payments to a later stage (or creating a permanent saving if the new mine does not become profitable). Such tax savings may also be available for other non-mining activities requiring significant upfront costs. This timing difference can amount to several years or even decades. The deferral of taxes to a later period results in an additional benefit for the investor—the time value of money—since they can reinvest the money that they could otherwise have to pay as tax, and this generates additional income. The more significant the time deferral achieved, the bigger the effect of the time value of money in net present value terms.

Ring-fencing reduces such tax deferral opportunities and brings forward the payment of taxes from profit-making projects, ensuring the early revenues that are particularly important for resource-constrained developing countries (see Box 4). This objective of accelerating the government revenues, however, comes into conflict with the objective of the investors, which is to optimize the cash flows by benefiting from the tax deferral effect. Careful consideration is therefore needed to assess whether this benefit of accelerated revenues outweighs the negative implications that this may have on the investment decisions and expectations of investors. In balancing these conflicting objectives, it may also be useful to consider whether other fiscal instruments could achieve such an objective (e.g., mining royalty) without the negative spillovers on investment decisions.[13]

[13] Without ring-fencing, there may be neutrality concerns where mining entities are also engaged in non-mining activities. Entities in the non-mining activity sector may be disadvantaged by having to compete with entities that have additional mining activities

BOX 4. AN EXAMPLE OF HOW RING-FENCING DELIVERS EARLY GOVERNMENT REVENUES

In the simplified example below, a mining investor holds two successful producing mines. Row 1 in Table 1 shows the revenue the government would collect if the investor were allowed to consolidate the income and losses from the two mines. Row 2 shows the government's revenue where ring-fencing rules are applied.[14]

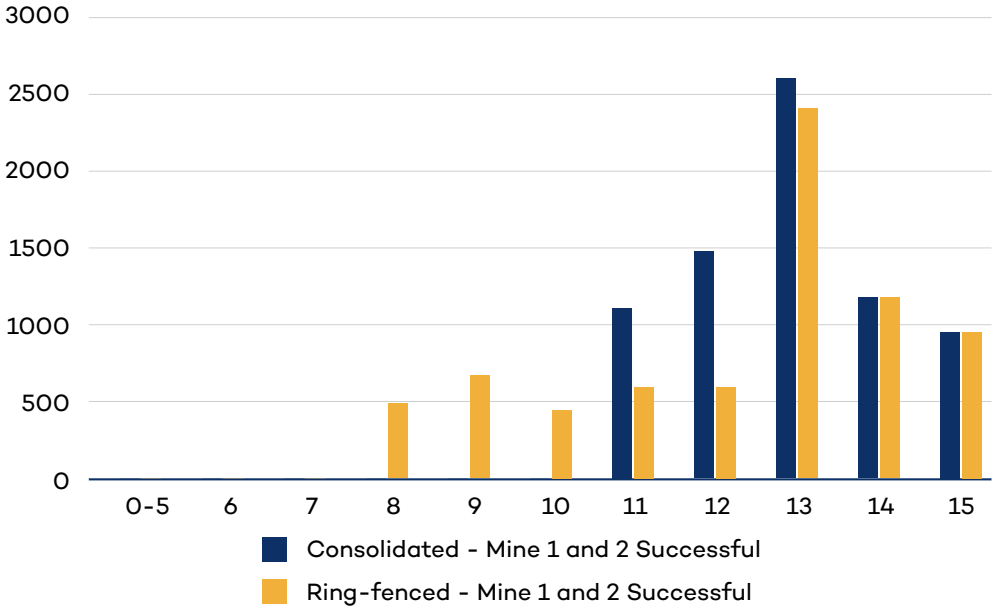
Where ring-fencing rules are applied, the government receives its first revenue from CIT in year 8, as opposed to year 11, if the investor is allowed to consolidate the two mines.

TABLE 1. Government revenues over the life of the mines (in USD millions)

YEAR	0-5	6	7	8	9	10	11	12	13	14	15	TOTAL
Consolidation	0	0	0	0	0	0	1,110	1,478	2,609	1,178	953	**7,328**
Ring-fencing	0	0	0	488	668	443	593	593	2,412	1,178	953	**7,328**

Source: Author's elaboration.

FIGURE 4. Timing of government revenues



Source: Authors' elaboration.

[14] Further details on the economics of the projects are available on request.

3.1.2 Mining Tax Base Issues Addressed By Ring-Fencing

3.1.2.1 Permanent Losses Derived From Unsuccessful Projects

A mining investor holding two licences, one for exploration and one for mining, may offset costs from an unsuccessful exploration project against the profits of a producing mine. If the exploration project had been successful, the loss would have been temporary because once production starts, these costs will be recouped. An unsuccessful project may result in a permanent loss for governments as costs will not be recoverable except where ring-fencing rules exist (see Box 5). While this outcome of protecting the tax base from permanent losses is attractive from the tax revenue policy perspective, it may conflict with the intention of attracting investment into exploration activities. Unsuccessful projects are a reality of the extractives industry, given the risk involved. From an investor's point of view, if a project is unsuccessful, it is entirely reasonable to utilize these losses against other operations, as this is the true reflection of their economic position in the jurisdiction as a whole. Special rules may be considered to find a balanced solution (see the discussion in Section 3.2.3 below).

BOX 5. HOW RING-FENCING PROTECTS THE TAX BASE FROM PERMANENT LOSSES DERIVED FROM UNSUCCESSFUL MINES

In the simplified example below, a mining investor holds a producing mine and has abandoned an unsuccessful exploration project. Row 1 in Table 2 shows the revenue the government would have collected if ring-fencing rules were not applied, and vice versa for row 2.

Where ring-fencing rules are applied, the government's total revenue is USD 3.664 billion; in comparison, where consolidation is applied, it is USD 2.718 billion. In this scenario, USD 946 million in possible government revenue is permanently lost.

TABLE 2. Government revenues during the life of the mines (in USD million)

YEAR	0-5	6	7	8	9	10	11	12	13	14	15	TOTAL
Consolidation	0	0	0	0	0	0	1,110	1,478	2,609	1,178	953	**7,328**
Ring-fencing	0	0	0	488	668	443	593	593	2,412	1,178	953	**7,328**
Consolidation	0	0	0	0	210	443	593	593	293	293	293	2,718
Ring-fencing	0	0	0	488	668	443	593	593	293	293	293	3,664

Source: Author's elaboration.

3.1.2.2 Risks Playing Out in Other Non-Mining Commercial Activities

In the absence of ring-fencing rules, a mining investor who controls either some key stages or all of the mining value chain from upstream (exploration, development, and exploitation) to downstream (processing, transport, and marketing) or who is also involved in non-mining activities (e.g., construction of buildings or investments made into innovative pharmaceutical research) may offset revenues and losses from different stages along the value chain and/or in other commercial activities. Downstream activities could be undertaken offshore, e.g., in a centralized logistical/commercial hub. These activities are intrinsically ring-fenced if they are undertaken by different entities in separate jurisdictions. However, there are scenarios where different upstream and downstream activities happen within the same jurisdiction. In scenarios where there are mining and non-mining activities undertaken in a jurisdiction, and the mine or projects have separate fiscal terms (e.g., there is a separate corporate tax rate for mining projects that does not apply to infrastructure), then ring-fencing may be required.

A similar outcome may arise where the mining investor engages in speculative financial instrument trading (i.e., buying and selling various financial instruments or transactions with financial derivatives with the objective of gaining income from market price fluctuation). While speculative financial instrument trading may be a legitimate investment activity and conducted by entities often in different jurisdictions, due to the unpredictable outcomes of such activities and the risks involved with such investment strategy, unless ring-fenced, they could erode the tax base of a mining company, sometimes even resulting in significant accumulated losses that are being carried forward against future mining profits.

Where the tax base from mining activities is not ring-fenced from the other commercial activities of the same taxpayer, there is a risk that costs or losses from the non-mining activity will erode the mining tax base. This could also have negative implications for administering the other special taxes applicable to the mining activities, especially the upstream activities. Ring-fencing rules will protect the mining tax base from such permanent losses.

3.1.2.3 BEPS Practices

Some taxpayers could engage in BEPS practices by generating or allocating costs and/or losses intentionally. Investors can also engage in so-called cost/expense shifting practices, allocating the costs to entities facing the highest effective tax rate while shifting the profits to entities with the lowest effective tax rate within the multinational enterprise (MNE) group. For instance, an investor can take advantage of tax incentives only available for mining activities (e.g., generous capital allowances) by generating and offsetting intentionally generated base erosion payments against the mining income. Alternatively, investors can take advantage of tax incentives only available for processing activities and shift the profits from mining operations into processing operations.

The use of various structured financial instruments can also result in BEPS practices, where costs and/or losses are intentionally generated with the mining taxpayer, and gains are booked by the beneficial owner or its controlled company (see Box 6).

BOX 6. AN ILLUSTRATION OF THE EROSION OF THE TAX BASE DURING FINANCIAL DERIVATIVES ARRANGEMENTS

Company A is a mining company in Country A. It has entered into a long-term financial derivative instrument arrangement with an overseas-based independent Investment Bank Z:

- whereby if the market price of the commodity extracted by Company A falls below a set price of USD 100, Investment Bank Z will pay Company A the difference between the set price (USD 100) and the actual market price.
- whereby if the market price of the commodity rises above the set price, Company A pays the difference to Investment Bank Z.

Based on the facts of the case, the price was set at USD 100, while the market demand trends and longer-term prognosis indicated that the commodity price would be mostly rising in the coming 5 years to USD 120, USD 130, USD 150, USD 170, and USD 200, respectively, with a very low risk that the price drops below USD 100. As a result of this arrangement, most of the profits earned over the 5-year period are paid to the independent Investment Bank Z.

During the audit, an exchange of information exercise was carried out, which identified that Investment Bank Z had entered into an identical but reverse arrangement with Company B, which is controlled by the beneficial owner of Company A. As a result of this arrangement, most of the profit—less the annual administration fee that stays with the bank—was paid to Company B. Investment Bank Z was thus acting as a mere intermediary, which was effectively a BEPS arrangement between related parties in Companies A and B.

Ring-fencing rules could avoid this type of scenario by ring-fencing the outcomes of such derivative instrument arrangements into separate tax bases that would not allow Company A to offset such expenses resulting from derivatives unless the gain was made on such a derivative transaction. This way, even in the absence of detection of such a BEPS arrangement, the tax base is protected. Ring-fencing rules effectively disallow Company A from offsetting losses derived from these types of transactions from mining revenues. In case of legitimate derivative arrangements, the company will still be entitled to offset the derivative losses from derivative gains earned in subsequent periods. This feature of ring-fencing rules is particularly relevant for developing countries that may lack the tools and infrastructure to detect such abusive arrangements.

Note: Such a structure is also possible directly between the related Companies A and B in the absence of Investment Bank Z.

Such BEPS practices also result in permanent revenue losses for the host government. Where the costs or losses resulting from such BEPS practices are ring-fenced from the mining tax base, the ring-fencing rules can contribute to protecting the tax base from permanent revenue losses.

While aggressive tax planning could be dealt with more effectively by (a) introducing general anti-avoidance measures, and/or (b) improving the capability of tax administrations to detect and mitigate BEPS practices generally, the reality is that these two conditions are not always in place in developing countries. Ring-fencing can be considered a temporary measure in such circumstances.

3.1.2.4 The Overstatement of Exploration and Development Expenditures

The consolidation of revenues and expenditures between projects held by one mining investor can increase the risk of companies inflating their exploration and mine development expenditures, which may not be audited at all (due to limited capacities and statute of limitation rules) or are audited only once the mine starts production and often receive preferential tax treatment, such as accelerated depreciation or investment allowances/tax credits, to lower their overall tax burden on profit-making operations.[15] This is particularly common in jurisdictions with weak monitoring capacity.

The overstatement of expenditures raises the need for additional financing and, thus, associated costs, such as interest deductions, where the investor uses debt to finance the additional "overstated" costs. Such additional debt financing is often provided by related parties, which has a further negative effect on the tax base—in addition to the overstated costs—because there is an additional deduction of the financing costs in relation to the related-party debt financing. Ring-fencing may reduce this risk by limiting the consolidation of revenues with losses derived from exploration or development areas.

BEPS practices may need to be resolved through the full suite of transfer pricing rules and other measures. However, the effect of ring-fencing may, to some extent, discourage such practices. This is especially true where both the overstated expenses and the financing costs are allocated to the ring-fenced activity (see Section 5).

[15] Most tax regimes provide preferential tax treatment for mineral exploration to offset the high risks and costs incurred in this phase. This treatment creates various auditing complexities for tax officials, including ensuring that the expenditures are eligible, how to treat indirect expenditures, and guarding against the risk of transferring expenditures across different operations (Wilcox, 2013).

3.1.3 Ring-Fencing Encourages New Entrants to the Mining Sector

Mining involves large upfront expenses and long lead times before income is derived. In the absence of ring-fencing rules, a mining investor with producing mines can obtain a tax benefit to offset exploration and development costs from new projects in the same country against their existing income within that country. This results in tax and cash flow savings. A new entrant, with no existing operations within the country, does not have access to this tax benefit, and as a result, the incumbent mining operators have an advantage compared to the new entrants. These tax benefits to the incumbent can be significant. Ring-fencing removes the incumbent's advantage, creating a more equal playing field for new entrants, and potentially contributing to more diversified investors. This benefit can conflict with a country's objective to expand investment by the incumbent investors.

3.2 The Risks

3.2.1 Ring-Fencing May Discourage Future Mining Investment by Existing Investors

Ring-fencing could discourage companies from making new or additional investments in the host country. These are especially critical in mining marginal ore bodies, which are very costly (Daniel et al., 2010). From an investor's perspective, the deferral of tax caused by consolidation is justified, as it is a result of further investment in the source country. Whether consolidation contributes to making the new investment or investments into the marginal ore deposits needs to be evaluated based on the merits of each specific case. This disadvantage of ring-fencing rules is valid only in cases of investors who can actually benefit from the consolidation effect. It is important to consider that any impact on investment is likely to be limited by the location-specific nature of mineral resources, which makes investors less mobile than in other sectors. It needs to be considered whether these new investments would have taken place anyway due to their commercial attractiveness, and the tax deferral benefit plays a limited role in making such investment decisions. These considerations are relevant for designing special exceptions from the ring-fencing rules, such as for the purpose of attracting investment into the marginal ore projects, where the tax deferral advantage may play an important role.

Some resource-rich countries have found it necessary to relax their ring-fencing rules to attract further investment. Resource-rich countries such as PNG and South Africa have had ring-fencing rules for a long time. At some point, these governments considered the need to relax strict ring-fencing rules to attract further investment in the context of low commodity prices (see Box 7). On the other hand, countries such as Kenya, PNG, and the Cook Islands have introduced an exemption to ring-fencing rules in which

unsuccessful exploration expenditures are incurred by the mining investor who holds more than one mine. The policy objective behind the exception seems to be to try to balance different policy objectives: deliver early government revenues and attract exploration investments to their jurisdiction. See Section 4 for more details.

BOX 7. THE RELAXATION OF RING-FENCING RULES IN PNG AND SOUTH AFRICA

Photo: Raina

South Africa

In the early 1980s, many mines were being developed in South Africa. If a company owned more than one mine, the unredeemed capital expenditure of one mine could be deducted from the mining income from another mine. Some major mergers and takeovers caused the government authorities to express concerns that vast new capital expenditures could substantially erode the mining tax base. Consequently, South Africa introduced ring-fencing rules mine by mine and distinguished mining from non-mining activities (Davis Tax Committee, 2016, p. 50).

Following a steep decline in new mining investment, South Africa announced a partial relaxation of the ring-fencing rules for "new mines" (a mine opened after March 14, 1990) (Leger & Nicol, 1992).

This meant that the "old mines" in the same entity may have access to the unredeemed capital expenditure of the "new mine" but limited to 25% of the remaining taxable income of the "old mines" after they have exhausted all their applicable capital expenditure in a given tax year" (Davis Tax Committee, 2014). Although the old ring-fencing rules were viewed as being restrictive to new investment, other factors—such as the lack of new major mineral discoveries, the decline in the global gold industry, and the political instability that preceded South Africa's independence—also might have encouraged disinvestment.

PNG

In 2002, when mineral prices were near record lows, PNG's mining fiscal regime was reviewed with the intention of attracting investment. The PNG Income Tax Act was amended to introduce relaxation rules for ring-fencing. Specifically, PNG allowed a tax deduction of up to 25% of allowable exploration expenditures undertaken outside the producing mine.[16] Other changes include more attractive accelerated depreciation arrangements and the elimination of loss carry forward time limits (Hogan & Goldsworthy, 2010).

Neither South Africa nor PNG saw fit to suspend their ring-fencing rules. Instead, they modified them to rebalance the policy objectives of securing early revenues, protecting their tax base on the one hand, and attracting and maintaining mining investment on the other.

16 See, for example, Department of Petroleum and Energy, Petroleum Division (2005).

3.2.2 Ring-Fencing May Make It Harder for an Investor to Attract Capital

Mining is a highly capital-intensive industry. As such, significant upfront finance during the exploration and development phases and additional funding throughout the mine's life are required to maintain operations and fund expansions. Mining investors may look to raise funds through debt or equity, depending on the stage and risk profile of the project, as well as the creditworthiness of the taxpayer (IGF & OECD, 2017b).

A good cashflow position and lower tax costs can enhance the after-tax profitability—and thus creditworthiness—of a specific project and can also make it more attractive for equity investment. Ring-fencing rules may have a negative impact on this fundraising capability since they may accelerate tax payments.

3.2.3 Under Ring-Fencing, Mining Investors May Register Permanent Losses

Mining typically requires substantial upfront expenditures during the exploration and development phases, as well as additional investments throughout the mine's life to maintain operations and fund expansions (IGF & OECD, 2017a, p. 17). Exploration and development expenditures, including additional investments, can be costly. Only a small percentage of exploration projects are successful: "It takes 500-1,000 grassroots exploration projects to identify 100 targets for advanced exploration, which in turn lead to 10 development projects, 1 of which becomes a profitable mine" (Eggert, 2010). The existence of ring-fencing might discourage investors from undertaking risky exploration projects, as they will not be able to recover these losses for tax purposes unless special design features make it possible.

Resource-rich countries could consider incorporating specific design features into their mining tax regimes to address the challenge of these permanent losses for exploration activities. This is explained in Section 5 of this practice note.

3.2.4 Ring-Fencing Creates Increases in Compliance Costs

Ring-fencing rules can impact the compliance costs for taxpayers.

Taxpayers will have to dedicate additional efforts to matching the relevant costs to the relevant mining projects and/or separate the results of non-mining activities from the mining tax base (Calder, 2014, p. 84). Ring-fencing rules might demand computations and reporting for operations in a manner that is inconsistent with internal management accounting and regulatory reporting. The complexity increases where mines operate based on separate licences, while they constitute one cohesive operating project, under which it is less likely to have separate management accounting on a per-licence basis. Weak grounding of the ring-fencing rules in commercial or accounting reality might result in disputes over the segregation of expenses or utilization of losses across an artificial line inconsistent with how the company makes decisions and reports.

Where regulatory or commercial reality already requires the taxpayer to maintain segregated management or financial accounts of the different activities and the ring-fencing rules are designed in a similar manner (such as obligation to report to mining authorities on a mine or per-licence basis), there is less tax compliance burden. On the other hand, artificial segregation of incomes and expenditures, which is not relevant and needed for other commercial or regulatory purposes, might create an additional compliance burden.

3.2.5 Ring-Fencing Increases Administrative Costs

The additional burden placed on tax administrations, which are often significantly resource-constrained in resource-rich developing countries, must also be considered. Ring-fencing per mine or mining licence area will increase the number of returns or separate calculations of tax base received by the tax authority, as opposed to a scenario where one single return or calculation is received per company. In addition, multiple returns or entries will need to be audited, including the verification of a correct apportionment of revenues and costs between mining licence areas. Tax authorities may need to audit several controlled domestic transactions between projects, as well as activities undertaken within the operational units of a single entity for transfer pricing purposes.

It is important for countries to consider the benefits and risks of ring-fencing rules before deciding to adopt them, including whether the ring-fencing rules are the most effective instrument to achieve the country's objectives, or whether there are more effective and appropriate approaches by using other fiscal tools or design features for the mining taxation framework. Section 4 will explore the important preconditions that will inform when ring-fencing might be essential to secure ring-fencing benefits.

4.0 Designing Ring-Fencing Rules

4.1 When Ring-Fencing Is an Appropriate Policy Response

Ring-fencing is a suitable policy option when certain conditions are in place. Section 3 outlined the risks of ring-fencing. For instance, ring-fencing could pose compliance and administrative costs and could deter investment. This means ring-fencing might only be the right policy choice under specific circumstances. This section outlines the important preconditions necessary for the benefits of ring-fencing to exceed its costs.

TABLE 3. Overview of considerations for introduction or design of ring-fencing

Circumstance	Where ring-fencing is appropriate in this circumstance
Where there is no differentiation of the tax rates or no special taxes for the mining sector.	A ring-fencing regime may not be a suitable policy option where there is no special differentiation of mining activities in corporate income rules and there are no special taxes targeting the economic rents from the mining sector. This could be the case in countries that permit consolidation of the tax base at the taxpayer level or even the MNE group level operating in the jurisdiction. The economic rents can still be captured with carefully designed fiscal instruments, such as mining royalties.
Where there is a tax rate differential between mining and non-mining activities, or special rent targeting taxes in the mining sector are in place.	Mining has characteristics that distinguish it from other sectors of the economy, which have led to the use of dedicated fiscal regimes. Some countries apply a higher corporate income rate to the mining sector, or have an additional rent targeting tax (resource rent tax [RRT], additional profit tax [APT]), given the potential for location-specific economic rents. Ring-fencing may be necessary to ensure the integrity of the special mining taxation regime; otherwise, countries risk failing to tax the specific economic rents.
Where the tax rate for CIT is progressive based on revenue (e.g., 10% and 25%) and/or the country does not operate other special profit-based taxes other than CIT.	In such cases, the effect of introducing ring-fencing rules could be counterproductive to the primary objective, as it may apply a lower tax rate to mines with lower revenue instead of a tax rate based on the revenue of the whole legal entity. The ring-fencing rules will result in increased compliance and administrative burden, and they will deliver only very little or no benefit due to the absence of special profit-based taxes (other than CIT). The fact that the tax base of the taxpayer will be further fragmented into separate ring-fenced tax bases will result in the potential reduction of tax revenue due to the separate calculation of the progressive tax rate for each mining project.

Circumstance	Where ring-fencing is appropriate in this circumstance
Where there is a policy preference for early revenues and levelling the playing field for the new investors with incumbent investors.	In some circumstances, governments attach a higher value to receiving early revenues over the life of the project and diversification of the investments by attracting new investors compared to additional investment from existing investors. In such cases, ring-fencing rules based on a project-by-project approach may be a suitable policy option.
Where there is a policy preference to bring a balance between the different features and objectives of a mining tax regime, i.e., mining tax cost-based incentives.	Mining taxation regimes often contain specific features that reflect the nature of the mining operations (i.e., they have long lead times before revenues are generated, are highly capital intensive, and involve significant uncertainty). Tax incentives are one of them. Accelerated depreciation, longer loss carry forwards, and investment allowances are all common features of some mining fiscal regimes. On the one hand, these cost-based incentives help decrease the capital cost of mining investments. A challenge, however, is that when such deductions on capital costs from a specific investment are claimed against other income-generating activities, such as other mining or even non-mining activities, taxes may be delayed even though those other projects are profitable. Ring-fencing rules limit the deduction of costs to the specific projects and the activities to which they relate, and thus bring revenues forward on the profitable projects rather than delaying them. In addition, some behavioural responses of taxpayers exploit these cost-based tax incentives for BEPS practices—for example, investors that are engaged in the overstatement of some of these expenses, either through related-party procurement, financing transactions, or abusive financial derivative arrangements. Where ring-fencing rules are not in place, such expenses can be quickly offset from the tax base generated from other profit-making projects, which can then significantly delay the payment of taxes or result in the permanent loss of tax revenues. Ring-fencing can play a role in minimizing the risk of BEPS where such special mining tax incentives exist.

Circumstance	Where ring-fencing is appropriate in this circumstance
Where there is a policy objective to accelerate tax revenues, and there are challenges in administering profit-based fiscal instruments.	Ring-fencing rules may not be suitable in such cases, and there might be other fiscal instruments that could achieve a similar result. For instance, royalties can provide early revenues from the start of production, are relatively easy to administer, and have fewer avenues for avoidance than profit-based instruments. A simpler way to deliver early revenues could be to carefully design a royalty regime. However, the downside of royalties is that they do not consider extraction costs, which increase the marginal costs of production, and the lack of elasticity in particular, if it is an ad-valorem royalty. This can distort investment and production decisions (Benninger et al., 2024; Lassourd et al., 2023).
Where there is a policy preference to align the tax treatment with commercial structures.	Governments need to be pragmatic on how the rules are applied in their jurisdictions, including tax and mining laws. Where governments define a mining project as an integrated project with mineral extraction and a separate processing facility, it might prefer to ring-fence per mining project which, in turn, includes the processing facility.

Source: Author's elaboration.

As noted in the above considerations, ring-fencing will not always be the most appropriate policy response and fiscal tool. The potential need to use ring-fencing rules will also depend on how the capital allowances regime is designed. Where the capital allowance regime operates on the basis of "matching" of income and expenses, meaning capital allowance deductions are claimed for depreciating assets in line with the useful economic life of such assets, this typically corresponds with the timeline of how the corresponding income is generated. If such deductions are claimed as income is generated, the need for ring-fencing is less likely to arise, as there is no large upfront deduction of the project cost claimed before the mine becomes operational (noting there will still likely be some deductions claimed in cases of failed exploration expenditure, and there may be some OpEx costs). The capital allowance regime will not achieve the intended matching effect if government policy allows for the accelerated or immediate expensing of CapEx costs. The features of the design of the capital allowance regime will thus play a significant role in the consideration of whether to use and how to design the ring-fencing rules.

4.2 Designing Ring-Fencing Rules

This section provides guidance to governments on how to design ring-fencing rules for mining, considering the various policy objectives and challenges outlined in Section 3. It covers five main design aspects:

- What should be ring-fenced (i.e., mine area, mining activities, etc.)?
- What taxes should be ring-fenced (i.e., profit-based taxes, royalties, etc.)?
- Who should ring-fencing rules apply to (i.e., licence holders, subcontractors, etc.)?
- Is it reasonable to consider some exceptions to ring-fencing rules?
- How to deal with permanent losses?

Countries have taken different approaches to the design of ring-fencing rules, as shown in Table 4. The advantages and disadvantages of each are discussed below.

TABLE 4. Practices identified among 25 resource-rich countries

Design feature	Practice among resource-rich countries

What should be ring-fenced?	• Per mining area, expressed as
	  ◦ mine from mine
	  ◦ per mining project
	  ◦ per separate mineral operation
	  ◦ per mining licence area
	• Mining from non-mining activities
	• Upstream from downstream activities

What taxes should be ring-fenced?	• CIT • RRT • APT
Who should ring-fencing rules apply to?	• Mining licence holders • Mining licence holders and subcontractors acting as mine operators • Subcontractors providing high-value-added services to mining companies

Design feature	Practice among resource-rich countries

Is it reasonable to consider some exceptions to ring-fencing rules?	• No exceptions
	• Some exceptions, such as the following:
	  ○ Two or more mines produce the same resource.
	  ○ Two or more mines are adjacent.
	  ○ Two or more mines are substantially interdependent.
	  ○ Exploration expenditures were incurred in one of the mines owned by the mining company.
	  ○ There are unsuccessful exploration expenditures incurred in one of the mines owned by the mining company.

How to deal with permanent losses?	• Permanent losses are not recoverable. • Permanent losses are permitted for gradual set-off.
Is there a policy preference to reinforce the accrual and matching concepts that exist in financial accounting?	• Accrual and matching concepts will typically require that costs be matched with corresponding revenues, and this may sometimes require that costs that are incurred for the purpose of obtaining future income are capitalized on the balance sheet to achieve those objectives. • Ring-fencing rules strengthen these concepts in tax practice, where the tax law rules may not always fully reflect these principles, or they are affected by specific features of the tax system, such as accelerated depreciation or similar tax incentives.

Source: Author's elaboration.

4.3 What Aspects of Mining Operations Should Be Ring-Fenced?

4.3.1 Ring-Fencing by Mining Area

All countries that apply ring-fencing rules to the mining sector do so primarily according to the mining area. Countries may articulate this differently—for example, mining licence area, separate mining operation, mining project,[17] or mine—but the policy intent is the same: to prevent investors from consolidating income between two or more separate mining (or exploration) activities carried out by the same taxpayer.

Of these variations, the mining licence area is arguably the easiest to administer because it is tied to a specific geographical location that is clearly defined in the licence, and the tax treatment is aligned with the mining regulatory treatment (see two examples in Box 8).

BOX 8. SELECTED RING-FENCING PRACTICES[18] WHERE COUNTRIES RING-FENCED PER MINING LICENCE AREA

Ethiopia

"A deduction for expenditure to the extent incurred by a licensee in undertaking mining operations in a license area during a tax year shall be allowed only against the business income derived by the licensee from mining operations in the license area during the year."

Source: Article 38 (1) Federal Income Tax Proclamation. Proc. No.979–2016.

Liberia

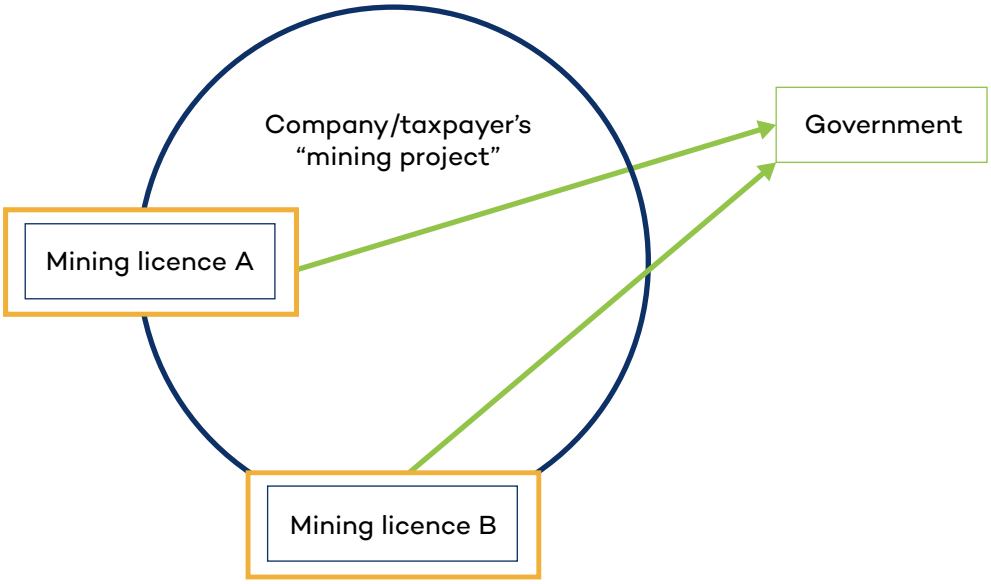
"All expenditures incurred during the tax period wholly, exclusively, and necessarily in connection with project operations (including non-capital operating costs but excluding capital costs except to the extent of the annual allowance for depreciation), are allowed as deduction. The term 'mining production project' means mineral development, mining, or related activities carried out by a mining project producer within a mining license area."

Source: Section 705. Determination of Taxable Income of Mining Projects under Liberia Revenue Code of 2000 as Amended by the Consolidated Tax Amendments Act October 25, 2011.

[17] For instance, Malawi, Kazakhstan, Liberia, and Botswana.

[18] The examples of legislation we considered throughout this practice note are not intended to show "best practice," these are merely country examples.

FIGURE 5. Ring-fencing by mining licence area



Note: In some cases, ring-fences should apply to the area defined by a mineral licence, as opposed to "project" areas, which can have less precise definitions.

Source: Author's elaboration.

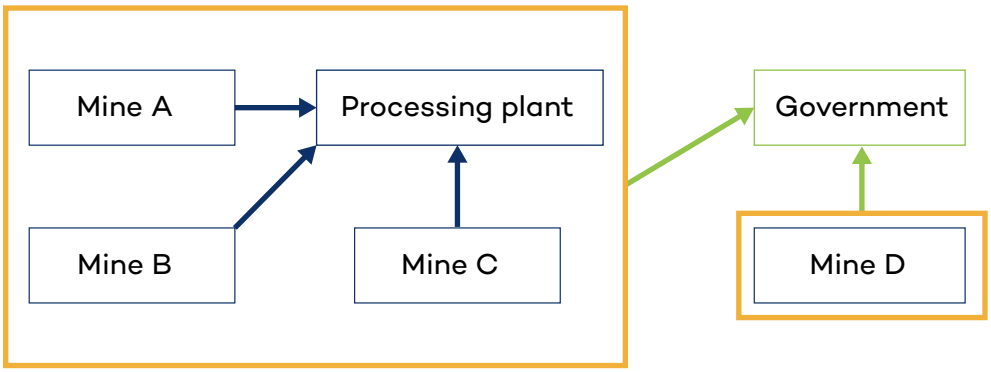
Countries that do not ring-fence per licence area let the taxpayer or tax administration subjectively determine which activities or projects should be ring-fenced.

Whichever terminology countries use to express "mining area," it should be unambiguous and simple to enforce. The definition should include the place where the mineral resource is being extracted, the mining area, and all buildings, structures, machinery, residual stockpiles, access roads, or objects situated within that area that are being used or intended to be used in connection with the extraction of the mineral resource. Resource-rich countries should be careful to make a determination of boundaries as rule-bound as possible to enhance tax certainty, simplify administration, and increase compliance. Where the approach of ring-fencing is based on the mining area, it should be aligned with other regulatory reporting obligations. This way, the additional compliance burden may be less burdensome, especially if the taxpayer already has to collect, prepare, and report financial information on the same mining area basis.

4.3.2 Ring-Fencing by Shared Processing Facility

Some countries may find the mining licence area too rigid a basis for ring-fencing, especially where companies have multiple mines that feed into a shared processing facility. For example, Ghana allows taxpayers who have multiple mines that share a processing facility to group the mines as a single entity for the purpose of calculating taxable income (Ghana Revenue Authority, n.d.). Taxpayers with multiple mining operations that do not have a shared processing facility must still ring-fence by mining licence area.

FIGURE 6. Ring-fencing by shared processing facility



Note: In some cases, it may be appropriate to ring-fence mining projects together with their shared processing facility. In other cases, individual mines may be ring-fenced alone.

Source: Author's elaboration.

The advantage of this approach is that taxpayers avoid the potential difficulty of having to accurately attribute the revenues and costs of the shared processing facility to each mining licence area. There are, however, three challenges that may arise when this approach is adopted:

- It may defer government revenues if the mines are at different stages of their development, as it defeats the main objective of ring-fencing based on the mining licence area.
- It may be difficult to determine which mines are linked to a specific processing facility, especially if there is more than one shared processing facility. This may be further complicated where the processing facility receives ore from related and third-party mines (i.e., tolling arrangements). To address this challenge, governments should require taxpayers to clearly identify and justify which of their mines use a shared processing facility. They should also require a detailed breakdown of the quantities and qualities of materials received per mine, supported by contractual agreements.
- It may encourage taking advantage of smelters that are often located in export processing zones (EPZs), which are commonly subject to preferred tax regimes. While not advisable due to the negative spillovers, EPZ status is sometimes granted to a company's mineral processing operations. An EPZ would often grant tax holidays, lower tax rates, or duty-free export and import. The producing mine outside the EPZ would often be required to pay tax on profits, as well as mineral royalties. Therefore, there is an incentive for the company to shift profits from the mine to the processing facility to reduce its overall tax bill. Ring-fencing rules, which are not based on licence area but are instead based on the shared processing facility, will exacerbate the incentive for companies to shift profits from different mines to the shared processing facility.

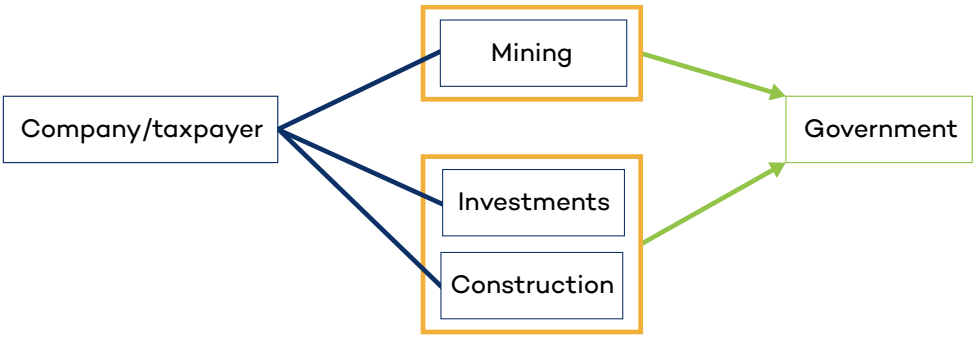
Where ring-fencing around the processing facility is not suitable for countries due to the listed challenges, tax authorities could opt to

- ring-fence the mining licence area, treating the activities related to the processing facility as a non-mining activity and ring-fencing it from mining activities; or
- ring-fence the mining licence area and allocate the CapEx and OpEx from the processing facility to the relevant mines covered by the mining licence that benefit from it. In this scenario, there should be a guidance with apportionment rules to allocate the costs between mines.

4.3.3 Ring-Fencing by Type of Activity

Some countries have chosen to expressly ring-fence upstream from downstream activities or mining from non-mining activities (or both). The main reason is to prevent mining income, often taxed at a higher rate (reflecting the location-specific rents derived from the minerals), from being reduced by costs incurred downstream or through other unrelated business activities.

FIGURE 7. Ring-fencing by activity



Note: In some cases, ring-fences may be used to prevent consolidating revenues from mining (often taxed at high levels) with other non-mining activities, which may enjoy lower tax rates.

Source: Author's elaboration.

For example, the United Kingdom applies special extractive industry taxes to profit from the extraction of upstream oil and gas, which is taxed at a higher rate (30%), while the general CIT rate is 19%. This can motivate companies to offset costs from downstream or other business activities against upstream income to reduce their overall tax bill in the United Kingdom. The United Kingdom has addressed this risk by expressly ring-fencing upstream from downstream oil and gas income.[19]

[19] The North Sea Transition Authority provides a useful summary of the UK Continental Shelf taxation regime.

BOX 9. SELECTED RING-FENCING PRACTICE WHERE COUNTRIES RING-FENCED UPSTREAM INCOME FROM DOWNSTREAM INCOME

United Kingdom

Oil-related activities are treated as a separate trade.

"If a company carries on any oil-related activities as part of a trade, those activities are treated for the purposes of the charge to corporation tax on income as a separate trade, distinct from all other activities carried on by the company as part of the trade."

Source: Chapter 3, Section 279: Oil-Related Activities Deemed as Separate Trade. Corporation Tax Act 2010.

However, even with such a ring-fence in place, companies may still seek to shift elements of profit (income or costs) between the ring-fenced activities by manipulating the internal "transfer" price of internal dealings within the same entity responsible for downstream, non-mining activities, to reduce the income of the mine with the costs from the non-mining and/or upstream activities. Countries can address this risk by extending the application of the transfer pricing rules to these internal dealings in addition to domestic and cross-border-related-party transactions, putting in place effective monitoring systems, and limiting tax incentives (see Section 5 on Implementation).

4.3.3.1 Ring-Fencing Upstream Versus Downstream Activities

The terms "upstream" and "downstream" are more commonly used in oil and gas than in mining. Upstream activities typically relate to extraction and production processes, while downstream activities relate to refining, transportation, and supplying consumers with end-user products (Cameron & Stanley, 2017, p. 49). This separation is often reinforced by distinct laws for oil exploration, production, and refining. Drawing a line between upstream and downstream activities in the mining sector may be more complex, depending on the type of mineral and beneficiation process. In general, legislation should follow industry practice by defining upstream mining activities as exploration, development, and production and downstream mining activities as processing, refining, transport, and marketing.

Some resource-rich countries have chosen to ring-fence upstream from downstream activities. This option draws the ring-fence around certain activities along the mining value chain. In the absence of such ring-fencing—the profits (costs but also the revenues) from the downstream activities might be taxable at the higher CIT rates—directed at taxing the higher economic rents in form of the profits resulting from the upstream activities. Taxpayers may, in practice, prefer to structure the downstream activities in separate legal entities, which will allow them to benefit from lower tax rates

or incentives available in respect of the profits from downstream activities. On the other hand, taxpayers may prefer to accelerate their cash flows and benefit from tax deferral due to the special rules applicable for the extractive operations, such as the accelerated deduction of capital expenditure (e.g., immediate 100% deduction of such expenditure, rather than being subject to gradual depreciation).

Countries will be able to collect taxes from upstream activities (i.e., mining) regardless of the costs (e.g., development costs of downstream infrastructure or losses incurred at the downstream stage, such as risks playing out during the processing, smelting, refining, or transport), or vice versa. As explained above, there may be a motivation to offset downstream expenses against upstream income if upstream is subject to a higher rate of tax. Tanzania includes this type of ring-fence in its legislation (see Box 10). Countries with a highly integrated mining sector and differential tax rates may wish to consider this variation.

BOX 10. TANZANIA

- losses from the separate mining operations may be deducted only in calculating future income from that operation and not income from any other activity whethera mining operation under a different mineral right, processing, smelting, refining or a non-mining activity;
- income from the separate mining operations may not be reduced by a loss from any other activity whether a mining operation under a different mineral rights, ***processing***, ***smelting***, ***refining*** or a non-mining activity."

Source: Section 65F (1)a, and 1(b) of Chapter 332, Income Tax Act (rev. 2019). Italics are authors' emphasis.

If resource-rich developing countries are seeking to encourage downstream activities, the existence of ring-fencing rules might be a relevant consideration for an investor in considering the economic viability and attractiveness of doing so. The fact that the profits from the downstream activities often result in lower rates of profitability is also reflected in the lower rate of CIT that is applicable to those profits. The investors may want to benefit from the deferral of tax on the upstream activities if they undertake such additional investment into downstream activities; this is why it may be more attractive for investors if there is no ring-fencing regime. Careful consideration should be given to what the costs are (e.g., timing difference of tax collection) and what the benefits are (e.g., attracting investment for downstream activities) for governments considering introducing this type of ring-fencing regime.

4.3.3.2 Ring-Fencing Mining Versus Non-Mining Activities

Companies with mining operations may have other business activities that do not relate to mining (e.g., speculative investment activities, renting equipment to other mining or construction companies). In the absence of ring-fencing, the licence holder may seek to offset expenses or losses incurred in these other business activities against mining income. If costs or losses from non-mining are offset against mining income, they reduce the latter. For these reasons, some countries expressly ring-fence mining from non-mining activities and even treat a hedging operation as a separate category of activities subject to ring-fencing. These countries include Kenya, Zambia, Zimbabwe, Tanzania, Ghana, South Africa, and the Cook Islands (see Box 11).

BOX 11. SELECTED RING-FENCING PRACTICE WHERE COUNTRIES RING-FENCED MINING FROM NON-MINING ACTIVITIES

Zimbabwe

"In a case where a person earns income from mining operations and income from other trade and investment, any amounts allowed to be deducted in terms of this section shall only be claimed in respect of the income to which they relate."

Source: Section 15, paragraph 1, subparagraph c, Income Tax Act.

Kenya

"Notwithstanding anything contained in this Act –

- the gains or profits of a person derived from one of the seven sources of income respectively specified in paragraph (e) of this subsection (and in this subsection called "specified sources") shall be computed separately from the gains or profits of that person derived from any other of the specified sources and separately from any other income of that person;
- where the computation of gains or profits of a person in a year of income derived from a specified source results in a loss, that loss may only be deducted from gains or profits of that person derived from the same specified source in the following year and, in so far as the loss has not already been so deducted, in subsequent years of income;
- the specified sources of income are –
    - (ivB) income of a licensee from one license area or a contractor from one contract area as determined in accordance with the Ninth Schedule;
    - (v) other sources of income chargeable to tax under section 3(2)(a), not
      falling within subparagraph (i), (ii), (iii) or (iv) of this paragraph" (pp. 45–46).

Source: Section 15, paragraph 7 of Kenya's Income Tax Act (rev. 2021).

19. (1) Subject to subparagraph (2), hedging transactions entered into by a licensee or contractor shall be treated as a specified source of income for the purposes of section 15(7).

(2) Subparagraph (1) does not apply to an approved hedging transaction entered into by a licensee or contractor that has an annual turnover of less than ten million shillings as required to obtain project finance and approved by the Commissioner.

(3) In this paragraph, "hedging transaction" means a transaction entered into by a licensee or contractor to manage commodity price risk.

Source: Schedule 9 – Hedging transactions, Kenya Income Tax Act.

South Africa

The capital expenditure determined "in relation to any mine or mines shall not exceed the taxable income (as determined before the deduction of any amount allowable under section 15(a), but after the set-off of any balance of assessed loss incurred by the taxpayer in relation to such mine or mines in any previous year which has been carried forward from the preceding year of assessment) derived by the taxpayer from mining."

Source: Section 36 (7E) of the Income Tax Act.

In some cases, it may be difficult to distinguish between mining and non-mining activities. Distinguishing between the mining operations and manufacturing activities that can be connected or interrelated with mining operations is one such example. Countries may have different rules and even incentives in place, which may apply depending on whether the activities are considered mining versus manufacturing activities.

On the one hand, mining involves the recovery of minerals that are already in the earth, whereas manufacturing produces a new element different from the materials or components that went into its making. On the other hand, the process of refining raw materials into a finished product, significantly different from the ore, could be considered manufacturing, and such activities may be subject to different tax treatments. Such distinctions and relevant definitions should be very carefully considered due to the potential implications for tax base determination. In South Africa, the courts have formulated judicial interpretations on what activities would constitute a mining activity, and what activities will be considered a manufacturing activity, given the different tax treatment. In the case of CSAR v Foskor, the South African Court of Appeal concluded that mining operations end when the ore is extracted from the soil, and any processing beyond extraction constitutes manufacturing (see Box 12).

BOX 12. MINING VERSUS MANUFACTURING

In the CSAR v. Foskor case, the Supreme Court of Appeal (SCA) of South Africa had to decide whether Foskor's activities were manufacturing or mining in nature. As part of Foskor's business operations, phosphate-bearing ore was initially crushed and then milled before the minerals of economic importance were separated through a series of metallurgical separation processes. The final products were concentrates containing phosphates that were dried and sold to fertilizer manufacturers.

The case was significant for several reasons. The tax administration (South African Revenue Service) argued that the processing activities of the extracted ore already constituted a process that was separate from mining activities, and therefore, the tax treatment related to manufacturing should apply. The taxpayer argued that the ore processing activity is still part of the mining activity and should not be treated as a separate manufacturing process.

The second significant element of this case relates to the treatment of CapEx. In the case of mining activities, investors can deduct 100% of the CapEx expenses in most cases from the mining income in the year they accrue and carry forward any excess amount into future years,[20] whereas in manufacturing activities, the taxpayers can deduct CapEx expenses only over a period of 4 years.

The third significant element of this case is that it also had implications for ring-fencing, as the outcomes of mining activities will be determined and taxed separately from the outcomes of manufacturing activities.

The court of first instance found that the aim of Fosker's operation was the extraction or mining of phosphates, and no different finished product emerged thereafter. The phosphates sold by Foskor occurred naturally in the earth, and they cannot be manufactured just as "gold or diamonds cannot be manufactured but can only be mined." The mineral was thus not extracted until the extensive processes of crushing, milling, and separation were complete. Accordingly, the court of first instance found that Foskor carried out mining operations.

Compared to the court of first instance, the SCA found that Foskor was carrying out manufacturing. For the SCA, the submission that phosphates occurred naturally in the earth and so could not be manufactured was too simplistic because it ignored the complexity of the processes that the ore had to be subjected to in order to access the phosphates. The SCA also considered the fact that during the separation

[20] The allowance provided in terms of Section 15(a) read with Section 36 is not, in all cases, a 100% upfront allowance. Certain categories of expenditures (such as expenditure incurred on shaft sinking or mine equipment) will be eligible for a 100% upfront deduction; some categories will be eligible for a partial allowance deductible over a 5 to 10 year period (such as expenditure incurred in respect of the acquisition or construction of employee housing, which is eligible for a 10% annual allowance for over a period of 10 years); in exceptional cases, an annual allowance in excess of 100% is possible (such as expenditure incurred in respect of renewable energy plants brought into use before March 1, 2025 which is eligible for a 125% upfront deduction).

process, several minerals other than phosphates are separated and sold independently. Lastly, it considered that the ore is not saleable before the complex separation process. The SCA thus found that the end products that emerge are significantly different from the raw ore, and as such, Foskor's operations include manufacturing. In this case, mining operations are considered to end when the ore is extracted from the soil, and any processing beyond extraction constitutes manufacturing.

Source: Southern African Legal Information Institute.

To prevent the mixing of mining and non-mining income, resource-rich countries should include clear definitions of mining activities. There is an argument for aligning the treatment in the tax legislation by the regulatory definitions and application of the same in the mining law. The sector regulator is better placed than the tax authorities to determine an appropriate treatment.

South Africa (Section 1 of the Income Tax Act) defines mining as "every method or process by which any mineral is won from the soil or from any substance or constituent thereof." There should also be a clear distinction between the process of beneficiating a mineral and manufacturing it into a final product. This distinction may be less critical when the two activities are subject to the same level of taxation, but the need for clear delineation grows as the tax differential increases, as this gives rise to tax arbitrage and, thus, motivation to shift profits or losses between the activities. The activities worth emphasizing as non-mining activities would be activities that have different natures and characters and could also be more likely used to generate unpredictable losses, such as engaging in financial investment activities or speculative trade with derivatives and/or even hedging activities (see the Zambia example in Box 13).

Other countries list specific non-mining revenues: for example, the 2012 Zambian tax reform separates hedging income from other mining income (see Box 13). This means that losses from hedging could no longer be used to offset taxable profits from mining operations. While in some cases, hedging activities could represent a reasonable risk-mitigation practice, countries that choose to separate mining income from hedging income and expenses have typically faced tax avoidance practices and also the difficulties of dealing with such challenges, as it requires significant sophistication of tax administration to scrutinize such transactions. Separating the hedging and derivative instruments into a separate ring-fence is a preferred approach of some governments with limited administrative capacities. Where the hedging and the transactions with derivative instruments are a legitimate business operation, they will result not only in losses but also in profits and can thus be mutually offset, even if ring-fenced from the main mining activity. Such legitimate costs and expenses should not be thus lost as deductions for tax purposes; instead, they should be recovered and offset as deductions from future hedging and derivative gains.

BOX 13. ZAMBIA: AN EXAMPLE OF A COUNTRY THAT CLASSIFIES HEDGING INCOME DIFFERENTLY FROM MINING INCOME

Section 2: Definitions

"business" includes:

- any profession, vocation or trade;
- any adventure or concern in the nature of trade whether singular or otherwise;
- manufacturing;
- farming;
- agro-processing; and
- hedging.

"Mining operations" means an operation carried out under a mining right, excluding an operation carried out under a mineral processing licence only or an exploration licence.

Source: Part 1: Preliminary, 2. Interpretation. Mines and Minerals Development Act 2015. Zambia Legal Information Institute.

While there may seem to be less practical need for ring-fencing for activities closely related to mining activities, such as buying shares of other companies or investing in financial derivatives, largely unpredictable valuation and occasionally opaque markets may create opportunities to structure these transactions to result in a loss-making outcome for the mine operator with a positive profit for another related entity registered in a foreign low-tax jurisdiction on the other side of such a transaction.[21]

4.4 Which Taxes Should Be Ring-Fenced?

Mining fiscal regimes comprise numerous different fiscal instruments. Some fiscal instruments are specific to the mining sector, such as mining royalties, RRTs, or APTs. The design of each fiscal instrument—whether it is ring-fenced or not—will have an impact on tax revenues. Governments must consider whether all taxes that apply to mining should be ring-fenced or only some of them.

[21] These transactions can be also structured via independent intermediaries, such as banks as over-the-counter trading transactions.

Typically, resource-rich countries will ring-fence CIT,[22] as well as RRT and APT (profit-based taxes), in the mining sector. We explain the reasons below.

- CIT, as well as RRT and APT, can be deferred, and/or the tax base may be fully eroded by shifting income/profits or expenses/losses between two mines or two different activities, which are subject to different tax rules. These taxes are calculated with reference to net income (revenue minus allowable deductions). The taxes calculated on gross revenues (e.g., mineral royalties) are less prone to this type of risk since they are not affected by deductions, but they may be affected by the pricing or valuation of the mineral extracted in the specific mine.
- CIT is expected to contribute the major share of mining revenues. Some resource-rich countries impose a higher CIT rate for mining[23] to capture more of the mining economic rent. In the absence of ring-fencing, there is an opportunity for investors to engage in tax arbitrage for activities subjected to different tax rates, which makes the tax base subject to a higher tax rate at risk of deferral or erosion through BEPS practices. Where ring-fenced, these profit-based tax revenues are delivered early and (in some cases) are at least to certain extent protected from such BEPS practices.
- Profit-based taxes such as RRTs or APTs are unique to extractives and are intended to tax excess economic rents from the exploitation of a finite and non-renewable resource, providing added justification for different tax treatment compared to other business activities (see Box 14).

BOX 14. RING-FENCING AND EXTRACTIVES PROFIT-BASED TAXES DIFFERENT FROM CIT

Additional profit-based taxes, such as an RRT or APT, can be effectively implemented within a ring-fence. This is why Sierra Leone, Chad, and Mozambique explicitly ring-fence RRTs, and the Cook Islands, Kazakhstan, the Democratic Republic of the Congo, and Zimbabwe ring-fence an APT, according to IGF's research. Typically based on some measure of excess profits, these taxes intend to capture an increasing share of revenues as profitability rises and are vulnerable to the same timing and base erosion problems as CIT. Where RRTs and APTs are designed to be paid once the investor has achieved a threshold internal rate of return (IRR), the tax base consolidation resulting from a lack of ring-fencing rules may delay the point at which the threshold IRR is reached. This threshold is calculated

[22] Some countries ring-fence only one aspect of the computation of taxable income. For example, South Africa's mining ring-fence, as provided for in Section 15(a) read with Section 36 of their Income Tax Act, applies only to CapEx. This means that deductible CapEx from one mine cannot be consolidated with the taxable income of another mine.

[23] For example, Ghana levies a tax rate of 35%, while the general tax rate is 25%. In Liberia, the general tax is 25% and 30% for mining companies. In Guinea the corporate tax rate is 25%, while the mining tax rate is 30%. See PwC's Worldwide Tax Summaries Online for various country examples.

for a taxpayer's multiple projects and can thus be affected by losses from other projects or even non-mining activities, rather than being calculated separately for each specific project.

From an administrative perspective, not ring-fencing these taxes may create unnecessary complexity for tax authorities, who would otherwise have to administer and audit each profit-based tax separately and differently, depending on whether they are ring-fenced or not.[24] The revenue impact of ring-fencing these taxes, if designed in this way, may be significant since these taxes will be paid when the IRR threshold is met for any single project. However, such an outcome is consistent with the tax policy objectives of RRTs and APTs, which may otherwise never apply if only consolidated results are considered. In summary, RRT/APTs will need to be ring-fencing to be effectively implemented.

The question is whether resource-rich countries should ring-fence the CIT. If the RRT/APT are calculated on a post-tax IRR, the CIT would also have to be ring-fenced. This will streamline administration and compliance efforts while also achieving the positive effect of ring-fencing rules for all profit-based taxes. On the other hand, if the RRT/APT are applied on a pre-tax IRR, ring-fencing of CIT is not required, and countries might consider consolidating CIT.

While countries typically apply ring-fencing rules for direct tax purposes, there may be situations of an (un)intended interaction with value added tax/goods and services tax (VAT/GST) rules that would merit consideration, in particular those aimed at addressing the challenges of mining companies to recover input VAT.[25] For example the implementation of a ring-fencing approach at project level when national (VAT/GST) legislation provides that VAT/GST refundable excess input tax credits can be offset against other tax liabilities (e.g., CIT, withholding taxes, or royalties) or via the application of VAT/GST grouping scheme (i.e., under which an entity that would have been in a refund position can use other entity's positive output VAT/GST and recover its input VAT/GST).

[24] Most resource-rich countries impose these fiscal instruments along with the general CIT. In some cases, both the RRT and the CIT are imposed at a project level. However, the RRT is sometimes levied on a project basis, while a CIT is levied on aggregate company income.

[25] For more on recommendations to address the VAT challenges in Mining Sector, see Swistak & Vernon-Lin (2023).

4.5 Who Ring-Fencing Rules Should Apply To

Ring-fencing rules usually apply to mining licence holders. In general, a licence holder is any person who carries out mineral exploration, mining, processing, transport, or marketing activities under a licence granted based on mining or other relevant laws. The main reason for subjecting mining licence holders to ring-fencing rules is that the income they generate is directly related to the extraction of non-renewable, finite (in most cases publicly owned) mineral resources. As such, governments can impose measures to speed up the payment of taxes from licence holders. In addition, licence holders' activities pose a risk of delayed revenues or lost revenue when you consider the typical features of the mining industry (i.e., price volatility, production level, long lead times to generate profits, etc.).

Other actors in the mining sector, such as subcontractors, are generally not subjected to ring-fencing for several conceptual and practical reasons. Conceptually, subcontractors typically generate their income by providing their services to mining licence holders rather than from the extraction of the resource itself, and they do not carry the risks and rewards associated with normal mining enterprises. They often receive their payments for services rendered irrespective of the success or failure of a particular mining project. Therefore, they can be treated as any other business that does not benefit directly from the economic rent derived from the exploitation of the mineral resource. Practically, subcontractors are typically remunerated on a cost-plus-margin basis, and they will likely pass any costs associated with taxation, including the tax effect of the ring-fencing, onto the licence holder. Another practical consideration is that applying ring-fencing rules to subcontractors can be difficult to implement. The auditing of subcontractors to ensure compliance with ring-fencing rules will involve extensive administrative work, from physical verifications of movable assets to the value of complex intangibles. This is a costly and time-consuming exercise that often requires both the tax authority and the taxpayer to have special knowledge.

There could be cases where subcontractors assume the roles, functions, and even risks of the miners, which has an impact on the nature of the remuneration they receive. This scenario would apply to fiscal models in the extractive industry in which companies provide services to host governments to explore, develop, and even exploit the mineral deposit as a service company. This practice is more common in the oil and gas sector. Where such features are present, the issues related to the discussion of ring-fencing a mining company become relevant for subcontractors that provide such services and assume such extended functions and associated risks while also benefiting from associated returns.

Examples of such approaches were also observed in some jurisdictions—such as South Africa. While the ring-fence obligation for subcontractors is not reflected in South African legislation, the court has been proactive by providing interpretations in those lines.[26]

Another example of such an approach was identified in the United Kingdom. In addition to the Ring-Fencing Corporation Tax applicable to oil licensees,[27] the United Kingdom applies ring-fencing rules to oil subcontractors[28] that provide relevant offshore services in connection with the exploration or exploitation of the seabed and subsoil in an offshore area.[29]

Automatically extending the application of ring-fencing rules to subcontractors, irrespective of the roles they perform and remuneration they receive, and regardless of whether they are related parties, may create more complexity and controversy than it is worth from a revenue perspective. The additional tax compliance costs resulting from such an approach will be passed onto the licence holder, especially in cases of transactions between unrelated parties.

In summary, where appropriate, governments may consider also applying ring-fencing to subcontractors, especially where such subcontractors perform the mining activities, which are compensated based on the value of mineral extracted or payment-in-kind and thus also benefiting from the economic rents dependent on the changes in mineral prices.

[26] See Southern African Legal Information Institute.

[27] United Kingdom upstream production profits are taxed at a higher rate from exploration to decommissioning. This is an entity-based tax combining all fields and excludes midstream, downstream, investment, and oil trading. See the North Sea Transition Authority for a useful summary of the UK Continental Shelf taxation regime.

[28] Although the law refers to contractors, we used subcontractors for the sake of clarity to avoid confusion with oil companies, which are commonly called contractors in the United Kingdom.

[29] For details, see OT50000 - Oil contractors ring fence: contents - HMRC internal manual - GOV.UK (www.gov.uk). The oil contractors ring-fence in the United Kingdom was introduced in 2014 as a part of the anti-BEPS package, alongside measures that restrict the deduction available for certain intragroup lease payments. The concern was that certain offshore drilling and accommodation contractors legally own their main asset (e.g., the mobile drilling rigs or accommodation vessels) in low-tax jurisdictions while they commercially exploit it in the United Kingdom. United Kingdom entities exploiting such valuable assets by providing high-value services to oil companies were able to make deductible intragroup lease payments for the use of that asset, which meant that a significant proportion of the operating profits moved overseas. Since April 1, 2014, tax deductions for certain lease payments have been capped at 7.5% of the asset's cost. At the same time, the oil contractors ring-fence was introduced to protect the additional profits resulting from the measure to prevent them from being shifted abroad or eroded through other means. Profits inside this new ring-fence are only taxed at standard CIT rates (as opposed to the higher rates for oil and gas producers), but they cannot be reduced by other deductions or tax reliefs derived from activity outside the United Kingdom Continental Shelf. Determining whether specific activities qualify as "oil contractor activities" can be challenging. See Wilhunter (UK) LTD v HRMC (2021).

4.6 Is It Reasonable to Consider Some Exceptions to Ring-Fencing Rules?

Some resource-rich countries have chosen to provide exceptions to ring-fencing rules in specific cases. Table 5 summarizes five cases where ring-fencing rules in place contain specific exemptions. These exemptions may be motivated by various tax policy considerations that seek to overcome some of the challenges created by the rules identified in Section 3. There are, however, also several reasons against having exceptions to ring-fencing rules. Granting poorly designed exceptions may render the ring-fencing rules ineffective while also increasing the administrative burden on tax officials having to distinguish between taxpayer/mining activities that are ring-fenced and those that are not. In some jurisdictions, exceptions to ring-fencing rules are discretionary, which, in the absence of clear guidance, may create subjective outcomes, resulting in an uneven playing field and further uncertainty for tax authorities and taxpayers. Taxpayers may also take advantage of exceptions to avoid ring-fencing. Lastly, there might be some interpretation challenges that can increase disputes between tax authorities and taxpayers.

TABLE 5. Common exceptions to ring-fencing rules

Exception applies in the following cases	Countries that apply this exception	Analysis
Two or more mines are adjacent.	Mongolia, Zambia, Kenya, and Sierra Leone. Zambia has defined a non-contiguous/ non-adjacent mine as "not one despite touching or sharing a common border." [30]	This exemption addresses the challenge that, due to ring-fencing rules, investors may be unwilling to make additional investments to explore or develop new adjacent mines, which may not be otherwise economical if treated as a separate project. Mines that are adjacent are more likely to share the same ore body, processing facilities, mining equipment, staff, etc., and consequently, ring-fencing may be more difficult to implement. The challenge is to define when there is an adjacent mine. For instance, a body of water can exist in the middle of two mines without the two mines losing their adjacency status.

[30] Article 15 (C) Amendment of Ninth Schedule. ACT-2018-8.pdf (zambialaws.com).

Exception applies in the following cases	Countries that apply this exception	Analysis
Two or more mines produce the same resource.	Mongolia, in combination with the previous exception—two or more mines being adjacent.	This exemption addresses the challenge that, due to ring-fencing rules, investors may be unwilling to make additional investments to explore or develop new mines. Mines that produce the same type of mineral product are more likely to be interdependent (i.e., shared processing facilities), making it harder to allocate income and expenditures to each licence area. However, it may be difficult to determine what qualifies as the same mineral product (e.g., is it the same dominant mineral, grade and quality, level of beneficiation, etc.).
Two or more mines are substantially interdependent.	Zimbabwe	The justification is the same as above. The challenge is that it can be broadly interpreted by tax authorities and taxpayers. For instance, the interpretation can be as broad as considering that interdependency means that new mines are only able to exist if they are able to offset costs against existing mines.
There are exploration expenditures incurred in one of the mines owned by the mining company.	Sierra Leone permits the consolidation of exploration expenditures from one mine with profits from another mine (only development costs are ring-fenced).	The policy objective is to encourage mining investment, specifically brownfield investments in older and abandoned mining locations. Without this exception, it is believed that resources occurring in these locations would have been sterilized. However, this exception may risk the potential of early government revenues—a critical objective that some of the versions of ring-fencing rules are trying to achieve. This is because investors would be able to offset exploration expenditures against mining income from producing mines.

Exception applies in the following cases	Countries that apply this exception	Analysis
There are unsuccessful exploration expenditures incurred in one of the mines owned by the mining company.	PNG, Kenya, and the Cook Islands exempt mining investors with unsuccessful exploration activities from ring-fencing rules (see Box 16).	The policy objective behind this exception is to promote exploration investments and overcome the challenge of ring-fencing rules, which could result in complete non-recognition of such costs for tax purposes. This exception permits the deduction of such failed exploration costs, but on a limited basis. This exception might be a good policy option if there is an obligation for the taxpayer to prove the existence of an unsuccessful exploration activity and the reasons why the operation was unsuccessful, as well as make those expenditures subject to a tax audit.

Source: Author's elaboration based on corresponding laws and regulations from countries mentioned.

4.7 How to Deal With Permanent Losses Where Ring-Fencing Rules Exist

Most resource-rich countries with ring-fencing rules in place apply them irrespective of the existence of unsuccessful exploration projects. This means that a mining investor who owns both a producing mine and a mine at the exploration stage, which may result in failed exploration activities, will not be able to offset permanent losses derived from the failed exploration project. From an investor perspective, it is one of the main challenges connected to ring-fencing rules that may discourage exploration activities and investment (see Section 3 for more details).

There are, however, some countries that allow investors a gradual utilization of such permanent losses derived from unsuccessful exploration projects over a number of years (see examples in Box 16). The objective of these tax policy responses is to address the legitimate expectation of investors that the expenses incurred for exploration, even when unsuccessful, should not be fully and permanently disallowed for tax purposes. The authors are of the view that to balance the various policy objectives—tax revenue collection versus the promotion of exploration investments—a special rule may be designed to allow full tax recovery of the failed exploration costs. It is a commercial reality in the mining sector that only a small percentage of exploration projects will be successful, and it is reasonable to permit the deduction of the unsuccessful exploration costs under certain conditions.

Such special rule could permit some limited tax recovery of the failed exploration costs by allowing the gradual recovery of losses over time while ensuring that there are still tax revenues collected. The special rule could stipulate that the amount of permanent losses allowed to be recovered is set as a fixed ratio of the tax base (e.g., failed expenses can be deducted from the tax base, but no more than 10% of the tax base on an annual basis). In such a manner, the investor could gradually benefit from tax savings resulting from such failed exploration expenses by using expenditures against profits from producing mines while not fully eroding the tax base in any single year. The investor should be in a position to demonstrate through a tax audit process that these exploration expenses are legitimate and are not affected by BEPS practices, such as by overstating such costs and not inflating them by additional financing costs on funding from related parties.

BOX 16. EXAMPLES OF EXCEPTIONS FOR UNSUCCESSFUL EXPLORATION COSTS

Kenya, the Cook Islands, and PNG offer an exception to ring-fencing rules where a mining licence holder ceases mining operations in a mining area and still has unredeemed losses with respect to that area. The mining licence holder may elect to make use of these losses in relation to another mining licence area in which they carry out mining operations.

Kenya and the Cook Islands

Both the Kenyan[31] and Cook Islands[32] laws state that if a mining licensee ceases mining operations in a mining title area and still has losses that could have been carried over into the next year of assessment, the mining licensee may elect to make use of these losses in relation to another mining title area in which they carry out mining operations, provided that the area covered by the second mining title area falls wholly within the area covered by the first mining title area. If this is not the case, the taxpayer may make use of the losses with regard to another mining title area that they hold.

PNG

PNG[33] offers an exception from the application of ring-fencing rules where a taxpayer incurs exploration expenditures outside the area of a producing project. The taxpayer has the option to include such an exploration expense in a fund that can be deducted from earnings from current or upcoming producing projects. A taxpayer may choose to transfer the unclaimed balance of exploration expenditures to the new development licence if they choose to add such costs to a general pool and a resource development licence is later granted for the exploration

31 Section 3, Income Tax Act.

32 Section 143E, Income Tax Amendment Act. https://parliament.gov.ck/wp-content/uploads/2022/06/Income-Tax-Amdt-No.-7.pdf.

33 See PwC tax summary.

area where the costs were incurred. As a result, the amount transferred will be considered an authorized exploration expense for this new project.

The policy objectives behind the exceptions applied in Kenya, PNG, and the Cook Islands are not clearly set out in public policy documentation; however, we can assume that these resource-rich countries are trying to balance different policy objectives by delivering early government revenues while also attracting exploration investments to their jurisdiction.

4.7.1 Recommendations

What should be ring-fenced (i.e., mine area, mining activities, etc.)?

- When designing the ring-fencing rules based on the mining area, each country's specific rules and reporting framework will be critical. For instance, it is reasonable to follow the existing reporting obligations to the mining authority, which can be on a mine, project, or licence basis. This will prevent an excessive tax compliance burden, since the separation of the costs and revenues will be already corresponding to the established reporting practices for regulatory purposes.
- Where shared processing facilities exist, governments can consider whether such processing activities are to be ring-fenced. Where ring-fencing around the processing facility is not suitable for countries, tax authorities could use the following options:
    - Ring-fence around the mining licence area and treat the activities related to the processing facility as non-mining activities, and ring-fence it from mining activities.
    - Ring-fence around the mining licence area and allocate the CapEx and OpEx from the processing facility to the relevant mines covered by the mining licences that benefit from it. In this scenario, there should be guidance with apportionment rules to allocate the costs between mines.
- Resource-rich countries with highly integrated mining sectors with different tax rates or different tax regimes, including concessions or incentives for different parts of the mining value chain, may also wish to explicitly ring-fence upstream from downstream income. In such cases, it will be important to provide clear guidance for the delineation of activities or definitions of upstream and downstream, as well as, potentially, guidance to taxpayers on implementation.
- Resource-rich countries with differential tax rates for different types of activities—mining and non-mining—may wish to explicitly ring-fence mining from non-mining income. Clear definitions and potential guidance to taxpayers on implementation are also key. This additional level of ring-fencing is particularly relevant to ring-fence some of the BEPS risks derived from investors undertaking speculative investment activities or structuring complex financial transactions next to mining activities.

What taxes should be ring-fenced (i.e., profit-based taxes, royalties, etc.)?

- RRT and APT, to be effectively implemented, should be ring-fenced. Ring-fencing RRTs or APTs will have a significant impact on revenue because the tax base subject to tax or the relevant IRR will not be affected by the results or the IRR of other projects.
- CIT should be ring-fenced together with RRT and/or APT where the latter are calculated on a post-tax IRR basis. Resource-rich countries will benefit from ring-fencing all profit taxes, as they will achieve the same degree of fiscal benefit and protection for all profit-based taxes, as well as from streamlining tax compliance and administration efforts.

Who should ring-fencing rules apply to (i.e., licence holders, subcontractors, etc.)?

- Ring-fencing rules should cover the licence holders. The income generated by licence holders is directly related to the extraction of publicly owned non-renewable mineral resources and often involves economic rents associated with fluctuating mineral prices, justifying a different tax treatment. The term "licence holder" should be clearly defined in the mining law to avoid misinterpretations and controversies with taxpayers.
- As opposed to mining licence holders, subcontractors' income is usually not directly related to the extraction of non-renewable, finite resources; thus, they should generally not be covered by ring-fencing rules unless there are reasons to the contrary, such as
    - the types of roles they perform are similar to those of mining companies,
    - the type of remuneration they receive and the manner in which it is determined, or
    - whether there are BEPS risks that can be effectively dealt with using ring-fencing rules, as demonstrated in the example of British ring-fencing rules for subcontractors.

If ring-fencing rules are to apply to subcontractors, this should be clearly stipulated in the law to minimize disputes and to motivate subcontractors to voluntarily comply with ring-fencing rules.

Is it reasonable to consider some exceptions to ring-fencing rules?

- There should be no exceptions to the application of ring-fencing rules between mining and non-mining activities, as this would expose the profits from mining activities to base erosion payments resulting from non-mining activities.
- If a resource-rich country regards exceptions from ring-fencing based on a mining licence area as essential, these must be carefully designed to be effective and included in the legislation. Exceptions should be balanced against the impact on the primary policy objective of ring-fencing rules, which is to accelerate the receipt of government revenues, as well as the secondary tax administration considerations and their resulting complexity.
- An exception for the usage of unsuccessful exploration expenditures due to a lack of sufficient reserves could, if administered properly, overcome some of the challenges resulting from ring-fencing rules, such as non-recoverable losses from exploration activities. Where this exception is introduced, the taxpayer should be obliged to prove the existence of an unsuccessful exploration activity, undergo an audit of such expenses irrespective of the statute of limitation rules, and explain the reasons why the operation was unsuccessful.

How to deal with permanent losses derived from unsuccessful exploration projects where ring-fencing rules exist

- Special rules could allow full or limited tax recovery of the failed exploration costs by allowing the gradual recovery of such loss over time while ensuring that tax revenues from producing mines are still collected.
- The amount and mechanism for recovering these losses should be carefully regulated so that this rule does not become a BEPS tool but a remedy for otherwise non-recoverable but legitimate and audited loss outcomes.

5.0 The Implementation of Ring-Fencing Rules

This section addresses the various implementation considerations and challenges that tax authorities and taxpayers may face when applying ring-fencing rules. It includes four main areas based on interviews with government officials who implemented and administered ring-fencing rules for mining:

- How should ring-fencing rules be introduced into the applicable legal framework?
- How should the apportionment of revenues and expenditures work?
- How can the risk of abuse of domestic transfer pricing be mitigated in the context of ring-fencing?
- How to design taxpayers' compliance obligations?

5.1 Introducing Ring-Fencing Rules Into the Applicable Legal Framework

When a host country concludes that ring-fencing rules are relevant to enhancing the integrity of the applicable regime for mining activities, several important considerations are relevant to introducing such rules into the applicable legal framework.

5.1.1 Introducing Ring-Fencing Rules Into the General Tax Legislation or Contracts

As mentioned in Section 2, ring-fencing rules could be introduced through laws or contracts. It is preferable to introduce ring-fencing rules for mining into the law, which is public and subject to legislative review, rather than through contracts, which are often discretionary and confidential, with negotiations that are vulnerable to corruption. The main disadvantage of doing so is the relatively long legislative process to pass a law. Therefore, resource-rich countries might wish to use contracts to secure ring-fencing rules for a specific project—for example, where there is a lack of ring-fencing rules in the law or where the rules in the law are not sufficient, and a special approach is needed to address the specifics of a particular project, where the fiscal terms are regulated by a contract.

5.1.2 De Facto Ring-Fencing Due to Licencing Requirements

In some jurisdictions, the licencing law requires each legal entity to own only one mining licence. This means that for each mining project, a separate legal entity must be established. This regulatory requirement effectively eliminates the need for ring-fencing based on mining licence area. However, ring-fencing based on mining versus non-mining or upstream/downstream may remain relevant even in such jurisdictions due to the considerations elaborated above.

5.1.3 Requiring Separate Accounting Per Project

Some resource-rich countries require mining investors to keep separate accounting for each project. This obligation can sometimes have implications that also the tax should be paid on a project-by-project basis, especially if the accounting laws are the basis for the application of tax law. However, where there is a lack of such an interaction between tax and accounting rules, the mere separate accounting rule will not result in ring-fencing outcomes for tax purposes (see Box 17 for Peru's experience).

However, where tax laws require ring-fencing, separate accounting—at least for tax purposes (tax accounting)—also becomes necessary to facilitate the compliance and administration of the ring-fencing rule. Such an additional compliance burden placed on investors through having to separately produce segregated accounts for tax purposes only should be carefully considered. However, this is of lesser relevance if such reporting requirements are already in place for other regulatory reporting or existing management accounting (see Section 3.2.4).

Many jurisdictions applying ring-fencing rules require separate accounting for all ring-fenced activities—that is to say, separate tax accounting for each project and also other non-mining activities.

BOX 17. PERU'S EXPERIENCE

Article 22 of the Peruvian Mining Code Regulations[34] guarantees the stabilization of fiscal rules per mining project for mining investors. A mining investor that holds more than one project, Article 22 says, "must keep separate accounts and reflect them in separate results." For years, this rule created the impression that ring-fencing applied to mining in Peru. This provision is understood as a practical necessity for compliance and to administer fiscal stability, which requires that the results of each project depend on the applicable tax law at the time the project was started.

In 2012, the Peruvian Tax Authority, the National Superintendency of Customs and Tax Administration, concluded that the interpretation of Article 22 should not be the existence of ring-fencing rules in mining. While the mining company must keep separate accounts and reflect separate results per each concession, the taxpayer is entitled to offset losses and profits between projects.[35]

34 LIBRO.pmd (fao.org).

35 A490-D12_INF_Mineras_Perdidas_cambiocriterio_PAC_IGV_web_final (sunat.gob.pe).

5.1.4 Requiring Separate Tax Identification Numbers for Each Mining Title

Some resource-rich countries (i.e., Mozambique) have decided that ring-fencing is applied per mineral right or title and for each prospecting and exploration licence, mining certificate, or mining concession. In Mozambique, each taxable person must obtain a single tax identification number for each mining title and keep separate accounting for each project/licence. Each project is identified by a separate tax identification number, which means that one taxpayer may have multiple tax identification numbers. This can result in administrative complexities that need to be carefully considered and managed.

5.1.5 Clarifying the Date of Effectiveness

Resource-rich countries that decide to introduce ring-fencing rules should be clear about which projects the rules will cover. It is inadvisable—and in most cases, it would be considered illegal—to apply the ring-fencing rules retroactively because this will also change the tax consequences for the past, which in most countries will not be permitted under constitutional principles. While the newly established ring-fencing rules may also apply to the existing projects (unless there is a stability clause in place that would prevent this), such an approach was taken by only a few countries because it also brings a significant compliance burden and administrative challenges. Ring-fencing rules should therefore preferably apply only to new licences/projects granted after the year of entry into force, unless there are imperative policy reasons to the contrary. These entry-into-force and effectiveness considerations should be carefully considered and reflected in the legislation. Administrative guidance would be helpful to deal with transitional issues and to determine when the ring-fencing rules should apply to existing projects.

5.1.6 Stabilizing Ring-Fencing Rules in Investment Agreements

Several resource-rich countries have signed mining contracts with investors containing specific fiscal clauses that guarantee that the fiscal provisions are stabilized (through stability clauses), which means that a set of fiscal terms is frozen at the time of signing the contract and will be applicable to a specific project until the end of the project, irrespective of subsequent legislative changes. Stability clauses can vary significantly in form and scope. Some clauses are very specific to some types of taxes, such as CIT and royalties, withholding taxes or VAT, or simply apply to "all taxes or tax rules" applied to a project, in addition to customs and other fiscal obligations.

It may need to be considered whether the introduction of ring-fencing rules for existing projects would violate a specific stability clause. The outcome of such an analysis will depend on how the stabilization provision has been formulated. Where the introduction of such rules is contemplated in the future, it is recommended that ring-fencing rules be taken out of the scope of stabilization to avoid further disputes.

Furthermore, Principle VIII of the OECD Policy Development Tool *Guiding Principles for Durable Extractive Contracts* says:

> The adoption of bona fide anti-avoidance measures or the interpretation of existing laws by host governments to protect the revenue base against tax base erosion and profit shifting (e.g., on interest deduction limitations and transfer pricing) and consistent with internationally recognised tax practices should not be considered a change in law constrained by stabilisation clauses. (OECD, 2020, p. 20)

5.1.7 The Interaction of Ring-Fencing Rules With CIT Progressive Rates and Deductions Limits

There are two features of a tax system that interact with ring-fencing rules and could create practical implementation challenges that need to be carefully considered when the ring-fencing rules are designed and drafted into law:

1. Resource-rich countries could have progressive CIT rates for different levels of profitability (i.e., 10% and 25%). Where such progressive tax rates apply, poorly designed ring-fencing rules could actually result in a reduction of the tax liability. This would be of concern, especially where the relevant progressivity thresholds are high and both the tax base and the overall tax liability—meaning also the tax rate—are also determined in relation to each project separately. In such a case, the law should be drafted clearly to clarify whether the ring-fencing rules
    - require full determination of tax liability, i.e., application of tax base and tax rate for each project separately and thus actually benefiting the taxpayer with application of the lower CIT rate, or
    - are only for separate tax base determination, i.e., to ensure that while the tax base is determined separately for each project, for the purpose of applying the progressive CIT rates, the positive results of the tax base from each project should be aggregated at the level of the taxpayer (i.e., on a consolidated basis), regardless of how many projects an investor holds.

    Such clarity is necessary to avoid subsequent disputes.

2. Similar implementation challenges may relate to the deductibility of some costs—for example, limits on the deductibility of some expenses, such as gifts and charitable donations or interest limitation rules based on BEPS Action 4 recommendations (OECD, 2015). The key question arising is whether the investor should determine the deductibility of these expenses at the level of each project/activity separately or whether this limitation should be determined at the consolidated tax base level. Some of these expenses may only relate to a specific project—for example, the loan financing CapEx on a specific mining project only relates to that project—and therefore

the interest limitation may need to be determined with reference to the results of that project, rather than reducing the tax base from other projects that did not require any financing. For other types of expenses that do not relate to the activities of a specific project but rather to the activities or operations of the taxpayer as a whole, the deduction limits may need to be determined with reference to the overall results of the taxpayer. Considering the complexity of such questions, it is advisable that the relevant approach be explicitly stipulated in the primary or secondary law.

5.2 How Should the Apportionment of Revenues and Expenditures Work?

In the case of a mining company carrying on multiple operations and undertaking different activities, the apportionment of revenues and expenditures to the correct project or activity is of utmost significance. This is because there are both direct and indirect revenues and/or expenses (e.g., general administrative expenses/overheads) that need to be apportioned to the different ring-fenced activities relating to multiple licence areas or business activities (upstream versus downstream or mining versus non-mining). Where direct allocation is not feasible or practicable, they may need to be apportioned among the different licence areas and activities. For example, if a drilling rig is used for multiple projects, this raises the question of which project is entitled to its depreciation charges. Should the expenses related to the usage of the drilling rig be allocated to all the taxpayer's projects evenly (even if not used on all the projects) or only to those projects that actually benefit from its exploitation and in proportion to its actual usage?

From a management accounting perspective, mining investors are interested in monitoring revenues and expenditures per mining project or activity through sophisticated management accounting processes and a record-keeping infrastructure. The investor will equally seek to carefully monitor the performance and profitability of each mine and each stage of the value chain and to keep track of expenses by carrying out detailed cost control related to the various activities performed. Such practices provide very useful information for allocating revenues and expenses to the relevant activities, which may also be subject to ring-fencing. It should be noted that while such a management accounting approach may often be reliable and provide useful information, it may not always be the suitable approach for tax base determination purposes, as it may be prone to tax base optimization. Any such management accounting approach should allow for a tax audit review and justification of how the relevant costs were allocated to the different projects. On the other side, where the taxpayer's management accounting systems use and apply economically sound allocation keys of linking the relevant expenses with the benefits derived from such expenses and their application results in reasonable outcomes, it is also advisable that the tax administration accepts such approaches to minimize unnecessary disputes and additional compliance burden, which may not have material effect on the tax base.

Various methods may be used to allocate the revenues and expenses to specific projects. Apportionment methods will differ based on the allocation keys that they use. Different allocation keys will lead to different outcomes. Some allocation keys may, therefore, be more appropriate than others. For example, if the operating overhead expenditure is to be apportioned based on revenues, such an approach will allocate the overhead costs only to mining projects that have already generated revenues rather than apportioning such expenditures based on the actual usage and benefits of the expenditure for a particular project.

In the absence of specific guidance, taxpayers may consider the most favourable apportionment methods from a tax liability perspective. If tax administrations disagree with the approach taken by the taxpayers, this may result in disputes and uncertainty. To mitigate such outcomes, tax authorities may consider issuing guidance for taxpayers on how to apportion shared direct, indirect, and general revenues and expenditures for ring-fencing purposes. This should include clear definitions of the revenues and expenditures, as well as a method for apportionment and appropriate apportionment keys. Where such guidance is considered, the following section provides some practical insights.

5.2.1 Defining Direct, Indirect, and General

For the purpose of apportionment, revenues and expenditures are usually categorized according to their nature by direct, indirect, and general categories. This categorization will generally have implications for the method of allocation of those revenues or expenses, as well as the relevant allocation keys needed to achieve reasonable outcomes that are consistent with the underlying objectives of the ring-fencing rules.

- "Direct" revenues and expenditures can be directly and exclusively attributed to a specific licence or business activity.
- "Indirect" revenues and expenditures have a bearing on a specific licence or business activity, as well as other licences or business activities.
- "General" revenues and expenditures are those that have no bearing on the specific licence or business activity but are shared revenues and costs that relate to the licences and various other activities of the enterprise as a whole.

Before the costs are allocated into the different categories using the methods outlined below, it may also be important to determine whether the particular type of costs actually belongs in the particular category and is eligible to be allocated to the particular mining licence area or business activity. For example, where a country applies ring-fencing rules to separate the mining activities from non-mining activities, the expenses not related to the mining activities (e.g., expenses related to speculative investment activities) should not be included in any of the categories mentioned above, where the income or expenses from these activities are subject to a separate ring-fencing regime.

TABLE 6. Examples of direct, indirect, and general revenues and expenditures

	Revenues	Expenditures
Direct	Mining revenues derived from the sale of minerals mined from a mining project.	Prospecting, exploration, and development expenditures are clearly attributed to a specific mining project. For instance, the depreciation associated with a drill rig used only for a specific mining project.
Indirect	Income from the sale of a drilling rig previously used for more than one mine.	Continuing the drilling example, assuming that the drilling rig is used during the taxable year for two or more licence areas, the costs will need to be allocated to more than one licence area where it was actually used.
General	Income earned from interest on current account bank deposit.	Management and administration expenditures, human resource expenditures, expenses related to the operation of internal information technology systems, overhead costs.

Source: Author's elaboration.

5.2.2 A Method for Apportioning All Indirect and General Expenditures and Revenues

Direct revenues and expenditures should be attributed in full to the specific licence area or business activities to which they relate. Indirect and general revenues and expenditures, however, are not directly attributable to a specific licence area or may relate to different business activities carried out by the same enterprise, which creates apportionment challenges. For instance, it can be difficult to apportion

- revenues derived from ore from differing licence areas where these are mixed during the processing stage to produce one product,
- revenues from raw materials versus processed goods or revenues from mining versus manufacturing activities,
- expenditures related to staff involved in more than one licence area/ business activity,
- expenditures related to equipment used for different mines/business activities, and
- financing costs incurred while borrowing funds to expand different mining projects/business activities.

Different allocation methods are used to apportion general and indirect expenditures and revenues. Direct and indirect methods could be applied depending on the materiality of the revenues and expenditures. The significance and materiality of the relevant expenditure could be considered when setting up specific tracking or tracing requirements, rather than relying on simplification approaches based on a proxy allocation rule, such as the CapEx expenditure mentioned above.

5.2.3 Direct Methods

These methods use the actual usage or benefit as a proxy. For instance, the cost of the drilling rig used during the taxable year for two or more licences should be apportioned based on the time/number of days it was used during the financial year on a specific licence area. This approach would result in the most reasonable outcome—rather than allocating such significant expenditure on some more indirect allocation key—such as total CapEx expenses on the different mining areas incurred during the year. For such significant expenses, the requirement to track the actual usage may be reasonable.

5.2.4 Indirect Methods

For insignificant expenses, it may be more pragmatic to use allocation keys that can serve as reasonable proxies without placing an excessive compliance burden on the taxpayer. There are different indirect methods to apportion general and indirect expenditures and revenues based on production, direct revenues, and capital expenditure. Resource-rich countries might consider using these methods in specific cases, that is to say, for material general and indirect revenues and expenditures.

Production

Under this method, apportionment is based on the contribution of each licence area/business activity to production volumes.

Advantage: It is relatively easy to apply if production volumes per mine are monitored.

Disadvantages:

- For expenditures, it directly undermines one of the policy objectives of ring-fencing rules, which is to avoid the deferral of taxes where a taxpayer holds both a producing mine and a mine at the exploration or development stage. Essentially, a mining investor is required to allocate 100% of indirect and general costs to the mine that is producing and generating profits. None of the costs are allocated to the mine under exploration or development, even though it presumably benefits from the same shared services. The result is that taxes owed by the producing mine are substantially deferred compared to if some of the costs were allocated to the exploration licence (see the case of Mongolia in Box 18).

- For revenues, mines may produce different mineral products that are not easy to aggregate. For example, an investor holds one mine producing gold concentrate and another mine producing copper concentrate. The prices are expressed in different units (e.g., ounces for gold and tonnes for copper), and even if there is a conversion to the same units, the values of minerals are very different. The result would be the allocation of more revenue by share of production to the copper mine that is warranted.

Direct Revenues

Under this method, apportionment is based on the contribution of each licence area/business activity to total revenues from mining activities, assuming that mining and non-mining income is ring-fenced.

Advantage: It is easy to apply if production volumes per mine are monitored.

Disadvantage: It also requires a monitoring process of the price of the mineral in addition to production volumes. In addition, there is a disconnect between indirect exploration and development costs and direct revenues. Also, it would result in offsetting the expenditures against the revenue/profit-generating mines, as explained under the Production item above, and thus, it also defeats the objectives of ring-fencing.

CapEx

Under this method, apportionment is based on the contribution of each licence area/business activity to the total CapEx per project.

Advantages:

- For expenditures, it preserves the policy intent of the ring-fencing rules, which is to avoid the deferral of taxes where there is both a producing mine and a mine at the exploration or development stage. Basically, a mining investor is required to allocate a percentage of indirect and general costs to all projects, regardless of whether one is producing and generating profits. Some costs are allocated to the mine under exploration or in the development stage, as it presumably also benefits from the same shared costs and services. The result is that taxes owed by the producing mine are not substantially deferred compared to a situation where production is used as a proxy. It reflects the idea of taxing the underlying factor that generates profits.
- For revenues, it considers that, in theory, a company that earns more spends more, contributing to total costs—a reasonable basis for apportioning revenues.

Disadvantage: The challenge would be to define what CapEx is for ring-fencing purposes and audit whether the taxpayer has considered the right components when applying the method. Countries might wish to use the generally accepted accounting principles for CapEx, which state that CapEx is an item that has a useful life of more than 1 year.

BOX 18. APPORTIONMENT OF MANAGERIAL, SALES, AND ADMINISTRATION EXPENDITURES IN MONGOLIA

The Mongolian CIT Law offers guidance on how to apportion a specific type of general expenses: management, sales, and administration expenses. Article 6.7 of the Mongolian Regulations sets out that "managerial, sales and administration expenses should be apportioned in proportion to the production amount in accordance with the IAS."

Under the current method, a taxpayer that holds two mines, one producing mine and one at the exploration or development stage, is required to allocate 100% of management, sales, and administrative costs to the producing mine. None of the costs are allocated to the mine under exploration or development, even though it presumably benefits from the same managerial and administrative expenditures. The result is that the tax base of the producing mine is reduced by 100% expenses, which may equally benefit both mines and, as a consequence, the tax payable may be substantially deferred compared to if some of the costs were allocated to the exploration or development licence. The method of apportionment, based on production as an allocation key, diminishes the policy objective of ring-fencing rules, which is to avoid the deferral of taxes; however, this does provide an advantage to taxpayers that could stimulate investment. Instead, Mongolia might consider separating the management and administration from the sales expenses and allocating such expenditures based on the nature of those expenses.

The sales expenses could continue being apportioned based on the production volumes, but the management and administrative expenses may be better allocated with a method using CapEx as the allocation key, as that would better allocate these expenses among both mining projects that benefit from such expenditure.

Resource-rich countries should use an appropriate method to apportion indirect and general expenditures and revenues. A suggested approach is the following:

- For significant expenses exceeding a set materiality threshold—for example, more than 5% of total annual costs—the taxpayers should apply the more direct allocation keys, such as tracking the actual usage of the drilling rig on the different projects, as explained above. Such expenses would then be allocated using direct allocation keys and approximating the outcomes under the direct allocation method.
- For most types of expenditures below a given threshold, a method based on CapEx will generally result in a reasonable outcome. It preserves the policy intent of the ring-fencing rules, which is to avoid the deferral of taxes where there are several mining projects in different stages, such as a producing mine and a mine at the exploration or development stage.

- For revenues, a method based on the contribution of each licence area to the total revenues from mining activities fits the purpose. General and indirect revenues can often be linked to mining revenues. For instance, income earned from bank interest will usually be generated from the excess cash that is achieved from selling the minerals.

5.3 How to Mitigate the Risk of Domestic Transfer Pricing Abuse in the Context of Ring-Fencing

Mining investors might over-allocate expenditures to mature mining projects or profitable activities to reduce the profits of those projects or activities. Similarly, there might be cases where mining investors will shift profits from profitable projects to loss-making projects or to non-mining activities subject to a lower tax burden. These profit or expense (deduction) shifting strategies are well known approaches that may be a result of an arrangement between related parties (belonging into the same MNE group) and/or can be also result of arrangements agreed with third parties—i.e. the investor could instruct the third-party service provider to contract and invoice a specific expense to a specific legal entity, which faces the highest effective tax rate and thus optimizing the tax benefit. Tax administrations are equally aware of such practices and address them either by applying transfer pricing rules or other special anti-avoidance rules designed to prevent the income or expense (deduction) shifting.

The existing transfer pricing risk can be observed between separate legal entities, but equally, it may be demonstrated where different parts of the same entity are treated as separate taxpayers due to the application of ring-fencing rules.

To address this challenge and to deal with such valuation/transfer pricing risks, the resource-rich countries often apply transfer pricing rules based on the arm's-length principle not only to cross-border transactions but also to transactions between different legal entities that operate in the same jurisdiction (domestic transactions). Where ring-fencing is used and the different parts of the same legal entity are subject to different tax treatment or there is a risk of profit shifting between the ring-fenced activities, the transfer pricing rules should also apply to such internal transactions (better referred to as "dealings") between separate parts of the same legal entity. By doing so, mining jurisdictions can ensure that the relevant profits recognized at the level of each licence/activity represent the true economic value generated by the specific licence/activity, which is de facto treated as a separate taxpayer, often even filing a separate tax return. The challenge with this approach is that transfer pricing rules are complex and time consuming to apply. If they are applied to all the internal dealings inside of the same legal entity, this can increase the tax compliance costs and create challenges for tax administration and taxpayers. Tanzania and Mozambique,

however, apply transfer pricing rules for such internal "arrangements" and "dealings" of mining companies. The United Kingdom does it with a focus on oil transactions (see Box 19). As demonstrated in these examples, where there is a policy intent that the transfer pricing rules shall apply to such internal dealings, it must be clearly stipulated in the legislation, and the compliance implications should be carefully considered.

BOX 19. THE CASES OF TANZANIA, MOZAMBIQUE, AND THE UNITED KINGDOM

Tanzania

In Tanzania, transfer pricing rules apply to arrangements between separate mining or oil and gas operations and any other activities of the person conducting those operations, including operations they carry out under different mineral rights or their own processing, smelting, or refining operations.

Source: Tanzania ITA s33 read with s65B(5), Tanzania Income Tax Act.

Mozambique

In Mozambique, transactions between different concessions or licences owned by the taxpayer, transactions between projects developed by the same taxpayer, or transactions between related parties are considered transactions conducted by independent parties, so transfer pricing rules will be applicable.

Source: Mozambique Law No. 23/2014, s25.

United Kingdom

In the United Kingdom, any cross-ring-fence transactions within a single company are treated as if they are transactions between associates and so are subject to domestic transfer pricing rules. Where oil is transferred or sold between ring-fenced upstream and downstream entities, a statutory price is applied to the transaction.

Source: Section 205 Taxation (International and Other Provisions) Act, 2010.

5.4 How to Design Taxpayers' Compliance Obligations

A mining taxpayer holding/performing more than two licence areas/activities is expected to properly apply and comply with the ring-fencing rules. Clear guidance and rules regarding formal obligations related to the implementation of ring-fencing rules will motivate voluntary compliance and will also reduce potential disputes.

5.4.1 Filling Out Separate Tax Returns

Ring-fencing rules create de facto "separate taxpayers" for tax liability determination purposes and sometimes also for tax reporting purposes. There are different ways that tax administrations deal with this phenomenon from a tax reporting perspective. The countries can request one single tax return filed by the taxpayer that includes separate tax base calculations for each ring-fenced area, either as a part of their tax return or as a special annex to their tax return. The other possibility is to require filing a separate tax return for each ring-fenced area or activity. This means that the same taxpayer may file multiple tax returns for the same taxable period with respect to each ring-fenced activity and an additional one or more tax returns for non-mining activities.

To support the filings, the licence holder will have to maintain all the necessary accounting documents and records to provide justifications for the completion of the relevant tax returns.

The tax return or a special annex should include information needed for preliminary risk analysis, such as revenues and expenditures per ring-fenced item. A licence holder must usually submit the tax returns (either electronically or in physical form) to the tax authority on a template specifically designed and authorized for this purpose. Special templates for tax returns or their annexes can be designed to simplify the filing process while ensuring the key information needed for risk assessment and high-level review is included.

5.4.2 Maintaining All the Necessary Supporting Documents and Records

In case of necessity or tax audit, the tax authority may require primary and other relevant documents when it receives the tax return(s). In that case, the mining taxpayer should be in a position to establish and prove how the relevant revenues and expenditures have been determined and correctly allocated to the specific licences or other ring-fenced business activities, ideally based on apportionment methods established in a guidance published by the tax authority for taxpayers. A proper application of an apportionment method relies on having clear data across mines/projects/licence areas. In doing so, the taxpayer should maintain all the necessary documents and records to support its arguments in case the tax authority requests that it do so. There should be periodic reviews undertaken by the tax authority.

5.4.3 Recommendations

How should ring-fencing rules be introduced into an applicable legal framework?

- It is preferable to introduce ring-fencing rules for mining into the law, which is public and subject to legislative review, rather than by contract, which is often discretionary, confidential, and vulnerable to corruption.
- Where the licensing law requires each legal entity to own only one mining licence, there is de facto ring-fencing. In those cases, countries should still consider ring-fencing per activity to separate mining activities from non-mining activities.
- Countries might consider requesting the mining investor to have separate accounting per project for non-tax reporting purposes; however, this obligation will not result in ring-fencing outcomes for tax purposes unless the accounting laws are the basis for the application of the tax laws or the tax law also mirrors these reporting requirements and it becomes the basis for application of ring-fencing rules.
- Where countries are considering a requirement for taxpayers to get separate tax identification numbers for each mining title for ring-fencing purposes, countries should factor in the administration challenges, such as managing one taxpayer with multiple identification numbers.
- Ring-fencing rules should preferably apply only for new licences/projects granted after the year of entry into force of the ring-fencing laws, unless there are imperative policy reasons to the contrary due to the challenges related to implementation for ongoing/existing projects.
- Ring-fencing rules should be out of the scope of stabilization provisions.
- Special attention should be given to the design of the ring-fencing regime, where the tax system includes progressive tax rates or special expense limitations.

How should the apportionment of revenues and expenditures work?

- Resource-rich countries should establish clear definitions of direct, indirect, and general revenues and expenditures.
- Direct revenues and expenditures should be attributed in full to the specific licence or the business activities to which they relate.

- Resource-rich countries should require the use of the most direct and appropriate allocation keys for significant expenses, which exceed a given materiality threshold. Such allocation keys should approximate the allocation approach most directly to the actual usage and benefit derived for each project. For less significant expenses, the use of CapEx is an appropriate allocation key to apportion indirect and general expenditures, and mining revenues are an appropriate allocation key to apportion indirect and general revenues.
- Resource-rich countries should issue publicly available guidance defining direct, indirect, and general revenues and expenditures, including the preferred allocation method and apportionment key for each category, where apportionment is necessary. This will create consistency in the industry, which will be important for compliance and implementation. In doing so, resource-rich countries should create reporting templates to require companies to report according to the different categories.

How can countries deal with the risk of abuse of domestic transfer pricing in the context of ring-fencing?

- Resource-rich countries could address the risk of abuse of domestic transfer pricing by applying transfer pricing rules to the domestic transactions as well as to internal dealings (economic activities carried out by different parts of the same taxpayer legal entity).

How can countries best design taxpayers' compliance obligations?

- There are different ways for taxpayers to comply with ring-fencing rules. Countries can opt to request one single tax return filed by the taxpayer that includes separate tax base calculations for each ring-fenced area, or they can require the filing of a separate tax return for each ring-fenced area or activity. Whatever the selected option is, taxpayers should maintain all the necessary accounting documents and records to provide justifications for the completion of the relevant tax returns.

6.0 Conclusion

Governments of resource-rich countries are looking for ways to accelerate tax revenues and ensure correct administration and compliance with special mining taxation regimes, as well as to prevent permanent revenue losses due to BEPS practices. This challenge can be complicated by the omnipresence of tax incentives in the mining sector, which may be effective if well-designed, but wasteful if not. These concerns are legitimate given the need to collect revenue to fund public needs.

At the same time, these governments seek to attract additional investments into the exploration and development of new mining projects. There are thus multiple tax and investment policy objectives that need to be considered and balanced carefully.

The information gathered here provides evidence of the prevalence of ring-fencing as well as countries' experience with its application. As the toolkit discusses, ring-fencing may play an important role in the timely collection of government revenue from the mining sector. While appropriate in some cases, it may not be in others, and the policy would be better achieved through other means, such as a mining royalty or a carefully designed capital allowances regime.

It was also argued that the ring-fencing rules are not always necessary. Since there are costs associated with ring-fencing, e.g., impacts on investment decisions or compliance and administration burdens, its implementation should be carefully considered, considering the costs and benefits related to revenue-raising in view of the prevailing mining tax regime.

Before considering the design and implementation of ring-fencing rules, governments need to consider the potential benefits a ring-fencing regime could deliver. Benefits must be weighed against the potential impact on future investment in their country and the additional burden that this is likely to place on taxpayers and tax administrations from complexities in audits and compliance, and the potential increase in disputes.

The toolkit identifies the instances where it is advisable to achieve the tax policy objectives more effectively by careful design of a special mining regime and use of different fiscal instruments (e.g., a mining royalty to deliver early revenues), rather than introducing the ring-fencing rules. Equally, in many cases, addressing and dealing with BEPS and tax avoidance practices may be more effectively achieved by introducing special anti-avoidance rules and having a well-trained tax administration administer them effectively.

In other situations, ring-fencing rules can enhance—or be essential to—the integrity of a special mining taxation regime. Furthermore, ring-fencing rules can also help mitigate some BEPS risks, such as abuse of financial derivatives and hedging transactions for profit-shifting purposes. This is especially the case where the tax administration has limited capacity to scrutinize sophisticated transactions, and ring-fencing rules can isolate such risk into a separate category of tax base that will be quarantined and taxed separately.

There are different ring-fencing regime options to choose from, each offering different trade-offs and levels of restriction. There could be exceptions to ring-fencing or special design rules that make ring-fencing more flexible—for example, to deal with permanent losses and to promote investment.

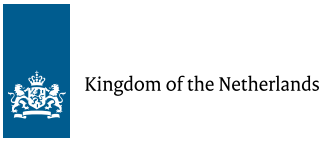
Regardless of which ring-fencing option is chosen and how it is designed, it must be clearly defined in the law. Clear rules on how to implement ring-fencing in mining—including methods to apportion revenues and expenditures and how to deal with domestic transfer pricing scenarios—are critical. Clear criteria must be developed to enable effective implementation by both companies and governments.

Financial Support for the OECD Comes From the Following Donors:

Support for the IGF Comes From the Following:

IGF Project Funders

IGF Secretariat Funders



IGF Secretariat Host

References

Australian Energy Regulator. (2023). *Ring-fencing*. https://www.aer.gov.au/industry/networks/ring-fencing

Benninger, T., Devlin, D., Godinez, E. C., & Vernon-Lin, N. (2024). *Cash flow analysis of fiscal regimes for extractive industries* (Working paper WP/24/89). International Monetary Fund. https://www.imf.org/-/media/Files/Publications/WP/2024/English/wpiea2024089-print-pdf.ashx

Bindeman, K. (1999, October). *Production-sharing agreements: An economic analysis*. Oxford Institute for Energy Studies. https://www.oxfordenergy.org/wpcms/wp-content/uploads/2010/11/WPM25-ProductionSharingAgreementsAnEconomicAnalysis-KBindemann-1999.pdf

Calder, J. (2014). *Administering fiscal regimes for extractive industries: A handbook*, International Monetary Fund. https://www.elibrary.imf.org/display/book/9781475575170/9781475575170.xml

Cameron, P. D., & Stanley, M. C. (2017). *Oil, gas, and mining: A sourcebook for understanding the extractives industries*. World Bank. https://documents1.worldbank.org/curated/en/222451496911224999/pdf/Oil-Gas-and-Mining-A-Sourcebook-for-Understanding-the-Extractive-Industries.pdf

Daniel, P., Keen, M., & McPherson, C. (Eds.). (2010). *The taxation of petroleum and minerals: Principles, problems and practice*. Routledge. https://www.international-arbitration-attorney.com/wp-content/uploads/arbitrationlaw1394930.pdf

Davis Tax Committee. (2014). *First interim report on mining for the Minister of Finance*. https://www.taxcom.org.za/docs/20151201%20DTC%20First%20Interim%20Report%20on%20Mining%20(hard-rock).pdf

Davis Tax Committee. (2016). *Second and final report on hard-rock mining for the Minister of Finance*. 20171113 Second and final hard-rock mining report on website.pdf

Department of Petroleum and Energy, Petroleum Division. (2005). *Petroleum policy handbook*. Government of Papua New Guinea.

Ernst & Young. (2019). *Global oil and gas tax guide*. https://globaltaxnews.ey.com/news/2019-5677-ey-global-oil-and-gas-tax-guide-2019

Ghana Revenue Authority. (n.d.). *Mineral royalties tax*. https://gra.gov.gh/portfolio/mineral-royalties-tax/

Hogan, L. & Goldsworthy, B. (2010). International mineral taxation: Experience and issues. In P. Daniel, M. Keen, & C. McPherson (Eds.), *The taxation of petroleum and minerals*. Routledge. https://www.international-arbitration-attorney.com/wp-content/uploads/arbitrationlaw1394930.pdf

Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development & Organisation for Economic Co-operation and Development. (2017b). Limiting the impact of excessive interest deductions on mining revenue. https://www.oecd.org/content/dam/oecd/en/about/programmes/beps-in-mining/limiting-the-impact-of-excessive-interest-deductions-on-mining-revenue.pdf

International Monetary Fund. (2010a). International tax issues for the resources sector. In *The taxation of petroleum and minerals: Principles, problems and practice*.

International Monetary Fund. (2010b). *The taxation of petroleum and minerals: Principles, problems and practice*.

International Monetary Fund. (2014). *Administering fiscal regimes for extractive industries: A handbook*. https://www.elibrary.imf.org/display/book/9781475575170/9781475575170.xml

International Monetary Fund. (2017). *International taxation and the extractive industries*. https://doi.org/10.5089/9781475539660.071

Land (2008). *Resource rent taxation: Theory and experience*. Conference on taxing natural resources - New challenges and new perspectives, September 25–27, 2008. https://www.imf.org/external/np/seminars/eng/2008/taxnatural/pdf/land.pdf

Lassourd, T., Readhead, A., Tarus, V., & Lassourd, T. (2023, June 23). Variable royalties: An answer to volatile mineral prices? In A. Readhead, V. Tarus, T. Lassourd, E. Madzivanyika, & B. Schlenther (Eds.). *The future of resource taxation: 10 policy ideas to mobilize mining revenues*. International Institute for Sustainable Development & African Tax Administration Forum. https://www.iisd.org/publications/guide/future-of-resource-taxation

Minerals Council of Australia. (2023). *Future critical: Meeting the minerals investment challenge*. Future-Critical_Meeting-the-minerals-investment-challenge_2023.pdf

Leger, J. & Nicol, M. (1992). South Africa's gold mining crisis: Challenges for restructuring. *Transformation Journal, 20*. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=60087bd1c3dbc34c321d0d8aff59e914b435e282

Nakhle, C. (2010). Petroleum fiscal regimes: Evolution and challenges. In P. Daniel, M. Keen, & C. McPherson (Eds.), *The taxation of petroleum and minerals: Principles, problems and practice*. Routledge.

Organisation for Economic Co-operation and Development. (2008). *Report on the attribution of profits to permanent establishments*. https://www.oecd.org/tax/transfer-pricing/41031455.pdf

Organisation for Economic Co-operation and Development. (2015). *Limiting base erosion involving interest deductions and other financial payments*, Action 4 - 2015 final report. https://www.oecd.org/tax/limiting-base-erosion-involving-interest-deductions-and-other-financial-payments-action-4-2015-final-report-9789264241176-en.htm

Organisation for Economic Co operation and Development & Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development. (2018). *Tax incentives in mining: Minimising risks to revenue* [Practice note]. OECD Centre for Tax Policy and Administration & IGF. https://www.oecd.org/content/dam/oecd/en/about/programmes/beps-in-mining/tax-incentives-in-mining-minimising-risks-to-revenue.pdf

Organisation for Economic Co-operation and Development. (2020). *Guiding principles for durable extractive contracts* (OECD Development Policy Tools). OECD Publishing. https://doi.org/10.1787/55c19888-en

Otto, J. M. (2000). Report on the mining taxation in developing countries. https://congomines.org/system/attachments/assets/000/000/649/original/Otto-UNCTAD-paper-2000-Mining-Taxation-in-Developing-Countries.pdf?1430929506

Ram, C. (2019, July 9). *Why ring-fencing matters and why it does not*. Stabroek News. https://www.stabroeknews.com/2019/07/05/features/the-road-to-first-oil/why-ring-fencing-matters-and-why-it-does-not/

Readhead, A., Tarus, V., Lassourd, T., Madzivanyika, E., & Schlenther, B. (2023, June 23). The future of resource taxation: 10 policy ideas to mobilize mining revenues. International Institute for Sustainable Development & African Tax Administration Forum. https://www.iisd.org/publications/guide/future-of-resource-taxation

Swistak, A., & Vernon-Lin, N. (2023). *Value added tax in the extractive industries*. International Monetary Fund. https://www.imf.org/en/Publications/WP/Issues/2023/10/27/Value-Added-Tax-in-the-Extractive-Industries-540826

Wilcox, S. (2013). Audit of the mining industry. In Inter-American Center of Tax Administrations, *Prevention and control of tax evasion: Proceedings of CIAT Technical Conference*. https://www.ciat.org/Biblioteca/ConferenciasTecnicas/2013/Ingles/2013_topic3.2_Wilcox_ASI.pdf

IGF

INTERGOVERNMENTAL FORUM
on Mining, Minerals, Metals and
Sustainable Development