Working paper

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Mozambique's Mining Fiscal Regime

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Executive Summary

Much can be done to improve the mining fiscal regime and suggestions for initial changes the government might consider are contained in this document. The recommendations are based on the framework and international comparison survey found in Chapter 1 and Appendix I. Appendix II contains an interlocutor list.

Recommendations

I. Concentrate on Price and Quantity

Measurement of total revenue is by far the most important element in developing a fiscal policy for mining. Total revenue is the basis for the royalty, the profits tax (revenue less costs), any type of production sharing in petroleum, and dividends from any equity participation. Thus, the government will benefit significantly for every unit increase in total revenue attributable to a mineral project arising from better legislation, regulation, and administration.

II. Variable Royalty

One proposal for a variable royalty is reviewed and an alternative procedure is suggested.

III. Thin Capitalization

The thin capitalization rule contained in the law is similar to those used elsewhere and is based on some measure of the debt-to-asset ratio. That said, staff in the policy group in the tax administration were not aware of the rule and there does not appear to be a consistent definition of debt, equity, or total assets which form the basis for the calculation. In addition, there is concern about the ability of the government to monitor interest rates on related party debt. Thus, it is possible for a taxpayer to satisfy the thin capitalization rule and still transfer price all profits out of Mozambique via interest costs. Given these concerns an alternative rule is suggested.

IV. Capital Gains

Concern was expressed about the possibility of certain mining rights transfers to occur offshore and thus escape domestic taxation. One method that might be used to ensure that domestic interests are protected on particular transfers is described. There is also a candid discussion of what Mozambique can realistically expect to capture in terms of any capital gains tax on such trade.

V. Ring Fencing

It is claimed that ring fencing is used to segregate properties and perhaps downstream activities. Some interlocutors, however, were not familiar with the concept and there was no policy statement about the general application of ring fencing. Thus, the discussion was drafted to introduce the concept and to help generate discussion about the extent ring fencing should be employed.

Chapter 1: Mozambique's Fiscal Framework in an International Context

I. Introduction

An initial survey and presentation of an analytical framework to be used in the analysis of the Mozambican mining regime is contained here. The intent is to supply some comparative information so that Mozambican decision makers can see how application varies throughout the world. One implication from this survey is that there may be no international best practice with respect to the structure of a mining fiscal regime. Each country must make choices about which functions the national government should undertake (equity participation for instance) and these choices will affect both the level of total revenue and the instruments used to accrue that revenue.

The framework is presented to explain the approach to the subsequent analysis and to lay the foundation for the recommendations.

II. Comparative Mining Fiscal Regimes

A description of Mozambique's fiscal regime in found in Table 1. Tables 2, 3, and 4 contain some comparative information about royalty structures for bauxite, niobium and natural gas, respectively, for a selected subset of country producers.[1] Summary tables for income and indirect taxes are found in Appendix I.

[1] Countries included are but an initial sample. I will be happy to provide either more detail on specific countries or the regimes in additional countries based on the results of the visit. I will also be happy to supply information about petroleum regimes and to discuss fiscal issues related to petroleum during my visit.

Table 1. Mozambique's Fiscal Regime

1.A Mineral-Related Charges

Item	Description
Tax Incentives[2]	The Code of Fiscal Benefits applies to all large investment projects (most mining operations count). Specific natural resource-related incentives include: • *Customs duties and VAT:* exempt for temporary import of necessary equipment. • *Personal income tax:* exemptions for non-residents and expatriate personnel. • *Corporate income tax:* 32% on income derived from petroleum operations. If development was undertaken before the end of 2010, the CIT rate was reduced one quarter for the first eight years of commercial production. • *Income tax by withholding:* standard rate 20% upon payment to non-residents with a few exceptions. • *Depreciation for income tax:* exploration costs 100% in the year when commercial production starts. Development and production capital costs 25% each year from the year commercial production begins. • *Carry forward of losses and deferral of depreciation:* up to six years from when the loss incurred.
Royalty[3]	Mineral royalty is a production-based tax imposed on the value of the mineral extracted (price times quantity) from the land. Royalty payment is based on the gross value of minerals mined on a monthly basis. For mineral products sold, the value is based on the sales value declared by the extractive entity. If no sales are made, valuation is based on the market price of the product. In practice, most companies have negotiated with the government to pay royalties after sales have been made. Fixed rates: diamonds 15%; precious stones and metals 10%; semi-precious stones 6%; basic minerals 5%; coal and other mineral products 3%.
Other Taxes on Mining[4]	Activity and surface fees apply from the moment the mining product is extracted. Tax/license on concessions: reconnaissance license, prospecting and exploration license, mining concession, mining certificate.

[2] CMI Report p. 21. 2011. *The Tax Systems in Mozambique, Tanzania and Zambia: Capacity and Constraints* by Odd-Helge Fjeldstad and Kari K. Heggstad for Chr. Michelsen Institute (CMI) http://www.cmi.no/publications/file/4045-taxation-mozambique-tanzania-zambia.pdf

[3] CMI Report p. 22.

[4] CMI Report p. 22.

1.B Profits Tax

Item	Description
Accounting Principles	Mozambique GAAP is based on the French system. All commercial banks adopted IFRS in 2007; large companies in 2010.
Business Entities	Public company (SA), private limited company (Lda), joint venture, and branch of a foreign company.
Residence	Resident if head office or place of effective management / control is in Mozambique, or if business is registered in Mozambique.
Basis	Residents taxed on worldwide income; non-residents taxed only on Mozambique-sourced income.
Taxable Income	All income and gains included in taxable income. Expenses considered indispensable in the generation of income or gains subject to tax are deductible.
Capital Gains	Included in ordinary income and taxed at standard rate. An inflation allowance is available on a case-by-case basis.
Losses	Carried forward 5 years; no carry back.
Rate	Standard company or branch tax rate is 32%. Penalty rate of 35% on unsubstantiated payments. (Special 10% rate for agricultural producers set to expire 1 January 2011 – need to verify.) An Alternative Minimum Tax applies to very small companies (turnover less than USD 71,500).
Foreign Tax Credit	Ordinary foreign tax credit applied as a unilateral method for the avoidance of double taxation of income obtained from abroad for resident companies and permanent establishments of non-resident companies. Unused credits may be carried forward for 5 years.
Participation Exemption	No withholding tax is levied on dividends paid to a Mozambique company that has held 20% or more of the shares in an associated company in Mozambique for at least 2 years.
Holding Company	No
Tax Incentives	The Code of Fiscal Benefits details rules for tax credits and the reduction or exemption of income tax. Companies that invest in Rapid Development Zones and Industrial Free Zones, in agriculture, mining, oil, tourism, and industrial and services projects also may benefit from incentives that vary by location, the number of employees, and whether the products are exported.
Transfer Pricing	The arm's length principle applies to deals between related parties. For payments to companies in low tax jurisdictions, the authorities will need to be satisfied that the payment was genuine and reasonable.
Thin Capitalization	2:1 debt-to-equity (the deduction of intercompany interest may be limited where the indebtedness to a nonresident related party is more than twice the equity).
Controlled Foreign Companies	No
Consolidated Reporting	Consolidated returns are not required; each company in a group must file a separate return for tax purposes.

Item	Description
Withholding Taxes[5]	
Dividends	20% withholding tax (10% for shares listed on Maputo stock exchange), unless they qualify for participation exemption. Foreign-source dividends taxed at standard rate (or reduced by treaty).
Interest	20% withholding tax on interest paid to residents and nonresidents (unless reduced by treaty). 0% rate applies to interest paid to a registered Mozambique financial institution.
Royalties	20% withholding tax for residents and non-residents (unless reduced by treaty).
Other	10% withholding tax on payments to non-residents for telecommunication services, international transport services, and the assembly and installation of telecommunications equipment.
Other Taxes on Corporations[6]	
Branch Remittance Tax	No
Capital Duty	No
Payroll Tax	No
Real Property Tax	Annual municipal tax is assessed at up to 0.4% (residences) and 0.7% (offices) of the value of property in Maputo and Matola.
Social Security	The employer pays 4% of staff emoluments, with no upper limit.
Stamp Duty	Stamp duty at 0.4% applies to share transfers and 0.2% to transfers of buildings. Land transfers (which are always leaseholds) are exempt from stamp duty.
Transfer Tax	A transfer tax of 2%, normally paid by the transferee, is charged on the transfer of title to a building. The rate is 10% if the buyer is resident in a jurisdiction with a more beneficial tax regime.
Economic Activity Tax	Levied on businesses in municipal areas, but the costs vary according to location, size, and type, and are not significant.

Tax Administration[7]	
Penalties	There are penalties for late filing, nonpayment of tax and failure to disclose records. Penalties range from approximately USD 100 to USD 33,000. Interest is charged on late payments. Prison terms for tax fraud may be up to 8 years, or up to 2 years for negligence.
Rulings	General rulings on the interpretation of the tax law, or advance rulings on the taxation of specific transactions may be obtained from the tax authorities. Such rulings are binding on the authorities with respect to the disclosed facts of the transaction.

[5] Deloitte. 2011. *Mozambique Highlights*. http://www.deloitte.com/assets/Dcom-Global/Local%20Assets/Documents/Tax/Intl%20Tax%20and%20Business%20Guides/2011/dtt_tax_highlight_2011_Mozambique.pdf

[6] Deloitte.

[7] Deloitte.

1.C Indirect Tax

Item	**Description**
Value Added Tax[8]	
Taxable Transactions	Supply of goods and services in Mozambique and imports.
Rates	17% standard rate. 0% for exports of goods and services. Exempt: banking; certain health, education, and philanthropic services
Registration	Form 1 is used to obtain a Unique Tax Number and Form 6 as a declaration of initiation of activities.
Filing and Payment	Monthly VAT must be filed by the last day of the following month.
Other Taxes	
Excise Taxes[9]	Levied on alcoholic beverages, tobacco products, and fuel. Only account for 7-8% of total tax revenues (2006-2010).
Trade Taxes[10]	No export duties. Import duties account for less than 2% of GDP.

[8] Deloitte.

[9] CMI Report pp. 18-19.

[10] CMI Report pp. 19-20.

Table 2. Selected Countries Royalty Provisions: Bauxite/Alumina

Country	Rate	Base
Australia (New South Wales)[11]	AUD 0.35	Ton of bauxite
Australia (Northern Territory)[12]	20%	Net value of mineral sold or removed without sale[13] Net value = GR – (OC + CRD + EEE + AD), where GR: the gross realization from the production unit in the royalty year; OC: the operating costs of the production unit for the royalty year; CRD: the capital recognition deduction; EEE: the eligible exploration expenditure, if any; and AD: is the additional deduction, if any.
China[14]	(a) RMB 0.3 to RMB 60 (b) 0.5% to 4%	(a) Resource Tax: levied on sales volume per ton, rate varies by type of mineral (b) Compensation Fee: based on sales revenue * exploitation-recycle ratio, varies by type of mineral
Brazil[15]	3%	Revenue from sales of extracted minerals, less taxes, insurance, and transportation costs
India[16]	(a) 0.05% (b) 25%	(a) London Metal Exchange aluminum metal price chargeable on the contained aluminum metal in ore produced for those dispatched for use in alumina and aluminum metal extraction (b) sale price on ad valorem basis for those dispatched for use other than alumina and aluminum metal extraction and export
Guinea[17]	negotiated[18]	
Jamaica[19]	US$0.50	Per long dry ton of bauxite dried or processed into alumina in Jamaica

[11] http://www.dpi.nsw.gov.au/minerals/resources/royalty/royalty-rates

[12] http://notes.nt.gov.au/dcm/legislat/legislat.nsf/linkreference/MINERAL%20ROYALTY%20ACT Section 10

[13] If net value is AUD 50,000 or less, royalty rate is 0%. If net value is above AUD 50,000, royalty otherwise payable is reduced by AUD 10,000.

[14] http://www.pwc.com/en_GX/gx/mining/pdf/global-mining-tax-comparison-Dec2010.pdf

[15] http://www.vale20f.com/main/information-of-the-company/regulatory-matters/royalties-and-other-taxes-on-mining-activities/page-1

[16] http://ibm.nic.in/mineralroyalties2011.pdf pp.42-43

[17] http://minerals.usgs.gov/minerals/pubs/country/2010/myb3-2010-gv.pdf

[18] In 2001, royalty rates were 5% on alumina and 10% on bauxite. Unclear if/when these changed. See p. 11.2 http://minerals.usgs.gov/minerals/pubs/country/2001/ivgvlislmyb01.pdf

[19] http://www.mgd.gov.jm/index.php?option=com_content&task=view&id=88&Itemid=97

Table 3. Selected Countries Royalty Provisions: Niobium/Tantalum

Country	Rate	Base
Rwanda[20]	No royalties	
Canada (Manitoba)[21]	10-17%	Sliding scale levied on profit (tax holiday until initial investment is recouped): • < \$50 million; tax = mining profit x 10%. • \$50 to \$55 million; tax = (mining profit - \$50,000,000) x 65% + \$5,000,000. • Between \$55 and \$100 million; tax = mining profit x 15%. • \$100 to \$105 million; tax = (mining profit - \$100,000,000) x 57% + \$15,000,000. > \$105 million; tax = mining profit x 17%.
Canada (Quebec)[22]	16% (15% in 2011)	Profits
Australia		See Table 2
Brazil		See Table 2

[20] As of 2010, Rwanda did not charge mineral royalties. See p. 33 http://www.unctad.org/en/docs/ditc20092_en.pdf . However, extensive mining tax reform was supposed to occur in 2011 http://allafrica.com/stories/201110190401.html

[21] http://www.gov.mb.ca/finance/taxation/taxes/mining.html

[22] http://www.nrcan.gc.ca/minerals-metals/business-market/mining-taxation-regime/3540 and http://www.finances.gouv.qc.ca/documents/Communiques/en/COMEN_20110915.pdf

Table 4. Selected Countries Royalty Provisions: Natural Gas

Country	Rate	Base
Russia[23]	17.5% mineral extraction tax	The quantity of extracted natural gas, adjusted as follows: Natural gas – RUR 147 per 1,000 cubic meters Associated gas – RUR 0
Canada – British Columbia[24]	Variable	For wells acquired after 1 June 1998 the base rate is 9% adjusted for price changes: R = (9 x Selected Price + 40x(Reference Price – Selected Price)/Reference Price R is bounded by 9% minimum and 27% maximum Selected price is a comparable price determine by the Administrator which is current 50 $(Can) There is also a special rate of low productivity wells where low productivity is defined as wells producing less than 5,000 m3 per day. There are special royalty deductions for processing and for a return on capital. Single well producers are allowed a depth of field allowance to reflected the relationship between depth and cost
Canada - Alberta	Variable	Base rate is 5% and has a upper bound of 36% Rate is calculated as a weighted average of the following factors: Price component (PP: Defined Par Price measured in Canadian dollars): If PP< 5.25 then price component = (PP – 4.5)*.045*100 If 5.25 < PP < 9.0 then price component is {((PP – 5.25) x.02) + .03375)}*100 If PP > 9.00 then price component is {((PP – 9)*.01) + .10875}*100 Quantity component (ADP: Average Daily Production; DF: Depth Factor = (D/2000)2 if Depth (D) is greater than 2,000 meters and is equal to 1 otherwise) If ADP < (6*D) then quantity component is (ADP – (4*DF))*(.05/DF)*100 If (6*D)<ADP<(11*DF) then quantity component is:

[23] http://www.energy.gov.ab.ca/Tenure/pdfs/FISREG.pdf pp. 12-14

[24] A reference is supplied in Appendix II in which a more complete description of the provincial regimes in Canada is supplied.

Country	Rate	Base
		[(ADP – (6*DF))*(.03/DF))*100 If ADP >(11*DF) then quantity component is: [(ADP – (11*DF))*(.01/DF0+.25)*100 Some new wells have a maximum rate of 5%. Special reductions based on deep drilling. There are also transition rules.
Canada - Saskatchewan	Variable	There are four tiers of gas royalties based on age and characteristics: Old Gas, New Gas, Third Tier Gas, Fourth Tier Gas Basic rates are variable with a base rate of 15% up to a price of $35 (Canadian) and then marginal rates vary by tier type.
Canada - Manitoba	12.5%	Monthly sales

Mozambique's fiscal regime in an international comparative context is discussed below.

a. Royalties

i. Royalties are used in all surveyed countries.

ii. Most use an ad valorem regime. Exceptions include Australia (New South Wales), which uses a per ton charge for bauxite, while Canada (Manitoba—Niobium) uses a type of ring-fenced measure of net proceeds. Rates in these mining areas are higher as a result.[25] The variable rate per unit charge in China, which approximates an ad valorem rate, is also an exception.

iii. Rates vary for those countries using an ad valorem basis,.

iv. Natural gas royalties are now becoming part of international comparisons as natural gas becomes more tradable internationally. The Russian royalty is an example of the traditional ad valorem charge. The variable charges in Canada (British Columbia and Alberta in particular)[26] reflect the close relationship between gas and oil fiscal regimes as well as, in part, reflecting the preexisting regulatory environment in natural gas and the importance of transportation in determining the value added of natural gas.

[25] Mineral rights are vested in the Canadian provinces. I understand that mineral rights are somehow shared between the states and federal government in Australia.

[26] A study of Canadian natural gas royalties is supplied in Appendix II in order to supply additional information given the complexity of the various systems used in the provinces.

The bases, even for ad valorem charges, are generally some measure of output value. Terms such as "net sales," "gross proceeds," and "gross value" may have similar or different meanings depending on actual practice. In particular, it is important to know at what point in the downstream process the charge is imposed (for example, at the smelter, concentrator, or border) and how values are computed (for example, arm's-length contract prices, net smelter returns, or net back pricing). The determination of how the base is measured will affect the effective rate and the administrative aspects of application. Such issues will be an important aspect of which alternatives might be appropriate for Mozambique.

It is important to note that Australian analysts, after a review of the entire tax system, proposed a type of Resource Rent Tax (RRT) [also called a Brown Tax] for mining. An RRT system has been used for federal oil and gas leases for some years. The provincial royalties would be a credit against this charge, at least as originally proposed. The proposal would impose a charge of 30% (at the time of this draft) on returns (measured in terms of a mine's net present value) in excess of 12%.

b. Income Taxes (Profits Taxes)

i. A profits tax is imposed in all countries.

ii. Profits tax rules should be applied uniformly across industries, but there will be industry-specific provisions for each sector including mining. Two aspects of mining will be addressed specifically in the law: exploration and development. Mozambican law provides for immediate expensing of exploration and four year amortization for development expense. Most countries (see Appendix I) provide immediate expensing for exploration but practice varies with respect to the amortization of development. Immediate expensing is generally allowed in Australia and Canada but amortization is required for development expenses in Russia. Differences, perhaps significant, in effective tax rates will result from this variation across countries because of the relative size of exploration and development expenditures.

iii. All countries employ some type of thin capitalization rule, generally based on some measure of debt and equity as in Mozambique.

c. State Participation

i. State participation varies from none (the United States, Canada, and Australia) to mixed in Russia (where gas and oil have significant government participation).

ii. Recent events in Mongolia suggest that the policy might be changing, at least with respect to coal. It was proposed that the government retain full ownership of mining operations and grant service contracts to producers (similar to the new Iraqi system). Thus, the state, via a holding company, would retain full ownership of reserves and operations with the division of the returns determined by the terms of the service contract.

d. Excess Profits Taxes

Excess profits tax has become common in oil and gas (assuming that production sharing is a type of excess profits scheme). Such schemes are less common in mining.

In summary, countries vary with respect to:

- Mineral ownership rights: the US vests mineral rights in private hands, Canada vests rights in the provinces, and Mozambique vests mineral rights with the national government;
- Generally applicable tax regimes;
- Royalty regimes; and
- State participation.

These differences in function may reflect social choices in the context of administrative constraints. Regardless of justification, it might be inferred that there is no international "best practice" for treatment across the range of potential instruments used by governments to accrue resource revenues. Governments appear to choose different functions and these differences in function lead to differences in both the type of instrument employed, aggregate revenues, and the risk borne by the state. Matching form and function is one topic of the next section.

III. Framework for Analysis

What follows is a brief description of the framework that will be used to evaluate the natural resource regime and to provide recommendations for further reform. This discussion is supplied because evaluations and recommendations might vary across analysts because different frameworks and perspectives may apply.[27] Thus, it is important for Mozambican decision makers to have an understanding of the chosen perspective so that they might evaluate both the recommendations and the underlying framework upon which those recommendations are based.

The government of a country endowed with mineral assets might perform five different economic functions, four of which have direct financial consequences:

- Manage the resource on behalf of the population;
- Impose and administer the general tax regime;
- Take equity positions in some, or all, mining operations;
- Use state enterprises as operating companies; and

[27] This description can be expanded given an interest in further development of the topic.

- Regulate the mining industry (health and safety, environmental, and other regulatory functions).

Payment stream elements and the total cash flow to government will be affected by how many functions are undertaken and at what level. The payment streams are only a partial measure of the gross benefit to government, however. That is, total gross economic benefits to the country could be greater than the financial gain to the government because the financial gain to government is a measure of the distributional benefit only. For instance, a government might forego tax revenue, among other costs, in order to require a mining company to purchase inputs from domestic sources.[28] Such a requirement might benefit domestic suppliers, on a net basis, if the value of supplying the goods and services is greater than their opportunity costs. Economic costs are imposed as well and thus it is essential that the gross benefit be balanced against the real costs in order to ensure positive economic returns, including growth of the economy.

Some benefits and costs relative to each of the four revenue-generating functions are summarized in Table 5 and a description is provided below.

a. Manage the resource on behalf of the population: Returns to Ownership

State ownership of subsurface rights is common in most countries. This means the government's balance sheet includes the value of subsurface rights in addition to other assets, such as assets of state enterprises, government buildings, and the power to tax (an intangible asset). If a deposit is developed, then the government may receive financial flows from a variety of sources, including but not limited to:

i. Land rents;
ii. Bonus payments;
iii. Auction values;
iv. Royalties; and
v. Resource rent charges (often called resource rent taxes).

The type of payment, the timing, and the amounts will depend on a country's legal framework, how extraction rights are awarded, the quantity and quality of the deposit, and other factors. It is important to note that the government is responsible for the speed with which resources are exhausted and thus can use these instruments, along with production quotas to the extent quotas are not redundant, to influence how much operators develop and determine extraction within and between time periods.

Resource extraction is not costless to any economy. At a basic level, the wealth of the economy is reduced with cumulative extraction. In addition, the government closes off options for different contractual forms or for awarding contracts to different investors by determining a particular contract form and choosing a particular operator (either public or private sector entity). Finally, the government,

[28] The revenue loss might be direct and indirect. A direct revenue loss would result if a government explicitly reduced a payment in return for domestic sourcing. The loss might be indirect if the government simply required domestic sourcing; since costs to the firm are higher than without the rule, profits taxes paid by the mine would be reduced by more than the increase in taxes paid by the supplier.

and society more generally, foregoes the use of surface rights and other rights resulting from the need for such assets in the production of subsurface minerals.

At a more aggregate level, extraction may reduce diversification of the asset base. A resource discovery increases the variety of assets in the economy which is reversed as the reserves are depleted. Significant resource discoveries can affect domestic relative prices, which can have adverse impacts on non-resource sectors. For instance, the price of non-tradables may rise because, at least in the short run, the stock of non-tradables may be reallocated between preexisting economic activities and new mining activities. Such a change can lead to a change in the real exchange rate, which in turn may cause profits and incomes in traditional sectors, exports in particular, to fall. Such changes are part of the cost of resource development and, to the extent they occur, should be part of any mineral evaluation.

b. Impose and administer the general tax regime: Return for Rights to Taxation

The right to tax, like the mineral rights, is vested in the state. This asset enables governments to accrue economic resources from the private sector without directly supplying goods and services in exchange for those resources. That is, unlike the private sector, the government does not have to sell a good or service in direct exchange for revenues. Most governments choose alternative means to collect tax revenues, including:

i. Direct taxes such as profits and personal income taxes;
ii. Indirect taxes such as VAT, excises, and tariffs; and
iii. Property taxes.

With the exception of certain discriminatory taxes such as excises (fuel, tobacco products, and alcoholic beverages) and selective tariffs, taxes (direct taxes and VAT in particular) are generally applicable. That is, tax policy should be designed to have economy-wide effects. In effect, mining should be treated like any other sector with respect to overall tax policy, particularly with respect to the use of direct taxes and VAT.

Three elements of the income tax are particular to mining: the treatment of expenses for exploration, development, and reclamation. All three elements, however, have similar counterparts in non-mining industries: exploration is effectively searching and is similar to research and development; development is a type of self-constructed asset; and reclamation is similar to expenses related to plant closure (disposal of hazardous waste, restoration, and other issues). A significant issue in the VAT treatment of mining is related to the export nature of production and the use of imported inputs, particularly during the initial investment stage. VAT refunds would be significant if standard VAT treatment is afforded to the mineral sector. These problems, however, are similar to any new investment where imported inputs are required and the output is designed for export. In emerging economies, this is the case with manufacturing in general.

The costs of developing a generally applicable tax system include administration and compliance costs. Such costs are complicated by the asymmetric nature of the information structure. Taxpayers have access to information about revenues and costs while tax administrations may have little or no means to independently verify that information. In addition, incentive compatibility is absent in a tax system because there is not a direct transfer of goods or services in exchange for tax payments. The second cost of a generally applicable tax system is the adverse economic incentives created by lack of direct exchange. Incentives are created to change investment and labor supply decisions, which reduce real net national income.

c. Take equity positions in some, or all, mining operations

Some countries have chosen to take equity positions in particular mining enterprises. Potential financial gains include dividends from shares and capital gains, to the extent that governments are not contractually obligated to hold shares.

Such gains are not costless, even if shares are so-called free equity. Government as a minority shareholder may be adversely affected by majority decisions, particularly in countries where transparent corporate governance is lacking and shareholder protections are weak. The government and economy more generally may bear two additional costs. First, the government now owns rights to physical capital and intangible assets held by the mining company in addition to holding the mineral rights itself. Thus, the government is taking a longer position in mining and there will be a higher correlation between overall government revenues and mineral prices unless the government pursues an active risk diversification strategy. Second, the economy will be less diversified, other things equal. Funds used to invest in mining enterprises could have been used to invest in other domestic and international assets (with perhaps higher marginal returns) in addition to reducing the society's exposure to mineral price risk.

Finally, there is an additional cost that is common to both passive and active equity positions. The government may be placing itself in a direct conflict of interest. Taxes reduce profits and environmental standards may reduce profits. Thus, the government must actively trade off implementing effective tax and regulatory policies with reduced financial gains from asset ownership.

d. Use state enterprises as operating companies

State enterprises may take a majority interest in mining enterprises and may themselves become operating companies. Potential dividends and capital gains increase with larger equity interests and the government can directly affect the operating decision of the enterprise, which in turn may affect both the level of financial benefits and their distribution.

The costs of using state enterprises as operating companies include greater financial costs (relative to passive equity ownership), making the economy even more dependent on mineral production for government revenues, and lower overall incomes. That is, this strategy increases risk bearing in minerals, unless mitigated by other means, and decreases the diversification of the economy. Potential conflicts of interest are greater relative to passive equity participation. In addition, there is the risk that state-operating companies will be less efficient relative to private sector counterparts unless those enterprises are placed in competitive situations in both the output and input markets.

In summary, governments may accrue financial benefits from mining in different ways. If form follows function, then the structure and levels of the financial flows will depend on the different types of functions undertaken by the government. This implies that concentrating on the "total take" may be inappropriate because the economic objective is to maximize the net benefit from mining (or any other activity) and the "total take" is a measure of the gross financial benefit without regard for the structure of the costs which are exchanged in order to accrue these gross benefits. In addition, cross country comparisons of total take may be misleading unless adjustments are made for the number of functions undertaken by government and their structure. For instance, mineral rights on private lands are not held by the government in the United States. The US federal government does not collect mineral factor payments in this case. In addition, there are no state-owned mining enterprises in the United States. Chile, on the other hand, has both a state mining enterprise and state ownership of reserves. Thus, comparing the gross benefits (or total take) between the United States and Chile would be misleading absent adjustments for the payment streams which flow to private parties in the US (royalties and returns to ownership of mineral enterprises) but to the state in Chile. That is, the total take to the economy could be the same in the US as it is in Chile, but the distribution of that revenue is different resulting in a different measure of government revenues.

e. Stabilization

i. Countries vary with respect to stabilization provisions.

ii. Mongolia employs stabilization by contract. Some mineral operations benefit from stabilization but others do not.

iii. Chile has used stabilization for regulations applied to the industry. It appears that stabilization is uniform for the industry and applies to a fixed term. That is, stabilization for all operations ends at the same date regardless of when the operation began.

iv. Stabilization is not part of the regimes in Canada, the United States, or Australia.

Table 5
Summary of Potential Government Functions in the Natural Resource Sector

Function	**Financial Payments to Government**	**Financial and Opportunity Costs**
Ownership Function	Financial returns to ownership • Bonus • Auction Bids • Royalties • Excess Profit Schemes	• Reduction in wealth via accumulated extraction • Limited/Reduction diversification
General Tax Function	• Personal Income Tax • Profits Tax • VAT • Tariffs • Property Tax	• Distortions in private sector decision making • Administrative and compliance costs
Passive Investment Function	• Dividends • Capital Gains • Interest (if passive investment is via loans)	• Less diversification (both domestic and international) given investment budgets • Foregone current government expenditures (such as debt reduction or education)
Operating Company	• Returns to management (in addition to dividends and capital gains)	• Further losses in diversification • Reduced efficiency in public sector enterprises

Chapter 2: Output Valuation

I. Introduction

Output valuation is the first essential element in developing a mineral fiscal regime for both royalty and income based charges. Under Mozambican law the royalty is a production-based tax imposed on the value of the mineral extracted from the deposit (price times quantity). For mineral products sold, the value is based on the sales value declared by the extractive entity. If no sales are made, valuation is based on the market price of the product.[29] In practice in Mozambique, some companies have to pay royalties at the time or after sales.

Provisions of the current royalty include:

a. Fixed rates:

i.	15%	diamonds
ii.	10%	precious metal and stones
iii.	6%	semi-precious stones
iv.	5%	basic minerals
v.	3%	coal and other mineral products

b. Time of imposition: I understand that government officials interpret the time of imposition as the time of extraction. Actual application appears to be on either the processed mineral (cleaned coal) or concentrate (in the case of other minerals).

c. Quantity and quality:

   i. Quantity appears to be the amount exported. Quantities produced are reported to the Ministry of Mines on a monthly basis. These reports are not for royalty purposes however, there no standardized reporting is required. The reports appear to be for basic statistical purposes, are self-reported and few, in any, audits occur.

   ii. Quality is measured jointly by the firm and Customs in conjunction with the Ministry of Mines. Samples are taken at the border and disputes are settled by appeal to third parties.[30]

d. Sales value: measured as price multiplied by quantity at the time of transfer or sale.

Practical issues related to the implementation of this structure are described here.

[29] It might be the case that the royalty should be based on production, not sales, in Mozambique. It might be important for the Government to maintain records of production, sales, inventories and other statistics such as production losses in order to ensure reasonable administration.

[30] There extent to which these practices are followed is not known.

II. Value and Quality-Adjusted Quantity

Interlocutors stated that the f.o.b. border price is being used to determine the royalty and that this price is also being used for profit tax purposes. The value apparently being employed is the self-reported value and Ministry of Finance officials appear to have limited experience with how to audit or otherwise verify this value. Concerns were expressed about the accuracy of the value, particularly when transfers (or exports) were conducted between related parties. Such concerns are common for governments throughout the world. Recently, some governments have adopted a more objective standard. For instance, Zambia now imposes the royalty based on the LME price of copper and Guinea uses an observable price for steel and aluminum to determine the value of iron and bauxite for royalty purposes. Producers have been concerned that a royalty based on a price observable to all parties is too high because the observable price is related to final product while the royalty is payable on either unprocessed extraction or some semi-processed material such as concentrate or washed coal.

The producer concern can be addressed in part by adjusting quantity for both quality and for other costs. One standard used in the past is known as net back pricing. The net back is computed by subtracting processing, transport, and related costs from the value of final output to derive an f.o.b. price at the point of sale. That is:

$$P_{fob} = P_{Market} - \text{Processing Cost} - \text{Transportation Cost} - \text{Other Costs}$$

Where: P_{fob} = computed f.o.b. price
P_{Market} = observed market price for final output

It is important to note that P_{fob} is a constructed price in cases where the transfer is between related parties and may never be computed by the firm in cases where downstream processing and mining occurred in the same jurisdiction. In cases where part of the processing is arm's-length, such as sales of concentrate to an independent smelter, the negotiated price, sometimes called the net smelter return, must still be adjusted for transport and other related charges.

The accounting equation above can be simplified by noting that the f.o.b. price is a fraction (or proportion) of the observed market price, or:

$$P_{fob} = (1 - k)\, P_{Market}$$

Where: k = proportion of other costs in total value added

The tradition of using net back pricing is effectively to determine "k" from an economic perspective. In addition, that fraction might change from time to time. The economic assumptions necessary to derive "k" using the net back methodology are significant and there is no reason to believe that the derivation is accurate in the sense that the computed result is equal to the price that one would observe for any arm's-length transaction.[31]

[31] In the case of long-term contracts between mines and downstream processors, risk sharing may be important. Downstream processing contracts may contain minimum prices and price participation clauses where the downstream processor captures a proportion of the observed market price above some base price.

The second element of computing the value of sales, or total revenue attributable to the transfer, is to measure quantity. The observed price is the value of final output, but unprocessed or semi-processed material is being transferred from the mine to the downstream processor. In effect, the miner is supplying a necessary input into the production process. It is common to adjust the quantity for quality in order to make the value approximate the value of the input. That is:

$Q_{market} = \alpha Q_{fob}$

Where: Q_{fob} = observed quantity transferred
Q_{market} = amount of final output produced from one unit of input
α = proportion of valuable content in one unit of input

As a practical matter, "α" might include more than one factor, such as proportions of various minerals contained in output, penalty points for undesirable content, production losses, and related factors. The important point, however, is that the exercise of adjusting quantity is essentially to determine a fraction. Note that the relationship can hold at any point in the chain of value added. That is, quantity transferred can be either concentrate, material exported, or even ore extracted. The adjustment factors would be different. For instance and for purposes of illustration, the adjustment factor "α" for alumina might be 0.5, while the adjustment factor for ore might be 0.1 or some number less than 0.5.

Total revenue attributable to transfer can now be expressed as the product of an adjusted price and an adjusted quantity, or:

$TR_{fob} = P_{fob}\, Q_{fob} = (1 – k)\, \alpha\, P_{Market}\, Q_{fob} = m\, P_{Market}\, Q_{fob}$

Where: TR_{fob} = total revenue attributed to transferred quantity
m = $(1\text{-}k)\alpha$

Note that it is immaterial whether the quality adjustment "α" is made to the observed price or the quantity transferred. The royalty is then computed by applying the statutory rate to the attributed total revenue or:

$\text{Royalty} = \beta m\, P_{Market}\, Q_{fob}$

Where: β = royalty rate

For instance, the Zambian royalty is 3% of the LME copper price, and the Mongolian royalty is 5% of the net smelter return. In effect, an adjustment factor of 0.6 would yield the same royalty in Zambia as in Mongolia, assuming comparable production. For instance, if the LME price were 100, then the Zambian royalty would yield 3 per ton. In Mongolia, the implied quality-adjusted net smelter return would be 60 (or .6*100); if a 5% rate were applied, this would yield an identical royalty of 3.

The advantages of this process are that the market price is known and the process can be transparent. In addition, the royalty can be applied at any stage in the chain of value added. In particular, the royalty can be applied at the time of extraction with a suitable increase in the adjustment factor. Applying the royalty at the time of extraction is consistent with the timing of the title transfer of ore (the time of extraction) and can be an indicator to the public about the value of reserves relative to final output. In addition, the resource owner (the government in this case) is able to charge for what is sold relative to what is transferred at the later production stage. In particular, production losses and internal consumption is captured in the royalty.

It is important to note that the estimate of "m", the adjustment factor, cannot be arbitrary and needs to be reasonable. This value can be determined by examining comparable internationally-known rates for transport, processing, and other costs. An appeal to internationally known rates will give an incentive to local producers to further justify their derivations; a process that can be mutually beneficial and enhance the overall transparency of the system.

III. Recommendation

To the extent administratively possible, the Mozambican Government should impose the royalty as far upstream as possible and use an independently-observable price as the basis for the royalty. The advantages of this approach include:

i. The measure of value is observable.

ii. The Government gets a royalty on production used as internal consumption and that is lost as part of the production process. Effectively the time of transfer will be the first "measurable" point, not the first "marketable" point. The Government is selling a scarce resource and thus should not be penalized by (or benefit from) inefficient (or particularly efficient) processing.

iii. Net back computations, while they may be deemed necessary for profits tax purposes, are not required for royalty purposes.[32] Instead, the Government, perhaps with assistance from experts, should begin gathering data on relevant costs available from independent sources to compute part of the adjustment factor. Such computations and data should be publicly-available so that the mining firms and general public can compute the adjusted price.

iv. The adjustment factor should be recomputed on at least an annual basis to take into account changes in relative market prices.

v. The independent assessment process should be continued, and perhaps strengthened, to determine the remaining part of the quality adjustment. This process should also be publicly available. Mining firms cannot complain about confidentiality because the Government owns the reserves. Thus, the public has the right to know what it is selling: the quantity, the quantity and the value.

In effect, the process would be similar to the treatment of goods produced in bond for excise tax purposes. The tax administrator is given the price and their responsibility is to compute and manage the quantity until the time that title is transferred and the royalty is paid.

[32] The net back for profits tax purposes may be different from the net back for royalty purposes. For instance, a net back to concentrate would be required if the royalty is imposed on concentrate, but a net back would be required only to the border for profits tax purposes when smelter output is produced domestically.

This process can be reasonable, but there are some costs.

i. Some transfers may be made on an arm's-length basis and those firms operating at arm's length may pay a royalty that is higher or lower using the proposed schedule. Thus, it is important that the Government, and others such as civil society and independent think tanks, monitor how the adjustment factors are determined in order to ensure that the overall process is reasonable.[33]

ii. Producers may be concerned about what might be the arbitrary nature of using an adjustment factor and an observed price for final output that is highly, but not perfectly, correlated with the value of product being transferred. In effect, using a downstream price, other things equal, may shift more of the risk for changes in downstream production and distribution costs from the Government (when the net smelter return is used) to the producer. This concern might be accommodated by the Government being transparent, in how the factor is derived, and making periodic adjustments to the factor in light of new information. In addition, the mining firm has access to international capital markets to accommodate risks via hedging and other transactions.

iii. Some variation across producers will result to the extent that quality is not perfectly measured. It is not clear, however, whether the variation will be greater or less than the variation resulting from using methods idiosyncratic to each operation.

iv. It is imperative that the Government obtain (and audit) production measures. Production statistics are supplied to the Central Bank, the Ministry of Mines, and the tax authorities, among other agencies. It is necessary to obtain some reconciliation or unification of definitions so that published statistics (and tax audits) are consistent. In addition, the Ministry of Mines, should apply uniform reporting standards and use a standardized form and process to report production, production losses, inventories (changes in inventories), and transfers. Such information should be publicly available; again, what is being sold belongs to the Government and confidentiality should be irrelevant for the use of public property.

The measurement issue is by far the most important concern, but diligent monitoring of production should be part of the basic regime regardless of how royalties are computed. As noted, the Government owns the reserves and is selling those reserves to a producer. Thus, the Government (and the population generally) has the right to know, as well as the responsibility to measure and monitor, the quantities transferred to the producers. This responsibility includes reasonable access to data and

[33] I am hesitant to recommend that the arm's-length price be used in cases where independent transactions can be established for two reasons. First, uniform application has administrative advantages. Second, the royalty can be interpreted as the supply price of reserves to the producer on a per unit basis. The government should take risk and other factors into account when computing this opportunity cost. An arm's-length supply price between a producer and downstream processors will have risk-sharing aspects that the producer might accommodate with hedging and other activities. The government's risk-adjusted supply price might not be affected by how independent producers share risk.

the right to take samples. If Government agencies do not have the equipment or expertise to perform their own testing, then the Government should contract with independent agencies until such time as the infrastructure necessary to supply independent valuations exists.

Finally, royalties accrued, amounts paid, and production quantities should be publicly available with little cost to the population. This objective can be achieved by publishing royalty revenues on a periodic (weekly or monthly) basis in a publication such as a major newspaper and/or via the website of the relevant agency (either Ministry of Mines or Ministry of Finance).

In summary, measurement of output, given the price, is one of the most important near-term (and longer-term) steps necessary to rationalize the Mozambican fiscal regime. The Government should not rely on self-reporting by buyers because even honest buyers will have a tendency to err in their favor when production, value and quality are estimated. In addition, all output measures are subject to some error and it is important for all parties to reduce measurement error as much as possible (both low and high errors). The Government might consider using outside experts for measurement purposes as a first step toward rationalizing the process.

Chapter 3: Variable Royalty

Variable royalties are being discussed in Mozambique and one specific proposal has been proposed by the World Bank. This proposal is discussed below along with one alternative.

I. Variable Royalty: One Alternative

The proposed variable rate may range from 3% to 10%, depending on a ratio computed by dividing a measure of the operating margin by a measure of total revenue. The operating margin is defined as the difference between one measure of total revenue and one measure of operating cost attributable to the operation, however defined. In equation form, this ratio is:

$$Ratio = \frac{Total\,\mathrm{Re}\,venue - Total\,Cost}{Total\,\mathrm{Re}\,venue} = \frac{PQ - TC}{PQ}$$

Where: P = Price of Production
Q = Quantity of Production
TC = Total Cost

Under the proposal, the royalty would be a flat 3% until the ratio defined above exceeds 0.3. The rate will increase in a linear fashion, in 0.0175 increments, until it reaches 10%, at which point the rate becomes independent of the computed ratio. The entire rate function can be summarized by:

Rate	Value of Ratio
3%	If Ratio < 0.3
3% + .0175*(Ratio-.3)	If 0.3 < Ratio < 0.7
10%	If Ratio > 0.7

The following comments might be relevant in evaluating this type of proposal.

a. The Ratio

The proposed ratio, sometimes called the return on sales, is an indicator used in the investment community. The numerator is generally defined as "Earnings before Interest, Taxes, Depreciation, and Amortization (EBITA)." The measure of the numerator is used because it is an indicator of the return to operations before capital costs (either debt or equity, including depreciation and amortization), debt, taxes, and all indirect costs attributable to the activity. The ratio may be useful because it is an indicator of a firm's ability to recover its overheads (fixed or quasi-fixed costs) and any return to capital on average. That is, the ratio is an average value.

While a useful indicator for financial purposes, this ratio makes little economic sense, even in a pure form. Investors seek total profit (or net present value) and economic decisions are made at the margin. Thus, the use of an average can be a misleading indicator of either total profit (which could be positive or negative given the definition) or marginal profit (which could be greater or less than the average). More obviously, the ratio can be significantly positive even when profits (either gross or net of tax) or cash flow are negative. Note that the ratio can be expressed as unity less the ratio of average variable cost (AVC) to price (P) for any given level of production and sales (Q), or:

$$\frac{P*Q-AVC*Q}{P*Q}>.3$$

$$or \qquad 1-\frac{AVC}{P}>.3$$

In effect, the trigger value of 0.3 is some measure of the average variable profit margin (normalized using the price). That is, the first step of additional progression will become effective if:

$$.7P-AVC>0.$$

Whatever this equation implies it is not a measure of the miner's willingness to pay or ability to pay royalty at an additional rate.

b. Behavior of the Royalty Function

The behavior of the revenue function is more of a concern. Given the mixed use of revenue and some measure of profit to calculate the rate notch effects, an inevitable aspect of any variable rate system, can be significant. In addition, marginal effective rates (either as a function of sales or operating profit) can be higher than stated in the statute. These phenomena can be illustrated by computing the marginal rate of the royalty function (again either as a function of sales or operating profit). Such an exercise is illustrated in Figure 1 where it is assumed that average variable cost is 70 and profit increases from 0 based on increases in revenue (presumably as the price of output increases). Note that the marginal rate is 3% until the ratio reaches 0.3, then jumps to 15.25%, and returns to 10% when the ratio reaches 0.7. The reasons for the high marginal rate within the band is that the change in the rate is applied to all revenue (from 0) and not on the increment in revenue (or variable profit) as would be the case under standard progressive payment regimes. In effect, the marginal rate increases more than 500% for values corresponding to a ratio value between .03 and .07.

The standard approach to address such behavior is to impose the marginal rate only on the incremental value above a specified level. For instance, in income taxation, the rates might be 10% for income less than 1,000 and 15% for income in excess of 1,000. It is not possible to employ marginal rates on the excess given the proposed function because excess is not perfectly correlated with the trigger determining the rate change. The royalty is based on a measure of output value, but the ratio is a function of both output value and some measure of cost using an average. Thus, it is possible for the ratio to increase when revenue falls or the ratio to fall when revenue rises. In general, the correspondence between changes in total output value and changes in the ratio is not perfect, which makes the standard approach to developing marginal rates (with average rates increasing) difficult.

c. Administrative Issues

Royalties are generally payable on a monthly basis and are measured relative to output values for the month the chargeable event (either production or other indicator of title transfer) occurs. It is not clear from the proposal whether the ratio would also be contemporaneous. That is, some regulation will be necessary to determine the value of the ratio as well as the value of output for each chargeable period. Administrative complexity for both the payer and the government is increased if operating profit is to be computed every month. One solution would be to apply the ratio based on some measure of operating profit computed more in accord with reporting standards (either quarterly or annually). The problem with this approach, however, is that the relationship between current profitability, however defined, and the marginal rate is lost. In particular, the rate could be low (or high) when prices are rising (or falling), further weakening the link between value and royalty amounts.[34]

II. Variable Royalty

Perhaps a simpler way to achieve the same result of the charge discussed in the last section is to make the trigger for the additional charge a function of the price. For instance, suppose a royalty of 3% is imposed on the value of production if the price, adjusted for inflation, is below an exogenously-given threshold, say 100.[35] Then the rate could be increased to 5% (or some other value) on the incremental price in excess of 100. Therefore, if the price is 100, then the royalty is 3. If the price is 150, then the royalty is 3 + .05(150 – 100) = 5.5.[36] This approach would eliminate the high marginal rates resulting from imposing the higher rate on the entire value. Some analysis of Mozambican facts and circumstances needs to be undertaken before a variable-rate royalty structure, the base rate, and the number of marginal rates can be determined.

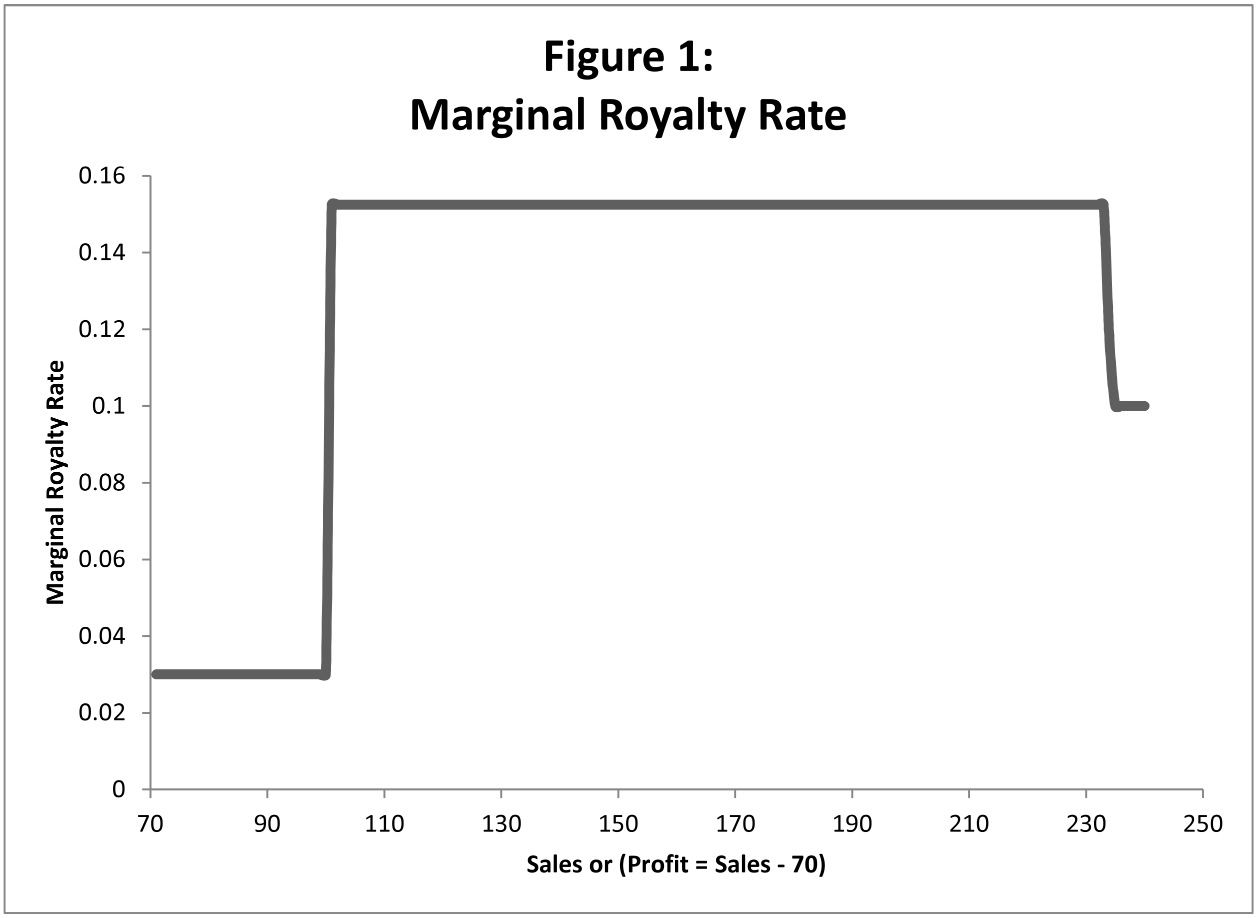
Similar variable royalties are used in other countries. The Canadian province of Alberta uses a two-part charge on oil and Chile, as a temporary measure, has adopted a variable royalty. This charge has a number of advantages in addition to being more in accord with economic notions of marginal rates:

a. The industry is familiar with the charge. Such charges are known as “price participation agreements” and are common in mining. For instance, downstream processors commonly receive a proportion of the price above some base price as part of contractual process regimes. In effect, the variable charge is a type of risk-sharing system in which the beneficiary shares the upside gain, presumably in exchange for a lower base price. Given the common use of these agreements, industry representatives can hardly complain about a government selling reserves and demanding this type of compensation.

[34] The proposal also contains a provision to lower this rate in cases where production is used for domestic processing. I recommend that such a proposal be rejected. From my perspective, the royalty is the Government’s measure of the resource’s opportunity cost and that value should be independent of how the resource is used – either in domestic or foreign processing. Reducing the royalty for domestic processing is an explicit subsidy which may result in negative value added for the country when output is measured at its true opportunity cost.

[35] This proposal is based on Conrad (2008) “Using a Variable Rate Royalty to Approximate a Profits Tax in Mining (or Any Other Sector). Unpublished memo.

[36] In petroleum, the royalty is sometimes variable based on cumulative production as well as price (such as in Alberta).



b. The system is transparent and there will be fewer disputes.

c. The system might approximate a flat-rate income tax, relative to the economic measure of income. Conrad 2008 (see Appendix) has shown that a variable royalty might be used to approximate a flat-rate income charge and provides some examples. Thus, a variable rate charge, if the rates are relatively reasonable, cannot be considered a “progressive” charge when measured against the appropriate base (economic income on a flow basis).

There are costs. Like any royalty (or the payment for any factor of production like labor), the charge must be paid even if the net present value is negative. In addition, the Government needs to consider the risk sharing properties of a variable royalty relative to a flat-rate charge. The Government might have to trade off some increased variability in revenue for higher expected revenue if a variable royalty is considered. For these reasons, some study is required before making a final recommendation.

Chapter 4: Profits Tax, VAT and Related Issues

A number of profits tax, VAT and other tax issues are discussed in this chapter. Emphasis is placed on particular technical issues in an effort to rationalize the existing profits tax structure. That said, by concentrating on the technical issues a pathway toward more a more general policy review might be developed.

I. Ring Fencing

a. Description

Ring fencing is a generic tax term that is not restricted to natural resource extraction. Ring fencing is a term applied to any set of activities that are taxed, either under special rules or by segregating a particular activity, or set of activities, for separate taxation. One example of ring fencing outside the natural resource sector is the segregation of income from electricity generation between the production and transmission of electricity.

Within natural resources in general and mining in particular, ring fencing is used to segregate certain activities and tax, or at least attempt to tax, those segregated activities independently from other activities in which an investor might engage. Ring fencing might be achieved in two ways. Horizontal ring fencing is a situation where the same, or similar, activities (such as mineral extraction from two different physical locations/tracts/license areas) are taxed separately. That is, the taxpayer will compute a separate tax for each property instead of computing a single tax for the aggregation of interests. Vertical ring fencing is a situation where downstream activities, or a particular set of downstream activities, are segregated from upstream activities. This type of ring fencing might be achieved by administrative definition in some instances. For instance, concentrating, smelting, and other downstream activities might be defined as "manufacturing" as opposed to "mining" in the tax law, thus potentially separating activities for tax or other regulatory purposes.[37] Regardless of the type of ring fencing, some type of separate accounting is required to compute the tax base attributable to the different activities when ring fencing is imposed. Thus, one important practical issue is the ability to measure the tax base attributable to segregated activities.[38]

An example will illustrate the point. Suppose an organization has three mines in different parts of the country, two concentrators, and one smelter. All smelter output is exported. All production from Mine 1 goes to Concentrator 1 for processing while production from Mines 2 and 3 goes to Concentrator 2 for processing. All output from Concentrators 1 and 2 goes to the smelter for processing and the smelter does not use throughput from any source other than Concentrators 1 and 2.

[37] This distinction is maintained in the United States and I was informed that Mozambique has a similar policy. This could have implications for policy applications in Mozambique. For instance, the law on fiscal incentives for mining and petroleum contains mineral incentives, while general investment tax credits and other incentives apply to manufacturing under the general tax law.

[38] It might be thought that the whole should be equal to the summation of the particular parts. For instance, if the total profit from two deposits is 100 then one might expect that separate accounting for each project separately should be equal 100, perhaps -10 to Property A and 110 to Property B. Such a result might not be achieved in practice however because the rules applied to the computation of each separate property may different from the rules applied to the aggregate (or to consolidated) profit in addition to the differential costs of maintaining different accounting regimes. Such limitations should be kept in mind when evaluating different ring fencing schemes.

There are a number of ways this organization can be ring fenced, including:

i. Vertical Ring Fencing between Mining and Processing. Mines 1, 2, and 3 would be treated as one group, while the two concentrators and the smelter would be taxed together as a separate unit.

ii. Horizontal Ring Fencing for Mining and Vertical Ring Fencing for Mining and Processing. In this case, Mines 1, 2, and 3 would be treated as separate units under horizontal ring fencing, while the two concentrators and the smelter would be taxed as in Part i.

iii. Complete Horizontal and Vertical Ring Fencing: Each mine, each concentrator, and the smelter would be taxed as separate units in this case.

These three examples are not exhaustive for the assumed facts but illustrate the different combinations of activities that might or might not be aggregated into one unit.[39]

b. Taxes and Charges to which Ring Fencing Might Apply

Ring fencing can be applied to a number of taxes and charges:

i. Profits and Income Tax: Ring fencing is most commonly applied to income taxes where separate accounting by ring-fenced activities is required. In effect, the intent is to treat each separate activity as a distinct, independent taxpayer even though one investor owns all of the activities.

ii. Value Added Tax (VAT): Ring fencing might apply to VAT and in this case each separate activity is effectively a separate VAT taxpayer. In general, ring fencing for VAT purposes might be inefficient or ineffective because trade between the separate segments will cancel out (no revenue effect) and the total VAT on trade with third parties should be independent of whether the investor's activities are ring fenced or combined, at least other things equal. Situations, however, where ring fencing might be justified for VAT purposes include:

1. If VAT revenues are allocated from the central government to local or regional governments;

[39] Ring fencing may be the result of corporate structures, either required or allowed. For instance, one investor might be allowed, or required, to establish separate special purpose entities by tract or activity. The creation of subsidiaries and reporting on a separate company basis can be equivalent to ring fencing.

2. If firms produce both taxed and exempt activities (a firm could produce both taxed and exempt supplies in different locations or in different operations); and

3. If investors engage in different types of activity (one investor could engage in both leasing and other financial transactions and production of goods like autos).

iii. Royalty: Ring fencing may be a de facto outcome of the payment's function, which is to compensate the resource owner (the government) for the sale of reserves when they are extracted. If the royalty is based on production of ore and the rate is either per unit or ad valorem, then there is ring fencing by definition. Ring fencing may not be the result, however, if the royalty is imposed on sale of concentrate from more than one deposit. Even in the case were royalty is imposed on concentrate sales from a single deposit vertical ring fencing is absent.

iv. Excess Profits Tax: An excess profits tax might be ring fenced by property if the policy intent is to capture some proportion of excess profits, however defined, attributable to a particular property. The property might be a lease, an aggregation of adjacent leases, or a single mine (or well) depending on the legislation and regulations.

c. Gains and Losses from Ring Fencing

Two advantages are noted for ring fencing (either horizontal or vertical). First, tax losses from exploration, development, and other start-up expenses cannot be used to offset income from either other production operations or downstream activities. Second, and related to the first, is that the ability to offset income with losses from another set of activities might create a competitive advantage for preexisting profitable firms relative to new entrants. The revenue loss and competitive advantage implications from aggregation of interests results in mining in part because exploration and development expenses are either immediately expensed or benefit from accelerated amortization. The need for ring fencing in this case can be reduced by replacing expensing with capitalization and amortization more in accord with economic principles. Exploration and development are capital expenditures and income accounting should reflect the capital nature of the expenditure by treating the expenditures like other expenditures on capital goods (either tangible or intangible).[40]

There are also costs to ring fencing. The most obvious cost is the administrative need to separately account for net income (or cash flow) or other measure of the base attributable to the separate activities.[41] Attributions of revenue (in cases where there are transfers from upstream to downstream activities, both of which operate domestically) and expenses must be made when an

[40] It might be claimed that expensing exploration and development expenses is beneficial to the investor risks are offset, at least to some degree. There is an economic question about whether expensing such costs are efficient.

[41] For discussion purposes, I am assuming that ring fencing is used to measure income.

investor has two activities that are segregated, either horizontally or vertically. Transfer pricing rules may have to be applied or formulary methods used to attribute expenses and sales in such cases. Absent reasonable administration, an investor can use transfer pricing to offset, at least in part, the expected revenue gain created by the inability to use losses more rapidly. For instance, the investor might reduce losses attributable to a mine by shifting some expense otherwise attributable to a loss making mine to a profitable upstream processing operation. In effect, transfer pricing may become a domestic as well as a cross border issue.

d. Deciding the Best Ring Fencing Policy for Mozambique

There is no international best practice for ring fencing. Facts and circumstances in any country should determine the policy. As noted, the need for ring fencing can be reduced significantly if exploration and development expenses are capitalized more in accord with economic principles. That said there are still tradeoffs between administering ring-fenced systems relative to systems with aggregated interests, even when significant upfront capital expenditures are expensed. Some important issues to consider before Mozambique can make an informed decision include:

e. To what extent is ring fencing a practical issue? For instance, if Mozambique might maintain a policy under which separate deposits are held by separate unrelated parties making, the issue irrelevant. This is the policy in some countries such as Mongolia where each property is organized by a separate special purpose entity. On the other hand, if the same foreign or domestic investor is able to hold more than one mining license as well as engage in downstream and even unrelated activities, then policymakers will need to make an informed judgment about the need for ring fencing.

f. How will ring fencing be administered? If ring fencing is adopted, then clear administrative guidelines will be necessary to segregate the interests to be taxed separately. For instance, there might be an issue of ring fencing adjacent licenses or determining at what point in the chain of value added to separate upstream and downstream activities.

g. What methods will be used to separately account for income between ring-fenced activities? In addition, what accounting rules (both tax and financial) might be necessary to measure the tax base when interests are aggregated? There is no practical standard for determining certain attributions. For instance, two separate properties might share a purchasing office for inputs. Cost of the purchasing office could be attributed to each separate property based on the ratio of input values supplied to each property, by the proportion of orders of each separate entity or other, reasonable method.

h. What are the revenue effects? Potential revenue effects relative to changes in administrative costs should also be considered.

II. Capital Gains

a. Current Policy

Realized capital gains are currently taxed under Subsection VI of the Corporate Income Tax Code (IRPC). Article 45 of Subsection VI appears to contain a reasonable definition of the adjusted basis, which is adjusted for inflation.[42] Given the existing policy, it may not be necessary to have a special provision for mining. Rather, it should be a regulatory matter to clearly define mining licenses, of any kind, granted by the state as capital assets and to impose a tax at the statutory rate.

The reinvestment deduction (Article 46) is poor policy and should be eliminated, especially for mining. The policy is poor in general, is difficult to administer, and can be subject to abuse unless there are clear recapture rules.[43]

With respect to mining rights and other rights granted by the state, it is also important that the regulation be clear about Mozambique's authority to tax as well as provide a clear statement of the accounting to be performed for both sides of the transaction.

i. Domestic Source

Trade in mineral rights and other rights granted by the state, as well any tangible personal, real or intangible property related to mining should be deemed Mozambican source so that Mozambique can establish the right to tax the gain. A statement should be included in the law or regulation to the effect that: "any gain or loss arising from the transfer of any mining licenses, and any rights conveyed by the state for mining either in whole or in part, originally granted by the Government of Mozambique to any person with respect to natural resource properties located in Mozambique, are domestic source." In addition, the sale of entities, joint venture interests, and shares of any domestic special purpose entity organized under the laws of Mozambique or traded on any Mozambican exchange should be defined as domestic source.

ii. Measurement of Adjusted Basis

The size of the gain needs to be measured. In general, the capital gain is equal to the difference between the deemed realized value of the transfer less the adjusted basis of the property at the time of transfer, given the realization basis employed in Mozambican law. The adjusted basis should be clearly defined to include the depreciated (or amortized) value of any real, tangible, or intangible property transferred, adjusted for inflation if Article 45 is applicable.

An example will illustrate these points. Suppose that Company A, a Mozambican entity, obtained the mining license for a mineral property in Mozambique in 2012. The license was initially valued at 100 in Company A's balance sheet in 2012. Between 2012 and 2020, Company A spends 500 on plant and equipment, begins operations, and carries a balance of total assets equal to 450 after depreciation and amortization. There is no debt. In 2020, Company A transfers the license and the entire property to Company B for 800. The results are:

[42] How Article 45 is applied in practice is not known and it would be helpful to develop numerical examples (if they are not already developed) in the regulations to show the steps necessary to make the basis adjustment.

[43] Further analysis of the reinvestment deduction can be provided if deemed appropriate.

1. Company A’s adjusted basis before the title transfer is 450.
2. Company A’s gain from the sale is 350 (800 – 450), which should be included in taxable income.
3. Company B’s initial basis in the property is 800, and Company B will receive the right to amortize and depreciate that basis for tax purposes.

If the person selling the rights is a legal entity or operates as a permanent establishment in Mozambique, then the capital gain is 350 as stated above. If, however, the person is not otherwise taxable in Mozambique,[44] then there is no way the Government of Mozambique can enforce disclosure of that person’s adjusted basis. Thus, the Government should deem the adjusted basis of the seller to be zero and require the purchaser to withhold tax at full rates.

Finally, the adjusted basis of the assets transferred should be the tax value and not the book value of the assets. Mozambique allows immediate expensing of exploration and rapid amortization (4 years) for development expenses. These provisions significantly reduce the adjusted basis of the assets for tax purposes. In effect, requiring the use of a tax basis facilitates recapture of the tax benefits at the time of transfer. Recapture can be an important anti-abuse device in general and its application for gains from the transfer of rights can be important in preserving the integrity of the tax system.

b. Retained Interest and Overriding Royalties

Capital gains and losses are not the only means to accrue gains and losses from title transfers. For instance, Company C may transfer the mining license and related property to Company B for 100, but retain an interest in the property by accepting an overriding royalty of 5% of sales for the remaining life of the property. The 100 less the adjusted basis should be subject to the capital gains provision and the adjusted basis for Company B should be 100.

In addition, Mozambique should define the payment of the overriding royalty to be domestic source. Thus, Company B would be allowed to deduct the overriding royalty for profits tax purposes, while the overriding royalty would be includable as gross income subject to tax for Company C. If Company C is no longer a Mozambican entity or operating a permanent establishment in Mozambique, then Company B should be required to withhold on the gross payments at either the standard corporate rate or the applicable withholding rate on royalties in general.

In summary, it is possible for Mozambique to share the gains and losses arising from the transfer of title of assets related to mineral properties in Mozambique, but care must be taken to ensure that regulations and legislation are appropriate. In addition, overriding royalties, and other means for compensating the seller such as obtained shares of the purchasing company in exchange for the rights, should be subject to Mozambican tax so that investors are not able to structure transactions to avoid the tax on the gain or loss.

[44] I believe the Government can make sure that such a situation never arises by stipulating that mining licenses and other rights cannot be issued to any person other than a Mozambican person or a foreign person operating as a permanent establishment in Mozambique.

c. Realism

The proposal described above is one means to protect Mozambique's interest with respect to title transfers, but the Government and the general public should be aware of the limited nature of this benefit. In particular, Mozambique may not be able to capture gains and losses from changes in equity prices or title to assets other than those directly granted by the state that are not Mozambican source. Some examples will illustrate the dilemma.[45]

d. Market Gains from Publicly-Traded Shares

One type of gain or loss arises when the stock market price of a mining company's shares changes in response to events (either in Mozambique or abroad). For instance, Corporation X might have a subsidiary in Mozambique that has been negotiating a new contract with the Government. Corporation X is a publicly-traded company whose shares are traded on a major stock exchange outside Mozambique. On a certain date it is announced that the contract has been concluded and new operations can begin immediately. The stock market price of Corporation X increases in response to this announcement.

With the exception of imposing a tax on the capital gain of domestic residents and permanent establishments that own shares of Corporation X, there is little Mozambique can do to capture this type of gain unless the government holds an equity position of the parent company at the time of the announcement.[46] Uncertainty has been resolved because investors now know that the contract is binding and the contract terms are sufficient for the investment to proceed. Thus, the change in the stock market price reflects, in part, the resolution of uncertainty for risk adverse investors who are resident throughout the world. Capturing a part of this gain is generally beyond the scope of Mozambique if the market where the shares are traded is outside Mozambique's jurisdiction and the shareholders are not Mozambican residents.[47]

i. Transfer of Title Indirectly Via Purchase of Entities

A second type of transfer may arise when the Mozambican entity holding the license is owned by another entity offshore which is sold, either in part or in total. For instance, suppose Corporation M is a special purpose entity organized under the laws of Mozambique for the purposes of mining. Corporation M holds the mining license, among other assets. Corporation M is a wholly-owned subsidiary of Corporation N, which is organized under the laws of the Netherlands. In turn, Corporation N is a wholly-owned subsidiary of Corporation U, which is a holding company organized under the laws of the United States and whose shares are publicly traded on the New York Stock Exchange.

[45] This issues discussed here are not restricted to mining but apply more broadly to all foreign investment. Mozambique might be well served by obtaining the advice of experts experienced in the taxation of international transactions.

[46] In theory, the Government might be able to affect the magnitude of the gain within the contractual terms negotiated in the contract. That is, if the Government knew the risk-adjusted return necessary for the shareholders of Corporation X, then the Government might be able to reduce the magnitude of this market gain for existing shareholders by increasing the Government's share of the project's value.

[47] The ability of Mozambique to tax its residents on foreign source capital gains may be further limited.

Suppose that Corporation R, a corporation organized under the laws of Russia, purchases 100% of the equity of Corporation N from Corporation U, which is fully disclosed to the US shareholders of Corporation U and to the Mozambican Government under the terms of a standard mineral agreement. Corporation R now owns Corporation M and thus owns all of the assets, including the mining incense. In this case, there may be no Mozambican-source transaction to tax. Mozambique could attempt to tax the gain via a type of "look through" provision, but neither Corporation U nor Corporation R are subject to tax in Mozambique and it would be difficult if not impossible for Mozambique to either enforce or to collect the charge.

This example is one where corporate structuring is used to effectively avoid the capital gains tax recommended in Section I of this memorandum. Given current international tax rules, it might be difficult for Mozambique to obtain direct tax benefits from such capital transactions. Some countries such as Australia attempt to tax the capital gain but the method are difficult to administer and a number of assumptions are required to achieve any results. Mozambique could benefit, however, if the government held an equity position in Corporation M, but any expected gain should be measured against the real economic costs of holding and maintaining such equity positions.

Finally, it is important to note that Mozambique may benefit significantly from such transfers, even if the capital gain is untaxed. The value of asset transfers is related to the risk-adjusted present value of the underlying income flows generated by the mine. Thus, Mozambique may not lose and may gain from the transfer. First, the value of the transfer would be at least equal to the net of tax present value of the original mining investor in Mozambique. In this sense, the seller is simply taking the risk-adjusted present value that was negotiated between the government and the company. Second, if a premium is paid for the assets, then the buyer of the company believes that the risk-adjusted present value is higher than the original value of the contract. This could be the result of different expectations about prices or because the purchaser may believe they are a more efficient producer. That premium measures at least part of the risk-adjusted net of government payment present value to the purchaser. Thus, if the purchaser is willing to pay a premium, then the government should expect more mineral and tax payments from the new investor if contract terms are robust and the contract is administered reasonably well. For instance, if the contract was structured so that Mozambique would get 45 out of a total projected present value of 100 when the initial contract was signed, then the government should expect to get at least 45 in present value terms if the domestic entity is sold for a premium and perhaps more. This would be true because greater profitability should mean a greater payment to Mozambique. That is, what was a present value 100 may now be a present value of 120 and so Mozambique might expect to receive greater than 45 even if the proportional share is constant.

III. Thin Capitalization

A thin capitalization rule is part of the generally applicable profits tax.[48] In particular, interest on nonresident related party debt is limited via a 2:1 debt-to-asset ratio test; that is, interest expense on debt attributable more than twice the amount of equity may be disallowed for a profits tax deduction (the deduction of intercompany interest may be limited where the indebtedness to a nonresident related party is more than twice the equity).

[48] Interlocutors at the tax administration were not aware of this provision and some time was spent on examining the issue during our discussions.

a. Using a Debt-to-Asset Ratio as an Anti-Abuse Device

A debt-to-asset ratio test is one of the more common methods used by tax authorities throughout the world. An example will illustrate how the rule is applied. Suppose that total debt plus equity equals 120, current inter-affiliated debt is 100, and total interest expense is 50. According to the rule, interest from only 40 of the 50 in interest cost would be deductible for income tax purposes (because 100/120 is greater than 80/120). Therefore, only 80/100 of the interest cost of 50 (or 40) would be allowed as an income tax deduction. As shown, the limitation depends on the definitions of debt, equity, and interest.

i. Inclusions in the Ratio

Debt may be defined as the total of short-term and long-term debt, or only long-term debt. Internationally, it appears that thin capitalization rules are related to long-term debt only. However, there is a problem with using long-term debt as a measure of the limitation. How a firm chooses to finance its operations, particularly using inter-firm financing, may be endogenous to the definition. For instance, a firm might use revolving credit schemes or other schemes to satisfy the limitation or to maximize the amount of the interest deduction given the limitation. Given such options, it might be better to limit the definition to total debt.[49]

A second issue arises with respect to inter-affiliated debt if that definition is used in Mozambique. What is really inter-affiliated debt may not be known to the tax authorities. For instance, back-to-back transactions are possible. A foreign parent firm may go to a bank and deposit 100 in exchange for that bank lending 100 to the parent's Mozambican subsidiary. The loan on the books of the Mozambican subsidiary would appear to be arm's-length, when in substance the loan is actually indirect financing from the parent.

A third issue may arise with the definition of debt and equity, as well as interest, attributable to an unincorporated branch, permanent establishment, or joint venture. Debt tied to particular assets may be clearly defined, but debt such as trade credits and other short-term liabilities may be attributions of global financing costs of the parent.

In addition, preferred shares may have characteristics similar to debt. For instance, agreements may stipulate that preferred shares accrue interest at a specific rate (or variable rate based on some market rate) and that preferred shares be paid before dividends are distributed. In effect, this type of inter-firm capitalization may be considered debt for practical purposes. There may be two ways to address preferred shares. First, preferred shares may be treated as equity and placed in the denominator of the thin capitalization ratio. The interest payment attributable to the preferred shares

[49] There may be an issue about non-interest bearing debt such as payables. My preference would be to define "debt" as total loans outstanding including payables. The interest to be subject to the limitation would be equal to total interest, regardless of the instrument. The government should not care how the firm chooses to finance its operations (short term, long term, or payables). In addition, a government that imposes a thin capitalization rule should not care how firms (other than banks) accrue gross income. Gross income could accrue from sales or interest income. Thus, there is no need to compute "net debt," which would include loans made to others and receivables, in the computation of debt nor should the limitation be on "net interest," which would include all interest expense less interest income (again except in the case of banks).

would then be treated as dividends and would not be deductible for tax purposes.[50] Second, preferred shares could be treated as debt and the interest could be deductible, but subject to the thin capitalization rule. There is some preference for treating preferred shares treated as equity, but some additional discussion would be appropriate a make a reasonable recommendation can be made for Mozambican circumstances.

ii. Interest Rates

Authorities must still limit the interest rate used to compute allowable interest. For instance, a company might have debt of 80 and equity of 40, which exactly satisfies the leverage constraint. The firm, however, could now charge an interest rate on inter-firm debt sufficient to have reduced taxable income, perhaps to zero.

In addition there might be the need for a stacking rule if interest rates vary by debt instrument. For instance, suppose there are two types of debt. Debt 1 is 100 and with an interest rate of 10% and Debt 2 of 100 with an interest rate of 15%. Suppose that interest on only 100 of debt will be allowed for tax purposes. The firm would prefer to use the deduction for the 15% interest cost while the government would prefer to allow the deduction for only the 10% interest cost. There either needs to be a stacking rule for ordering the interest cost allow and to compute the average interest cost for all debt and allow a deduction for the average amount. Any method adds to administrative costs.

These examples illustrate the fact that firms have two instruments to transfer price income out of a country via debt: the amount of debt itself and the interest rate charged on that debt. Limiting one without limiting the other may not constrain the firm and thus the government will have to ensure that interest rates are within some stipulated bounds should use of a leverage limitation continue.

b. An Alternative

Mozambique might consider a rule that limits interest expense deductibility to 2/3 of taxable income before the interest expense. Such a rule is based on the United State asset stripping rule and has been adopted in the Dominican Republic and Mongolia among other countries. For instance, if taxable income before interest expense is 60, then total interest allowable would be equal to 40. Amounts below 40 would be fully deductible. Amounts above 40 would not be allowed as a deduction this year, but an unlimited carry forward would be allowed.[51]

This limitation has two advantages. First, the government has limited the firm's ability to use both the interest rate and the debt level to transfer income out of the country tax free. The limitation is on interest expense (the result) and not on the means of achieving the result (debt levels or interest rates). The government might want to limit interest rates allowable, but the need to fine tune audit rules is reduced or even eliminated. In effect, the government should be indifferent to how the excess over 2/3 of taxable income accrues (large debt or relatively high interest rates), because the interest

[50] There may be withholding tax consequences, however. For instance, if dividends are exempt from withholding tax, then using preferred shares to finance a domestic subsidiary would effectively allow interest to escape withholding taxes. I was not able to explore this issue thoroughly during my visit and would like to follow-up further if the government is interested.

[51] The limitation might be imposed on "net interest," defined to be interest expense less interest income, if banks are to be included in the system.

deduction itself is limited. Second, a firm can never use interest to reduce taxable profits to zero (or below). Thus, at least part of the income from capital will be subject to tax regardless of the source of finance if the methodology used to derive taxable income is reasonable.[52]

The cost of this policy is that there could be some situations where legitimate interest expenses (settled at arm's length and not related party debt) would be disallowed (or at least deferred). This really may be an issue about the allowable debt structure, however. A 2/3 limitation on interest results in an implied debt structure of 2-to-1. Thus, the result should be identical to a 2-to-1 thin capitalization rule if all debt is arm's-length and rates are market-determined.

In summary, Mozambique may be well served by the proposed change. Revenue to the government will be no lower and probably higher, administrative costs will be reduced, and the overall system may be more transparent. Technical details need to be developed and supplied so that policy makers have a better appreciation of the gains and losses of each approach.

IV. Selected Technical Issues

Some technical tax issues are discussed here.[53] Coverage is not exhaustive and more work needs to be completed in order to evaluate the policy and administrative implications of the overall framework in the Mozambican context.

a. Income Tax and Incentives Acts

i. Currency Adjustments

The draft petroleum contract contains a requirement to keep accounts in US Dollars and to pay production sharing payments in dollars (if taken in cash). It is also common for mining companies to use US Dollars. Notwithstanding these comments, interlocutors at the Ministry of Finance and in the private sector noted that profits tax is measured and payable in local currency.

Two issues about the treatment of foreign exchange adjustments arise because of the requirement of converting accounts into local currency.[54] First, there is an issue about the interaction of the conversion with foreign exchange gains and loss provisions. It is possible that valuations at different dates can trigger a taxable gain or loss depending on how the exchange rate changes interact with tax provisions and I understand that tax authorities have included such gains (and losses) into taxable income without any compensating adjustments in asset accounts. In general, the best approach in my view is to tax foreign exchange gains and losses on an accrual basis, while making adjustments (compensating, perhaps) in the balance sheet accounts. In this case, if the local currency depreciates (or appreciates) solely due to differences in inflation, then the compensating adjustments would net to zero

[52] Excess interest should be deemed a dividend for withholding tax purposes.

[53] I did not take as my mandate to evaluate the overall fiscal regime structure for either mining or petroleum. I would be happy to supply such an evaluation if the authorities believe a reevaluation of either the production sharing strategy for petroleum or the tax-royalty regime is appropriate. Instead, I have assumed the overall structure is, or will be, adopted and have chosen to concentrate on particular technical issues within the respective frameworks.

[54] The issues discussed here would be irrelevant, at least for most situations, if profits tax could be computed in US dollars and then be paid in local currency.

and no tax (or tax loss) would be generated. There is an administrative question about whether such a procedure is cost effective, however.

Other options include taxing foreign exchange gains and losses on a realization basis or exempting foreign exchange gains and losses altogether. There are policy and administrative difficulties with either approach, in particular the ability of the firms to choose currencies for transactions and to choose the timing of transactions to the detriment of profit tax revenues.[55]

A second, but related, issue relates to the real value of income and expenses. For instance, suppose a firm buys a new machine for 1,000 US Dollars on January 1 when the exchange rate is 2 Meticals per US Dollar. Suppose further depreciation is 30%. At the end of the year, the investor would take depreciation of 300 Meticals. Suppose, however, that the Metical on December 31 was 1 Metical per US Dollar (or 4 Meticals per US Dollar). The government would lose real tax revenue if the Metical appreciated, and would gain real tax revenue if the Metical depreciated. Such effects are similar to changes in real tax revenue resulting from inflation if the tax system is not adjusted for inflation.

Most countries address this problem for mining by allowing mining firms to maintain accounts in US Dollars (or other functional currency), and compute all government payments in Dollars even though the producer may be required to pay the charge in local currency at the exchange rate prevailing at the time the charge accrues. Some foreign exchange gain and loss issues as well as some inflation adjustment issues remain. Any remaining issues might be addressed by the use of applicable provisions and perhaps inflation adjustments.

b. Option to Defer Depreciation

I understand that mining companies have the option to deduct up to the maximum depreciation amount allowable on capital assets in any given profits tax period. For instance, the taxpayer may have a new asset with an adjusted basis equal to 200 that is eligible for 25% straight-line depreciation. Normally, the taxpayer would be eligible to take a depreciation deduction of 50 in the first year. I understand that in mining, however, the taxpayer has the option of taking any value of depreciation from zero to 50 in the first year. Taxpayers may choose to defer depreciation deductions if they believe that any tax losses carried forward will nullify the depreciation deduction. For instance, if the taxpayer took the 50 in the first year and a tax loss resulted, then the taxpayer would be able to carry forward that loss for, I believe, six years (on a First-In-First-Out basis or at least the regulations should so state). It might be the case that tax losses accumulate for six years, so the taxpayer would lose the full value of the depreciation deduction in this case. Thus, the taxpayer would choose to delay the depreciation deduction until the period when a tax benefit, at least in present value terms, results.

Such an approach is reasonable from the taxpayer's perspective, but it increases administrative difficulties. In particular, the tax authorities need to audit the maximum amount that the taxpayer could take, as well as determine when in time that deduction is actually taken. In effect, two types of carry forwards must be tracked: the tax loss carry forward and the depreciation carry forward (which is taken on an optional basis).

[55] The issue becomes a bit more complicated when investors use hedging and/or purchase derivatives in foreign currency.

A better approach, I believe, would be to extend the tax loss carry forward period for mining firms and require depreciation deductions to be taken in the period accrued. That is, depreciation of the applicable amount should be required on an all-or-nothing basis in the period accrued. Separate accounting for depreciation carry forwards and tax loss carry forwards would be eliminated. Investors should have no complaint about this method as long as the tax loss carry forward period is sufficient.

c. Recapture

A number of expensing and investment tax credit provisions are contained in various incentive laws, draft contracts, and other policy documents.[56] Abusive situations can be created in the presence of such generous incentives. For instance, a firm might purchase a new asset for 100 and immediately expense that asset, saving 32 in tax. In this case, the investor could sell the asset to another person for any value greater than 68 and make a profit. In addition, absent a rule to the contrary, the purchaser might then expense the same asset for their tax purposes.

The former situation may be contemplated in Article 52 of the Law on Fiscal Benefits by the statement: "When the fiscal benefit applies to the acquisition of assets to be directly applied in the realization of the buyer's objectives, if the assets are disposed of or applied to another purpose, without obtaining the prior authorization of the competent authority, the fiscal benefit will be null and void, without prejudice to any other sanctions." It is not clear, however, how this provision is applied in practice and the provision, by itself, is insufficient, in my view, to counter abusive situations.

In general, there is a need for clear anti-abuse rules and timing provisions so that taxpayers know how particular situations will be addressed. Some of these provisions may include:

i. A requirement that qualified investments be limited to new assets (to reduce the chance of churning);
ii. A requirement that the adjusted basis for any asset be reduced by the value of the tax benefit combined with a recapture rule at the time of disposal; and
iii. A time limit, with perhaps a reduction in recapture depending on the period the qualified assets were held.

The new asset test, as noted, reduces the potential for churning (the ability of taxpayers to trade the same asset and benefit from the incentive multiple times). A basis reduction combined with recapture should work as a detriment to churning as well. For instance, if an asset is expensed, then its adjusted basis is zero. Upon disposal, the greater of the realized value of the asset or the asset's initial basis would be added back to income. This means that the taxpayer would then capture only the present value of the incentive. A time limit is necessary for most situations, as noted in point iii above. For instance, it is common to limit the recapture period to a specific time period (measured in years) and if the asset is held for longer than the specified time period, then recapture would not apply. For instance, the recapture period could be five years and so an investor selling the asset in the sixth period would be subject only to the normal capital gain and loss provisions contained in the law. Prorating the recapture (or alternatively prorating the benefit) through time might also be reasonable. For instance, if

[56] Investment tax credits are available in the Law on Fiscal Benefits and mining or petroleum investments may not benefit from the incentives in this law. Downstream activities such as transportation and refining might be eligible for such benefits if such activities are defined to be manufacturing as opposed to mining; a common occurrence in tax law. Such incentives are discussed here for that reason.

the recapture period is limited to four years, the authorities might deem that recapture be reduced by 25% per annum. That is, recapture would be 100% in the first year, 75% in the second, 50% in the third, and 25% in the fourth year. Such an approach is reasonable because the asset will depreciate during the holding period. In addition, the taxpayer could have purchased the asset in good faith but needs to dispose of the asset due to changes in circumstances. Finally, prorating recapture will help preserve the policy intent of the incentive.

b. Value Added Tax

Value Added Tax (VAT) exemptions appear to be either limited in type and duration or not granted at all for particular types of mining. This policy is reasonable as long as refunds are prompt. Most, if not all, VAT paid by mining and petroleum operations should be refunded because either the VAT is paid on inputs during the exploration and development phases when there are no outputs supplied or outputs supplied are exported and, accordingly, zero rated. In effect, there should be a clear expectation that little or no net VAT revenue should accrue from mining in Mozambique if mining operations are not exempt. The difficulty with this approach is that government does not pay refunds or, at a minimum, refunds are paid only after a long time period. Given the inability to use VAT credits to offset other government charges, the VAT can represent a real tax burden to mining firms beyond that anticipated by either the law or the contracts.

The most straight forward solution is for the government to obey its own laws and promptly pay excess VAT credits. An alternative, adopted in some countries, is to eliminate much of the collection and refund process by exempting mining operations from VAT altogether and exempting firms from paying VAT on imported inputs. Two things should be noted about the option to exempt. First, tax administration is not reduced. The government must still audit imports and other inputs to ensure that goods and services imported are for the exempt use. An incentive is created to import goods and services that would not otherwise be exempt (such as high-end autos and other consumer goods). Second, a type of negative effective protection might be created if imports are exempted. An exempt firm must still pay VAT on domestic supplies, which will increase the competitive advantage of imported goods, other things equal.[57]

c. Customs Exemptions

Customs exemptions contained in the various incentive laws tend to be very specific. While beneficial in limiting the scope of the benefit, excessive specificity can offset the policy intent of the exemption, perhaps to a significant degree. Such limitations may be counterproductive, particularly when domestic substitutes are not produced (and will not be produced during the exemption period). For instance, exempting a machine without exempting the spare parts of that machine may increase the tariff-inclusive cost of the investment. In addition, equipment used in other sectors may also be used in

[57] Some mining companies require foreign service suppliers, such as construction companies, to establish a domestic presence in order for the service supplier to receive a contract from the mining firm. One reason for such a requirement is tax risk. In such cases, the negative protection created by exempting imports is offset because the foreign supplier becomes a domestic VAT taxpayer and charges VAT to the mining firm. In effect, the benefit of the exemption, at least for services, is mitigated. Note should be made that if the mining firm is not exempt and must pay VAT, then it should not matter for the mining firm's VAT purposes whether the supplier has a domestic presence if there is a reverse charging rule in the VAT law. I was not able to determine whether a reverse charging rule is present in Mozambican law.

mining, such as heavy-duty trucks or computers. Again, the net effect of excessive specificity may increase the tariff distortion for the overall investment.

A complete relaxation of the customs exemption is not recommended. Rather, the exemption, to the extent deemed appropriate, should extend to all qualified mining assets and investors should be able to justify the use of imported capital goods and other goods on normal business grounds. Such a policy will reduce the tariff distortion on inputs without adversely affecting domestic competitors.

APPENDIX I
Comparative Fiscal Regimes

Table A. 1. AUSTRALIA

1. I. Profits Tax

Item	*Treatment*
Tax Rate	30% is the federal tax rate. No separate state income tax. Taxable income is gross income (from sales, dividends, royalties, rent, interest and capital gains) less allowable deductions. Royalty payments, management fees, interest payments, depreciation, losses (carried forward indefinitely), payroll taxes and fringe benefits are allowed deductions.
Accounting	Accrual accounting using IFRS.
Exploration	Expenses are deducted to the extent of the income. Balance is carried forward. Companies can elect excess mining deductions and transfer losses under the group company loss transfer provisions.
Development	All expenses incurred in deriving gross business income are deductible.
Intangibles	n/a
Thin Capitalization	The debt to equity ratio cannot exceed 3:1 or the company cannot borrow more than the maximum reasonable amount from commercial lenders. Companies with interest deductions less than AUD 250,000 are exempt.
Head Office Expenses	n/a
Depreciation of Mining Assets	Immediate deduction for certain assets related to exploration or prospecting and on-site rehabilitation. Statutory caps on the effective lives of certain infrastructure assets are set (they are subject to an ongoing review). Taxpayers can choose from two depreciation methods: • prime cost method: asset cost × days asset held/365 days × 100%/asset effective life • diminishing value method: base value × days asset held/365 days × 150%/asset effective life. Once the method is chosen, it cannot be changed.
Reclamation	Rehabilitation expenses incurred in the current tax period can be deducted. Cost of assets used for on-site rehabilitation can be deducted immediately.
Special Incentives	n/a

1. II. Excess Profits Tax

Item	*Description*
Rates	No excess profits tax.
Base	

1. III. Equity Participation

Proportion	*Terms*
	No agreements.

1. IV. Withholding Taxes

Item	*Rate*
Dividends	30% on unfranked dividends.* Varies (usually 15%) if there is a tax treaty.
Interest	10% or as specified by tax treaty.
Payments for Services of Non-residents	5% for payments related to the construction of natural resource infrastructure.
Payments for Services of Residents	n/a
Royalties	30%. Reduced to 10% if there is a tax treaty.
Other Payments	n/a

* If dividends paid out of profits have already been taxed at corporate tax rate, the company gets franking credits for the tax paid and may choose to use them. Dividends are called franked, partially franked or unfranked to the extent to which credits are used.

1. V. Indirect Taxes

Item	*Treatment*
Indirect tax (VAT)	The first supply of precious metals (gold, silver, platinum) after refining may be GST free. Exported minerals are GST free. The Standard rate is 10%.

1. VI. Tariffs

Item	*Treatment*
Tariffs	Equipment and material used in the mining industry are eligible for tariff customs concessions.

1. VII. Other Matters

Item	*Notes*
Entities allowed	Domestic companies and foreign branches and subsidiaries.
Ring Fencing	No ring fencing.

Sources: Australian Taxation Office, AusIndustry Australian Government Initiative, New South Wales Department of Primary Industries, Northern Territory Treasury, Sydney Mineral Exploitation Discussion Group, Deloitte, and James Otto "Competitive position of Mongolia's mineral sector fiscal system: the case of a model copper mine" (North America Mongolia Business Council, 2007).

Table A. 2. BRAZIL

2. I. Profits Tax

Item	*Treatment*
Tax Rate	34% is total effective tax rate – 15% corporate income tax, plus a 9% tax for federal social security system (non-deductible against corporate tax) and 10% surplus tax on income greater than BRL 240,000*. Levied on gross receipts less cost of goods sold, operating expenses, reserves, and losses (which can be carried forward indefinitely).
Accounting	Accrual accounting using Brazilian Generally Acceptable Accounting Practices (GAAP), which is similar to US system.
Exploration	Pre-production exploration and development: 10% deductible. On-going exploration: 100% deductible.
Development	
Intangibles	n/a
Thin Capitalization	No specific thin capitalization rules. If a foreign loan is registered with the Central Bank, then the interest is fully deductible. If the loan agreement is not registered, under the Brazilian transfer-pricing rules, interest is deductible up to LIBOR + 3%.
Head Office Expenses	n/a
Depreciation of Mining Assets	10% straight line depreciation for mining and processing machinery and equipment. 4% straight line for buildings. 20% straight line for vehicles.
Reclamation	Unclear. Presumably current period expenses can be deducted.
Special Incentives	n/a

- BRL = Brazilian Reais. 1 BRL = 0.606 US Dollars (May 21, 2008).

2. II. Excess Profits Tax

Item	*Description*
Rates	No excess profits tax levied.
Base	

2. III. Equity Participation

Proportion	*Terms*
	No state participation.

2. IV. Withholding Taxes

Item	*Rate*
Dividends	No withholding on dividends paid to non-residents.
Interest	15% is withheld on interest paid to non-residents. 25% is withheld if the non-resident is from a country considered to have low taxes.
Payments for Services of Non-residents	15% is withheld on payments to non-residents. 25% is withheld if the non-resident is from a country considered to have low taxes. 10% contribution to intervening in the economic domain is also charged for technical assistance.
Payments for Services of Residents	n/a
Royalties	15% is withheld on royalty payments to non-residents. 25% is withheld if the non-resident is from a country considered to have low taxes. A 10% contribution to intervening in the economic domain is also charged when there is a transfer of technology.
Other Payments	n/a

2. V. Indirect Taxes

Item	*Treatment*
Indirect tax (VAT)	Exports are exempt from federal VAT. State VAT is levied on the circulation of goods when the transaction originates in another country. Generally, the rate is 17%.

2. VI. Tariffs

Item	*Treatment*
Customs duties	No export tax for mineral products. The importation of equipment for mineral prospecting, exploration, development and production is tax exempt.

2. VII. Other Matters

Item	*Notes*
Type of entities allowed in mining	Domestic companies and foreign subsidiaries and branches.
Ring Fencing	Unclear. There is a ring fence around the country for tax purposes for oil and gas.

Sources: Deloitte, US Geological Survey, Federation of International Trade Associations, Ogre Partners, Brazilian Company Handbook, James Otto *Mining Royalties: A global study of their impact on investors, governments, and civil societ*y (World Bank, 2006) and M. Grote "Taxation of Natural Resources" (World Bank, 2006).

Table A. 3. CANADA

3. I. Profits Tax

Item	***Province***	***Treatment***
Tax Rate	British Columbia	14.36% on net resource income. The 2% royalty on net proceeds can be deducted.
	Saskatchewan	12.75% on net resource income. The resource allowance or the royalties (whichever is greater) can be deducted.
	Federal Rule	22.12%, which includes the 28% statutory rate, 4% surtax and 7% resource rate reduction. Allowable deductions are costs directly related to operations, loss carry forwards, development and exploration costs, asset depreciation and accelerated depreciation allowance, resource allowance, reclamation contributions, and depletion allowance. Provincial royalty and mining taxes are not deductible from federal taxes.
Accounting	British Columbia	Cash accounting is used for reporting revenue in public accounts (otherwise accrual accounting) using GAAP as set by the Accounting Standards Board.
	Saskatchewan	
	Federal rule	Accrual accounting using GAAP as set by the Accounting Standards Board. By 2011, publicly accountable companies will move to the IFRS.
Exploration	British Columbia	Costs and depreciation directly related to the mine in the pre-production phase are deductible.
	Federal rule	Exploration expenses are fully deductible in the year in which they were incurred.
Development	British Columbia	Costs and depreciation directly related to the mine in the pre-production phase are deductible.
	Federal rule	Development expenses are aggregated in a Cumulative Canadian Development Expenses account and the taxpayer is allowed to deduct up to 30% every year and carry the balance indefinitely.
Intangibles		n/a
Thin Capitalization	Federal rule	Interest on debts to non-residents (who own at least 25% of shares of the resident company) is deducted only if the debt does not exceed twice the company's equity (excluding retained earnings attributable to other companies).
Head Office Expenses		n/a
Depreciation of Mining Assets	Federal rule	25% declining balance is the general rate for mining assets. 30% declining balance for equipment used in manufacturing and processing. This capital allowance is claimed at the discretion of the taxpayer and the balance is carried forward indefinitely.
Reclamation	British Columbia	Current reclamation costs and contributions to the reclamation account are deductible. The government has set up a reclamation cost account and a reclamation tax credit account. A

Item	***Province***	***Treatment***
		reclamation tax credit is available if a mine operator was actively involved in reclamation during the tax period. The credit is the lesser of the balance in the reclamation tax credit account at the end of the previous tax period and the prescribed percentage of the balance in the reclamation costs account at the end of current year.
	Saskatchewan	Contributions to the reclamation fund can be deducted.
Special Incentives (Investment Tax Credits, etc.)	Federal rule	• Flow-Through Shares allow corporations to finance their exploration and development expenditures by issuing shares and passing the expenses on to the investors. Thus, these costs can be claimed sooner than they would be otherwise. • Investment Tax Credit for Exploration in Canada of 15% is granted in relation to the flow-through share investment. • Resource Allowance can be claimed as 25% of the taxpayers' profits from the mineral resource in computing federal income tax. • Accelerated Capital Cost Allowance is claimed in addition to the regular capital allowance and it is up to 100% of the asset cost as long as it does not exceed income. It can only be claimed if the asset was purchased before production, for major expansions or the proportion of the asset cost is greater than 5% of the gross income of the mine. • Depletion allowance is available only to corporations still carrying a balance since 1990 (since then, no further additions to the pool were allowed).
	Saskatchewan	• 10-year royalty holiday for precious and base metals. • Corporate capital tax exemption for diamond mines. • Remission of fuel tax for off-road fuel use in mineral exploration and power generation of mining sites. • Incentive program for prospectors valued at CAD 100,000*/ year and mineral company incentive of CAD 1.1mil./ year for 6 years. • Increase of CAD 400,000/ year for 6 years for geo-science research.

* CAD = Canadian Dollar. 1 CAD = 1.016 US Dollar (May 21, 2008).

3. II. Excess Profits Tax

Item	***Description***
Rates	Unclear. No excess profits tax.
Base	

3. III. Equity Participation

Item	*Terms*
Proportion	No agreements in Ontario. Unclear if there are any agreements at all.

3. IV. Withholding Taxes

Item	*Rate*
Dividends	25% is withheld on payments made to non-residents. Rate varies depending on the treaty with the country where the income is sent. There is no withholding tax for services rendered to resident companies.
Interest	
Payments for Services of Non-residents	
Payments for Services of Residents	
Royalties	
Other Payments	

3. V. Indirect Taxes

Item	*Treatment*
Indirect tax (VAT)	Minerals are exempt from GST only if they are exported. The standard GST rate is 7%.

3. VI. Tariffs

Item	*Treatment*
Tariffs	Most minerals are exempt.

3. VII. Other Matters

Item	*Notes*
Type of entities allowed in mining	Foreign branches, subsidiaries and resident companies can invest in the Canadian mining sector.
Ring Fencing	No, but unclear.

Sources: British Columbia Government, Saskatchewan Government, Natural Resources Canada, Canada Border Service Agency, *European Tax Handbook 2006* (IBFD, 2006) and James Otto "Competitive position of Mongolia's mineral sector fiscal system: the case of a model copper mine" (North American Mongolia Business Council, 2007).

Table A. 4. CHINA

4. I. Profits Tax

Item	*Treatment*
Tax Rate	25% unified tax rate as of 2008. Companies operating in special economic zones benefit from a reduced tax rate of 15%. Applied to gross taxable income after allowable expenses and loss deductions. Losses are carried forward for 5 years. Other taxes are generally not deductible. Additional natural resource tax is paid to local authorities.
Accounting	Cash accounting (unclear if there was a move to accrual) using mostly IFRS (transition from Chinese Accounting Standards started in 2007).
Exploration	Costs associated with exploration and development are allowable deductions.
Development	
Intangibles	Costs incurred from the purchase or development of intangible assets cannot be deducted from gross taxable income.
Thin Capitalization	No specific thin capitalization rule. Limit on foreign debt prohibits the deduction of interest for debt that exceeds that limit.
Head Office Expenses	Royalties paid to the head office cannot be deducted.
Depreciation of Mining Assets	Straight-line method with a minimum number of depreciation periods (10 years for large equipment). Accelerated depreciation or a different method can be used by foreign companies if approved by tax authorities. Minimum salvage value is usually estimated at 10% of the original value.
Reclamation	Unclear. It seems that costs incurred in the current period would be deducted.
Special Incentives (Investment Tax Credits, etc.)	• Unclear if significant tax holidays are still granted to wholly-owned foreign companies and joint ventures. • Unclear if foreign owned mines are still exempt from income tax in the first two years and benefit from a 50% reduction in years 3-5. • 50% reduction in income tax after the period of reduced tax rate expires for foreign-owned export-oriented companies if 70% of total production is exported. • 40% income tax refund of invested amount for foreign companies who use the profits derived in China to reinvest in an operation for at least 5 years. If the re-investment is in a high-tech or export-oriented enterprise, the whole amount of the income tax paid on the investment amount may be refunded. • Partial exemption from royalties is rarely granted for investments in underdeveloped provinces, new technology or in marginal projects.

4. II. Excess Profits Tax

Item	*Description*
Rates	None. As of 2006, there were plans for an excess profits tax for the oil industry only.
Base	

4. III. Equity Participation

Proportion	***Terms***
	No equity participation agreements.

4. IV. Withholding Taxes

Item	***Rate***
Dividends	Exempt.
Interest	10%. No tax on loans to government or state banks.
Payments for Services of Non-residents	n/a
Payments for Services of Residents	n/a
Royalties	10%.
Other Payments	5% business tax on technology transfers if transfers are not made by establishments in China. A reduction or exemption is granted if foreign companies prove the technology is considered advanced.

4. V. Indirect Taxes

Item	***Treatment***
Indirect tax (VAT)	Exports of minerals and imports of mining equipment and materials are VAT exempt.

4. VI. Tariffs

Item	***Treatment***
Customs duties	Large mining equipment is exempt from import duty. As of 2006, the export tax rebate was reduced.

4. VII. Other Matters

Item	***Notes***
Type of entities allowed in mining	Domestic companies, foreign investment enterprises.
Ring Fencing	Yes.

Sources: US Geological Survey, Deloitte, Asian Development Bank, News Guangdong, China Orbit, James Otto "Competitive position of Mongolia's mineral sector fiscal system: the case of a model copper mine" (North American Mongolia Business Council, 2007), James Otto *Mining Royalties: A global study of their* *impact on investors, governments, and civil society* (World Bank, 2006) and James Otto "Comparative International Tax Regimes" (Rocky Mountain Mineral Law Institute, 2004).

Table A. 5. GUINEA

5. I. Profits Tax

Item	***Treatment***
Tax Rate	35% tax rate, or as negotiated in mining contracts by the company (rates from 0-65%). Deductions from net taxable income include: feasibility, exploration, development, depreciation and operating costs, as well as reserves, loan interest, withholding tax, import duties, land area fees, loss carry forward and investment allowance.
Accounting	n/a
Exploration	Feasibility study, pre-production exploration and development: 5 years straight line method once production begins.
Development	
Intangibles	n/a
Thin Capitalization	n/a
Head Office Expenses	n/a
Depreciation of Mining Assets	Light vehicles: 3 year straight line. Property depreciable over 3 years: accelerated declining balance method, a multiplier of 2 is applied to straight line depreciation rate to get accelerated depreciation rate Property depreciable over more than 3 years: accelerated declining balance method, using a multiplier of 2.5.
Reclamation	Non-taxable reserves of maximum 10% of taxable benefit may be set up each fiscal year. The reserves must be used within 2 years to finance mine prospecting or operation. Any part of the reserve not so used must be brought into income in the 3rd fiscal year following the year in which it was created.
Special Incentives (Investment Tax Credits, etc.)	• Losses are carried forward for 3 years. • Income tax exemption for 3-8 years (depending on the zone) for bauxite, iron ore and base metals mines which increase the value of substances in economically underdeveloped zones. • Investment allowance of 5% of any investment during a fiscal year. • Exemption for prospecting title holders from minimum lump-sum tax and contributions for patents and professional training. • Exemption for operating permit or concession holders from minimum lump-sum tax, contributions for patents, registration and stamp duties and real estate taxes. • Tax and customs stabilization agreements.

5. II. Excess Profits Tax

Item	***Description***
Rates	50%
Base	Additional benefits tax is levied when ratio of taxable net benefits to capital is greater than level of profitability generally accepted by the international

	mining industry. The part of this amount that is not reinvested is taxed after the profit tax. This tax is not currently applied in practice.

5. III. Equity Participation

Proportion	*Terms*
15%	Free equity requirement for local and state government for gold, diamonds and precious stones.
	No free equity requirement for bauxite, iron, solid hydrocarbons and others, but state may choose to have shares in the mine (negotiated in mining agreement).

5. IV. Withholding Taxes

Item	*Rate*
Dividends	15% (deductible from profits tax).
Interest	No withholding on interest to foreign debtors.
Payments for Services of Non-residents	10% (non-deductible from profits tax).
Payments for Services of Residents	n/a
Royalties	10%
Other Payments	n/a

5. V. Indirect Taxes

Item	*Treatment*
Indirect tax (VAT)	Mines are exempt from VAT.

5. VI. Tariffs

Item	*Treatment*
Customs duties	Exempt from duties on items admitted into the country on temporary basis.

5. VII. Other Matters

Item	*Notes*
Type of entities allowed in mining	No apparent restriction.
Ring Fencing	n/a

Sources: Guinea Mining Code 1995 and James Otto "Guinean Mining Taxation System: Analysis and Recommendations for Reform" (Guinean Ministry of Mines and Geology, 2005).

Table A. 6. INDIA

6. I. Profits Tax

Item	***Treatment***
Tax Rate	30% corporate tax rate on resident companies. 40% corporate tax rate on foreign companies and branches. 10% surcharge applies to domestic companies / 2.5% surcharge applies to foreign companies if income exceeds INR 10 million. 3% additional education cess payable by all on aggregate for income tax + surcharge. 10% Minimum Alternative Tax (plus surcharge and cess) if tax liability is less than 10% of book profits.
Accounting	Cash accounting (possible transition to accrual in public accounts) using standards issued by the Institute of Chartered Accountants of India, based largely on International Accounting Standards (IAS).
Exploration	n/a
Development	n/a
Intangibles	n/a
Thin Capitalization	No.
Head Office Expenses	Normal business expenses may be deducted from taxable income.
Depreciation of Mining Assets	15% for plant and machinery.
Reclamation	n/a
Special Incentives (Investment Tax Credits, etc.)	• Business losses and capital losses may be carried forward 8 years (short-term losses may offset capital gains on both short- and long-term assets but long-term losses may only offset long-term gains). • Unabsorbed depreciation losses may be carried forward indefinitely. • Tax holidays and special economic zones may be available.

6. II. Excess Profits Tax

Item	***Description***
Rates	n/a
Base	n/a

6. III. Equity Participation

Item	***Terms***
Proportion	Government-owned companies account for 75% of the value of the country's mineral production.

6. IV. Withholding Taxes

Item	*Rate*
Dividends	17% Dividend Distribution Tax (plus surcharge + cess) on dividends paid by a domestic company (dividends subject to DDT are exempt from tax for the recipient).
Interest	20% for payments to companies and 10% otherwise. Rates may be reduced by treaty. Surcharge is also imposed.
Payments for Services of Non-residents	n/a
Payments for Services of Residents	12.36% Service Tax (including education cess) applied on the provision of specified taxable services on the gross amount charged for the service.
Royalties	10% general rate, may be reduced by treaty. Surcharge and cess are also imposed.
Other Payments	n/a

6. V. Indirect Taxes

Item	*Treatment*
Indirect tax (VAT)	12.5% standard VAT rate or lower rates, 1 or 4%. Central Sales Tax (CST) on movement of goods across states; 3% against local applicable VAT rate.

6. VI. Tariffs

Item	*Treatment*
Tariffs	7.5% customs tariff on imports of ferroalloys, primary and secondary nonferrous metals and steel 2% customs tariff on imported copper ore and concentrate (2006 rate, reduced from 5%) 5% customs duty on steel melting scrap (2006 rate, increased from 0%)

6. VII. Other Matters

Item	*Notes*
Mining entities allowed	n/a
Ring Fencing	n/a

Sources: Indian Ministry of Mines, Federation of Indian Chambers of Commerce and Industry, Deloitte, US Geological Survey and Hindu Business Line.

Table A. 7. JAMAICA

7. I. Profits Tax

Item	*Treatment*
Tax Rate	General rate is 33 1/3 % which applies to both subsidiaries and branches.
Accounting	IAS/IFRS. Financial statements must be prepared annually.
Exploration	Normal business expenses may be deducted from taxable income.
Development	n/a
Intangibles	n/a
Thin Capitalization	No.
Head Office Expenses	n/a
Depreciation of Mining Assets	n/a
Reclamation	n/a
Special Incentives	Special tax regimes for some industries, including petroleum refining (unclear if includes mineral mining).

7. II. Excess Profits Tax

Item	*Description*
Rates	n/a
Base	

7. III. Equity Participation

Proportion	*Terms*
	n/a

7. IV. Withholding Taxes

Item	*Rate*
Dividends	25% if received by individuals (non-treaty rate) 33 1/3% if received by corporate bodies (non-treaty rate)
Interest	25% if received by individuals (non-treaty rate) 33 1/3% if received by corporate bodies (non-treaty rate)
Payments for Services of Non-residents	n/a
Payments for Services of Residents	n/a
Royalties	25% if received by individuals (non-treaty rate)

	33 1/3% if received by corporate bodies (non-treaty rate) But non-residents may file a return of net income, claiming related deductions and receive a refund on excess taxes paid.
Other Payments	Quarry tax is 3½ % of sales and is payable quarterly.

7. V. Indirect Taxes

Item	***Treatment***
Indirect tax (VAT)	Standard rate General Consumption Tax is 16.5%.

7. VI. Tariffs

Item	***Treatment***
Customs duties	n/a

7. VII. Other Matters

Item	***Notes***
Type of entities allowed in mining	n/a
Ring Fencing	n/a

Sources: Deloitte and Jamaica Ministry of Energy, Mining and Telecommunications.

TABLE A.8 RUSSIA

Profits Tax

Topic	*Description*
Accounting Principles	Russian accounting standards; differ from IFRS. Statements must be prepared quarterly and annually.
Business Entities	Open and closed joint stock company, limited liability company, partnership, sole proprietorship, branch of foreign entity.
Basis	Domestic Permanent Establishment (PE): established under Russian law, taxed on worldwide income. Foreign Legal Entity (FLE): taxed on income earned from a PE in Russia, passive income from Russian sources
Rate	20%: 2% to federal government / 18% to republics
Taxable Income	Profits tax imposed on company's profits, which includes business/trading income, passive income, and capital gains. Normal business expenses may be deducted in calculating profits provided they are economically justified, incurred in the generation of income, and supported by adequate documentation.
Capital Gains	Taxed as ordinary income at the normal rate.
Depreciation	Depreciable property is property, both tangible and intangible, which has the following: - a useful life of at least 12 months; and - a value of no less than RUB 20,000. Otherwise, it is treated as an expense and should be included in the cost of sales. Land cannot be depreciated. Assets are divided into 10 groups. Certain groups of fixed assets (building, construction and transmission devices) must be depreciated using the straight-line (SL) method. For other assets, taxpayer can choose SL or declining balance (DB) method. Can change from SL to DB on 1 January of the following year; can only change from DB to SL once every 5 years.
Stock / Inventory	Stock is valued at its purchase cost. Cost of materials used can be value at average cost, cost of item, FIFO, or LIFO.
Losses	Carried forward 10 years.
Recognition of Income and Expenses	Accrual basis: must be used by taxpayers with an average income exceeding RUB 1 million per quarter for the previous 4 quarters Cash basis: optional for taxpayers below this threshold
Withholding Tax	Dividends: 9% for residents (unless qualify for participation exemption); 15% for nonresidents (or reduced by treaty). Interest: 20% for nonresidents (or reduced by treaty). Royalties: 20% for nonresidents (or reduced by treaty).

Topic	*Description*
Participation Exemption	0% withholding tax rate for dividends received by PEs if: - recipient holds at least 50% of the capital of the payer, - the share has been held continuously for at least 1 year, and - the shared are worth at least RUB 500 million (this requirement was dropped 1 January 2011?).
Social Security Contributions	Employer pays 34% (in 2011,was 26% in 2010) of remuneration up to RUB 463,000 as mandatory contribution to pension, social, and medical insurance funds.
Transfer Pricing	The market price may be imposed on the following “controlled transactions”: - between related parties; - cross-border transactions; - barter transactions; and - when the actual price fluctuates more than 20% from the market price. The concept of “market price” is similar to the methodology under the OECD transfer pricing guidelines.
Related Parties	Related parties are those where: - one person holds directly or indirectly more than 20% of the statutory capital of the other person; - the parties are married, related, adopted or in charge; and - the court decides on a case by case basis.
Thin Capitalization	The thin capitalization rules restrict the deductibility of interest on loans to related legal entities and apply where the lender is: - A FLE that owns directly or indirectly more than 20% of the charter capital of a Russian company; or - A Russian company that is an affiliate of such a FLE; or - Any company to which such Russian- affiliated or foreign company itself undertakes to act as a guarantor or to secure in any other way the discharge of the loan by the Russian borrower. The maximum debt-to-equity ratio is 3:1 for related legal entities in general, and 12.5:1 for banks and leasing companies. Excess interest is recharacterized as a dividend distribution and is nondeductible by the borrower for Russian profits tax purposes and subject to dividend withholding tax.
Incentives	• Regions may reduce the tax rate on their share of the profits tax from 18% to 13.5% and may provide property and land tax exemptions. • Special Economic Zones (industrial, research and development, tourism, and port) receive benefits such as reduced profits tax rate, exemptions from land and property tax, accelerated depreciation, no customs duties, and stabilization clauses. • Research & Development expenditures qualify for 150% profits tax deduction. • Agricultural producers have a 0% profits tax rate until 2012, and a 20% social security contribution. • 10-year profits tax exemption for the Skolkovo Innovation Centre. • Other tax concessions for technology and software companies.

Topic	*Description*
Administration/ Compliance	• Calendar year tax year. • No consolidated returns. • Penalties: generally 20% of the relevant tax or 40% if default is deliberate, plus fixed penalties. Criminal sanctions may apply.
Property Tax	Land tax levied at rates up to 1.5% of the cadastral value per annum. Regional property tax levied at rates up to 2.2% on movable and immovable fixed property (not land) based on the depreciated book value of the assets.
Other	• Securities transaction tax of 0.2% applies to the nominal sum of securities (to a maximum of RUB 100,000) issued by a joint stock company, except the initial issue. • Excise duties levied on some goods such as alcohol, tobacco, cars.. • Mineral resources royalty (typically 8%) levied on extraction. • No excess profits tax. • No Alternative Minimum Tax. • No holding company regime. • No branch remittance tax. • No capital duty, payroll tax, stamp duty (nominal), or transfer tax.

Note: Russia Rubles 1 RUB = 0.034 USD (27 January 2011) <http://www.xe.com/>

Table 3: Value Added Tax

Topic	*Description*
Rate	Standard rate 18%. Reduced rate of 10%: some basic foodstuffs, children’s clothing and footwear. Zero-rated: exports, some imported medicines, medical equipment.
Base	Sales price at the earlier of: date of shipment or transfer, or date of payment for future transaction.
Taxable Transactions	VAT levied on the sale of goods, the provision of work/services supplied in Russia, the transfer of property rights, and the import of goods.
Exemptions	• Lease of office space and accommodation to accredited foreign representative offices and foreign individuals • Medical services and the sale of certain medical equipment • Banking and insurance services • Sales of "FITTS" (financial instruments of term transaction — broadly, financial derivatives) — the underlying assets may also be exempt • Stock lending and "repo" transactions • Interest on monetary loans • Warranty services, including the cost of spare parts • Gambling • Licensing or assignment of certain intellectual property rights • Assignment of claims arising from loan agreements • Sale of land and residential buildings and premises or any interest in such property Certain research and development activity

Topic	*Description*
Place of Supply Rules	Goods are treated as being sold in Russia if they are located in Russia and are not being transported, or are located in Russia at the moment of dispatch. Works and services are generally deemed to be supplied at the place of business of the supplier unless another special treatment is applicable. In particular, special treatment applies to the following: - Services relating to immovable property and movable property which are deemed to be supplied where the property is located - Cultural, sports, arts, educational or tourism services which are deemed to be supplied at the location performed - Transportation and freight services, which are deemed to be supplied in Russia if the point of departure or destination is located in Russia, and provided that these services are supplied by Russian entities or entrepreneurs - Leases of movable property, except for motor vehicles; provision of personnel, provided that they work at the place of business of the service buyer; consulting, legal, accounting, engineering, advertising, marketing, information-processing, research and development, and software development, modification and adaptation services, as well as the transfer of rights to intellectual property. These services are deemed to be supplied at the place of business of the buyer
Registration	Not required to register until sales exceed RUB 2 million in previous 3 months. Foreign entities may not register for VAT – however, FLEs carrying on business in Russia through a PE (or several) will choose one PE through which all VAT will be paid.
Input-Credit System	Amount payable is the difference between VAT received on sales (output VAT and VAT paid for purchases (input VAT). Taxpayers can claim an offset of VAT without having paid suppliers, subject to certain rules.
Reverse Charge	If foreign companies, which do not have a Russian tax registration, supply goods, works or services in Russia and these supplies are deemed to be made in Russia according to the place of supply rules, the remittance of VAT is made through a withholding mechanism. The tax-registered buyer of these goods, works and services is required to withhold VAT from the amount payable to the foreign supplier and remit that tax to the budget. The rate of withholding is 18/118 of the gross invoice, equal to 18% of the net payment. Having withheld and paid the VAT to the budget, a Russian buyer can then offset this VAT against its output VAT under the general rules for offsetting input VAT.
Filing and Payment	Accrual basis only. Quarterly returns and payments.
Incentives	• Import VAT exemption for “technological equipment which has no equivalent produced in Russia.” • Other VAT concessions for R&D activity.

Note: Russia Rubles 1 RUB = 0.034 USD (27 January 2011) <http://www.xe.com/>

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Table A. 10. UNITED STATES

10. I. Profits Tax

Item	*Treatment*
Tax Rate	Federal: 15-35% rates. Foreign companies taxed on gross withholding basis. An additional branch profits tax of 30% (or as stated by tax treaty) applies on income of foreign companies from US sources. Arizona: 6.968%. Applies to taxable income that is assessed similarly to federal taxable income and adjusted for Arizona tax. Losses (can be carried over for 5 years), Arizona depreciation, certain dividends, interest on US loans, charitable contributions and basis adjustments for sold property are deductible. Losses, interest on foreign debt, federal depreciation and other special deductions claimed on federal return and other income taxes are not deductible. Nevada: No corporate income tax.
Accounting	Accrual accounting using US GAAP.
Exploration	70% in first year, balance on straight line basis over 5 years.
Development	Pre-production: 70% in first year, balance over 5 years on straight line.
Intangibles	Amortized over 15 years.
Thin Capitalization	“Earnings stripping” rules restrict the ability of US (and certain foreign) companies to claim an interest deduction on debt owed to, or guaranteed by, certain non-US related parties. Rules generally apply when debt-to-equity ratio exceeds 1.5:1 and the payer’s net interest expense exceeds 50% of its adjusted taxable income for the year.
Head Office Expenses	In general, a deduction is permitted for ordinary and necessary trade or business expenses.
Depreciation of Mining Assets	7% declining balance for mining and processing buildings and equipment.
Reclamation	n/a
Special Incentives	Depletion allowance of lesser of 15% gross income or 50% of net income (for gold, silver, copper, iron ore).

10. II. Excess Profits Tax

Item	*Description*
Rates	There is no excess profits tax.
Base	

10. III. Equity Participation

Item	*Terms*
Proportion	n/a

10. IV. Withholding Taxes

Item	*Rate*
Dividends	30% to non-treaty countries, 0-15% to treaty countries.
Interest	30% to non-treaty countries, 0-15% to treaty countries.
Payments for Services of Non-residents	n/a
Payments for Services of Residents	n/a
Royalties	30% to non-treaty countries, 0-15% to treaty countries.
Other Payments	n/a

10. V. Indirect Taxes

Item	*Treatment*
Indirect tax (VAT)	n/a

10. VI. Tariffs

Item	*Treatment*
Tariffs	No export duties. Import duties vary by country and commodity.

10. VII. Other Matters

Item	*Notes*
Type of entities allowed in mining	All types of companies allowed.
Ring Fencing	n/a

Sources: Arizona Department of Revenue, Nevada Department of Taxation, Deloitte, Price Waterhouse Coopers, Ernst & Young, Alaska State Legislature's Majority Organization and James Otto *Mining Royalties: A Global Study of Their Impact on Investors, Government, and Civil Society* (World Bank, 2006).

APPENDIX II
Canadian Provincial Natural Gas Royalties

Oil and Gas Fiscal Regimes: Western Canadian Provinces and Territories. June 2011.
http://www.energy.gov.ab.ca/Tenure/pdfs/FISREG.pdf

Appendix III

Robert Conrad visit, February 2012

Completed meetings:

Order	Date	Time	Person(s)	Location	Contact Details
1	Sunday, Feb 12th	13:00	Félix Simione, Veronica Prado and Ronald Fischer	Hotel Avenida, Maputo	IGC Mozambique
2	Monday, Feb 13th	10:00	Mrs. Isabel Isumar. Ministry of Finance (Director of the PPP Unit)	Praça da Marinha Popular, 929 Maputo	t: +258 21 315000/4
3	Tuesday, Feb 14th	09:00	Mr. Benjamim Chilenge. Ministry of Mineral Resources (National Director of Planning and Development)	Praça 25 de Junho, 380, 12º andar, Maputo, Mozambique	Assistant: Ana Catarina t:+258 21 427124 chilenge@tvcabo.co.mz
4	Tuesday, Feb 14th	10:45	Mr. Eduardo Alexandre. Ministry of Mineral Resources (National Director of Mines)	Praça 25 de Junho, 380, grand floor, Maputo, Mozambique	t: +258 21 312224 m: +258 82 3200520 email: eduardo.alexandre@mirem.gov.mz
5	Tuesday, Feb 14th	11:30	Mr. Herminio Sueia and his team. Revenue Authority.	Edifício 33 andares, 7º andar, Maputo, Mozambique	Assistant: Elsa Mausse m: +258 82 2712130; +258 84 4244854 hsueia@at.gov.mz
6	Thursday, Feb 16th	11:00	Jennifer Garvey. Rio Tinto, Director-Legal; Coal Mozambique	Rua de UNAMI, 27, Maputo, Mozambique	t: +258 21 403142 f: +258 21 403144 m: +258 82 3180130 email: jenniferg@rivmoz.com
7	Thursday, Feb 16th	15:00	Mr. Victor Lledo. IMF representative resident.	Av. Ahmed Sekou Toure, 133, Maputo, Mozambique	t: +258 21 496118 m: +258 84 3319056 email: vlledo@imf.org
8	Friday, Feb 16th	15:00	Mr. Felisberto Navalha. Bank of Mozambique, Department of Studies and Statistics	Av. 25 de Setembro, Maputo	m: +258 82 3176600 email: felisberto.navalha@bancomoc.mz

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