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MONGOLIA

THE FISCAL REGIME FOR THE MINING SECTOR AND THE DEVELOPMENT FUND

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PREFACE

In response to a request from Mr. N. Bayartsaikhan, Minister for Finance (MOF), for a technical assistance mission to provide strategic advice on mining taxation and the Development Fund, a mission comprising Mr. Emil M. Sunley (a member of the FAD panel of fiscal experts), and Mr. Daehaeng Kim and Mr. Mauricio Villafuerte (both FAD) visited Ulaanbaatar, January 9 to 24, 2007.

The mission met with Mr. Bayartsaikhan; Mr. B.Jargalsaikhan, Minister of Industry and Trade (MIT), Mr. Ts. Nyamdorj, Speaker of Mongolian Parliament, Mr. N. Batbayar, Member of Parliament; Mr. Ch. Ganzorig, Vice Minister, MOF; Mr. Ch. Khurelbaatar, State Secretary, MOF; Mr. B. Batjargal, Director General of the Fiscal Policy and Coordination Department, MOF; Mr. J.Jargalsaikhan, Director, Economic Policy Department, MOF; Ms. B. Otgontsetseg, Deputy Director of the Treasury Department, MOF; Mr. J. Ganbat, Head of Revenue Division, MOF; Mr. B.Batbayar, Head of Debt Management Division, MOF; Mr. B. Lkhagvasuren, Director of Accounting and IT Department, BOM; Mr. O. Tsogt, Director of the Tax Collection Division, General Department of National Taxation; Mr. Ts. Davaadorj, Director of the Department of Geology, Mining and Heavy Industry, MIT; Mr. D. Munkhjargal, Trade and Economic Cooperation Department, MIT; Mr. Ts. Gankhuyag, First Deputy Chairman, Mineral Resources and Petroleum Authority of Mongolia (MRPAM); and Mr. D. Javkhlanbold, Chief of Mineral Division, Office of Geology, MRPAM.

The mission also met with Mr. A. Sayed, Country Manager and Resident Representative of the World Bank, Mr. S. Orgodol, Associate Investment Officer, IFC; Mr. Peter Meredith, Deputy Chairman, Ivanhoe Mines; Mr. David Baker, Manager of Corporate Development and Project Finance, Ivanhoe Mines; Mr. Tony S. Giardini, Chief Financial Officer, Ivanhoe Mines; Mr. John Fognani, Executive Vice President, Legal, Ivanhoe Mines; A. Munkhbat, Senior Vice President, Ivanhoe Mines; Mr. Sam Riggall, General Manager – Commercial, Rio Tinto Exploration; Mr. Dorj Tsogbaatar, Head of Ulaanbaatar Representative Office, Erdenet; Mr. Gordon Thorpe, Vice President for Finance and Administration, Boroo Gold; Mr. Wayne Nicoletto, Vice President for Operations, Boroo Gold; Mr. I.A. Kovarsky, Vice President for Government Affairs and Corporate Development, Boroo Gold; Mr. Do. Ganbold, President of Mongolian National Mining Association, and Ms. P. Erdenejargal, Executive Director of the Open Society Forum.

The mission would like to express its gratitude for the assistance and collaboration provided by the authorities. The mission would also thank Mr. Byung Kyoon Jang, the Fund's resident representative in Ulaanbaatar, and his staff, who facilitated and supported the work of the mission.

EXECUTIVE SUMMARY

Mongolia has vast mineral resources, primarily copper, gold, and coal, but other minerals as well. Its mining sector accounted for 25 percent of GDP, 71 percent of export earnings, and 16 percent of tax revenue in 2005; and its importance is estimated to have increased to 32 percent of GDP and 40 percent of tax revenue in 2006. However, the mining sector is vulnerable to international mineral price volatility; and its direct contribution to employment has been limited (2.4 percent of labor force), due to its highly capital intensive nature.

In 2006, Mongolia introduced a new Minerals Law, which permits government equity participation in strategic mineral deposits. The Minerals Law also increased the royalty rates on copper and gold from 2½ to 5 percent, except the rate for placer gold was reduced from 7½ to 5 percent. Effective from the beginning of 2007, the rates of the corporate income tax (CIT), personal income tax (PIT), and value-added tax (VAT) were sharply reduced. A new windfall tax was introduced in June 2006 to ensure that the government shares in the upside of high copper and gold prices, and this tax has raised 5½ percent of annual GDP in 7 months. The windfall tax revenue is transferred into the Development Fund to finance social protection programs and public spending. Tying social assistance programs and public spending to volatile mineral tax revenue could result in excessive fluctuations in either government expenditure or fiscal deficit.

At the request of the authorities, the mission reviewed the operations of the Development Fund (DF) and the fiscal regime for the mining sector. In designing or appraising a fiscal regime, an exclusive focus on the impact of individual tax instruments can be very misleading. Investors themselves are interested in the trade-off between risk and reward and in the overall impact of the tax regime, under a range of assumptions about output, costs and prices. The mission's model of a copper mine allows a comparison of different tax regimes under alternative assumptions (Appendix I).

The mission's recommendations should be viewed as a package. In broad summary, the mission endorses Mongolia's 25 percent CIT rate and generous cost recovery rules. It suggests that the loss carryforward should be simplified and extended to 7–10 years. If the tax system is going to be stabilized for investors in major mining projects, certain rules of the income tax should be tightened (e.g., the rules for related parties and thin capitalization). This mission takes a cautious approach to government equity and suggests that the windfall tax should be reformed. The government may want to consider alternative fiscal instruments for capturing a share of the economic rents of the most profitable projects.

Countries are often interested in whether their fiscal regime is internationally competitive. There is a market test for competitiveness: Is the country able to attract interest of international mining companies for exploration and development of its mining sector? The

combination of the government's desire to take an equity position in projects and the windfall tax reduces the competitiveness of Mongolia's fiscal regime, but it is too soon to know whether the international mining companies will reduce their exploration efforts in Mongolia.

Development Fund

The operations of the Development Fund (DF) are inconsistent with international best practices and it can substantially complicate fiscal policy for Mongolia. If the authorities want to retain the DF, the mission recommends that:

- The operations of the DF (revenue and expenditure) should be consolidated with the regular budget.
- The DF operations should be included in the formulation of the medium-term budget framework (MTBF) targets, in particular the fiscal deficit ceilings.
- The spending initiatives to be financed by the DF should be selected within the regular budget process.
- The execution of spending financed by the DF should follow the regular procedures established for budgetary outlays, including the provisions from the Public Procurement Law.

Royalties

Royalties secure revenue for the government as soon as production commences, are considerably easier to administer than most other fiscal instruments, and ensure that companies make a minimum payment for the minerals they extract. The Minerals Law sets the royalty rate for all metals at 5 percent of the sales value. Prior to the 2006 amendments, a royalty of 2.5 percent applied to copper and gold, except placer gold, for which the rate was 7.5 percent. The mission recommends that:

- The current royalty rates, although high by international standards, are reasonable given the low-rate CIT and the generous capital recovery rules.
- To limit disputes between the mining company and the tax authority, reference prices should be used to determine the value of the mineral for purposes of levying the royalty. The sales value for royalty purposes should be the higher of the reference price or the sales price reported by the taxpayer.

Income tax

Income tax rules are necessarily complex if the tax is going to be levied on profits. The most critical rules relate to rates and capital recovery. Other details are also important. The mission endorses the 25 percent CIT rate and recommends that:

- All tax provisions in the Minerals Law should be removed. The CIT should be amended as appropriate to reflect the tax regime for mining.
- In negotiating tax treaties Mongolia should strive to not reduce the 20 percent withholding tax rates on dividends and interest.
- Mining companies should be allowed to use dollar accounting for tax and financial purposes.
- The capital recovery rules for mining should be liberalized, as follows:

Depreciable Asset	Useful Life (in years)
Buildings	40
Vehicles	5
Plant and equipment	10
Computer, computer parts, and software	3
Intangible assets with indefinite useful life	10
Intangible assets with definite useful life (includes license for mining exploration and mining)	Valid period
Mining pre-operating expenses	5 years from commencement of production

- The 10 percent credit for investing in priority sectors should not be extended to mining if the loss carry-forward period is lengthened and the capital recovery rules liberalized.
- The loss carry-forward period should be lengthened to 7–10 years and the amount of the loss carryforward that can offset taxable income in a subsequent year should not be limited to 50 percent of taxable income.
- To limit excessive use of debt, interest on debt in excess of a 3:1 debt/equity ratio should not be deductible for tax purposes. This rule should apply to related party and unrelated party debt. This rule should apply to mining and non-mining companies.
- The definition of related party (Art. 6 of the CIT) needs to be broadened to cover companies that are owned or controlled directly or indirectly by the same interests. This change should apply to mining and non-mining companies.

- The tax deduction for funds accumulated in a special bank account for environmental protection should include both current and future environmental expenditures and mine closing costs.
- The fiscal regime for mining should be ring fenced license by license (or project by project) so that losses are not transferred among projects with the single exception—losses from unsuccessful exploration on relinquished areas should be allowed to offset income from successful projects.

Indirect taxes

Mongolia levies a 5 percent customs duty, but there is an exemption for technological equipment and heavy machinery imported by foreign investors for use in priority sectors. Mining companies pay VAT and excises on fuel, without special rules. The government is considering introducing export duties on a long list of unprocessed minerals. The mission recommends that:

- Current customs duty exemption for technological equipment and heavy machinery imported by foreign investors in the mining sector should be retained.
- The proposal to introduce export duties on unprocessed minerals should be dropped.
- As the VAT exemption for imports by the mining sector has recently been repealed, the authorities should monitor the timely payment of VAT refunds.
- The government should consider allowing mining companies to claim a credit for VAT paid on inputs during the exploration and development period of the mine.
- Given the low excise rates levied on fuels, no relief for mining companies is warranted.

Fiscal stability

Fiscal stability clauses are wide-spread in mining and petroleum contracts and are generally justified by: (i) the large size and the sunken nature of the initial investment, (ii) a long period required to recover investment and earn a reasonable return, and (iii) a lack of credibility on behalf of the host country to abstain from changing the fiscal rules—possibly singling out mining or petroleum—once the investment is sunk. The mission recommends that:

- Mongolia should continue to respect previously signed fiscal stability agreements. On a going forward basis, Mongolia should consider a more limited fiscal stability clause that might cover the capital recovery rules, the income and withholding tax rates, royalty rates, and a maximum rate on import duties. However, any tax law change that affects businesses generally (e.g., a change in the thin capitalization rules) and that do not discriminate against mining would apply.

State equity

Government equity in mineral projects is an important political symbol in Mongolia, as it is in other countries. It can give the people, through their government, a sense of participating in the development of the country and sharing in the risks and rewards of mining projects. The new Minerals Law provides that the government may take up to a 34 percent equity interest in a project that was not identified through state funds, and up to 50 percent equity interest in a project that was identified through state funds. From the legislation, it is not clear what form this equity interest might take (e.g., paid-up equity on commercial terms or some type of concessional interest). The mission recommends that:

- The government should take a cautious approach to equity participation in strategic mining projects, including taking less than the maximum amount of equity allowed under the Minerals Law. It should look for ways (e.g., a carried equity interest) to minimize its risk from investing in these projects.

Additional revenue-sharing arrangements

In addition to income tax and royalties, and possibly government equity, the government may want a fiscal instrument that ensures that it shares in the upside of the most profitable projects. To this end, the government adopted the windfall tax in 2006. In its design, the windfall tax can be viewed as government price participation. The mission considered ways of making the windfall tax responsive to costs, and not just price increases. The mission also reviewed three additional alternatives for the government to share in the upside of a mining project: (i) a resource rent tax; (ii) excess profit tax based on Payback Ratio or “R Factor,” and (iii) a variable income tax. These alternatives would be more sensitive to the profitability of the project than the windfall tax is. The mission recommends that:

- If the windfall tax is retained, it should apply only to a limited list of strategic projects for which the government may elect to take an equity interest; the rate should be reduced possibly to 55 percent; the base should be adjusted annually by the change in the US GDP deflator; and the tax should apply to all copper sales.

I. BACKGROUND AND CURRENT FISCAL ARRANGEMENTS

A. The Fiscal Situation

Mongolia is experiencing an unprecedented period of strong economic performance. Real GDP is estimated to have risen by 7 percent in 2006, the same as the average pace achieved during 2002–05. In 2006, GDP is projected to have reached US\$2.8 billion. The mining sector has been a key engine of growth, supported by record high prices for copper and gold, some increases in production volumes, and investment in new mines. Outside the mining sector, growth has also been supported by favorable weather conditions, buoyant residential and commercial construction, and rapid growth in financial services.

The fiscal position has also improved markedly in recent years, aided by the rapid run up in copper and gold prices and by faster-than-expected economic growth. The overall budget balance shifted from a deficit of 4 percent of GDP in 2003 to a surplus of 3 percent in 2005, which is now projected to have widened to 9 percent of GDP in 2006 (Table 1). Underlying the dramatic improvement in fiscal performance has been a sevenfold increase in government revenues from the mining sector between 2003 and 2006 due to high metal prices as well as the imposition of a new windfall tax on copper and gold in June 2006. Meanwhile, total expenditure has fallen from 42 percent of GDP in 2003 to an estimated 31½ percent in 2006, despite a 30 percent wage increase and an expansion of social welfare transfers.

Table 1. Mongolia: Consolidated Fiscal Balance, 2003–07

	2003	2004	2005	2006	2007
				Est.	Budget
	(In percent of GDP)				
Total revenue	37.6	37.0	33.7	40.6	35.9
of which: current mineral revenue	2.8	4.1	4.5	13.5	11.3
Total expenditure	41.8	39.1	30.7	31.7	40.9
Current expenditure	29.5	28.0	24.1	24.1	28.9
Capital expenditure	12.3	11.1	6.6	7.6	12.0
Primary balance	-3.0	-0.9	3.8	9.6	-4.4
Overall balance	-4.2	-2.1	2.9	9.0	-5.0
Nonmineral balance	-7.0	-6.3	-1.5	-4.5	-16.3

Sources: Mongolian authorities; and Fund staff estimates.

In sharp contrast, the 2007 consolidated budget envisages an overall deficit of nearly 5 percent of GDP. While a part of this deterioration would be due to a projected decline in copper prices, the non-mineral deficit would also widen from 4½ percent of GDP in 2006 to

16½ percent in 2007.¹ With growth remaining robust, most of deterioration in the fiscal balance would reflect policy measures in the budget, including (i) cuts in VAT, CIT, and PIT rates that became effective on January 1, 2007; (ii) a large increase in recurrent current spending such as child allowance and civil service wage bills; and (iii) a sharp pickup in capital spending.

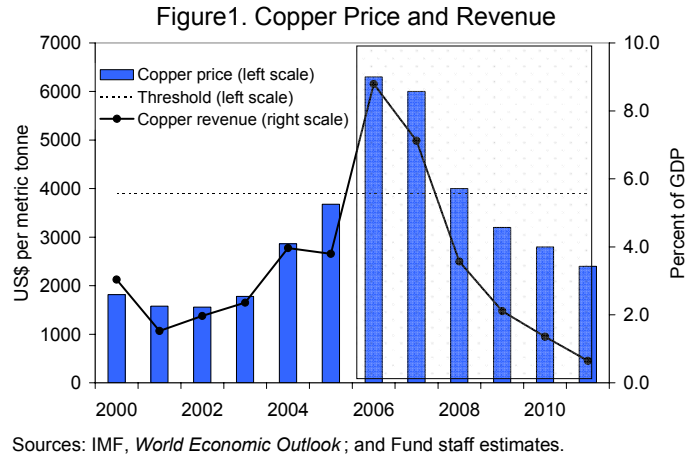
Given the inherent volatility of metal prices, the cuts in non-mineral taxes will make the budget increasingly sensitive to conditions in the mining sector. The

Mongolian government introduced

the “windfall” tax in June 2006 to share the upside of high copper and gold prices.² Since its introduction, the windfall tax revenue collected in 7 months has reached Tog 178 billion (5½ percent of annual GDP) in 2006, which have been transferred into the Development Fund to finance child allowances and public investment.³ This strong attachment of social assistance programs and public spending to volatile mineral tax revenue could result in excessive fluctuations in either government expenditure or fiscal deficit.

B. Mongolia’s Mining Sector

Mongolia’s mining sector has been a major contributor to economic development. It accounted for 25 percent of GDP, 71 percent of export earnings, and 16 percent of tax revenue in 2005; and its importance is estimated to have increased to 32 percent of GDP and 40 percent of tax revenue in 2006. However, the mining sector is vulnerable to international



¹ The authorities assume that the average copper price in 2007 will be US\$6,000 per ton, while the annual average price at London Metal Exchange (LME) was above US\$6,700 in 2006. However, since January 3, 2007, the LME official copper prices, which set a norm for the windfall tax, have remained below US\$5,800. With the annual copper price lower than US\$6,000 per ton, the 2007 fiscal balance would fall below the budgeted level.

² The 68 percent of tax rate applies to the LME copper prices exceeding the sum of a base price (US\$2,600 per ton) and smelting costs, and the Bank of Mongolia gold prices exceeding US\$500 per ounce.

³ The child allowance financed through the Development Fund would amount to about 3 percent of GDP in 2007. Consolidating this amount into the child allowance in the regular budget, the total child allowance would provide the equivalent of 10 percent of per capita GDP to about 40 percent of the population.

mineral price volatility; and its direct contribution to employment has been limited (2.4 percent of labor force), due to its highly capital intensive nature.

Mongolia has vast mineral resources, although estimates of proven and potential resources are subject to large uncertainties: overall, only 15 percent of the total area has been geographically mapped (USGS 2004). Table 2 provides an overview of operating and expected future mines in Mongolia.

Table 2. Major Mines in Mongolia

Name of Deposit	Mineral Resources	Location	Operational
Erdenet	Copper, Molybdenum	Erdenet city	Yes
Oyu Tolgoi	Copper, Gold	Umnugovi aimag	No
Tavan Tolgoi	Coking Coal	Umnugovi aimag	Partially
Burenkhaan	Phosphate	Huvsgul aimag	No
Tumurtei	Iron	Selenge aimag	No
Tumurtiin Ovoo	Zinc	Suchbaatar aimag	Yes
Asgat	Silver	Bayan-Ulgii aimag	No
Tsagaan Suvraga	Copper	Dornogovi aimag	No
Bor Undur	Fluorspar	Khentii aimag	Yes
Boroo	Gold	Selenge aimag	Yes
Gatsuurt	Gold	Selenge aimag	No
Hailaast	Gold	Tuv aimag	Yes
Baganuur	Coal	Baganuur city	Yes

Sources: Mongolian authorities; company reports and websites.

Among various mineral deposits, the most economically significant minerals are copper, gold, and coal. The copper production has long been derived exclusively from Erdenet, a state-owned company owned by the governments of Mongolia (51 percent) and Russia (49 percent). Erdenet has been exploiting a major copper mine since the 1970s. It is the largest taxpayer, paying over 50 percent of total CIT revenue in Mongolia and earning about half of all foreign exchange. The Erdenet mine is expected to continue extraction at the current rate for a further 50 years, although the head grade is deteriorating with depth. In contrast, the gold mining sector has been more diverse with over 100 companies, most of them quite small.

There has been an upturn in mineral exploration since the introduction of the 1997 Minerals Law, which played a pivotal role in attracting foreign exploration companies by providing generous tax holidays and exemptions. In addition, the widely publicized discovery of the Oyu Tolgoi copper/gold deposit by Ivanhoe Mines of Canada in 2001 brought international attention into the Mongolian mining sector. According to Ivanhoe, the Oyu Tolgoi project will be able to achieve a life-of-mine in excess of 35 years, producing over 16 million tons of copper and 11 million ounces of gold. One indication of the size of this deposit is that Rio Tinto, the second largest mining company in the world, made an investment in the equity of

Ivanhoe Mines for US\$303 million for 9.95 percent of the shares; and will increase the investment, under defined conditions, up to US\$1.5 billion. Ivanhoe is now negotiating an Investment Agreement with the Mongolian government. Oyu Tolgoi is expected to be developed into a worldclass copper mine.

Two coal mines, Tavan Tolgoi and Baganuur, are significant due to their huge deposits and economic impacts on energy sector development. The estimated reserves in these mines are 6 billion tons of coal and 2.4 billion tons of coking coal (Baganuur); and 6 billion tons of coal (Tavan Tolgoi). A license to develop Tavan Tolgoi is held by two Mongolian companies, Energy Resources and Tavan Tolgoi Coal Mine. While coal is currently being extracted on a small scale for domestic sales and exports to China, the coal power plant in Dalanzadgad, the capital city of Omnogovi province, runs completely on Tavan Tolgoi coal. Due to its location, just north of Oyu Tolgoi and close to the Mongolia–China border, Tavan Tolgoi’s huge coal deposit has been attracting the attention of Chinese, Japanese, North American, and Russian companies. The government anticipates that this deposit will be exploited by a joint venture of foreign companies.

C. The Current Fiscal Regime for Mining

The current fiscal regime for the minerals sector is governed by the Minerals Law and various tax laws. (A simulation of the current regime is provided in Appendix I.) The regime includes a royalty, an income tax, and the windfall tax, which applies to copper and gold sales.⁴ The Minerals Law provides that a holder of a mining license who undertakes to invest at least US\$50 million during the first 5 years of its mining project can enter into an Investment Agreement with the government to provide a stable operational environment, including a stable tax environment clause. The duration of the stability agreement depends on the amount of investment over the first 5 years of the project as follows: (i) US\$50 million to US\$100 million—10 years; (ii) US\$100 million to US\$300 million—15 years; and (iii) over US\$300 million—30 years.

Royalty

The Minerals Law sets the royalty rate for all metals at 5 percent of the sales value.⁵ Prior to the 2006 amendments, a royalty of 2.5 percent applied to copper and gold, except placer gold, for which the rate was 7.5 percent. The royalty payments are shared—10 percent to the soum or district budget, 20 percent to the aimag or city budget, and 70 percent to the state

⁴ There are also certain fees, but these are of lesser importance.

⁵ Sales value is discussed in Chapter III in the section of royalties.

budget. Up to 30 percent of the royalty payment to the state budget will be distributed to finance the geology and mining sector.

Corporate income tax

The new corporate income tax (CIT), effective from January 1, 2007, reduced the standard tax rate from 30 to 25 percent and the lower rate from 15 to 10 percent. It increased the threshold of the higher bracket by 30 fold. The new CIT abolished the 5-year tax holiday for mining companies.⁶ It also introduced a two-year loss carryforward provision. There are capital recovery rules, for income tax purposes, in both the Minerals Law and the CIT, and these laws appear to be in conflict. In determining taxable profits, a deduction is allowed for funds that are accumulated for restoration of the environment and are deposited in a special bank account established by the ministry in charge of the environment. There is a 20 percent withholding tax on payments of dividends, interest, and management fees to nonresidents, unless the withholding tax rates are reduced by a tax treaty.

Windfall tax

In June 2006, Mongolia introduced a windfall tax to: (1) capture a higher share of the revenues accruing to copper and gold mining companies from high export prices and (2) mobilize resources into a special fund – the Development Fund. The tax, which is modeled after the Russian oil export tax, is imposed on sales of gold and copper ore and concentrate extracted in Mongolia under the following provisions:

- Copper concentrate: the tax is levied at a rate of 68 percent on the difference between actual copper prices on the London Metal Exchange and the sum of a base price (set at US\$2,600 per ton) and smelting costs (estimated to be US\$1,580 per (metric) ton in 2006).
- Gold: the tax will be levied at a rate of 68 percent on the difference between the Bank of Mongolia's gold price⁷ and the base price (set at \$500 per ounce of gold).

The windfall tax is deductible for purposes of the regular income tax. The base prices—\$2,600 per ton for copper and \$500 per ounce for gold—are not indexed.

⁶ For the subsequent five years, the companies were taxed at half the regular rate.

⁷ The BOM daily gold price is the London PM fix for the previous day. As London is 6 hours behind Ulaanbaator, the London PM fix for the previous day is set after business hours in Ulaanbaator and before the BOM opens the next day.

Companies with stability agreements are unaffected by this tax. At the present time, almost all of the windfall tax is being collected from the Erdenet copper mine. Several small gold mines pay about 4–5 percent of the total windfall tax revenue. The largest gold mine—Boroo—is exempt, as it has a stability agreement.⁸ Moreover, as the tax applies only to exports of copper concentrates, the Ivanhoe project will not be affected by this tax if it exports copper cathodes.⁹

The Law on Government Special Funds provides that windfall tax revenues will go into the Development Fund, which is described below.

Indirect taxes

The customs law exempts mining companies from customs duties on a specific list of construction items. However, the new VAT law, adopted in 2006, removed the exemption for equipment and heavy machinery imported by companies with foreign investment in priority industries.

State equity

The new Minerals Law provides that the government may take up to a 34 percent equity interest in a project that was not identified through state funds, and up to 50 percent equity interest in a project that was identified through state funds. From the legislation, it is not clear what form this equity interest might take (e.g., paid-up equity on commercial terms or some type of concessional interest).¹⁰

⁸ Boroo Gold entered into a Stability Agreement under the 1997 Minerals Law, under which it has not paid CIT as the company has been entitled to tax holidays or other exemptions. However, Boroo Gold recently agreed to pay the government an additional US\$10 million in 2006 and to begin paying income tax at the full tax rate from 2007.

⁹ Ivanhoe would not necessarily have to build its own refinery. It would be exempt from this tax on its copper production if it exported copper cathodes refined in Mongolia by a third party.

¹⁰ There is an additional requirement in the Minerals Law that is part of the broader fiscal regime, but outside the competence of this mission. Art. 5.6 requires that a legal person holding a mining license for a mineral deposit of strategic importance must trade at least 10 percent of its shares on the Mongolian stock exchange. This requirement would allow Mongolian citizens to hold directly interests in the deposits and should assure full disclosure in accordance with the stock exchange rules of the activities on the Mongolian license holder. Potential international investors may view this requirement as a negative factor in their investment decision.

Development fund

The development fund will be operated according to the following rules:

- All windfall taxes should be directed to the Fund;
- The fiscal surplus net of all windfall taxes should also be directed to the Fund;
- The resources raised in the current year will be spent in the following year; and
- One third of the windfall tax revenues should be spent on domestic investment; one third should be spent on social protection programs to support children and families; the remaining one third should be saved; and up to 100 percent of the fiscal surplus net of all windfall taxes in the previous year should be spent on public investment in the current year.

Extractive industries transparency initiative (EITI)

The EITI supports improved governance in resource-rich countries through the full publication and verification of company payments and government revenues from oil, gas and mining. Many countries are rich in oil, gas, and minerals and studies have shown that when governance is good, these can generate large revenues to foster economic growth and reduce poverty. However when governance is weak, they may instead cause poverty, corruption, and conflict – the so called “resource curse”. The EITI aims to work against this “curse” by improving transparency and accountability.

Mongolia has taken steps to implement EITI. First, the recent amendment to the Minerals Law requires a license holder to “publish a report on the sales of products, taxes and fees paid to the state and local treasuries within the first quarter of each year. Second, on January 4, 2006, a government order was issued establishing a National EITI Council chaired by the prime minister and a working group to support the council. The mission endorses these steps.

II. THE DEVELOPMENT FUND

A. Current Legal Background

The Development Fund (DF) has been established with the objective of managing the fiscal revenue from the windfall tax on copper and gold production, which was introduced in mid-2006. Its main provisions are contained in the Law on Government Special Funds (LGSF). However, and because the DF is expected to be much larger than other government special funds, additional specific legislation (in the form of a law or regulations) is being formulated to govern the operations of the DF.

The LGSF defines a government special fund as a part of the government's revenue that is accumulated into a special account with the purpose of implementing particular functions and objectives. Income and expenditure reports of those special funds are considered to be an integral part of the regular budget performance report.

The following are the main features of the DF according to the legislation in place as of early 2007.

Revenue sources

According to the LGSF, as amended late 2006, the DF resources are:

- the budget revenue under the windfall tax law; and,
- up to 100 percent of the previous year's budget surplus, net of the windfall tax, as decided by Parliament.

Operations of the DF

The DF has been designed to both finance specific spending priorities and fulfill a budget stabilization objective. According to the LGSF, one third of the windfall tax revenues should be spent on domestic investment; one third should be spent on social protection programs to support children and families; the remaining one third should be saved; and the fiscal surplus net of all windfall taxes in the previous year should be spent on public investment in the current year.

The specific allocation of DF resources must be proposed by the executive and approved by Parliament. The LGSF does not explicitly state that the spending execution procedures to be applied on these operations must be the ones envisaged for standard operations under the regular budget.

The LGSF does not have explicit provisions regarding asset liability management, apart from stating that the resources of the DF must be placed in a special account of the Treasury and its interest earnings should be placed in the Treasury Single Account. It is not clear whether the DF can borrow, pledge or mortgage its assets, or issue guarantees. In addition, there are no specific investment policy guidelines or procedures for the DF.

Accounting and reporting

According to the LGSF, the Ministry of Finance must incorporate the operations of the DF into the government's annual financial statements in line with International Accounting Standards to be submitted to the Cabinet and Parliament. For that purpose, a manager of the DF and the spending units that finance projects/activities with DF resources should prepare expenditure reports on a half-yearly and annual basis. The financial statements of the DF must be audited in accordance with provisions of the Public Audit Law and be subject to an audit opinion. In addition, year-end expenditure reports of the DF must be disclosed publicly in daily newspapers along with the audit opinion within 20 days of the reports being finalized.

B. The Development Fund and the 2007 Budget

The windfall tax and DF were established well into the formulation of the 2007 budget. By then, Parliament had approved the 2007 budget deficit ceiling within the medium-term budget framework (MTBF) and line ministries were submitting their budget proposals to the Ministry of Finance for the preparation of the annual budget.

Parliament decided to make the Child Money Program (CMP) universal and to increase the annual benefits by Tog 100,000 to be financed with the resources earmarked for social protection spending by the DF. Investment spending was also increased relative to original budgetary plans, in coordination with the executive.

Parliament approved the 2007 DF operations together with the regular budget. However, they are presented separately in budget documentation and their operations are not consolidated. The regular budget includes all revenues received by the government, but on the expenditure side does not include expenditures from the DF. Instead it includes the transfer of total windfall tax receipts to the DF; this amount may differ from the amount of actual expenditures in social protection programs and investment projects undertaken through the DF. The regular budget's overall deficit is in line with the ceiling approved in mid-2006, but the consolidated deficit is greater than that ceiling. This, together with a very large consolidated surplus in 2006, might be behind the decision not to consolidate.

A separate account was set at the Bank of Mongolia for the DF last October. The Single Treasury Account (STA) made three transfers during 2006 for a cumulative amount equivalent to the total windfall tax collections in 2006 (Tog 177.5 billion). This account is part of the government total assets at the Bank of Mongolia but it is not integrated into the TSA to ensure the integrity of DF resources at all times.¹¹ The DF account is not remunerated, while other deposits at the Bank of Mongolia earn 0.5 percent per year since last July. The government will request the remuneration of DF deposits in the next negotiations with the Bank of Mongolia.

A Financial Policy and Management Department has been created at the Ministry of Finance, partly because of the accumulation of sizable deposits at the DF. This department is expected to make proposals for a more active asset and liability management by the government.

C. Assessment of the Development Fund Operations

The DF can be basically seen as a mechanism to earmark one specific source of mineral revenue, the windfall tax, with a limited stabilization mechanism. The features of the current DF can complicate fiscal policy formulation and management as well as undermine fiscal discipline and the integrity of the overall budgetary process in Mongolia.

The following problems can be highlighted:

- *The lack of consolidation of the operations of the DF with the regular budget can undermine the budget process and reduce the transparency of the fiscal position.*

If the medium-term budget framework (MTBF) were to be limited to the regular budget, there is the risk that its targets and projections do not properly reflect the stance of fiscal policy and its macroeconomic impact. Even if DF operations are implicitly incorporated in the formulation of the MTBF (and of the annual budget), there would be reduced transparency that could negatively affect the credibility of the MTBF as an instrument for budget formulation.¹²

In a more extreme scenario, the fragmentation in the formulation and presentation of government operations can lead to *parallel budgets*. Since budgetary entities could finance its operations from separately presented budgets, there could be pressures to introduce

¹¹ This contrasts to the deposits from other government special funds. A similar arrangement is made for foreign project accounts, a treatment that has been agreed with foreign creditors.

¹² The Open Budget Initiative 2006 places Mongolia in the bottom group in its rankings of budget transparency.

differentiated (*extrabudgetary*) criteria for the selection of spending initiatives. This risk would be exacerbated if the DF were to have a different agency (or committee) responsible for the formulation and monitoring of its expenditure plans. Parallel budgeting undermines the whole budget in terms of its relevance for budget entities (i.e., line ministries), the definition of spending priorities, the achievement of aggregate expenditure control, and the proper accountability in the use of government resources.

- *The earmarking of windfall tax receipts creates rigidities for the formulation and implementation of fiscal policy.*

Earmarking by the DF can reduce the flexibility of fiscal policy to respond to changes in total revenue, complicate liquidity management by fragmenting government deposits, and affect the efficiency of government spending as the competition for resources within the budget process is eroded. The forced buildup of deposits can also lead to asset-liability management problems if, for instance, the government has to borrow while at the same time having to accumulate deposits at the DF. There is also the risk that earmarking provisions lead to perceived permanent entitlements and the need for recurrent outlays in the future associated with public investments financed by the Fund.¹³

- *The DF could exacerbate the procyclical fiscal policy in Mongolia.*

By design, the DF could transmit the volatility of mineral revenue to government spending. In particular, future windfall tax collections could be very volatile and uncertain, not only because of mining prices and production, but also due to tax design features. While collections are expected to be relatively large in the short term, they could fall very quickly in coming years if copper (and gold) prices converge toward the tax reference prices and/or copper production is increasingly refined in Mongolia.¹⁴ Table 3 shows that if the statutory distribution of DF inflows is rigorously applied in coming years, expenditures financed by the DF would fall from 7 percent of GDP in 2007 to 1 percent of GDP in 2009. This drastic shift in available financing could particularly affect public investment spending, with the possibility of inefficient starts and stops in investment projects. Even if the stabilization

¹³ For example, the increase in the CMP benefits financed with the 2006 windfall tax receipts could become permanent.

¹⁴ In fact, lawmakers aim at fostering the production of refined copper through the establishment of the windfall tax on copper concentrates.

deposits are used to finance spending, their balance at the end of the projection period would barely help to smooth DF expenditure.¹⁵

Table 3. Development Fund Operations, 2006-10

	2006	2007	2008	2009	2010
	Prel.	Bgt. 1/	Proj.	Proj.	Proj.
(In billions of togrogs)					
Total Revenue	302.0	217.8	61.0	20.9	25.1
Windfall tax	177.5	217.8	61.0	20.9	25.1
Fiscal surplus net of windfall tax	124.5	0	0	0	0
Expenditure	0.0	268.7	145.2	40.7	13.9
Child money program	0	104.6	72.6	20.3	7.0
Public investment	0	164.1	72.6	20.3	7.0
Balance	302.0	-50.9	-84.2	-19.8	11.1
Asset accumulated by end-year	302.0	251.2	167.0	147.2	158.4
(In percent of GDP)					
Total Revenue	9.1	5.8	1.5	0.5	0.5
Windfall tax	5.4	5.8	1.5	0.5	0.5
Fiscal surplus net of windfall tax	3.8	0.0	0.0	0.0	0.0
Expenditure	0.0	7.1	3.6	0.9	0.3
Child money program	0.0	2.8	1.8	0.5	0.1
Public investment	0.0	4.4	1.8	0.5	0.1
Balance	9.1	-1.4	-2.1	-0.4	0.2
Asset accumulated by end-year	9.1	6.7	4.1	3.3	3.0

Sources: the Mongolian authorities; and Fund staff estimates.

1/ Expenditure in 2007 is not consistent with the statutory use of resources based on the preliminary figures for 2006.

D. Principles for the Design of a Non-Renewable Resource Fund: Best Practice

Non-renewable resource funds (NRFs) have been set up in many countries as a mechanism to enhance fiscal management in the presence of volatile, uncertain, and exhaustible revenue that largely originates from abroad. In many instances, the key rationale for NRFs is political: NRFs might help crystallize public support for saving petroleum resources, let the public see

¹⁵ Assuming that the base prices for the windfall tax (e.g., US\$500 per ounce for gold) reflect medium-term equilibrium prices, the fact that the DF aims at spending two thirds of the price boom (with one year lag) would mean that accrued deposits by the DF (one third) would not be sufficient to keep the same levels of spending once prices converged back to the medium-term equilibrium prices.

how much petroleum revenue is being saved, and allow politicians to justify budgets that build up fund resources by referring to the need to save for future generations.¹⁶

The international experience suggests that NRFs, as well as fiscal rules, are not a panacea for managing nonrenewable fiscal resources. The particular experience of Norway implies that a financing fund operating in the context of a clear medium-term fiscal strategy can be a useful way of anchoring fiscal policy while not unduly constraining scope for maneuver in the future (Box 1). Formulating fiscal policy in a medium-term framework can help limit the extent of expenditure pressure and allow a better appreciation of future spending implications of present policy decisions. Therefore, the focus should be on the overall design of fiscal policy: successful management of nonrenewable resources does not require NRFs. By contrast, poorly designed NRFs (e.g., with rigid operational rules, authority to spend, and earmarked resources) will complicate fiscal policy formulation and management, but a well-designed fund could help the government achieve its sound fiscal policy objectives.

Based on the international experience, the following best practice principles emerge for the design of NRFs:

- *NRFs should be coherently integrated into the budget process.* This is best achieved by ensuring the fund operates only as a government account rather than a separate institution. Budget formulation and reporting should focus on the consolidated presentation and expenditure should be executed by the Treasury. The fund should ideally be a “financing” fund, where the fund’s balance reflects government saving of its petroleum wealth and is presented in the context of all the government’s financial assets and liabilities.¹⁷
- *NRF assets should be prudently managed, coordinated with other government financing operations and invested offshore.* Funds can accumulate large amounts of resources and excessive risk-taking would not be appropriate. Holding the assets offshore reduces the impact on the domestic economy. Funds should also not lend or otherwise encumber their assets.

¹⁶ For a fuller discussion of petroleum funds, including international experience, see “Stabilization and Savings Funds for Nonrenewable Resources: Experience and Fiscal Policy Implications,” Occasional Paper 205, IMF (2001). A forthcoming IMF Board paper will provide an updated assessment of the role of special fiscal institutions, including oil funds, in managing the recent oil revenue boom.

¹⁷ NRFs can be classified into stabilization funds (aimed at reducing the impact of volatile revenue on the government and the economy), savings funds (to build up wealth for future generations) and financing funds (which act as the government’s savings account and can serve as both savings and stabilization funds).

**Box 1. The Norwegian Government Pension Fund
(Formerly the State Petroleum Fund of Norway)**

The Norwegian Government established the Fund in 1990, but activated it only in 1995, following the achievement of overall budget surpluses. The Fund is designed to manage accumulated budgetary surpluses and does not have specific rules for accumulation or withdrawal of resources, making its operation flexible. The budget, in effect, transfers *net* oil revenues to the Fund. In turn, the Fund finances the non-oil deficit of the budget through a reverse transfer (assuming the balance in the Fund is sufficient). Thus the Norwegian Fund effectively finances the overall budget balance. An overall budget surplus is transferred *to* the Fund; a budget deficit is financed *by* the Fund. The accumulation of assets in the Fund, which includes the return on the Fund's capital, thus represents government's net financial saving.

The Norwegian Fund is effectively a government account rather than an independent fund. Its features ensure integration into a unified budget and system of public finance. The Fund does not attempt to deal directly with the problems posed to the budget by the volatility of oil prices and production, these are addressed in the standard budgetary process by the use of fiscal guidelines adopted in 2001. The fiscal guidelines specify that the non-oil central government (structural) budget deficit be 4 percent (the assumed long-run real rate of return) of the assets of the GPF.

Norway no longer assigns state participation shares in oil ventures to a state-owned company. Where there is a "State Direct Financial Interest," the required investments, and any associated revenues, are transactions of the Fund, but included in the calculation of the overall budget balance. The budget is therefore comprehensive in its coverage of oil-related expenditures and revenues, and state participation does not give rise to any alternative accumulation of oil-related revenues outside the Fund.

Norway has a well-formulated and transparent asset management strategy for its Fund. The Ministry of Finance bears overall responsibility for the Fund's asset management, but has delegated the task of operational asset management to the central bank (Norges Bank) under the terms of a management agreement. The Ministry of Finance defines the strategy for investment by identifying a benchmark portfolio against which Norges Bank seeks to achieve the highest possible return. However, the Ministry of Finance also controls exposure to risk so that the actual return should remain within a range around the return on the benchmark portfolio. The Norges Bank set up a separate wing for investment management, that in turn engages professional investment companies to manage the equity and fixed income portfolios of the Fund.

In September 2005, the Ministry of Finance formally established an independent Investment Strategy Council. In December 2005, legislation was passed to rename the Petroleum Fund as the Government Pension Fund – Global, to be managed in coordination with the Government Pension Fund – Norway, representing the capital of the National Insurance Fund. The Global Fund continues to be managed along the same lines as was the Petroleum Fund. The formal link of oil-related deposits to old-age pensions was done mainly for pedagogical purposes to increase the awareness of inter-temporal constraints; the Global Fund operations are not earmarked, i.e., its transfers to the budget will not be related to the government's pension obligations.

Annual and quarterly reports of the Fund are published in a timely fashion (the web publication is at http://www.norges-bank.no/nbim/pension_fund/). These reports provide detailed information about changes in the management of the Fund, transfers to and from the budget, market trends, returns on investments, trends regarding risk exposure, and administrative costs. The Fund is audited under the internal procedures of the Norges Bank, and by the office of the Auditor General.

- *The rules and operations of the fund should be transparent with stringent mechanisms to ensure accountability and prevent misuse.* This requires regular and frequent disclosure and reporting on the principles governing the fund, its inflows and outflows, and the allocation and return on assets. The fund’s activities should be audited by an independent agency, and investment performance should be periodically evaluated.

E. Proposal for the Development Fund Operations

The previous sections suggest that the current setup of the DF is inconsistent with international best practices and that it can substantially complicate fiscal policy in Mongolia. The mission would recommend that the authorities reconsider the decision to introduce the Development Fund. However, as the authorities are currently preparing additional provisions aimed at regulating the DF and improving their operations, the mission recommends that those provisions should be aimed at (i) ensuring that the DF operations are set within the government’s budget process and the overall fiscal policy framework (the MTBF), and (ii) increasing the flexibility in the management of the DF to minimize the impact of the rigidities introduced in its original legislation.

The previous sections suggest that the current setup of the DF is inconsistent with international best practices and that it can substantially complicate fiscal policy in Mongolia. The authorities are preparing additional provisions to regulate the DF. In this context, the mission recommends that those provisions be aimed at (i) ensuring that the DF operations are set within the government’s budget process and the overall fiscal policy framework (the MTBF), and (ii) increasing the flexibility in the management of the DF to minimize the impact of the rigidities introduced in its original legislation.

The DF should be well integrated into the regular budget process. This has several dimensions:

- *The operations of the DF (revenue and expenditure) should be consolidated with the regular budget.* This means that the DF should be considered as part of a single unit and the operations between the Treasury and the DF should be netted out. For instance, investment spending should be consolidated regardless of its source of financing. The current presentation of fiscal figures, i.e., without consolidating the DF, cannot be justified as it does not show the correct fiscal position and can even end up undermining the integrity of the budget process.
- *The DF operations should be included in the formulation of the MTBF targets, in particular the fiscal deficit ceilings.*
- *The spending initiatives to be financed by the DF should be selected within the regular budget process.* The DF should operate as a “special” account of the government that is part of the pool of total resources available for the financing of the

budget's expenditure envelope. Earmarking provisions should be preferably eliminated, but alternatively their potential distortions can be minimized if they are assessed within the government's overall expenditure envelope. The recurrent costs of spending initiatives financed by the DF in the current year should be reflected in the out-years of the line ministries' MTBF. Line ministries should present integrated budget proposals and the Cabinet and/or the Ministry of Finance should centralize the decisions regarding the specific spending items to be financed with DF deposits.

- *The execution of spending financed by the DF should follow the regular procedures established for budgetary outlays, including the provisions from the Public Procurement Law.*
- *The creation of a special committee to manage the operations of the DF should be discouraged.* Not only would this require additional institutional capacity and resources, but also it could create an unnecessary degree of separation between management of the DF and good management of the government's fiscal operations. The ministry of finance should be the responsible entity.
- *Parliament should retain ultimate authority over decisions affecting the use and operation of the DF.* It can exercise this authority primarily through its power to approve the draft budget submitted by the executive.

The revenue sources of the DF should not be expanded. The fragmentation of fiscal revenue does not help fiscal management. Ideally, if the authorities consider a NRF useful, the DF could be transformed into a financing fund that accumulates the government's net financial saving, i.e., the overall fiscal balance. Removing the DF's link with the windfall tax might be unrealistic at this stage, but at least the fund's revenue sources should not be increased.

The international best practice is to have the DF resources placed in a special account of the Treasury Single Account (TSA). This should facilitate liquidity management. However, a case has been made in countries with NRFs that the size of accrued deposits and the public visibility of the NRF justify a slightly differentiated treatment. The mission understands that the MOF is taking steps to enhance its asset liability management operations, including with the creation of a Debt Management Division. The MOF, through this new division, should be responsible for decisions relating to the investment of the DF resources. The mission recommends that the government maintains a conservative investment strategy (based on relatively liquid instruments at this point) that preserves the fund's resources and does not complicate the conduct of monetary policy. There should be a general preference to place DF's assets abroad, mainly to dampen domestic demand and to allay fears about the appreciation of the domestic currency. The DF should not have the authority to borrow or lend money and to provide guarantees.

Reporting and auditing of the DF operations and financial position should be at least in line with the regular budgetary provisions. The MOF, the state audit agency, and Parliament should be the relevant monitoring entities. It is not convenient to create additional institutions with a specific mandate to look into the DF operations. The transparency of DF operations to Parliament and the public should be promoted through frequent, highly accessible, and easily understood reports.

The mission's recommendations suggest that any specific provisions regarding the operations of the DF should not be introduced by a separate law. A law could institutionalize the DF as a separate institution and reduce the flexibility in the management of the DF.¹⁸

The stabilization objective envisaged under the DF should be framed in a broader context. The volatility, uncertainty, and exhaustibility of mineral revenue calls for a comprehensive approach for fiscal policy formulation and implementation based on a strengthened medium-term framework (see Box 2).

Fiscal policy in Mongolia should focus on stabilizing expenditure aggregates *or the non-mineral primary deficit* over the medium (and long) term(s). Upcoming efforts to improve the MTBF with the assistance of the World Bank should go a long way to put such a framework in place. Determination of appropriate fiscal policy or fiscal anchors for Mongolia goes beyond the scope of this report.¹⁹

¹⁸ The mission provided specific comments to several DF's draft regulations that were prepared by the authorities.

¹⁹ There is currently a high degree of uncertainty regarding future mineral revenue in Mongolia. However, it would seem that the government needs to save more of the windfall tax receipts because of its projected decline in the near future and to reduce the pro-cyclical spending and the risk of inefficient start and stops in investment projects.

Box 2. Medium-Term Frameworks

A medium-term framework (MTF) can help link annual budgets to longer-term policies and fiscal sustainability objectives. The budgets of many governments that are dependent on volatile nonrenewable resources are characterized by short-term horizons, with little reference to longer-term policies and objectives. MTFs that explicitly incorporate a longer-term perspective can help promote predictability, improve resource allocation, and enhance transparency and accountability.

Fiscal policy targets need to be set based on a number of factors, including an indicative estimate of sustainable income from the nonrenewable resource, short-run macroeconomic stabilization objectives, the economy's absorptive capacity, potential competitiveness concerns, precautionary motives, the quality of expenditure, and administrative capacity. Estimates of sustainable income are fraught with uncertainty and should be treated as indicative parameters that can usually inform fiscal policy and public discussion.²⁰

MTFs can be specifically designed to help address the fiscal risks posed by volatile, unpredictable, and exhaustible nonrenewable revenues. They should incorporate explicit risk management strategies to help offset shocks and facilitate less disruptive adjustment processes, thereby contributing to the smoothing of spending over the medium term.

- The introduction of budgetary contingencies or other self-insurance mechanisms is important. Traditional MTFs include technical and prudential contingencies for dealing with changes in key macroeconomic assumptions or unexpected expenditures. Governments heavily reliant on nonrenewable revenues should give appropriate weight to the risk of revenue shocks and their potential fiscal impact in determining the appropriate size of contingency reserves and non-mineral deficits from a vulnerability and sustainability perspective, especially in light of the asymmetric costs of adjustment.
- Scenario or stress tests to the MTF and long-term fiscal position in relation to potential shocks should be regularly conducted to calibrate country specific target levels for contingency reserves and non-mineral deficits. This approach, which can be conducted at various levels of complexity, should help internalize the risks in fiscal policy formulation.

²⁰ The documentation on the 2006 Article IV consultation with Mongolia includes a paper entitled “Long-Term Fiscal Sustainability in Mongolia” that uses a “constant real expenditure” approach to determine a sustainable fiscal policy in Mongolia (SM/06/413).

III. THE FISCAL REGIME FOR NEW MINING PROJECTS

This chapter addresses the broader issues of the design of a tax/royalty regime for the mining sector. State equity participation is addressed in the next chapter, and Chapter V addresses additional revenue sharing arrangements, including the windfall profit tax, for the government to share in the upside of highly profitable projects.

A. General Considerations

The first issue is whether the development of the mining sector requires a sector specific fiscal regime. The simple answer is “yes.”

The government, as resource owner, has a valuable asset in the ground. This asset—a mineral deposit—can only be exploited once. In order to convert the mineral deposit into financial resources, capital must be attracted on terms that ensure that the government gets the greatest possible value for its resources—under uncertainty about the quantity and value of the resources and the costs that must be incurred to exploit the resources.

There is a fundamental conflict between mining companies and governments over the division of risk and reward of mineral development. Both want to maximize rewards and shift as much risk as possible to the other party. Nevertheless, the right choice of fiscal regime can improve the trade-off between each party’s interests. Mining agreements and the associated fiscal rules establish the “price” of the resource in terms of bonuses, royalties, taxes or other payments the investor will make to the government over the life of the project. Designing fiscal arrangements that encourage a stable fiscal environment and efficient resource development maximizes the magnitude of the revenues to be divided. The aim is for the government to receive a fair and rising share of the economic rents, as profitability increases, without scaring off potential investors.

Given multiple objectives, multiple fiscal instruments may be needed to protect the interest of the government and the mineral companies over the life of the agreements. Product-based instruments, such as royalties, can ensure the government receives at least a minimum payment for its mineral resources. Profit-based instruments allow the government to share in the upside of highly profitable projects, but they also increase the government’s share in the project’s risk inasmuch as the government may receive no income tax revenue if the project turns out to be unprofitable.

In addition to product-based and profit-based instruments, there may be bonuses of various types. While bonuses can ensure some up-front revenue for the government and may encourage companies to explore and develop contract areas rapidly, they are usually feasible

only in highly prospective areas where there is strong competition among investors for mineral rights.²¹

In many countries with mineral resources, revenues from different instruments accrue to different parties; for example, local units of government may accrue a share of royalty payments.²²

In designing or appraising a fiscal regime, an exclusive focus on the impact of individual tax instruments can be very misleading. Investors themselves are interested in the overall impact of the tax regime, under a range of assumptions about output, costs and prices.

Countries are often interested in whether their fiscal regime is internationally competitive. There is a market test for competitiveness: Is the country able to attract interest of international mining companies for exploration and development of its mining sector?

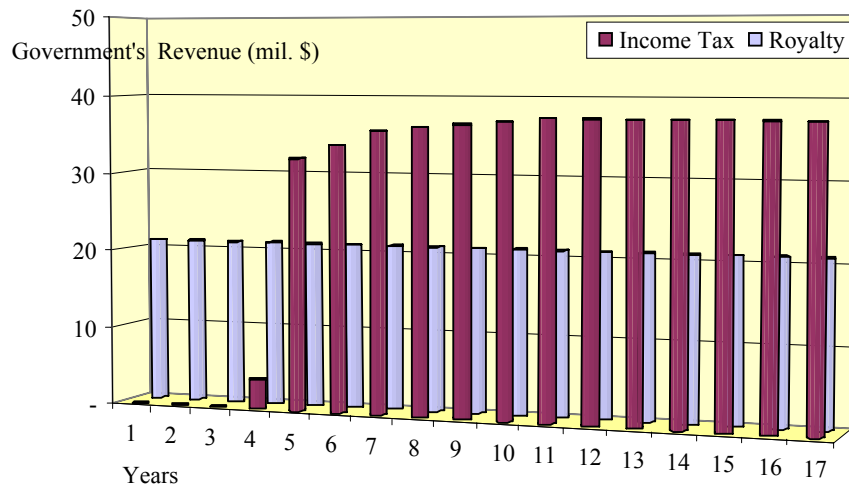
B. Risk/Reward Trade-off

As indicated above, both the government and the investor want to maximize rewards and shift as much risk as possible to the other party. Royalties provide a more certain revenue stream. Profit-based levies allow the government to share in the upside of the project. The trade-off between risk and reward can be illustrated by assuming two fiscal regimes for a hypothetical mining project that yields a 26 percent pre-tax rate of return. The first regime has a 40 percent income tax and the second has a 9 percent royalty. Both regimes will yield the same revenue for the government in present value terms (at a 10 percent discount rate) when a gold price of \$410 per oz is assumed. The revenue, however, is back-end loaded in the profit tax regime compared to the royalty regime (Figure 2).

²¹ Bonuses are more common in petroleum agreements. Mongolia's Minerals Law does not require or provide for bonuses. Exploration licenses are granted to qualified companies on a first come first served basis. If a commercial discovery is made under an exploration license, the holder can receive a mining license that confers the exclusive right to undertake mining operations in the mining area. If the exploration license has expired and the exploration license holder fails to submit an application for a mining license, the mining license for the area shall be granted through a tender.

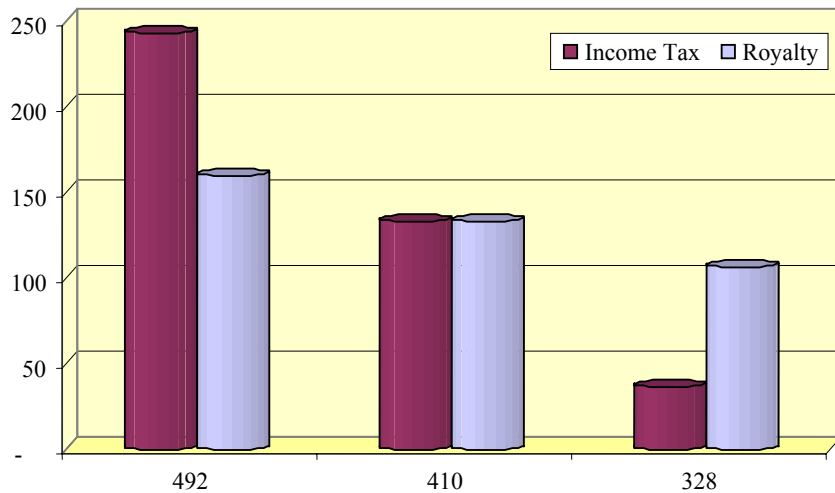
²² Whether provinces (aimag) or counties (soums) should receive a share of the royalty income is outside this mission's expertise and terms of reference. For a discussion of intergovernmental issues, see E. Ahmad and E. Mottu, "Oil Revenue Assignments: Country Experience and Issues," in J. M. Davis, R. Ossowski, and A. Fedelino, eds., *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*, (International Monetary Fund, 2003).

Figure 2. Timing of Revenue Under Alternative Fiscal Regimes



But suppose the price of gold is 20 percent higher or lower. When the price is 20 percent higher, the profit tax regime yields a higher present value of revenue than the royalty regime. Conversely, when the gold price is 20 percent lower, the royalty regime yields the higher present value of revenue (Figure 2). Thus the profit tax regime is riskier to the government than the royalty regime.

Figure 3. Risk/Reward Trade-off Under Alternative Fiscal Regimes



Royalties

Royalties are either specific levies (based on volume of minerals extracted) or ad valorem levies (based on the value of minerals extracted).²³ They secure revenue for the government as soon as production commences, are considerably easier to administer than most other fiscal instruments, and ensure that companies make a minimum payment for the minerals they extract.²⁴

Such royalties raise the marginal cost of extracting minerals, as they are based on the volume or value of production without deduction for cost. A royalty set too high may discourage development of marginal deposits and lead to high grading and early closure of productive mines. Nevertheless, a regular minimum payment is usually necessary to justify extraction of the resource in the public mind, to assure stability of the fiscal regime, and to broaden the tax base.

Investors are resistant to the use of substantial royalties, even on potentially rich deposits, because they increase the risk of failure to achieve target returns and because a royalty is a deductible, rather than a creditable item, for tax purposes in the home jurisdictions of investing companies.²⁵

Ad valorem royalties are generally levied on the value of the mineral at the mine or the FOB export price. An overriding concern is the use of an observable price, and (in the case of many minerals) this could necessitate using a downstream price. If a downstream price is used, either the rate of the royalty should be adjusted to reflect the transportation and other costs embedded in the downstream price, or the extracted value should be established by netting back the transportation and other costs (e.g., in the case of copper, these costs would include the costs of smelting and refining).

²³ A few countries levy profit-based royalties, which are based on revenues less operating costs and capital allowances. This can make the royalty more sensitive to the overall profitability of the mine. There are likely better ways for the government to share in the upside potential of mining project, including the windfall profit tax, as discussed below.

²⁴ For an excellent discussion of royalties for hard minerals, see J. M. Otto (1995), *Legal Approaches to Assessing Mineral Royalties*, in *Taxation of Mineral Enterprises*, ed. by J. M. Otto, Graham & Trotman, London.

²⁵ Not all countries tax the foreign source income of their resident companies. For example, Australia uses the territorial system under which foreign source income is exempt from taxation in the company's country of residence.

While most countries apply royalties in order to secure a stream of early revenue from a project, the actual rates (and the type of royalty) vary widely (Box 3).²⁶ The rates chosen will reflect the interaction with other taxes imposed on the mining operation (e.g., a high royalty rate may be offset by a low income tax rate), and higher rates may be assessed on more valuable minerals such as diamonds.

International experience suggests that there is not a standard international practice in levying royalties, although ad valorem royalties are the most common.

Box 3. Royalties on Mining

Some countries (notably Chile and Mexico) charge no royalty, but royalty rates in the range of 1 to 4 percent of the value of mine product – but somewhat higher for diamonds – appear to be common and acceptable to investors, depending on the level of other fiscal charges. Among other countries which have attracted significant mining investment, Papua New Guinea levies a 2 percent royalty on copper and gold, recently increased from 1.25 percent (but also levies import duties, subject to limitations, and offers slower depreciation than is offered in Mongolia); Indonesian precious metal royalties range between 1 and 2 percent, varying according to a price-related formula. The Papua New Guinea charge is based on "net smelter returns" (i.e., transport, smelting, and refining charges are deducted in arriving at the revenue for royalty), whereas the charge in Indonesia appears to be based on a gross international price for refined metals. Peru levies a sliding scale ad valorem royalty based on annual sales, with rates of 1 to 3 percent

In Africa, Botswana levies a 3 percent royalty on copper on the sale value at the mine (netback). Ghana operates a variable royalty system that depends on the operating ratio of the mine, with a minimum rate of 3 percent, and it is understood that no gold or copper mine pays more than 3 percent. South Africa has had no mineral royalties since the early 1990s, but has proposed re-introduction of ad valorem royalties. Zimbabwe levies no royalty under its general regime, but is understood to have used a royalty of 2.5 percent for a project under a special mining lease. Zambia concurrently imposes a royalty of 0.6 percent of "gross value" on all base metals.

In Australia and Canada, royalty practices vary widely among states. Australian states tend to levy ad valorem royalties. Rates for copper vary from 1.5 percent to 5 percent. However, Queensland and Western Australia use a sliding-scale ad valorem royalty, and the Northern Territory uses a profit-based royalty. In Canada, as mineral resources are often privately owned, profit-related royalties are common forms of payment to resource-owners.

Turkey and the US state of Nevada use profit-related royalties (e.g., a percentage of net profits).

²⁶ See also, James M. Otto, "Gold and Copper Royalties: A Global Comparison," June 2005.

Mongolia's royalty rate for all metals is 5 percent of sales value, which is high by international standards but not unreasonable given the 25 percent income tax with liberal capital cost recovery.²⁷ For exported minerals, "sales value" is defined as the average monthly price of the product or similar products, based on regularly published international market prices or determined through recognized principles of international trade (Article 47.2.1 of the Minerals Law). Thus if copper concentrate is sold, the royalty is levied on the value of copper concentrate and not on the value of refined copper. There is no netting back for transportation costs. For minerals sold on the domestic market, "sales value" is defined as the domestic market price for the particular or similar product (Article 47.2.2). Furthermore, the Minerals Law requires the government to prepare and periodically publish a list of commodity exchange prices (i.e., reference prices) and related information, which will be used for the purpose of calculating the sales value of exported products (Article 47.7 of the Minerals Law).²⁸

At this time, a critical issue for Mongolia is how the reference price should be set for the various minerals. The authorities provided the mission a draft "Procedure for Calculating Selling Prices of Minerals." This draft makes clear that the costs of smelting and refining are deducted in determining the sales value when copper concentrate is sold. The mission provided the authorities with comments, and a modified version of those comments can be found in Appendix II.

To simplify the valuation of tons of copper concentrate, the procedure could provide that:

Value of LME price					
Copper Concentrate	=	of copper per pound	x 2204.6	x 0.3	x 0.75.
Per ton		US\$			
US\$					

This formula recognizes that there are 2204.6 pounds in a (metric) ton; a ton of copper concentrate contains 30 percent pure copper; and that smelting and refining costs average 25 percent of the value of pure copper. This formula would allow the copper royalty to be

²⁷ The royalty rate is 2½ percent for coal and other common minerals sold on the domestic market and used for power generation.

²⁸ Some officials suggest that this provision in the Minerals Law would allow the government to establish selling prices for purposes of the income tax. This is not a reasonable reading of the provision as it is part of Art. 47 of the Minerals Law, which relates to royalties and not other fiscal levies.

collected based on the amount of copper concentrate shipped and the price of copper on the London Metal Exchange.

If reference prices are used, should they be mandatory or used only when they are higher than the prices reported by the taxpayer (a check-price system)? The draft Procedure contemplates that if the reference price will be used only when it is higher than the price reported by the taxpayer.

Recommendations

- The current royalty rates, although high by international standards, are reasonable given the low-rate CIT and the generous capital recovery rules.
- To limit disputes between the mining company and the tax authority, reference prices should be used to determine the value of the mineral for purposes of levying the royalty. The sales value for royalty purposes should be the higher of the reference price or the sales price reported by the taxpayer.

C. Income Tax

Conflict between the Minerals Law and the corporate income tax

Article 61 of the Minerals Law contains a number of tax provisions relating to mining that conflict with the CIT. For example, it provides different cost recovery rules for exploration and all expenses incurred in preparing a mine site for production (5 year amortization compared to 10 year amortization under the CIT). Also, the annual deduction for repairs is not limited, while the deduction for repairs under the CIT can not exceed 2 percent of the book value of immovable property and 5 percent of the book value of other property. The article requires the Minister of Finance to adopt regulations implementing this article.

There is an additional problem. Art. 2 of the General Law on Taxation provides that rules relating to taxes shall be regulated solely by tax laws. Thus the tax administration will likely not recognize the tax rules that are in the Minerals Law.

Corporate tax rate

Prior to 2007, Mongolia's corporate tax rate was 15 percent on the first Tog 100 million of taxable income and 30 percent on the excess over Tog 100 million (about US\$90,000). From January 1, 2007, the corporate income tax rate is 10 percent on the first Tog 3 billion of taxable income and 25 percent on the excess over Tog 3 billion (about US\$2.7 million).

While most Mongolian companies will be taxed only at the 10 percent rate, large mining companies will be in the 25 percent bracket.

The 25 percent tax rate, coupled with generous cost recovery rules, is competitive by international standards (Table 4).

Table 4. Corporate Tax Rates in Major Copper Producing Countries

Country	Corporate Tax Rate
Canada	36.1
Chile	17
China	33
Mongolia	25
Peru	30
Poland	19
Russia	24
United States 1/	40
Zambia	35

Source: KPMG's corporate tax rate survey, 2006.

Note: 1/ 35 percent rate at federal level + 5 percent average effective rate at the state level.

Withholding tax rate

Under general international rules, income that is sourced in a country but paid to a nonresident—for example, dividends, interest, royalties, and management fees—is subject to a final withholding tax. This allows the source country to effectively tax this income, as there is no practical way to force nonresidents to file returns and account for their incomes.²⁹ Final withholding on interest is the first line of defense against “interest stripping” as a withholding tax will be collected on interest payments, which should reduce the incentive for excessive leverage. Final withholding tax on management fees can reduce the pressure for a company to engage in abusive transfer pricing.

The Mongolian CIT imposes a 20 percent final withholding tax on certain payments to nonresidents: (i) dividends, (ii) loan interest and guarantee payments, (iii) income from royalty, leasing interest, payment for administrative expenses, rent, management expenses, and income use of tangible and intangible assets, and (iv) income from goods sold, work performed and services provided in the territory of Mongolia.

²⁹ The residence country may also tax this income, and if it does so, it would normally give a credit to the tax paid to the source country.

The 20 percent withholding tax rate on dividends makes the tax burden on distributed income 40 percent ($25 + .20 \times 75$), which is in line with other mineral producing countries that have a higher corporate tax rate but a lower withholding tax rate on dividends.

The 20 percent withholding tax rate may be reduced by treaty. For example, the Canadian Tax Treaty provides that the withholding tax on dividends paid to a Canadian company (e.g., Ivanhoe Mines Canada) can not exceed 5 percent if the beneficial owner is a company that controls directly or indirectly at least 10 percent of the voting power of the company paying the dividend. The Singapore Tax Treaty limits the withholding tax on interest paid to a bank to 5 percent.

If Mongolia has a tax treaty with a country, then the income from goods sold, work performed and services provided in the territory of Mongolia by a nonresident would not be taxable in Mongolia under the business profits article of the treaty. There is one exception to this rule. If the foreign company carries on business in Mongolia through a permanent establishment, then Mongolia can tax the income of the permanent establishment. But that is not usually done through final withholding, as the permanent establishment is treated as a resident taxpayer and it files an annual corporate tax return.

Mongolia's tax treaties were negotiated when the corporate tax rate was 30 percent (40 percent prior to 2003), and reducing the withholding tax on dividends to 5 percent may have made sense at that time. Now that the corporate tax rate has been reduced to 25 percent, Mongolia in negotiating tax treaties should not reduce withholding tax rates on dividends and interest to below 10 percent.

Functional currency

In many countries mining companies are allowed to keep their books of account in US dollars, or possibly another foreign currency. When dollar accounting is used, the tax return is first prepared in dollars and then each item is translated into the local currency at the going exchange rate. The mining company does not have to keep its basic books in the local currency.

Dollar accounting recognizes that the dollar is the mining companies' functional currency. Imports are paid for in dollars and exports are sold for dollars. By using dollar accounting for tax and financial purposes, the companies are protected from the risk of togrog depreciation, and this may be viewed as an incentive for investment in the mining industry.

Cost recovery rules

Under the CIT, most assets that a taxpayer acquires as the result of incurring capital expenditure will be considered depreciable property. This includes both tangible and intangible property, but excludes land, inventory and materials. The cost of depreciable assets is recovered on the straight-line method over their useful lives, as follows:

Depreciable Asset	Useful Life (in years)
Buildings and construction	40
Machinery and equipment	10
Computer, computer parts, and software	3
Intangible assets with indefinite useful life	10
Intangible assets with definite useful life (includes license for mining exploration and mining)	Valid period
Other depreciable assets	10

The Minerals Law provides its own capital recovery rules. First, all costs incurred for exploration and expenses incurred in preparing a mine site for production shall be amortized on a straight-line basis over 5 years beginning in the year production commences. Second, licenses shall be amortized on a straight-line basis over the term of the license. Third, fixed assets shall be depreciated on the straight-line basis, but no useful life is given.

The mission would suggest that CIT schedule of useful lives for depreciable assets should be modified, as follows:

Depreciable Asset	Useful Life (in years)
Buildings	40
Vehicles	5
Plant and equipment	10
Computer, computer parts, and software	3
Intangible assets with indefinite useful life	10
Intangible assets with definite useful life (includes license for mining exploration and mining)	Valid period
Mining pre-operating expenses	5 years from commencement of production

This new schedule would make clear that construction costs of developing a mine (fixed plant) would be depreciated over 10 years, instead of 40 years under current law. Also pre-operating expenses would be recovered over a 5-year period. When this more liberal

schedule for the mining sector is adopted, the 10 percent tax credit, which is discussed below, should be repealed.

10 percent investment credit

The CIT allows taxpayers investing in priority sectors—agriculture, construction, tourism, etc., but not mining—to claim a tax credit equal to 10 percent of the cost of depreciable (noncurrent) assets. The 10 percent credit coupled with depreciating 100 percent of the cost of the asset allows the taxpayer, in effect, to recover 140 percent of the cost of the asset. That is, a 10 percent credit is equal to a deduction of 40 percent of the cost of the depreciable asset, assuming a 25 percent tax rate.

This tax credit could be viewed as a rough-justice way to index depreciation, which is based on historic costs.

The mining sector would like to be considered a priority sector for purposes of the 10 percent tax credit. The mission concludes that the 10 percent credit should not be extended to mining if the loss carryforward is lengthened to 7–10 years and most mine development costs are depreciated over 10 years, instead of 40 years.

Carryforward of losses

Mongolia allows operating losses to be carried forward two years. The amount of the loss that can be deducted against taxable income in each of the two succeeding years can not exceed 50 percent of that year's taxable income (Art. 21 of CIT).³⁰

Carryforward of losses is essentially an averaging device to avoid the arbitrariness of the annual accounting period. A company that has a profit of US\$50,000 in year 1 and US\$40,000 in year 2 should not pay less tax than a company that has a loss of US\$200,000 in year 1 and a profit of US\$290,000 in year 2. Over the two years, each has profits of US\$90,000. Yet without a loss carryforward of the US\$200,000 from year 1 to year 2, the second company would pay more total tax. The case for a reasonably long loss carry-forward period is particularly strong if the losses are due to an acceleration of capital cost recovery that is intended to provide an incentive for the company to make investments.

³⁰ Art. 61.4 of the Mineral Law also provides that operating losses can be carried forward two years, but there is no limit on the amount of the loss than can be used in each succeeding year.

Mongolia's rule for offsetting operating losses against future income is quite restrictive. Mining projects, under Mongolian rules, will create large losses in the early years by taking the allowable cost recovery (depreciation and amortization). Unless losses can be carried forward for a significant period, capital investment will not be recovered, and the attractiveness of rapid cost recovery will be lost. A loss carryforward of 7 to 10 years is needed and the amount of loss carryforward allowed in any one year should not be limited to 50 percent of taxable income. Some countries (e.g., Tanzania) allow an unlimited loss carryforward for mining companies.

Thin capitalization

Interest expense is generally deductible in determining taxable profits, but countries have introduced provisions to protect their tax base from the deduction of excessive interest payments, as debt reduces the effective tax rate on corporate profits. If the investment is funded by equity, Mongolia collects a 25 percent tax on the profits and an additional 20 percent withholding tax on the dividend, unless the dividend withholding tax is limited by a tax treaty. The total tax could be as high as 40 percent ($25 + .20 \times 75$). If the investment is funded by debt, Mongolia only collects the 20 withholding tax on the interest payment, and this withholding tax may be reduced by a tax treaty. For example, the Singapore tax treaty provides for only a 5 percent withholding tax on interest received by a bank.

Mongolia's CIT denies a deduction for interest expense when "the loan provided by the investor to the taxpayer exceeds three times the value of the capital invested before." Assuming "capital invested" means "equity," the rule would deny a deduction for interest expense on debt in excess of a 3:1 debt/equity ratio, but the rule seems to apply on a lender-by-lender basis (Article 14.3).³¹ Thus the parent company could use a related entity—possibly a financing subsidiary located in a tax haven—to provide debt financing. This debt would not exceed three times the value of the capital invested by the related entity.

There are various approaches to limiting excessive use of debt (i.e., limiting thin capitalization). Mongolia's approach—placing a limit on the debt/equity ratio—is the most common. A 3:1 ratio is reasonable.

Most developed countries apply a limit on excessive use of debt only in the case of debt supplied by a related party broadly defined. The mission would suggest that it would be

³¹ Art. 14.3 provides that a deduction shall not be made in the case of interest paid to the extent that the interest is paid in respect of the part the total debt owed to the lender exceeds three times the value of the capital invested by the lender in the taxpayer.

better for the limit on excessive debt to apply to all loans, as it is sometimes difficult to know whether the debt is from a related party, particularly when back-to-back loans are used or the parent company guarantees a loan by a third party to the subsidiary.

The mission would support limiting the debt/equity ratio to 3:1, and this rule should apply to related party and unrelated party debt.

Transfer pricing

Transfer pricing concerns the allocation of income between related parties across countries (or within a single country when tax rates differ across sectors or regions). Most countries have a provision in their tax laws enabling a price adjustment to be made where under- or over-pricing between related companies has resulted in a lowering of taxable profits (see Box 4 for examples of transactions where transfer pricing may be important.)

Box 4. Transfer Pricing

Some transfer pricing mechanisms that affect revenues are:

- The sale of exports at below-market prices to a related party located in a low-tax jurisdiction.
- The creative use of price hedging mechanisms perhaps involving transactions between related parties.

Measures to maximize expenditure deductions include:

- The provision by related parties of debt finance at above-market interest rates.
- Claiming excessive management fees, deductions for headquarter costs, or consultancy charges paid to related parties.
- The provision of capital goods and machinery through sales or in leasing arrangements with above-market costs charged by a related party.

For some specialized goods and services it can be difficult to determine what exactly is an arm's length price. There is often also a case of asymmetric information between the tax administration and the taxpayer in this regard. One way to overcome this is to seek cooperation with the tax authorities in the home countries of the mining companies. Bilateral double taxation agreements provide for information exchanges between tax authorities.

The Mongolian income tax provisions require related (or dependent) parties to use "standard sales prices" of goods, works, and services (Art. 7.5 of the CIT). Although from the legislation it is unclear whether the "standard sales price" is the same as the internationally

accepted concept of an “arm’s length price,” the tax administration is developing a regulation on calculating the arm’s length price.

The major weakness of the Mongolian CIT with regard to transfer pricing is the definition of related party (Art. 6). The definition only covers a parent/subsidiary relationship. Thus, transactions between two companies controlled by a third company would not come under the CIT’s definition of a related party. The definition needs to be broadened to cover companies that are owned or controlled directly or indirectly by the same interests. Control can be exercised by ownership or contract. Special consideration needs to be given to the treatment of dominate shareholder entities, (e.g., Rio Tinto), who alone or through shareholder agreements have the power to control a domestic mining company. If the definition of related party is not broadened, mining companies will have a “license to steal” by using transactions between “related companies” that fall outside the CIT’s restrictive definition of a related party.

Recognizing that it is difficult to make transfer pricing adjustments that will stand up through appeals, possible litigation, and competent authority discussions with tax treaty partners, the mission offers several suggestions to provide greater certainty and to limit abusive transfer pricing:³²

- Mongolia should adopt and follow the OECD guidelines³³ for transfer pricing, which would provide taxpayers with more certainty. These guidelines could be adopted in the draft regulations by reference.³⁴
- Companies should be required to disclose related party transaction on a schedule attached to their income tax returns. There should be an appropriate penalty for failure to disclose these transactions.
- As included in the draft regulation on calculating the arm’s length price, companies should be required to contemporaneously document how they established their transfer prices. This documentation would be provided to the auditor on request.

³² If Mongolia were to pursue transfer pricing adjustments aggressively, staff training would be quite important. However, the mission would question whether this training should have high priority given other training needs. Requiring disclosure of related party transactions and contemporaneously documenting how transfer prices were established would put taxpayers on notice.

³³ OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, loose leaf.

³⁴ If the OECD Guidelines are not adopted by reference, the draft regulation needs to provide more examples and also cover profit split methods in addition to the traditional transaction methods.

Environmental and mine-closing costs

Under the Minerals Law, a license holder—either exploration or mining—has obligations with regard to environmental protection. To ensure that the mining company performs, a license holder must deposit funds equal to 50 percent of its environmental protection budget for the particular year into a special bank account. The CIT allows a tax deduction for the funds accumulated for purposes of environmental rehabilitation, as required under the Minerals Law (Art. 12.1.27 of the CIT). It is presumed that once environmental expenditures are made, funds would be released from the escrow account. Any surplus accumulation would be returned to the company and taxable.

Mongolia's rule relating to environmental costs is too restrictive, as it seems to relate to only the budget for the current year's environmental costs. It would be better if the company were allowed to fund current and future environmental costs, including mine closing costs through contributions to an escrow account.

There is an alternative approach to fund future environmental costs and that would be to allow companies tax-deductible provisioning for these future costs. The company would be allowed to make a provision in its tax accounts for future environmental expenses and receive a tax deduction. In return, the company would be obliged to put in place acceptable security for carrying out its environmental obligations.³⁵ This alternative approach may be preferable if the security is sufficient. Payments to an escrow fund would count as cash outflows and would therefore depress the expected rate of return at the time of the investment decision.

As Mongolia has adopted the approach of an escrow account, the mission suggests that the account should cover both current and future environmental costs, including mine closing costs.

Ring fencing

Ring fencing means a limitation on consolidation of income and deductions for tax purposes across different activities, or different projects, undertaken by the same taxpayer. Some countries ring fence mining (and petroleum) activities, others ring fence individual license areas or projects.

³⁵ Tanzania's Income Tax Act of 2004 allows mining companies to accrue a provision for future environmental costs, subject to terms and conditions set by the Commissioner of Income Tax. Any excess provisioning will be subject to interest and penalty charges.

Ring-fencing rules matter for two main reasons:

- Absence of ring fencing can seriously postpone government tax revenue because an investor who undertakes a series of projects will be able to deduct exploration or development expenditures from each new project against the income of projects that are already generating taxable income.
- As a mining (or petroleum) area matures, absence of ring fencing may discriminate against new investors who have no income against which to deduct exploration or development expenditures.

Despite these points, a very restrictive ring fence is not necessarily in the government's interest. More exploration and development may occur if taxpayers can obtain a deduction against current income, generating more government revenue over time by increasing the taxable base. The right choice is a matter of balance within the fiscal regime and the degree of government's preference for (modest) early revenues over (greater) revenues later on.

Ring fencing—preventing losses from being transferred among projects—is particularly important if the government imposes a profit-based additional tax on highly profitable projects (see Chapter V).

The mission would recommend that the fiscal regime for mining should be ring fenced license by license (or project by project) with the single exception—losses from unsuccessful exploration on relinquished areas should be allowed to offset income from successful projects.

Recommendations

- The Minerals Law should not contain CIT provisions; they should all be in the CIT law.
- All tax provisions in the Minerals Law should be removed. The CIT should be amended as appropriate to reflect the tax regime for mining.
- In negotiating tax treaties Mongolia should strive to not reduce the 20 percent withholding tax rates on dividends and interest.
- Mining companies should be allowed to use dollar accounting for tax and financial purposes.
- The capital recovery rules for mining should be liberalized, as follows:

Depreciable Asset	Useful Life (in years)
Buildings	40
Vehicles	5
Plant and equipment	10
Computer, computer parts, and software	3
Intangible assets with indefinite useful life	10
Intangible assets with definite useful life (includes license for mining exploration and mining)	Valid period
Mining pre-operating expenses	5 years from commencement of production

- The 10 percent credit for investing in priority sectors should not be extended to mining if the loss carry-forward period is lengthened and the capital recovery rules liberalized.
- The loss carry-forward period should be lengthened to 7–10 years and the amount of the loss carryforward that can offset taxable income in a subsequent year should not be limited to 50 percent of taxable income.
- To limit excessive use of debt, interest on debt in excess of a 3:1 debt/equity ratio should not be deductible for tax purposes. This rule should apply to related party and unrelated party debt. This rule should apply to mining and non-mining companies.
- The definition of related party (Art. 6 of the CIT) needs to be broadened to cover companies that are owned or controlled directly or indirectly by the same interests. This change should apply to mining and non-mining companies.
- The tax deduction for funds accumulated in a special bank account for environmental protection should include both current and future environmental expenditures and mine closing costs.
- The fiscal regime for mining should be ring fenced license by license (or project by project) so that losses are not transferred among projects with the single exception—losses from unsuccessful exploration on relinquished areas should be allowed to offset income from successful projects.

IV. INDIRECT TAXES

Import duties

Mongolia introduced a single import duty rate of 5 percent in 1999; it was increased to 7 percent in 2001; and then reduced back to 5 percent at the beginning of 2002. A uniform, low tariff makes sense for a country such as Mongolia that cannot affect its terms of trade.

The customs law provides a number of exemptions, including an exemption for technological equipment and heavy machinery imported by foreign investors for use in priority sectors and export-oriented industries. Mining is designated as a priority sector.

Import duty exemptions for equipment (and supplies) are common in fiscal regimes for mining. These exemptions, particularly when duty rates are high, are important to the companies as they view these duties as an additional upfront cost. Mongolia's exemption does not include supplies and is therefore more restrictive than the duty exemptions offered by some other countries.

On balance, the mission would recommend that the current customs duty exemption be retained. It should not be expanded to cover supplies, such as fuel.

Export duties

Mongolia levies export duties on a limited number of products and has made commitments to WTO to eliminate these duties from January 1, 2007. Notwithstanding that, a draft bill has been prepared within the government which would significantly expand the list of goods subject to an export duty. The list includes all types of unprocessed minerals (except ash, residue and iron slag). The (tentative) tax rates are specific rates, based on quantity and not value. The rate for copper concentrate would be US\$15 per ton (about US\$0.02 per pound of pure copper).

Export duties are generally viewed as undesirable as they distort trade and draw resources into activities that are not internationally competitive. But presumably the supporters of the proposal to expand the list of goods subject to export duties want to encourage the local processing of minerals.

It was suggested to the mission that coal and iron ore producers sell products at below market prices and that an export tax would ensure that the government received appropriate tax revenue from these producers. But it should be understood that an export tax on commodities such as coal or iron ore can not be shifted forward to the buyers. The burden of the export tax would fall on Mongolia's producers.

Introducing export duties on minerals at this time would send the wrong signal. The mining industry already views the new windfall tax on gold and copper and government equity participation as making Mongolia's fiscal regime less competitive internationally. The export duty proposal should be dropped.

Value-added tax (VAT)

Mongolia adopted a new VAT law in 2006, which from the beginning of 2007 reduced the VAT rate from 15 to 10 percent and eliminated a number of exemptions, including the exemption, which is retained in the customs law, for technological equipment and heavy machinery imported by foreign investors for use in priority sectors and export-oriented industries. The mining sector now is treated for VAT purposes on par with other importers.

There are two potential problems: (i) prompt VAT refunds and (ii) VAT paid on inputs prior to registering for VAT.

As mining companies export most of their output and exports are zero-rated, they will be in a VAT refund situation. Their primary concern about the VAT will be that VAT refunds are paid promptly.³⁶ Many countries give VAT relief for imports of equipment and supplies by mining companies to reduce the need to pay refunds. If VAT refunds were paid promptly, this special provision would not be needed. But international experience is that many countries seem to have difficulty making timely refunds of VAT payments. As the VAT exemption for mining (and other priority sectors) was recently repealed, the mission would suggest that the situation regarding prompt payment of VAT refunds be monitored.

Under the new VAT law, a company must register for the VAT once sales exceed Tug 10 million per year. Unless a company is registered for VAT, it is not able to charge VAT on sales or claim a credit for VAT paid on purchases. As a result, mining companies are not able to claim a credit for VAT paid on inputs during the period the mine is being developed. It is quite common for countries to allow mining companies to claim a credit for VAT paid on inputs during the exploration and development period. The credit would be claimed once the mine commences production.

³⁶ Art. 14.6.2 of the VAT law allows the tax authority to credit the potential VAT refund against payments of other types of taxes due to the state or local budgets. It would be better if the tax authority paid refunds in a timely manner.

Excises

Mongolia's new excise tax law, effective from January 1, 2007, imposes excises on alcoholic beverages, tobacco products, gasoline and diesel fuel, automobiles, and gaming equipment. The excise rates for gasoline and diesel are as follows:

Gasoline (up to 90 octane)	US\$11 per ton
Gasoline (above 90 octane)	US\$12 per ton
Diesel	US\$15 per ton

The rates, which have been slashed by 75 percent, are about US\$0.01 per liter.³⁷ At these very low rates, the mining companies need no special relief from excises on fuel. An Investment Agreement that stabilizes taxes could guarantee that excises on imported fuels would not rise above, say, US\$0.04 a liter.

Recommendations

- Current customs duty exemption for technological equipment and heavy machinery imported by foreign investors in the mining sector should be retained.
- The proposal to introduce export duties on unprocessed minerals should be dropped.
- As the VAT exemption for imports by the mining sector has recently been repealed, the authorities should monitor the timely payment of VAT refunds.
- The government should consider allowing mining companies to claim a credit for VAT paid on inputs during the exploration and development period of the mine.
- Given the low excise rates levied on fuels, no relief for mining companies is warranted.

A. Fiscal Stability

Fiscal stability clauses are widespread in mining and petroleum contracts and are generally justified by: (1) the large size and the sunken nature of the initial investment, (2) a long period required to recover investment and earn a reasonable return, and (3) a lack of

³⁷ One ton of regular gasoline = 1,418 liters; one ton of premium gasoline = 1,353 liters; and one ton of diesel = 1,177 liters.

credibility on behalf of the host country to abstain from changing the fiscal rules—possibly singling out mining or petroleum—once the investment is sunk.

It can be argued that the need for a fiscal stability clause is less compelling under certain conditions: a history of sound fiscal management, statutory and effective corporate tax rates in line with international rates, low tariff rates and nonimposition of taxes that distort investment and production decisions (e.g., asset taxes, excises on machinery), non-discrimination between domestic and foreign investors, a low level of corruption, a transparent tax policy process, and a reasonably efficient tax administration.

In Mongolia a holder of a mining license who undertakes to invest at least US\$50 million during the first five years of its mining project can enter into an investment agreement with the government to provide a stable operational environment, including a stable tax environment clause.³⁸

The stability agreement that Mongolia negotiated with Boroo gold guarantees fiscal stability by reference to the laws in force on the effective date of the agreement. In effect, the agreement freezes the law. This is a common approach to fiscal stability agreements, but “current law,” which is frozen by the stability agreement, may contain unintended benefits. A possible example of an unintended benefit is the definition of related party in Article 6 of the CIT and the scope of the thin capitalization rule in Article 14.3 of the CIT. If current law is frozen, the investor will be able to rely on the loopholes in current law during the period of the stability agreement.

An alternative to the “frozen law” approach is an agreement to negotiate to maintain the economic equilibrium if there are any adverse changes. However, it is never clear cut just what offsetting change is needed to maintain equilibrium, as it involves the calculation of two tax amounts under varying assumptions as to future revenue and costs.

There are also some fiscal stability clauses that are asymmetric: protecting the investor from adverse changes to the fiscal terms but passing on benefits of reductions in tax rates or other changes beneficial to the taxpayer, such as more liberal rules for cost recovery. If fiscal stability is a one-way street and the government later wants to reduce tax rates and broaden the tax base, the company protected by the stability agreement will be entitled to the reduced rates but will not be subject to the provisions that broaden the tax base. This can make future tax reform very difficult, especially if large taxpayers are protected by stability agreements

³⁸ Under the prior law—the Minerals Law of 1997, the Stability Agreement (now known as the Investment Agreement) could only provide for stability of rates for a definite time period.

that entitle them to all beneficial tax changes. Moreover, investment decisions were made based on the tax regime that was fixed in the stability agreement. Conferring future beneficial tax benefits on these taxpayers would provide them with a windfall. If an investor wants a fiscal stability agreement, it should be a two-way street.

The government may want to consider a more limited stability agreement that would stabilize various tax rates and the capital recovery rules for the CIT and would guarantee that the tax rules would not be changed in a way that would discriminate against the mining sector. This would avoid some of the problems of frozen law bestowing unintended benefits. A stable tax environment does not require that all tax rules are frozen.

Recommendation

- Mongolia should continue to respect previously signed fiscal stability agreements. On a going forward basis, Mongolia should consider a more limited fiscal stability clause that might cover the capital recovery rules, the income and withholding tax rates, royalty rates, and a maximum rate on import duties. However, any tax law change that affects businesses generally (e.g., a change in the thin capitalization rules) and that do not discriminate against mining would apply.

V. STATE EQUITY

Government equity in mineral projects is an important political symbol in Mongolia, as it is in other countries. It can give the people, through their government, a sense of participating in the development of the country and sharing in the risks and rewards of mining projects.

The new Minerals Law provides that the state may participate up to 50 percent jointly with a private legal person in the exploitation of a minerals deposit of strategic importance³⁹ where State funded exploration was used to determine proven reserves (Article 5.4).⁴⁰ The State may own up to 34 percent of the shares of an investment to be made by a license holder in a mineral deposit of strategic importance where proven reserves were determined through funding sources other than the state budget (Article 5.5).⁴¹ The Minerals Law, however, does not specify the terms and conditions of the state equity (e.g., paid-up equity on commercial terms or some type of concessional interest).

The amount of state equity will be negotiated as part of the Investment Agreement. However, Parliament must approve the state's ownership percentage based on the size of the minerals deposit. It will likely be unable to do this outside the context of the entire agreement.

On the assumption that the government will want to take equity in strategic projects, this Chapter addresses what form the equity interest might take and the advantages and disadvantages of the various types of equity interests. Box 5 outlines the arguments against government taking equity in a project.

A. Single Purpose Company or a Joint Venture

The government's equity interest could take the form of shares in the Mongolian company that is the license holder, or the government and the license holder could form a joint venture. There are advantages and disadvantages to conducting a mining project through a single

³⁹ Art. 4.1.11 of the Mineral Law defines a "mineral deposit of strategic importance: as a deposit that may have a potential impact on national security, economic and social development of the country at the national and regional levels or that is producing or has the potential of producing more than five percent of total GDP in a given year." At the time of the mission, Parliament was considering a resolution that, if adopted, would designate 49 deposits as strategic deposits, which would allow the government to take an equity interest in the deposit.

⁴⁰ This language suggests that the mining project would be structured as a joint venture.

⁴¹ This language suggests that the mining project would be structured as a single purpose company.

purpose company (as contemplated in Art. 5.5 of the Minerals Law) or as a joint venture (as contemplated in Art. 5.4 of the Minerals Law).

If a single purpose company is used, an international mining company would establish a Mongolian company, for example, Mining Mongolia, Ltd. The government would acquire its equity in the project by acquiring shares in the Mining Mongolia. The advantage of a single purpose company is that it is the simplest and easiest structure for the tax administration. There is one taxpayer and a standardization of approach for tax purposes of all the transactions concerning and undertaken by that company. The position of the various shareholders, in their capacity as shareholders, will be different, but the transactions between the company and the shareholders will be few. The disadvantage of a single purpose company is that it restricts commercial flexibility when a project is undertaken by a consortium of foreign investors, rather than by a single investor.

Box 5. The Case against Government Equity

- When the government takes an ownership position, it exposes itself to risk. Although it may appear that a particular project will be highly successful, unexpected events, such as a fall in mineral prices, can turn a promising equity investment into a significant government liability.
- Taxation, possibly including an additional tax on highly profitable projects, may be more likely to maximize government revenue flow than an equity interest that looks to dividends which may never be paid.
- Equity may require the government to divert funds that otherwise could finance priority development projects.
- There can be a conflict between the government's role as a shareholder (or joint venture investor) and its role as a regulator. As a shareholder, the government will want to maximize its return from its investment. As a regulator, the government will want to ensure that the mining project fully complies with all government regulations.
- The government does not need shareholder representation to adequately monitor the project. Through the mining law or investment agreement, the government can insist that all relevant information be communicated to the government. Even if the government has an equity interest, the other owners can hold discussions and make critical decision without consulting the government participant.

In a joint venture structure, each investor is a “partner” in the joint venture.⁴² Under this structure, each investor will be free to raise its own finance on terms most appropriate to its worldwide operations. Each can take its product share and dispose of it how it wishes. This may increase abusive transfer pricing if an investor sells its share of production to a related party. (If a single purpose company is used, a shareholder who is a customer for the mineral produced would have to put in bids to the company for a share of the production against other independent prospective purchasers.)

Recommendation

- The authorities should facilitate joint ventures as the commercial flexibility offered by joint ventures can encourage participation in mining projects.

B. Forms of Equity Interests

The Oyu Tolgoi is a world class copper-gold deposit that was discovered by Ivanhoe. Given the important of this project to Mongolia—it has the potential of doubling the country’s annual GDP, the government plans to take a 34 percent equity interest, and negotiations are currently underway between the government and Ivanhoe. In considering various types of equity interests the government might take, several facts regarding this project should be kept in mind.

- Through end-2006, Ivanhoe has incurred \$400 million of costs to explore and to begin to develop the project.
- It is estimated that to complete construction of the mine, an additional \$1.4 billion of costs will need to be incurred.
- In the fall of 2006, Rio Tinto, the second largest mining company in the world, agreed to pay Ivanhoe Mines (IC), a Canadian company, US\$1.5 billion for a 34 percent holding in the company.⁴³ The main asset of Ivanhoe Mines Canada is its wholly-owned subsidiary, Ivanhoe Mines Mongolia (IMMI). The Rio Tinto purchase thus

⁴² The joint venture is an unincorporated legal entity. The term “joint venture” may refer to an entity that is incorporated. In the terminology used here, an incorporated joint venture would be a single purpose company.

⁴³ The first payment US\$303 million for 9.95 percent of the shares was made in October 2006. The second payment of US\$388 for an additional 9.95 percent holding is to be made when an acceptable Investment Agreement has been signed. If Rio Tinto exercises its warrants to acquire additional shares, the total investment will be approximately \$1.5 billion. Rio Tinto can acquire additional shares on the open market to bring its holdings in Ivanhoe Mines up to 40 percent. Rio Tinto has effective control of Ivanhoe Mines.

suggests that the market value of IC should be about US\$4.5 billion, once the purchase by Rio Tinto is complete (US\$1.5 billions is equal to about 34 percent of US\$4.5 billion).

- The value of IMMI would be about US\$3 billion. IC has a greater value than IMMI, as once the Rio Tinto purchase is complete, IC will have \$1.5 billion of cash on its balance sheet in addition to its holding of IMMI.
- In summary, Ivanhoe discovered a major copper-gold deposit, incurred \$400 million in costs, and developed an asset that is now valued at \$3 billion. To complete construction of the first phase will require an additional \$1.4 billion.

Government equity participation can take various forms: (i) working interest (ii) paid-up equity on concessional terms; (iii) a carried interest; (iv) tax swapped for equity; (v) equity in exchange for a non-cash contribution; and (vi) free equity.

Working interest (paid-up equity on commercial terms)

The government has a working interest if it acquires its equity on commercial terms. A working interest puts the government on a par with private investors in the project. In some countries (e.g., Nigeria in the case of large petroleum project), the government takes a working interest from the inception of the project. If the government takes a 40 percent interest, it puts up 40 percent of the costs and receives 40 percent of the rewards from the project.

If the government buys in on commercial terms after a mineral deposit has been discovered, it would acquire its working interest based on the market value of the project.

In the case of the Oyu Tolgoi project, if the government were to purchase a 34 percent equity interest on commercial terms, it would be making an investment of about US\$1.5 billion dollars, which is equal to 54 percent of the country's GDP in 2006. The government would likely need to borrow funds on the international market to pay for its equity interest. If the project were to have an unhappy ending, the government would still be liable for the outstanding debt.

During the development stage, the project will need an additional \$1.4 billion and the government may be required to contribute additional equity if it wants to maintain its 34 percent interest. Assuming the project is organized as a joint venture between the government and Ivanhoe Mines Mongolia, the government would need to meet its portion of the cash calls.

If the government purchases its equity on commercial terms, it can only expect a commercial return on its money. The purchase price should reflect the discounted present value of the expected future returns. Of course, the actual outcome could come out worse than expected, if copper prices are lower or the costs of mining are higher. Acquiring equity on commercial terms is the most risky type of equity participation.

Paid equity on concessional terms

In some countries; e.g., Papua New Guinea, the government has an option to acquire an equity interest in a mining project by paying a share of the costs already incurred. The government would exercise its option to invest only if the project is likely to be highly profitable. Of course, if the government takes paid equity on concessional terms, it affects the profitability of the project for the private investors.

In the case of the Oyu Tolgoi project, if the government could acquire its equity interest at cost, it would pay about \$135 million for a 34 percent interest. Of course, it would still be required to pay its share of the future development costs. Acquiring equity at cost would reduce the risk of the government investment.

Carried interest

When the government has a carried interest, the private partners agree to “carry” the government, which does not have to put up cash for its joint venture interest (or its equity shares in the case of a single purpose company). The government pays for its equity (plus interest on the carry) out of its share of production (or dividends). Until the carried interest is paid off; that is, crystallizes, the government does not receive its share of production (or dividends). If the project never earns sufficient profits for the government to pay for its carried interest, the government would not be liable for the unpaid debt. A carried interest is thus equivalent to a non-recourse loan.⁴⁴

A carried interest is less risky than a working interest or a concessional interest, as the government does not have to put up cash. A carried interest gives the government an opportunity to share in the upside of a project without having to share in the downside risk.

⁴⁴ A nonrecourse loan is a loan in which the lender’s security, or collateral, is confined to the project’s assets. If the borrower defaults, the lender can seize the collateral, but the lender has no “recourse” to the other assets of the borrower.

As the private investors are bearing the risk that the project will not be profitable, the interest charge on the carry may be higher than the rate at which the government could borrow on international markets.

Tax swapped for equity

In exchange for tax concessions, the government could receive equity in the project. For example, the government could pledge a portion of royalty payments or the windfall profit tax to pay for its equity. The government would be foregoing current royalty and/or tax revenue for the right to share in future production (in the case of a joint venture) or future dividends (in the case of a single purpose company).

Tax swapped for equity could be used to acquire equity on either commercial or concessional terms. When tax is swapped for equity, the government interest could crystallize only when the tax that would otherwise be payable is foregone. Alternatively, the other investors could agree to give the government equity in the project when the Investment Agreement is signed in exchange for reduced tax liabilities in the future.

Tax swapped for equity is not common. In Sierra Leone, the government received the right to obtain up to 30 percent of the equity shares in Sierra Rutile, a project which needed tax concessions (or new equity capital) to remain viable. It is not clear that the government will ever receive dividends because of the amount of subordinated debt on Sierra Rutile's balance sheet. The interest charge on this debt absorbs all the surplus cash generated by the project.

Equity in exchange for non-cash contribution

The government could acquire equity through non-cash contributions such as infrastructure facilities. The cost of these facilities would pay for the government's equity. When non-cash contributions are used to acquire equity, it is necessary to value them, which may be difficult. There is also the issue of whether the government non-cash contribution, such as regional roads, would normally be provided by the government and not the mining project. Moreover, if the government commits, for example, to construct roads for a mining project, it reallocates government financial and institutional resources and undermines the budget process.

Free equity

When the government receives free equity in a project, it assumes no financial obligations and it probably does not have management involvement in the project. If the project is sold, the government may or may not share in the proceeds of the sale, depending on how the free equity interest is drafted in the agreement between the government and the investor.

If the project is structured as a single purpose company, free equity is equivalent to a dividend withholding tax. That is, if the government has a 10 percent free equity interest, it receives 10 percent of the dividends paid. A dividend withholding tax would also give the government 10 percent of dividends paid.

Free equity is not very common.⁴⁵ It is, however, much less risky than other forms of equity interests as the government does not have to pay cash up front, agree to reduce future tax payments, or make non-cash contributions for its equity interest. Of course, if the government receives free equity, the profitability of the project for the private investors is reduced.

Recommendation

- The government should take a cautious approach to equity participation in strategic mining projects, including taking less than the maximum amount of equity allowed under the Minerals Law. It should look for ways (e.g., a carried equity interest) to minimize its risk from investing in these projects.

⁴⁵ State participation is 15 percent free equity in Guinea, 5 percent in Guyana, and 10 percent in Niger. Myanmar requires that a bidder for a contract should propose that the government receive at least 15 percent free equity.

VI. ADDITIONAL REVENUE-SHARING ARRANGEMENTS

Chapter III outlines a tax/royalty regime for future mining projects. The mission endorses a 5 percent royalty and a CIT with a 25 percent rate, generous cost recovery rules, and a 7–10 year loss carryforward. There remains the question of whether it would be useful to include in the regime, for future projects, some device that would capture a higher share of mineral rents for government where projects turn out to be more profitable than expected.

In 2006, Mongolia adopted the windfall profit tax to share in the upside of gold and copper prices when the prices of these minerals are high. This windfall tax could be viewed as government price participation. As originally proposed by the government, the tax would have applied only to sales of copper concentrate. Parliament extended the tax to gold sales.⁴⁶ At present, as outlined in Chapter I, the windfall tax is essentially an imposition on the Erdenet mine, which is owned by the governments of Russia and Mongolia. Some have suggested that the primary purpose of the windfall tax is to extract payments from Erdenet. However, the tax, as currently drafted, would also apply to Ivanhoe unless it exports refined copper. This would suggest that in addition to increasing the tax burden on Erdenet proponents of the windfall tax wanted to induce Ivanhoe to refine copper in Mongolia or pay the tax. This seems to be the view of senior officials in the MOF.

In this chapter we examine whether the windfall profit tax, in a modified form, would be an appropriate levy to ensure that the government shares in the upside of highly profitable projects. We also outline various alternatives that are profit-based in that they take into account both prices and costs (see appendix I). These alternatives may be more appropriate than the windfall tax for capturing a share of the upside of the most profitable projects, although they involve more administrative complexity. This suggests that the government may want to consider these alternatives as a preferable component of the future general regime for mining and may want to explore in the context of the Ivanhoe negotiations whether one of these alternatives should be used in place of the current windfall tax.

If an additional revenue sharing device is used, a number of principles are important:

- It should not increase the risk to investors of absolute loss or significant delay in achieving a required rate of return.

⁴⁶ Parliament did not extend the windfall tax to coal, which is the country's third largest mineral export. Although Mongolia has large coal deposits, the economic rents are likely to be lower than for copper and gold. This is in part reflected by the lower royalty rate for coal—2½ percent, compared to 5 percent for gold and copper.

- It should yield sufficient additional revenue for government in projects (and periods) of high profitability that it reassures government and the public about the fairness of the fiscal regime, thus contributing to stability of the investment climate.
- It should be rules-based and transparent in operation and reasonably straightforward to administer.
- It should not be open to significant tax planning or avoidance schemes, once in operation.
- It should not require or encourage case-by-case negotiation.

The discussion below assumes that the fiscal regime will be ring-fenced, license by license,⁴⁷ so that losses are not transferred among projects—with the single exception of losses from unsuccessful exploration on relinquished areas.

In addition to the windfall tax, the mission has reviewed three models for the government to share in the upside of a mining project: (i) a resource rent tax; (ii) excess profit tax based on Payback Ratio or “R Factor,” and (iii) a variable income tax.

A. The Windfall Tax

The windfall tax captures a higher share of the revenues accruing to copper and gold mining companies from high export prices. In the last 7 months of 2006, this tax raised 5½ percent of GDP. The tax is levied at a rate of 68 percent.

A major weakness of the windfall tax as an additional revenue sharing measure is that it does not take into account costs. There are other structural weaknesses, which should be addressed if the windfall tax is retained as part of the general fiscal regime: (i) the marginal tax burden is too high; (ii) the base is fixed in nominal terms; and (iii) the tax serves as a subsidy to build a domestic copper smelter and refinery.

⁴⁷ The Income Tax Act does not permit consolidation of related companies for income tax purposes, and this in practice ring fences projects that are not grouped under one company.

Rate of tax

Assuming a 5 percent royalty and a 25 percent CIT, the effect of the 68 percent windfall tax, makes the marginal tax rate on the additional dollar of income from a dollar increase in the gold or copper price almost 80 percent, as follows:

An additional dollar of income	1.0
Less royalty	.05
Less windfall tax	.68
Equals taxable income	.27
CIT	.0675
Total tax and royalty payments (before dividend withholding tax)	.7975

If the after-tax profits are distributed and subject to a 20 percent dividend withholding tax, the total tax burden is almost 84 percent. If the rate of the windfall tax were reduced possibly to 55 percent or less, the tax burden before the dividend withholding tax, which may be reduced by tax treaties, would be 70 percent, as follows:

An additional dollar of income	1.0
Less royalty	.05
Less windfall tax	.55
Equals taxable income	.40
CIT	.10
Total tax and royalty payments (before dividend withholding tax)	.70

The government capturing 70 percent of the marginal dollar—76 percent if the 20 percent dividend withholding tax applies—would be high for mining projects, and probably should apply only to a limited list of strategic copper and gold projects for which the government may elect to take an equity interest.

The base price

The base price—US\$2,600 per ton for copper and US\$500 per ounce—is set in nominal terms. The concept of windfall is difficult to define, but it could be viewed as a price that would allow the producer to recover costs and earn a reasonable profit margin. But as costs rise over time, the base should be adjusted, at least annually, to reflect rising costs. A common index for this purpose, used in some mineral contracts, is the US GDP deflator. By indexing the base by a cost index, the “windfall” subject to this tax would reflect both changing prices and changing costs.

Subsidy for domestic smelting and refining

In the case of copper, the windfall tax only applies to the export of copper concentrate. If the producer exports copper cathodes, the windfall tax would not apply.⁴⁸

This feature of the windfall tax can be viewed as a subsidy to building a copper refinery in Mongolia. The amount of the subsidy is uncertain as it depends on future copper prices and levels of production. There must be much better ways to provide a subsidy, if that is the government's policy. The government could provide rapid cost recovery for refineries.

Recommendation

- If the windfall tax is retained, it should apply only to a limited list of strategic projects for which the government may elect to take an equity interest; the rate should be reduced possibly to 55 percent or less; the base should be adjusted annually by the change in the US GDP deflator; and the tax should apply to all copper sales.

B. Other Alternatives

These alternatives, unlike the windfall tax, take into account costs and not just the price of the metal. For that reason they are more tied to the profitability of the project.

Resource rent tax (RRT)

The RRT is a proportional tax on discounted cash flow returns to total project outlays, in excess of a predetermined percentage rate. The predetermined rate is intended to represent a "minimum" required rate of return on a new project in the mining sector.⁴⁹ For tax calculation purposes the rate is sometimes called an "accumulation rate." The RRT is designed from the concept of "resource rent," meaning the surplus over all necessary capital and current costs of production including a reasonable return to the capital invested in the project.

⁴⁸ The copper mining company would not necessarily have to build its own refinery. It would be exempt from this tax if it exported copper cathodes refined in Mongolia by a third party.

⁴⁹ There are important technical issues about measuring the return at the point of the exploration decision or the point of the development decision. These issues are more important in the petroleum industry. Australia, for example, uses an RRT for offshore petroleum; the scheme (known as PRRT) offers higher rates of return to exploration expenditure than to development expenditure.

The main features of the RRT calculation are:

- RRT is a tax on cash flow, so all capital and operating expenditure, but not interest, is deducted from revenues as soon as it is made.
- The accumulation rate (a compound interest rate or annual uplift) is applied to the balance of net negative cash outlays, including all other taxes, (and usually including exploration expenditure on the project) each year from the commencement of construction.
- When the accumulated negative cash flows are fully offset by revenues, the positive balance of cash flow becomes taxable at the agreed or legislated rate of RRT.
- When the tax is paid in any year, the balance of accumulated cash flows is set at zero for the next year so that the same cash flows are not taxed twice; net positive cash flow in the next year will again be taxed at the RRT rate.⁵⁰
- The tax base for RRT is reconciled with the profit and loss account by adding back interest and depreciation to accounting profit; because the accumulation rate (representing an overall rate of return) covers both interest on debt and return to equity, the RRT is neutral with respect to the method of financing.

The procedure described treats company income tax as a deduction in arriving at RRT. It is equally possible to calculate RRT first and treat it as a deduction in calculation of income tax.

The RRT has gained a reputation in mining countries (though less so among petroleum exporters) as the tax that is not paid. This is sometimes, as in Ghana, because the accumulation rate was initially set by negotiation at an unrealistically high level.⁵¹ The higher this rate is set, the greater becomes the incentive for “gold-plating,” or excessive capital cost, in projects; in any case, as with normal company income tax, the capital cost risk in the tax lies with the government. In other cases (Papua New Guinea is an example) the accumulation rate has been realistic, but the intrinsic profitability of the projects concerned has turned out to be less than expected; the tax has therefore functioned properly, but perhaps with disappointment of public or political expectations.

⁵⁰ If in the next year the net cash flow is negative (e.g., due to new investment in the mine), the RRT paid in prior years is not refunded—that is, there is no carryback. However, RRT would not be paid in a subsequent year until accumulated negative cash flows are fully offset by revenues.

⁵¹ The tax was introduced in Ghana at an accumulation rate of 35 percent.

Excess profit tax based on Payback Ratio or “R Factor”

The tax base for an excess profit tax would be taxable income for purposes of the CIT less the income tax liability. The rate of the excess profit tax would depend on the R-Factor or Payback Ratio; namely the ratio of the company’s cumulative gross receipts (CGR) to the company’s cumulative gross outlays (CGO), which will include payments of the CIT if the calculation is to be made on an after-tax basis. When the ratio of CGR to CGO is less than one, payback has not been reached; as it grows to a greater multiple of the excess profit tax rate increases.

The R Factor differs from the rate of return method in that it does not take explicit account of the time value of money. Whether the ratio increases quickly or slowly does not matter in the calculation, the same excess profit tax rate is still triggered.

The following rate schedule could be proposed:

R Factor	Excess Profit Tax Rate (in percent)	Excess Profit Tax Rate + CIT Rate 1/ (in percent)
< 2	0	25
2 < 3	20	40
3 < 4	40	55
4 & >4	60	70

1/ Assumes the 25 percent CIT is deductible for purposes of the excess profit tax.

Variable income tax

The gold mining tax regime in South Africa for many years incorporated a formula that determined the tax rate each year and was designed to impose a lower-than-average rate of tax in years of poor relative profitability offset by a higher-than-average rate of tax in years of high relative profitability. The variable income tax retains all the other features of the regular income tax, including the special capital recovery rules for investments in the mining sector; it only adjusts the tax rate. The South African system was also adapted for use in the mining tax legislation of Namibia for non-diamond mines. The variable rate in Namibia was repealed in 2002 and replaced with a flat rate of 37.5 percent (compared to the standard rate of 35 percent). A variable income tax was introduced in Botswana in 1998.

The variable income tax was initially designed to encourage the mining of marginal ores which would otherwise be discarded. It also has the property that a mine which proves to have a relatively low ratio of profit to revenue will bear a lower tax burden; for some investors this possibility could reduce perceived risk and thus encourage investment. If required, the formula can be designed so that, on average across the mining sector, the effect of the tax is the same as the standard rate of income tax.

In principle, the variable tax system is less efficient than the RRT because it does not take direct account of the investor's required rate of return. Moreover, differential rates of income tax run the risk of tax arbitrage or transfer pricing problems.

APPENDIX I. MODELING FISCAL REGIMES FOR AN ILLUSTRATIVE MINERAL PROJECT

The mission has prepared a stylized model to illustrate the impact of various fiscal regimes on an illustrative Mongolian copper mine project. The copper mine project is designed to represent an underground copper mine in Mongolia, but not to portray any particular project under development. The model parameters are derived from staff estimates using available information on operating mines in Mongolia as well as other countries. The assumptions and results of the model have not been independently audited. All US dollar amounts referred to in the text are values at constant 2006 prices.

An illustrative copper mine

The copper mine example assumes a total production of 7.8 million tons of copper and 257 tons of gold over 25 years. Exploration and capital development costs amount to US\$1,675 million, which are phased over 3 years. After commencing production, the mine needs further capital development of US\$105 million over 2 years to reach a production capacity of 375,000 tons per year. The capital replacement costs of US\$2,673 million are evenly phased over the mine life. Mining and concentrating costs are assumed to be US\$300 per ton; and treatment and refining charges (TC/RC) are assumed to be equivalent to 25 percent of refined copper prices.⁵²

Table 6. Assumptions of an Illustrative Copper Mine

Description	Assumption
Reserve of ore	623 million tons
Average grade	1.5%
Recovery	85%
Total production	
Copper	7.79 million tons
Gold	257 tons
Mining cost	250 US\$ per ton 11.5 cents per pound
Concentrating cost	50 US\$ per ton 2.3 cents per pound
TC/RC	25% of refined copper price per ton
Exploration/Development costs	1,675 million US\$
Post production development costs	105 million US\$
Post production capital replacement costs	2,673 million US\$

Sources: Fund staff estimates.

⁵² The mission understands that Erdenet sells copper concentrates to Chinese smelting companies through several contractors usually under one-year contracts. Its cost of TC/RC has fluctuated in line with refined copper prices. It is not clear whether this reflects formal price participation agreements or market conditions—when copper prices are high, the demand for smelting and refining is high also.

Current fiscal regime

The current fiscal regime as described in Chapters I and III is simulated using the illustrative copper mine.⁵³ The key tax parameters are royalty (5 percent of gross revenue), the windfall tax (68 percent),⁵⁴ corporate income tax (25 percent), and a withholding tax on dividends (5 percent on foreign investors' share benefiting from a tax treaty). Other important tax parameters in the simulation include 2-year limited loss carry forward (limited to 50 percent of taxable income in each succeeding year) and no investment tax credit.⁵⁵ Government equity participation is not considered in the model.

The government share of the projected total benefits⁵⁶ at a 10 percent discount rate shows that the current regime is highly progressive, mostly due to the windfall tax (WFT) (Figure 4). The government share remains stable at around 33–35 percent of the total benefits until the pre-tax rate of return of the project reaches 32 percent (at a price of US\$2,800 per ton of copper).⁵⁷ Given the assumptions listed above, the pre-tax rate of return is varied solely by changing the copper price. Above a 32 percent of pre-tax rate of return, the WFT becomes increasingly progressive, and so does the overall fiscal regime. For example, the total government share (including customs duty, royalties, WFT, CIT, and dividend withholding tax (DWT)) reaches over 40 percent when the rate of return is 38 percent (at a price of US\$3,400 per ton of copper), 50 percent when the rate of return is 47 percent (at a price of US\$4,400 per ton of copper), and 59 percent when the rate of return is 60 percent (at a price of US\$6,000).⁵⁸

⁵³ Each simulation assumes that copper prices are constant in real terms over the life of mine. Given the asymmetric nature of the windfall tax, which applies only to the actual price in excess of the trigger price, the simulation results would be changed with stochastic copper prices assumed.

⁵⁴ The base prices of US\$2,600 for copper and US\$500 for gold are fixed in nominal terms, according to the current law.

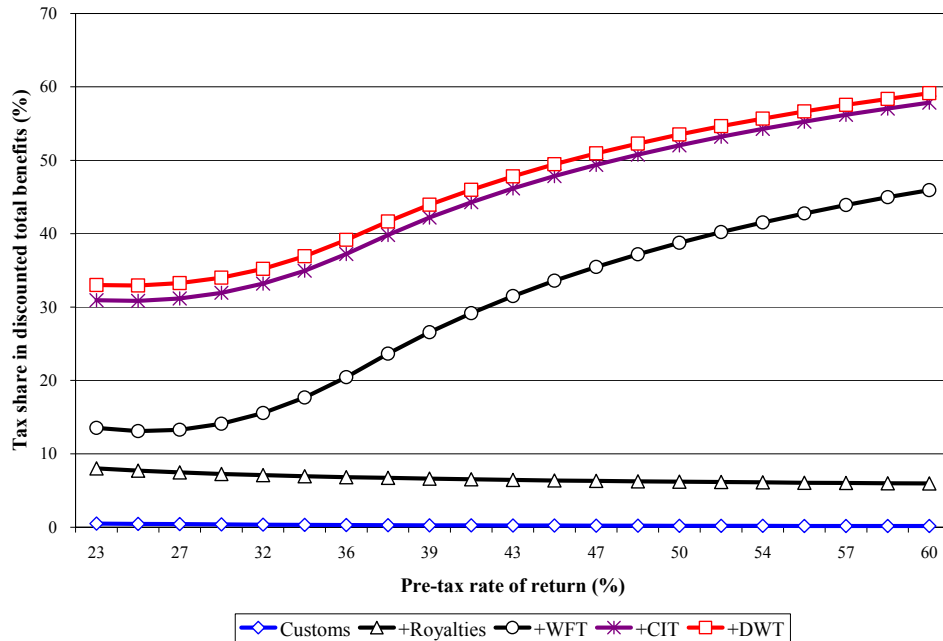
⁵⁵ According to the CIT law, a tax credit of 10 percent of investment costs shall be granted for investments in priority sectors. However, mining is not designated as a priority sector.

⁵⁶ Total benefits are defined as gross revenue less capital replacement costs, operating costs and TC/RC.

⁵⁷ At this price range, slightly progressive CIT and WFT offset regressive royalties, keeping the overall tax share stable.

⁵⁸ Over the period 1991–2006, annual copper prices have fluctuated between US\$1,750 and US\$6,700 per ton at constant 2006 US dollars with an average of US\$2,960 per ton.

Figure 4. Cumulative Tax Share in Percent of Total Benefits, Current Regime



Modification of the current fiscal regime

The model is also simulated to evaluate the impact of the changes to the fiscal regime on the government share in percent of total benefits. The following alternatives are evaluated:

- A modified windfall tax: its rate is lowered from 68 percent to 55 percent, and the base price is indexed to the US GDP deflator.
- Variable income tax: the corporate income tax rate varies with taxable income.

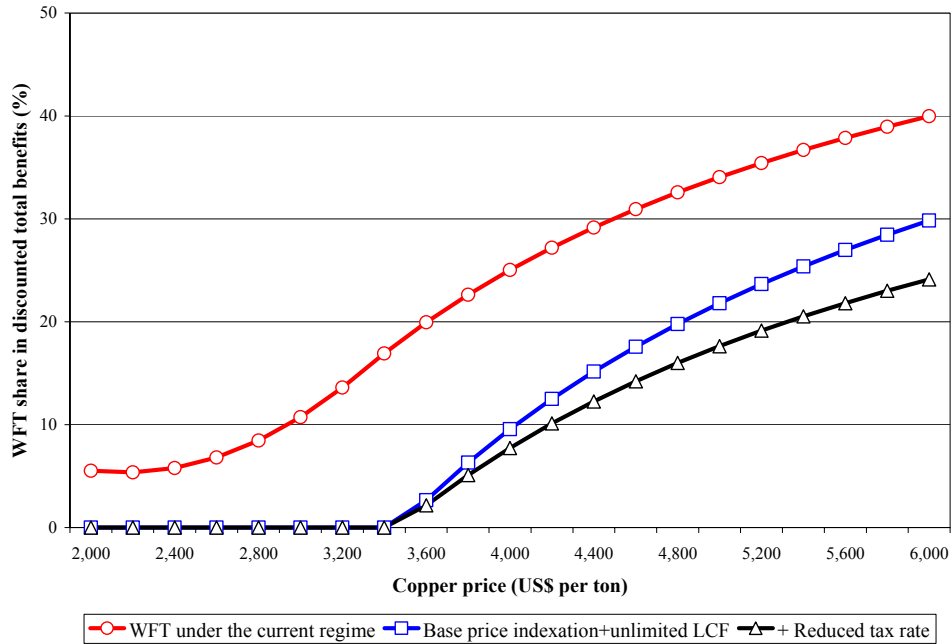
An unlimited loss carryforward is assumed in both regimes.

Modified windfall tax

The government share in the projected total benefits at a 10 percent discount rate is lower than under the current regime due to (i) a lower windfall tax rate, (ii) a fixed base price for the windfall tax in real terms, and (iii) an unlimited loss carryforward (LCF).⁵⁹

⁵⁹ The quantitative impact of an unlimited LCF is small, in particular, because the illustrative copper mining company is assumed to make profits within 4 years after developing the mine.

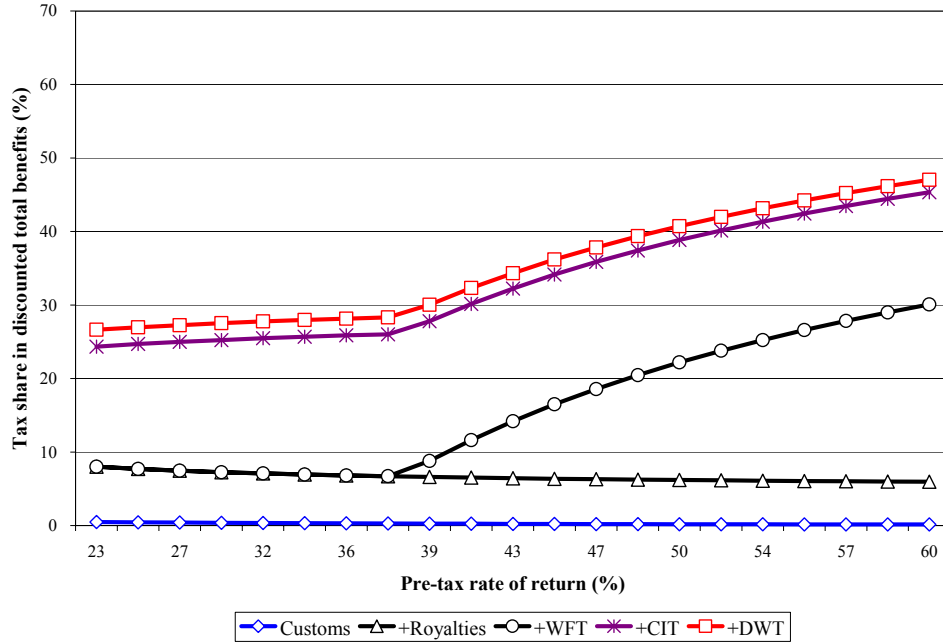
Figure 5. Windfall Tax Share in Percent of Total Benefits, Current Regime vs. Modified Windfall Tax



The reduction in tax burden in the modified windfall tax mainly results from the indexation of the base price to the US GDP deflator (Figure 5). For instance, when the copper price is US\$4,000 per ton, the share of windfall tax revenue falls from 25 percent under the current regime to about 10 percent with the base price indexed, and the share decreases further to about 8 percent when the rate is reduced to 55 percent.

However, the tax system remains highly progressive with the modification of windfall tax. Since the base price is indexed to the US GDP deflator, the windfall tax becomes effective when the actual copper price is higher than US\$3,600 per ton (with a 39 percent pre-tax rate of return in Figure 6). Until that point, the total government share remains stable at around 24–26 percent, where a slightly progressive income tax offsets regressive royalties. When the refined copper price is higher than the windfall tax threshold, the tax system becomes highly progressive, reaching nearly 50 percent of total benefits at a 60 percent pre-tax rate of return.

Figure 6. Cumulative Tax Share in Percent of Total Benefits,
Modified Windfall Tax



Variable income tax

Instead of a modified windfall tax, a variable income tax is introduced. The variable tax rate y is computed as follows:

$$y = a - (ab/x)$$

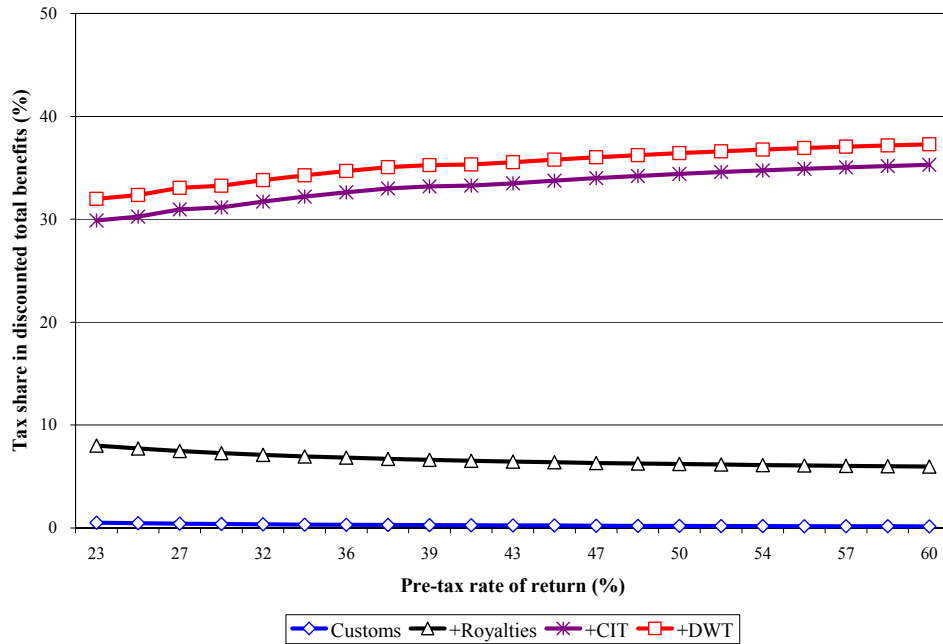
where

- a is the marginal tax rate, set at 40 percent.
- b is the portion of tax free revenue, set at 8 percent.
- x is the percentage ratio of taxable income to total income.

With the introduction of a variable income tax, the government share increases relative to the previous example for the price range below the windfall tax threshold (US\$3,600). However, this tax regime becomes less progressive than the previous example when the copper price is higher than the threshold, so that the government shares are contained below 40 percent in the entire price range under consideration. Compared with the current regime, this tax system is far less progressive: it provides around 32–33 percent (vs. 33–34 percent in the current regime) government share in the total benefits when the pre-tax rate of return is below

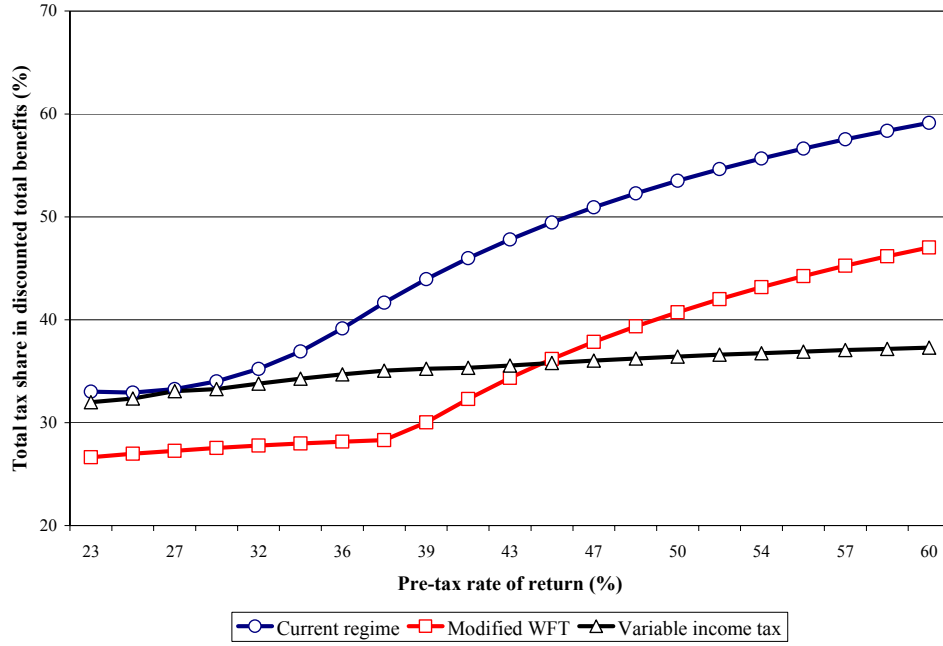
30 percent, while the government share reaches only 37 percent (vs. 59 percent in the current regime) when the rate of return is 60 percent.

Figure 7. Cumulative Tax Share in Percent of Total Benefits,
Variable Income Tax



The total government share in three different tax regimes is compared in Figure 8. In the range of pre-tax rate of return below 45 percent (at a price below US\$ 4,200 per ton), which would be more likely to include actual copper prices in the long run, the current regime is highly progressive and can secure more government share than the other alternatives. While the current regime is very effective in sharing in higher copper prices, the overall tax burden seems excessive, especially in the higher price range, which could undermine the competitiveness of the current mineral tax regime. The modified windfall tax rate is also effective in capturing a higher share of the revenues accruing to copper mining companies from high copper prices. However, the total tax share in the mining project seems somewhat low in the more likely range of copper prices, especially due to low CIT rate and generous cost recovery rules. On the other hand, while the variable income tax is not as progressive as the other two tax regimes, it can secure a reasonable tax share in the lower range of copper prices and provide a strong incentive for the investors by allowing higher shares to accrue to the mining companies when the project turns out to be highly profitable.

Figure 8. Total Tax Share in Percent of Total Benefits,
Comparison of Tax Regimes



Mongolia: Illustrative Copper Project, Current Regime,
Copper Price US\$2,000 per ton

Pre-tax internal rate of return	23.0%	Pre-tax NPV	8,931 (const \$ mn)			
Post-tax internal rate of return	11.7%	Post-tax NPV	3,419 (const \$ mn)			
Discount rate	0%	5%	8%			
Investor's net present value (const \$ mn)	3,419	1,219	528			
Government net present value (const \$ mn)	6,154	3,282	2,367			
Government share of net present value (%)	64%	73%	82%			
Total benefits (const \$ mn)	10,711	5,866	4,302			
Government share of total benefits (%)	57%	56%	55%			
Profit-investment ratio (%)	192%	73%	33%			
Capital expenditure (const \$ mn)	1,780	1,670	1,611			
			1,575			
			1,541			
Fiscal assumptions		Other assumptions				
Income tax rate	25%	Copper price:	0.9 dollar per pound			
Windfall tax rate	68%		2.0 thousand dollar per tonne			
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce			
Import tax rate on material costs	5%		16,077 thousand dollar per tonne			
Import tax rate on fuel	5%					
Contractors withholding tax	0%					
Royalty on net-back value	5.0%	Variable CIT rate	No			
Tax Revenues in Real Terms						
(\$ mn 2006 prices)		Customs	Royalty	Windfall	Income tax	Total
2008		6	10	2	-	18
2009		1	32	8	24	64
2010		1	33	11	45	91
2011		1	34	14	43	93
2012		1	36	17	72	126
2013		1	37	21	106	164
2014		1	38	24	111	174
2015		1	38	27	113	179
2016		1	38	30	115	184
2017		1	38	32	114	186
2018		1	38	35	114	187
2019		1	38	37	113	189
2020		1	38	39	113	191
2021		1	38	42	112	193
2022		1	38	44	111	195
2023		1	38	46	111	196
2024		1	38	48	110	198
2025		1	38	51	110	199
2026		1	38	53	109	201
2027		1	38	55	109	202
2028		1	38	57	108	204
2029		1	38	65	106	210
Totals		29	790	757	2,069	3,646

Mongolia: Illustrative Copper Project, Current Regime,
Copper Price US\$3,000 per ton

Pre-tax internal rate of return	33.6%	Pre-tax NPV	14,732 (const \$ mn)
Post-tax internal rate of return	19.2%	Post-tax NPV	7,029 (const \$ mn)
Discount rate	0%	5%	8%
Investor's net present value (const \$ mn)	7,029	3,111	1,886
Government net present value (const \$ mn)	10,210	5,400	3,879
Government share of net present value (%)	59%	63%	67%
Total benefits (const \$ mn)	16,512	9,069	6,665
Government share of total benefits (%)	62%	60%	58%
Profit-investment ratio (%)	395%	186%	117%
Capital expenditure (const \$ mn)	1,780	1,670	1,611
1,575	1,541		
Fiscal assumptions		Other assumptions	
Income tax rate	25%	Copper price:	1.4 dollar per pound
Windfall tax rate	68%		3.0 thousand dollar per tonne
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce
Import tax rate on material costs	5%		16,077 thousand dollar per tonne
Import tax rate on fuel	5%		
Contractors withholding tax	0%	Variable CIT rate	No
Royalty on net-back value	5.0%		
Tax Revenues in Real Terms			
(\$ mn 2006 prices)		Customs	Royalty
		Windfall	Income tax
			Total
2008	6	14	2
2009	1	43	8
2010	1	45	11
2011	1	47	14
2012	1	49	19
2013	1	50	36
2014	1	52	54
2015	1	52	70
2016	1	52	85
2017	1	52	101
2018	1	52	115
2019	1	52	130
2020	1	52	144
2021	1	52	158
2022	1	52	171
2023	1	52	184
2024	1	52	197
2025	1	52	210
2026	1	52	222
2027	1	52	234
2028	1	52	245
2029	1	52	257
Totals	29	1,082	2,666
			2,928
			6,705

Mongolia: Illustrative Copper Project, Current Regime,
Copper Price US\$4,000 per ton

Pre-tax internal rate of return	43.2%	Pre-tax NPV	20,534	(const \$ mn)		
Post-tax internal rate of return	28.4%	Post-tax NPV	11,672	(const \$ mn)		
Discount rate	0%	5%	8%	10%	12%	
Investor's net present value (const \$ mn)	11,672	5,666	3,766	2,883	2,207	
Government net present value (const \$ mn)	15,236	8,158	5,905	4,851	4,041	
Government share of net present value (%)	57%	59%	61%	63%	65%	
Total benefits (const \$ mn)	22,314	12,273	9,028	7,496	6,308	
Government share of total benefits (%)	68%	66%	65%	65%	64%	
Profit-investment ratio (%)	656%	339%	234%	183%	143%	
Capital expenditure (const \$ mn)	1,780	1,670	1,611	1,575	1,541	
Fiscal assumptions		Other assumptions				
Income tax rate	25%	Copper price:	1.8 dollar per pound			
Windfall tax rate	68%		4.0 thousand dollar per tonne			
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce			
Import tax rate on material costs	5%		16,077 thousand dollar per tonne			
Import tax rate on fuel	5%					
Contractors withholding tax	0%					
Royalty on net-back value	5.0%	Variable CIT rate	No			
Tax Revenues in Real Terms						
(\$ mn 2006 prices)		Customs	Royalty	Windfall	Income tax	Total
2008		6	18	37	-	61
2009		1	55	132	88	276
2010		1	57	153	124	337
2011		1	60	175	122	359
2012		1	62	198	151	412
2013		1	64	221	184	470
2014		1	66	245	188	500
2015		1	66	261	187	515
2016		1	66	277	186	530
2017		1	66	292	182	541
2018		1	66	307	178	552
2019		1	66	321	175	563
2020		1	66	335	171	574
2021		1	66	349	168	584
2022		1	66	362	164	594
2023		1	66	376	161	604
2024		1	66	388	158	614
2025		1	66	401	155	623
2026		1	66	413	152	632
2027		1	66	425	149	641
2028		1	66	436	146	650
2029		1	66	448	143	658
Totals		29	1,374	6,553	3,333	11,290

**Mongolia: Illustrative Copper Project, Modified Windfall Tax,
Copper Price US\$2,000 per ton**

Pre-tax internal rate of return	23.0%	Pre-tax NPV	8,931	(const \$ mn)		
Post-tax internal rate of return	11.3%	Post-tax NPV	3,088	(const \$ mn)		
Discount rate	0%	5%	8%	10%		
Investor's net present value (const \$ mn)	3,088	1,085	450	156 - 69		
Government net present value (const \$ mn)	5,716	3,043	2,191	1,792 1,486		
Government share of net present value (%)	65%	74%	83%	92% 105%		
Total benefits (const \$ mn)	10,711	5,866	4,302	3,565 2,994		
Government share of total benefits (%)	53%	52%	51%	50% 50%		
Profit-investment ratio (%)	174%	65%	28%	10% -4%		
Capital expenditure (const \$ mn)	1,780	1,670	1,611	1,575 1,541		
Fiscal assumptions		Other assumptions				
Income tax rate	25%	Copper price:	0.9 dollar per pound			
Windfall tax rate	55%		2.0 thousand dollar per tonne			
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce			
Import tax rate on material costs	5%		16,077 thousand dollar per tonne			
Import tax rate on fuel	5%					
Contractors withholding tax	0%	Variable CIT rate	No			
Royalty on net-back value	5.0%					
Tax Revenues in Real Terms						
(\$ mn 2006 prices)		Customs	Royalty	Windfall	Income tax	Total
2008		6	10	-	-	17
2009		1	32	-	-	33
2010		1	33	-	-	34
2011		1	34	-	-	36
2012		1	36	-	67	104
2013		1	37	-	111	149
2014		1	38	-	117	156
2015		1	38	-	120	159
2016		1	38	-	122	161
2017		1	38	-	122	161
2018		1	38	-	122	161
2019		1	38	-	122	161
2020		1	38	-	122	161
2021		1	38	-	122	161
2022		1	38	-	122	161
2023		1	38	-	122	161
2024		1	38	-	122	161
2025		1	38	-	122	161
2026		1	38	-	122	161
2027		1	38	-	122	161
2028		1	38	-	122	161
2029		1	38	-	122	161
Totals		29	790	-	2,129	2,948

Mongolia: Illustrative Copper Project, Modified Windfall Tax,
Copper Price US\$3,000 per ton

Pre-tax internal rate of return	33.6%	Pre-tax NPV	14,732 (const \$ mn)
Post-tax internal rate of return	18.1%	Post-tax NPV	5,639 (const \$ mn)
Discount rate	0%	5%	8%
Investor's net present value (const \$ mn)	5,639	2,507	1,040
Government net present value (const \$ mn)	8,898	4,785	2,850
Government share of net present value (%)	61%	66%	73%
Total benefits (const \$ mn)	16,512	9,069	5,530
Government share of total benefits (%)	54%	53%	52%
Profit-investment ratio (%)	317%	150%	94%
Capital expenditure (const \$ mn)	1,780	1,670	1,575
Fiscal assumptions		Other assumptions	
Income tax rate	25%	Copper price:	1.4 dollar per pound
Windfall tax rate	55%		3.0 thousand dollar per tonne
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce
Import tax rate on material costs	5%		16,077 thousand dollar per tonne
Import tax rate on fuel	5%		
Contractors withholding tax	0%		
Royalty on net-back value	5.0%	Variable CIT rate	No
Tax Revenues in Real Terms			
(\$ mn 2006 prices)		Customs	Royalty
		Windfall	Income tax
			Total
2008	6	14	-
2009	1	43	-
2010	1	45	71
2011	1	47	106
2012	1	49	139
2013	1	50	175
2014	1	52	183
2015	1	52	186
2016	1	52	189
2017	1	52	189
2018	1	52	189
2019	1	52	189
2020	1	52	189
2021	1	52	189
2022	1	52	189
2023	1	52	189
2024	1	52	189
2025	1	52	189
2026	1	52	189
2027	1	52	189
2028	1	52	189
2029	1	52	189
Totals	29	1,082	-
			3,502
			4,613

**Mongolia: Illustrative Copper Project, Modified Windfall Tax,
Copper Price US\$4,000 per Ton**

Pre-tax internal rate of return	43.2%	Pre-tax NPV	20,534	(const \$ mn)		
Post-tax internal rate of return	26.0%	Post-tax NPV	9,109	(const \$ mn)		
Discount rate	0%	5%	8%	10%	12%	
Investor's net present value (const \$ mn)	9,109	4,431	2,931	2,227	1,685	
Government net present value (const \$ mn)	12,896	6,985	5,086	4,193	3,504	
Government share of net present value (%)	59%	61%	63%	65%	68%	
Total benefits (const \$ mn)	22,314	12,273	9,028	7,496	6,308	
Government share of total benefits (%)	58%	57%	56%	56%	56%	
Profit-investment ratio (%)	512%	265%	182%	141%	109%	
Capital expenditure (const \$ mn)	1,780	1,670	1,611	1,575	1,541	
Fiscal assumptions		Other assumptions				
Income tax rate	25%	Copper price:	1.8 dollar per pound			
Windfall tax rate	55%		4.0 thousand dollar per tonne			
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce			
Import tax rate on material costs	5%		16,077 thousand dollar per tonne			
Import tax rate on fuel	5%					
Contractors withholding tax	0%	Variable CIT rate	No			
Royalty on net-back value	5.0%					
Tax Revenues in Real Terms						
(\$ mn 2006 prices)						
		Customs	Royalty	Windfall	Income tax	Total
2008		6	18	22	-	46
2009		1	55	69	15	139
2010		1	57	72	145	275
2011		1	60	74	148	283
2012		1	62	77	181	321
2013		1	64	80	219	364
2014		1	66	83	229	378
2015		1	66	83	232	381
2016		1	66	83	234	384
2017		1	66	83	234	384
2018		1	66	83	234	384
2019		1	66	83	234	384
2020		1	66	83	234	384
2021		1	66	83	234	384
2022		1	66	83	234	384
2023		1	66	83	234	384
2024		1	66	83	234	384
2025		1	66	83	234	384
2026		1	66	83	234	384
2027		1	66	83	234	384
2028		1	66	83	234	384
2029		1	66	83	234	384
Totals		29	1,374	1,713	4,450	7,567

**Mongolia: Illustrative Copper Project, Variable Income Tax,
Copper Price US\$2,000 per ton**

Pre-tax internal rate of return	23.0%	Pre-tax NPV	8,931 (const \$ mn)			
Post-tax internal rate of return	10.3%	Post-tax NPV	2,641 (const \$ mn)			
Discount rate	0%	5%	8%			
Investor's net present value (const \$ mn)	2,641	863	298			
Government net present value (const \$ mn)	6,176	3,271	2,347			
Government share of net present value (%)	70%	79%	89%			
Total benefits (const \$ mn)	10,711	5,866	4,302			
Government share of total benefits (%)	58%	56%	55%			
Profit-investment ratio (%)	148%	52%	18%			
Capital expenditure (const \$ mn)	1,780	1,670	1,611			
			1,575			
			1,541			
Fiscal assumptions		Other assumptions				
Income tax rate	33.7%	Copper price:	0.9 dollar per pound			
Windfall tax rate	0%		2.0 thousand dollar per tonne			
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce			
Import tax rate on material costs	5%		16,077 thousand dollar per tonne			
Import tax rate on fuel	5%					
Contractors withholding tax	0%					
Royalty on net-back value	5.0%	Variable CIT rate: a=40%, b=8%				
Tax Revenues in Real Terms						
(\$ mn 2006 prices)		Customs	Royalty	Windfall	Income tax	Total
2008		6	10	-	-	17
2009		1	32	-	-	33
2010		1	33	-	-	34
2011		1	34	-	-	36
2012		1	36	-	80	116
2013		1	37	-	148	186
2014		1	38	-	156	196
2015		1	38	-	161	200
2016		1	38	-	166	205
2017		1	38	-	166	205
2018		1	38	-	166	205
2019		1	38	-	166	205
2020		1	38	-	166	205
2021		1	38	-	166	205
2022		1	38	-	166	205
2023		1	38	-	166	205
2024		1	38	-	166	205
2025		1	38	-	166	205
2026		1	38	-	166	205
2027		1	38	-	166	205
2028		1	38	-	166	205
2029		1	38	-	166	205
Totals		29	790	-	2,863	3,682

**Mongolia: Illustrative Copper Project, Variable Income Tax,
Copper Price US\$3,000 per ton**

Pre-tax internal rate of return	33.6%	Pre-tax NPV	14,732	(const \$ mn)		
Post-tax internal rate of return	16.8%	Post-tax NPV	4,865	(const \$ mn)		
Discount rate	0%	5%	8%	10%	12%	
Investor's net present value (const \$ mn)	4,865	2,113	1,233	821	504	
Government net present value (const \$ mn)	9,694	5,190	3,750	3,076	2,556	
Government share of net present value (%)	67%	71%	75%	79%	84%	
Total benefits (const \$ mn)	16,512	9,069	6,665	5,530	4,651	
Government share of total benefits (%)	59%	57%	56%	56%	55%	
Profit-investment ratio (%)	273%	127%	77%	52%	33%	
Capital expenditure (const \$ mn)	1,780	1,670	1,611	1,575	1,541	
Fiscal assumptions		Other assumptions				
Income tax rate	34.1%	Copper price:	1.4 dollar per pound			
Windfall tax rate	0%		3.0 thousand dollar per tonne			
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce			
Import tax rate on material costs	5%		16,077 thousand dollar per tonne			
Import tax rate on fuel	5%					
Contractors withholding tax	0%					
Royalty on net-back value	5.0%		Variable CIT rate: a=40%, b=8%			
Tax Revenues in Real Terms						
(\$ mn 2006 prices)		Customs	Royalty	Windfall	Income tax	Total
2008		6	14	-	-	20
2009		1	43	-	-	44
2010		1	45	-	77	123
2011		1	47	-	132	181
2012		1	49	-	182	232
2013		1	50	-	239	291
2014		1	52	-	251	304
2015		1	52	-	255	308
2016		1	52	-	260	313
2017		1	52	-	260	313
2018		1	52	-	260	313
2019		1	52	-	260	313
2020		1	52	-	260	313
2021		1	52	-	260	313
2022		1	52	-	260	313
2023		1	52	-	260	313
2024		1	52	-	260	313
2025		1	52	-	260	313
2026		1	52	-	260	313
2027		1	52	-	260	313
2028		1	52	-	260	313
2029		1	52	-	260	313
Totals		29	1,082	-	4,771	5,882

Mongolia: Illustrative Copper Project, Variable Income Tax,
Copper Price US\$4,000 per ton

Pre-tax internal rate of return	43.2%	Pre-tax NPV	20,534	(const \$ mn)		
Post-tax internal rate of return	22.5%	Post-tax NPV	7,082	(const \$ mn)		
Discount rate	0%	5%	8%	10%		
Investor's net present value (const \$ mn)	7,082	3,356	2,159	1,597		
Government net present value (const \$ mn)	13,218	7,118	5,162	4,245		
Government share of net present value (%)	65%	68%	71%	73%		
Total benefits (const \$ mn)	22,314	12,273	9,028	7,496		
Government share of total benefits (%)	59%	58%	57%	57%		
Profit-investment ratio (%)	398%	201%	134%	101%		
Capital expenditure (const \$ mn)	1,780	1,670	1,611	1,575		
Fiscal assumptions		Other assumptions				
Income tax rate	34.4%	Copper price:	1.8 dollar per pound			
Windfall tax rate	0%		4.0 thousand dollar per tonne			
Import tax rate on expl costs	0%	Gold price:	500 dollar per ounce			
Import tax rate on material costs	5%		16,077 thousand dollar per tonne			
Import tax rate on fuel	5%					
Contractors withholding tax	0%					
Royalty on net-back value	5.0%	Variable CIT rate: a=40%, b=8%				
Tax Revenues in Real Terms						
(\$ mn 2006 prices)		Customs	Royalty	Windfall	Income tax	Total
2008		6	18	-	-	24
2009		1	55	-	14	70
2010		1	57	-	213	272
2011		1	60	-	217	278
2012		1	62	-	270	333
2013		1	64	-	330	395
2014		1	66	-	345	412
2015		1	66	-	349	417
2016		1	66	-	354	421
2017		1	66	-	354	421
2018		1	66	-	354	421
2019		1	66	-	354	421
2020		1	66	-	354	421
2021		1	66	-	354	421
2022		1	66	-	354	421
2023		1	66	-	354	421
2024		1	66	-	354	421
2025		1	66	-	354	421
2026		1	66	-	354	421
2027		1	66	-	354	421
2028		1	66	-	354	421
2029		1	66	-	354	421
Totals		29	1,374	-	6,691	8,095

**APPENDIX II. COMMENTS ON “PROCEDURE FOR CALCULATING
SELLING PRICES OF MINERALS”**

General comments

1. What is the purpose of the Procedure? Does it establish the selling price for income tax purposes, royalty purposes, and windfall tax purposes?
2. It is not clear that the same procedure can be used for all three purposes. The income tax law accepts actual prices for arm’s length transactions and has a separate (but defective) transfer price rule for sales between dependent parties. For royalties, the Minerals Law provides that the sales price for exported products shall be determined by the average monthly prices of the products, or similar products, based on the regularly published international market or on recognized principles of international trade (Art. 47.2.1). Finally, the windfall tax, use the LME price for copper and the Bank of Mongolia (BOM) price for gold, which is the London PM fix of the previous day.
3. Is the intention to apply the Procedure only when there are related party transactions? The language in the Procedure is completely general. The answer to this question may vary depending on whether the Procedure is being used for income tax, royalty, or windfall tax purposes.
4. Usually an arm’s length price is the best indicator of the fair market value of the goods or services, which would suggest that the Procedure should be limited to related party transactions, unless the relevant legislation requires otherwise. As indicated above, the royalty and windfall tax legislation require norm prices, but possibly calculated in different ways. *The “norm” selling price should not be used for income tax purposes when there is an arm’s length transaction.*
5. Art. 2.9 provides a rule for all other minerals. The sales price will be based on the domestic market price of the importer. Presumably there are other minerals that may be produced domestically and not imported. How are these handled? It is not clear that the General Department of National Taxation will be able to compile price information on a quarterly basis.
6. Art. 2.10 suggest if produced minerals are sold at a price lower than the international price, the tax office shall re-calculate the sales price of the mineral in accordance with this Procedure. If the contrary is true, will the tax office use the taxpayer’s actual price? If this is so, the “norm” price is a floor, and the Procedure is a check-price system under which the sales price is the higher of the norm price or the actual price. It may contradict Art. 47.2.1 of the Minerals Law, which provides, in effect, that “norm” prices, and not actual prices, will be used in calculating royalties.

7. Many minerals are sold on term contracts, and the arm's length price for a term contract may differ from the arm's length price for a spot contract. Art. 2.11 of the draft Procedure suggests that the price determined under the Procedure will govern. It would be desirable to have examples to illustrate what is meant by "the taxable income shall not be deducted for this purpose." Is the draft Procedure saying that taxable income should be adjusted to reflect the difference or should not be adjusted to take account of the difference?
8. Art. 2.12 seems redundant with Art. 2.10. What is the difference between "produced minerals" in Art. 2.10 and "other minerals" in Art. 2.12?
9. Art. 3.2 and Art. 3.3 put a 25-percent ceiling on smelting and refining costs. This appears arbitrary. Art. 2.4 and Art. 2.7 would suggest that actual smelting and refining costs should be deducted. When calculating the "sales price" of copper concentrate and zinc concentrate, the Procedure could require that international market prices should be used for the costs of smelting and refining, and not the taxpayer's declared costs.

Prices for specific minerals

1. *Gold.* The London afternoon gold price fixing (London PM fix) is used as a reference (spot) gold price around the world. There is also a morning fixing, but as the afternoon fixing takes place when both the US market and the European (e.g., Zurich), Middle Eastern and African markets are still trading, it tends to be the most liquid period during the day. Many long-term contracts will be priced on the basis of either the morning or afternoon London fix, and the market will usually refer to one or other of these prices when looking for a basis for valuations.

Despite its name, the fixing process closely resembles an open auction process, with offers and bids netted off throughout the market before the final bidding process is conducted during the fix itself, as described in detail below. The fix is executed on a single price. This price is quoted in US dollars. Where the gold price is presented in currencies other than the US dollar, it is converted into the local currency unit using the foreign exchange rate closing price on the same day. (World Gold Council, www.gold.org, London Bullion Market Association, www.lbma.org.uk).

2. *Copper.* World copper markets are London Metal Exchange (LME) and New York Mercantile Exchange (NYMEX). The more quoted spot reference price comes from LME: the cash seller and settlement spot price for copper grade A.
3. *Copper Concentrate.* The value of copper concentrate can be obtained by subtracting the treatment and refining charges (TC and RC) from the (refined) copper price. There are spot and annual TC/RC markets in Japan and a spot market in Shanghai.

The annual market includes a price participation (PP) element by which smelters share part of increases in copper prices. There can be sizable differences between the prices quoted in the annual and spot markets, which suggests that the impact of imposing a uniform reference tax price to all transactions would be significant (see table below).

Copper Concentrate Market: TC/RCs c.i.f. Japan/Pacific Rim

		2005				2006		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3
Annual	TC/RC/PP (c/lb)	27.7	28.3	37.0	39.5	37.4	48.1	21.4
Spot	TC/RC (c/lb)	38.1	42.3	38.1	37.6	32.5	18.4	9.4
Difference	Spot- Annual (c/lb)	10.4	14.0	1.1	-1.9	-4.9	-29.7	-12.0

Source: CRU International Ltd. www.crumonitor.com.

The equilibrium in the refined copper market is the one that drives both products. The netback from copper prices is traditionally determined in negotiations between copper concentrate producers and smelters. Transportation costs might also have to be deducted to get the price of copper concentrate. There seem to be several distortions in world markets to the advantage of Indian (high import tariffs on cathodes) and Chinese smelters. In China, there have been reports of collusive behavior by their smelters.

4. *Coal*. The majority of coal is either utilized in power generation (steam coal or lignite) or iron and steel production (coking coal). Coal is readily available from a wide variety of sources in a well-supplied worldwide market. Transportation costs account for a large share of the total delivered price of coal; therefore, international trade in steam coal is effectively divided into two regional markets:
- the Atlantic market, made up of importing countries in Western Europe, notably the UK, Germany and Spain; and,
 - the Pacific market, which consists of developing and OECD Asian importers, notably Japan, Korea and Chinese Taipei.

The Pacific market currently accounts for about 60 percent of world seaborne steam coal trade. By contrast, international coking coal trade is limited. Coking coal is more expensive than steam coal.

BP Statistical Review of the World Energy provides the following coal pricing information:

- Northwest Europe marker price
- US Central Appalachian coal spot price index (CAPP 12,500 BTU, 1.2 SO₂ coal) from NYMEX
- Japan coking coal import cif price
- Japan steam coal import cif price

The Paris-based International Energy Agency (IEA) maintains annual and quarterly time series of steam and coking coal import prices.

The mission was not able to find a standard source for price information on the Chinese market for coal, which is the most relevant market for Mongolian coal.

5. *Zinc Concentrate*. The main world reference spot price for zinc is the LME, high grade 98 percent pure zinc price, cif, UK ports. As in the case of copper, the spot cash seller and settlement price can be specifically used as the reference price of zinc. It is not easy to find references to markets for zinc TC/RC. A 2005 report on zinc markets in Asia-Pacific suggested that zinc smelters and zinc mines negotiate base TC/RC once a year, with actual TC/RC being determined by the base TC/RC plus/minus 15 percent of zinc-price changes from the base zinc price.
6. *Lead*. LME has a 99.97 percent minimum purity lead spot price, cif for European ports. Cash seller and settlement price.
7. *Tin*. LME, standard grade tin spot price. Cash seller and settlement price.
8. *Nickel*. LME, primary nickel of 99.8 percent minimum purity, spot price. Cash seller and settlement price.
9. *Aluminum*. LME, standard grade aluminum, minimum 99.7 percent purity, spot price. Cash seller and settlement price.
10. *Iron ore*. Two iron ore price lists, one for prices of ore to Europe and the other for prices to Japan are widely published. These prices are usually set during lengthy negotiations between Brazilian iron ore producers and German steelmakers and between Australian producers and Japanese steelmakers. The unit pricing system is used with iron ore to accommodate variations in iron content. Prices are quoted in U.S. cents per ton unit of iron. A unit is 1/100, or 1 percent, of the weight of a ton of iron so that 1 metric ton unit corresponds to 1/100th of a metric ton. This means that a steelmaker that buys 1 ton of ore that is about 65 percent iron is paying for 1 ton of iron contained in that ore and will receive about 1½ tons of ore. The IMF World Economic Outlook (WEO) reports the Brazilian iron ore's contract price to Europe, fob, 67.55 percent iron content.