An independent analysis of the 2006 draft royalty bill for the South African mineral and petroleum sectors

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Transaction Paper

Synopsis

This paper reviews the Mineral and Petroleum Resources Royalty Bill of 2006, identifies potential areas that require further consideration by the National Treasury and, where appropriate, offers alternatives. At its basic level a royalty regime consists of two elements: the base and the rate that must be applied to the base. Deciding on an acceptable royalty rate is a complex matter and can be done only after extensive analysis of all variables affecting the competitiveness of the regime. The proposed royalty rates are in the range of zero to five per cent and are based on sales revenue. It is argued that future investment patterns are more likely to be influenced by market cycles and commodity prices than policy events. Inevitably the current boom in the minerals sector will come to an end and the success of the proposed regime will be known only when profit margins are under pressure. Policy makers must therefore have the long run in mind when developing policies that affect the ability of industry to do business, without the need to renegotiate each time there is a change in the market. A long-run policy must be sufficiently flexible to allow for consistently fair sharing ratios and splitting of revenues between government and industry. Although broadly in line with international practice, the current version cannot be regarded as internationally competitive and efficient. In order for the royalty bill to become internationally competitive, promote beneficiation of mineral production and adequately compensate the State for the loss of a national resource, the National Treasury should heed the following main recommendations in this review:

1. **Abandon the notion that each mineral product must have its own royalty rate;**
2. **Introduce an NSR type royalty that allows for value-addition costs to be deducted from the base; and**
3. **Provide for automatic relief through the use of a sliding-scale mechanism based on ability to pay, e.g. the X-Factor used in the gold mining tax formula.**

Introduction

The 2006 Draft Mineral and Petroleum Resources Royalty Bill (MPRRB, 2006) was released on 11 October 2006. This is the second attempt to establish a Money Bill (Section 73(2) of the South African Constitution empowers the Minister of Finance to develop Money Bills, hence the involvement of the National Treasury) to compensate the State for the depletion of non-renewable national mineral resources by mining companies. The first attempt was called the Draft Mineral and Petroleum Royalty Bill of 2003 (MPRB, 2003). The 2003 draft was no doubt an improvement on the historic regime, which allowed for site-specific royalties to be negotiated with the Department of Minerals and Energy (DME) in the case of state-owned mineral rights. The past system also had inadequate controls to allow for effective governance during the calculation and collection of royalty payments to the State. Despite these improvements, the 2003 Bill was criticized (there were several submissions by a wide range of stakeholders that expressed the same or similar concerns) for the following reasons:

- The questionable motive of the fiscal stabilization clause, which required a premium payable to the South African Revenue Services (SARS) when companies wanted to secure their royalty rates for the life of the mine. The underlying message was that National Treasury's intention from the outset was to raise the rates over the long run
- Disregard for the fundamental economic principle called ability to pay. The 2003 draft bill took an all-or-nothing approach by exempting some companies from all royalties while others had to pay a specified rate on sales value. This was interpreted as an incentive to work inefficiently. In addition, the discretion required for such exemption would have added to the complexity of the royalty regime
- The unintended consequence that would have resulted from the definition of the royalty based on sales value (after

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beneficiation) was that companies adding value to mineral production would have been penalized through higher royalty payments. While costs directly linked to beneficiation were not considered as an expense for determining the base of the royalty, the additional revenue as a result of value addition was made subject to the royalty. This 'penalty' on beneficiated minerals meant that the first draft was not aligned with the vision of the National Mineral Policy (NMP, 1998), which encouraged value addition of minerals through the proposed use of incentive measures. By collecting more revenue from minerals in their beneficiated state, with no provision to deduct the significant expenses required to raise product value, the royalty regime proposed in 2003 indirectly discouraged the beneficiation of mineral production

- There was mineral discrimination through having higher rates for some minerals while exempting others from royalties. This approach incorrectly assumes uniqueness is determined by commodity type and is popular with governments who do not have the capacity to administer regimes that are profits-based. It further disregards the fact that uniqueness is a function of market price and cost of delivery to the market and not mineral type.

What has changed from 2003 to 2006? First, the National Treasury removed the uncertainty surrounding the stabilization clause by replacing it with an assurance that the rates will not increase over the life of the development right. Second, the problems associated with the ability-to-pay and discretion for exemption were partially addressed by the Relief Section in the 2006 version. The automatic reduction of royalty payments when profits approach zero is certainly a step in the right direction. Third, the fundamental problem of not allowing the additional costs associated with product value addition to be deducted before applying the royalty rate has not been addressed.

This paper reviews the MPRRB, identifies potential areas that require further consideration by the National Treasury and, where appropriate, offers alternatives. The main section headings of the MPRRB and the newly proposed rates are indicated in Appendix A. The rates range from zero to five per cent and are based on sales revenue. The media statement that accompanied the announcement of the MPRRB stated that the purpose of the Bill is to give effect to the objectives of the Mineral and Petroleum Resources Development Act (MPRDA, 2002), which is the principal Act for mineral development in South Africa (SA). The statement also made it clear that the National Treasury had considered the feedback that it received on the 2003 version.

Preamble

The preamble of the MPRRB recognises the non-renewable nature of minerals, acknowledges State custodianship (and ownership) of minerals, affirms the State's obligation to provide for economic and social development and considers the need for international competitiveness, efficiency, certainty and stability in the minerals sector. The issues listed in the preamble are extremely important to provide for both public and investor confidence. Figure 1 provides a positive view on SA's policies since 1994 with its cumulative net investment position indicating a positive trend.

The policies of the current government are well known and even where there are outstanding issues, government views are fairly predictable. This situation adds to investor confidence. Future investment patterns are more likely to be influenced by market cycles and commodity prices than policy events. Inevitably, the current boom in the minerals sector will come to an end and the success of the proposed regime will be known only when profit margins are under pressure. For this reason policymakers must have the long run in mind when developing policies that affect the ability of industry to do business, without the need to renegotiate each time when there is a change in the commodity cycle. A long-run policy must be sufficiently flexible to allow for consistently fair sharing ratios and splitting of revenues. This situation could be achieved by developing a Competitive Investment Framework (Framework of leading practice to measure policies against. For examples see Cawood (1999) and UNECA (2004)) (CIF), which sets the limits for policy instruments like royalties and provides a template for best practice policy development.

Part I: Definitions

The definitions appear in Part I of the MPRRB, most of which do not warrant discussion. However, the definition of a connected person deserves some mention. Provision is made

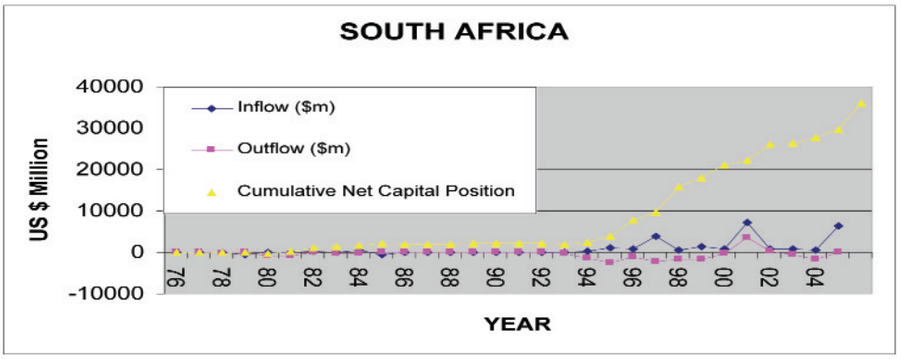

Figure 1: Foreign capital investment into and out of South Africa
Source: IMF (2006)

for natural persons, trusts, close corporations, companies and mineral resource extractors to be deemed connected persons. A company is deemed a connected person when transactions occur between the company and natural persons and trusts that hold 25% of fixed capital or shares of that company, or when other companies controlled by the same persons are transacted with. A mineral resource extractor is deemed a connected person when the buyer and extractor collude so that the transaction is not at arm's length and there is a scheme (a scheme that has the effect of avoiding, reducing or postponing the royalty liability – Section 2(e)) that would not have happened if it were not for the MPRRB.

In addition to the definitions in Part I, Schedule 1 provides definitions for refined minerals. These definitions will determine at which rate future royalties will be paid. However, the definitions are unclear and need to be expanded. For example, in the case of platinum group metals (PGM) the royalty rate for unrefined minerals is 6%. Although the rate is clear, the base is uncertain and could be interpreted as either the value of the ore mined or that of concentrates, or of any intermediate product. For refined PGM the issue is simple, where a rate of 3% applies to all metal refined to 99.5% purity.

Another definition that requires attention is that of coal, where coal with an ash content of greater than 15% will attract a 1% royalty. For washed coal or raw coal with an ash content of less than 15%, the corresponding royalty rate is 3%. The policy objective for this rationale is unclear and will be discussed later in this paper. From a definition perspective, there is again uncertainty on the base, i.e. which ash content would apply? That of the *in situ* grade or the ash content after washing?

Part II: Basic Royalty Regime

The media statement refers to the reduction of rates (as compared to the 2003 MPRB) by stating 'The significantly lower rates mitigate the impact of a tax base based on gross sales rather than profit'. This statement is oversimplifying the issue and should be tested using historic data in an economic analysis. It is true that there is an improvement in the royalty rate from 2003 to 2006 for some minerals. The maximum rate came down from 8% to 5%. However, rates for other significantly important mineral and petroleum products (for example, the rates for unrefined antimony, chromite, manganese, copper, iron, PGM, uranium concentrate, gas in shallow water and coal with an ash content of less than 15%) have increased. Appendix B shows a comparison between the 2003 and 2006 rates for all minerals. The table shows that the average (based on the arithmetic mean, which is not strictly correct because it implies that minerals are mined in equal quantities. Although it is acknowledged that it would be better to calculate a weighted average rate from actual quantities, such a calculation falls outside the scope of this paper) rate increased from 2.2% to 2.6%. There is also uncertainty as to why the National Treasury continued with its policy of mineral discrimination where some minerals are treated significantly differently compared to others. What remained the same as the 2003 draft are the tax base and the allowance for royalties to be deductible as an expense for income tax purposes.

With regard to the high potential for double payment of royalties (MPRDA Schedule II, Section 11(1) provides for community royalties to continue after the five year conversion period after aligning old-order rights with the MPRDA), the media statement provides some direction. It states that 'Government will encourage communities and mining companies to enter into negotiations to, where appropriate, convert the financial interest of communities into equity stakes...' This statement seems like an oversimplification of a very complex negotiation process, which some of the mining companies have already started, e.g. Amplats and Impala Platinum. Although the advice is broadly in line with what is currently happening in the industry, it is useful when dealing with affluent communities who can afford to, and are willing to, share mine ownership risks. In the current commodity boom, it is an attractive option for the community because during good times dividend payments are high and paid regularly. However, such advice becomes less appropriate when dealing with poor communities who cannot afford to share mining risks, as opposed to receiving a constant and predictable flow of royalties. During the downside of commodities cycles, dividend payments are infrequent and amounts insignificant. In the absence of regular payments to the community, poorer communities will suffer hardship and the situation would become unsustainable and may lead to political instability at mine level.

Sections 3 – 5: The royalty base

Royalties are payable on gross revenue and triggered by the first transaction, unless the buying party is a refiner and both parties to the transaction agree that the liability could be transferred to a refiner. The apparent benefit would be that the royalty rate will be reduced, albeit on a larger base. In the case of connected persons, such transfer to the refiner may be economical, but for arm's-length transactions refiners will be reluctant to take on the royalty liability. Unless the sales agreement between the two parties is amended to take account of the economics thereof, the risk associated with the transaction is mitigated and the impact of the royalty payment is assessed. The calculation of gross sales value for the purpose of determining the royalty base is as follows:

Amount received after adjustment for foreign currency transactions (this amount is adjusted by the closing spot exchange rate on the date of transfer or the date it becomes quantifiable, whichever is first)
PLUS
Value reduction by seller, for the purpose of determining an adjustment to fair value
PLUS
Financial assistance, service or other benefit that the buyer received
MINUS
VAT, transport and insurance costs
MINUS
Credit for bad debts, provided it is not a transfer between connected persons.

The tax (royalty) base is interpreted as the (arm's-length) sales value of the end product at the point of sale. This situation allows for the sale of minerals in its broken ore, concentrate or refined state. With the exception of coal, a lower percentage is applied to the sales value for beneficiated

products refined to the levels stipulated in Schedule 1. In the case of PGMs, refined means processing to at least 99.5% purity, in which case the royalty rate is reduced from 6% to 3% of the sales value. The rationale for the separate treatment of refined and unrefined products is to promote beneficiation as a key (national) policy objective. The question is: Why would a company incur the additional cost and risk to do something that may not be part of its core competency, i.e. to beneficiate mineral production, and thereby substantially increase the amount to which the royalty rate is applied? The next question would be: Do the reduced rates for refined metals adequately compensate for such costs and risks? If the objective is value-addition, a practical solution is to deduct the costs associated with beneficiation from the base. Such an action will eliminate the need for having different rates for refined and unrefined mineral products, which definitions and implications are more complex than what Schedule 1 suggests. The next question would then be: What about multi-mineral mines? The Draft MPRRB will potentially result in different rates for different minerals on the same mine, e.g. PGM/chrome-producing mines. Even for the same mineral there could be different rates depending on market specifications. The end result would be significant accounting and transfer pricing problems, which will not only add to the complexity of the regime but will also considerably increase compliance costs. If these complexities are justified in the name of beneficiation, why did the same principle not apply to coal? There are, therefore, significant advantages of having a single rate while allowing for all value-addition costs to be deducted before applying the royalty rate.

It is appropriate to consider what happens internationally because first, in order to attract investment into the domestic mineral sector, the regime must be competitive, and second, the royalty base has a significant impact on the final payment. It was mentioned that the definition of the base (gross sales value) stops short of allowing the deduction of beneficiation costs (draft MPRRB of 2006, Section 5). Although there is no perfect international definition for a sales value that allows the deduction of value-addition costs, the term net smelter return (NSR) is often used in the literature. After examining the different definitions encountered internationally, Cawood (1999) summarized the universal understanding of NSR as the sales revenue after costs associated with off-mine transport, handling fees during transport, processing and marketing have been deducted. A problem with international comparisons is that, although the tax base is often referred to, and sometimes even stipulated as, *ad valorem*, sales or gross value, in practice these are often NSR, as illustrated in Appendix C.

Table I in Appendix C provides proof that a number of countries use the terms gross revenue, *ad valorem* or sales value, but on closer inspection, the regimes have, in fact, a NSR base. Further analysis in Table II indicates that NSR is the preferred base for most countries, which situation is also representative of the international trend. This interpretation complies with the internationally accepted definition of a mineral royalty, which is aimed at compensation for the loss of the resource—not after value has been added to it. This definition implies that all costs incurred after the minerals have been severed from the ground should be deducted from gross revenue in determining the base.

Schedule 1: The royalty rates

The royalty rates in Schedule 1 may be amended from time to time by the Minister of Finance in consultation with the Minister of the DME. Such future amendments will be by way of regulation and will presumably be done to accommodate economic cycles, to include new minerals and to rectify mistakes. Considering the cyclic nature of the industry, combined with the impact of new technological developments on demand and supply of minerals, it is fair to predict frequent future amendments of Schedule 1. The solution to this problem probably lies in a single royalty rate for all minerals while allowing for all value-addition costs to be deducted. If this is not done, value-addition could ultimately be the loser in the long run.

As stated already, at its basic level a royalty regime consists of two elements—the base and the rate that must be applied to the base. Deciding on an acceptable royalty rate is a complex matter and can be done only after extensive analysis of all variables affecting the competitiveness of the regime. Several such studies (by Otto, Cawood and the SADC Harmonization Report) had been done in the recent past and the outcomes indicated that, for a country to be successful in attracting investment, royalty rates should be no more than three per cent of NSR. In addition, the SADC harmonization study commented on the high royalty rates that are encountered in the SADC. The harmonization report stated that '…the average mineral royalty rate in SADC is about 6 per cent, which is rather high…' (p. 24). The benchmark for that study was a CIF, which suggested that the average competitive regime internationally has a royalty rate of between one and two per cent. The earlier suggestion of a three per cent ceiling for South Africa is, therefore, realistic. The maximum rate in the Draft MPRRB is nearly double that, which renders the statement in the preamble untrue.

Although broadly in line with international practice, the current version, with regard to royalty base and rate, cannot be regarded as an '…internationally competitive and efficient mineral resource royalty regime…' as claimed in the Preamble of the MPRRB. In order for the SA mineral royalty regime to be internationally competitive, promote beneficiation of mineral production and adequately compensate the State for the loss of a national resource, the royalty rate should be no more than three per cent, which rate must be applied to a NSR base.

Table I

Sample calculation to explain marginal mine relief

Marginal mine relief calculation	
Description	**Rand**
Gross sales value amount as calculated in Sections 5 & 6	1000
Royalty rate (say 2%)	20
Gross sales value after royalty	980
Working costs	970
Profit before capital and other expenses payable to a connected person Defined as 'Adjusted net cash turnover'	10
However, royalty > adjusted net cash turnover, so adjust	10
Check if adjusted royalty > 25% of original royalty	5
Yes it is, therefore royalty payable	**10**

Part III: Reliefs

Marginal mines/oil wells — Section 7

Before discussing Section 7, it will be useful to provide a sample calculation (see Table I) of its application.

There is no doubt that the calculation in Table I for marginal mine relief is a significant improvement on 2003 MPRB. The method allows for a 75% automatic reduction of the royalty amount when profit becomes zero. It is agreed that profit is the best indicator for marginality, in addition to the principle that more royalties should be collected during periods of high profits. Another option would be to piggyback on the definition for marginality in the MPRDA, where marginal is interpreted as a six per cent profit-to-revenue ratio (MPRDA Section 52(1)(a)). Yet another option would be to take the existing Gold Mine Tax Formula, which uses an X-Factor based on taxable income to determine marginality. There are obvious advantages to a method with a 100-year track record and that is familiar to both tax authority and taxpayer.

A further issue that needs clarification is the meaning of mineral resource extractor for the purpose of Section 7. Does the section apply to each marginal mine on its own or may one resource extractor as holding company be allowed to combine financial results to take advantage of the situation or to keep loss-making mines in operation (in order to reduce the socio-economic impact during difficult times and prevent unnecessary closure)? A disadvantage is the high potential for abuse by some mining companies. A further suggestion is to reconsider the adjusted net cash turnover (MPRRB Section 7(2)), which excludes capital expenditure and, therefore, does not recognize the unusual risks associated with the mining sector. By recognising capital expenditure as a means to reduce the royalty base, the National Treasury will provide an incentive for the reinvestment of profits for green-, brown- and redfield mineral projects. It is also debatable why connected persons are excluded from qualifying for relief because first, the potential for abuse is limited because of existing transfer pricing requirements; second, socio-economic and beneficiation contributions may suffer as a result; and third, it affects the ability of a group to operate efficiently over the long run.

Small mining, sampling and Petroleum exploration: Sections 8–10

In a positive development to stimulate and assist small-scale miners, the first R50 000 of the royalty payment is waived for qualifying companies, who are domestic, have a sales value of less than R5 million over a period of 6 months, do not hold shares totalling more than 20% in another extractor, and those who do not collectively hold more than 20% in different other extractors. Prospecting rights are exempted from the MPRRB, but Group 1 minerals (precious and gem stones) are not exempted and must still pay the five per cent stated in Schedule 1. The separate treatment of Group 1 minerals is understandable considering first, the difficulty of distinguishing between prospecting and mining activities for such mines, and second, past legacies in SA where diamonds were removed and sold for profit in the name of prospecting. The MPRRB further provides additional incentives for exploring oil and gas fields. In a study by Cawood (2006), the need for incentives in off-shore petroleum development was identified as one of the key issues that need attention. To exempt exploration rights from royalties and allow for a 0.5% reduction in the rate for production rights, following a successful initial discovery is certainly a step in the right direction.

Part IV: Connected persons rules

This part is significant in terms of both content and impact. Its importance requires further research and possible amendment of current transfer pricing policies of mining companies. Exports without change in ownership, i.e. transactions between subsidiaries, require a bill of entry for export under the Customs and Excise Act 91 of 1964 (MPRRB Section 12). Gross sales value for this purpose is the greater of the amount received, the arm's-length value, the specified value in terms of the Customs and Excise Act, or the value assessed by the Diamond and Precious Metals Regulator (Section 13(1)). Further restrictions apply, e.g. the value may not be less than 90% of the price from a recognized commodity index (Sections 13(5) and 13(6)(a)). The arm's-length value, as the preferred approach, warrants specific mention because of the link with SARS (1999) Practice Note 7 on Transfer Pricing. To reduce compliance cost and provide for consistency in reporting, it will be necessary for companies to amend their existing transfer pricing policies in order to incorporate mineral royalty issues. An arm's-length price for connected persons generally means a price, terms and conditions that would have been adopted when independent (unrelated) parties do business. The characteristics of an uncontrolled price are that the price is set by the markets, there is reference to published or ruling market prices, the transaction is negotiated in uncontrolled conditions, and it is determined by demand and supply fundamentals. The valuation methods recognized by the MPRRB (Section 13(6)) that corresponds with the general transfer pricing requirements (note that the general transfer pricing rules allow for other methods, e.g. profit-split and transactional net margin methods, which are not provided for in the MRRB) are as follows:

- The comparable uncontrolled price, which compares the price for tangible goods transferred in a controlled transaction to prices charged in a comparable uncontrolled transaction in comparable circumstances. It is the most direct and reliable way to apply the arm's-length principle. However, in practice it is usually very difficult to find a transaction between independent parties that is sufficiently similar to a controlled transaction
- The resale price method, also called sales-minus or marginal-cost pricing. The price of the finished product is the starting point and an arm's-length margin is deducted from the sales price
- The cost-plus method, which requires adding a percentage profit mark-up to the total cost. Here it is important to check the appropriateness of including opportunity and marginal cost in order to get to the sales price.

Part V: Royalty liability adjustments

Section 14 provides mineral resource extractors with the option to transfer their royalty liability to a domestic refiner, provided both extractor and refiner elect to do so. Upon exercise of this provision, relief for marginal and small mines automatically falls away. In addition to Section 14, Section 15 makes provision for liability sharing. With regard to royalty liability adjustments, the media statement mentions that mineral resource extractors may transfer the royalty obligation to a refiner in order to 'take advantage of lower rates for refined products'. The exercise of this provision will vary from case to case and the impact on project economics. Mining and refining companies should, therefore, not exercise this option without doing more research and evaluating the economic impact.

Part VI: State royalty rate guarantee

The royalty rate is determined upon birth or renewal of the development right issued in terms of the MPRDA and remains applicable for the duration of the right. The guarantee of Section 17 involves that the royalty rate will never exceed the rate stipulated in Schedule 1 at the time when the right was granted or renewed or, in the case of already granted/converted/renewed new-order rights, the rates applicable on 1 May 2009. When transfer of royalty liability is exercised in terms of Part V, the rate will also stay the same. This provision is a positive development and will contribute to investor confidence.

Parts VII–X: Administration

These sections deal with administrative and governance issues such as registration with SARS (Section 18), returns (Section 20), maintenance of records (Section 23), assessments (Sections 24 to 27), refunds (Section 28), treatment of interest (Section 29), and miscellaneous provisions (Sections 30 to 33). The following points need to be emphasized:

- Registration must be at SARS within 45 days from the date that the taxpayer becomes a mineral resource extractor
- The submission of returns is required for each assessment period and such submission must be within 30 days after the closing date of the assessment period
- The assessment period is six months. For natural persons, it starts with SARS' financial year (1 March), and for companies it starts with the company's financial year. Notwithstanding this, the Commissioner may prescribe rules for amending the assessment period
- Records must be kept for five years for royalty audit purposes and the DME will assist SARS with conducting royalty audits
- The correct title for the Bill is the Mineral and Petroleum Resources Royalty Act of 2006 and the Bill will be effective from 1 May 2009.

As a general comment on administration issues, the MPRRB will be a significant improvement on the historic system when the DME was responsible for the collection of royalties.

Possible alternative to Schedule 1

Instead of having a unique royalty for each mineral, the National Treasury could decide on acceptable maximum and minimum rates. It seems that the maximum rate National Treasury has in mind is five per cent (this is despite the fact that several studies have indicated that, for a country to be successful in attracting investment, royalties should have a ceiling of 3%), which is on the high side but still within acceptable limits of what is encountered internationally. The minimum rate in Schedule 1 is zero for some minerals. However, the wasting asset nature of mineral resources suggests that the minimum rate should never be zero because it violates the definition of royalty and may lead to political instability in the long run. For these reasons the notion that some minerals should be exempt from State royalties should be rejected. The next lower rate in Schedule 1 is 0.5%, which rate could be accepted as an appropriate minimum rate. A minimum or modest royalty ensures that the State receives '…something for its exploited resources even when the operation was unprofitable' Otto *et al.* (2006).

Once a decision on the minimum and maximum rates is made, a single formula, instead of multiple rates, may be used to determine the royalty rate. This formula could take the form of $Y\% = a + b$ where Y is the royalty rate based on NSR, a the minimum rate (0.5%) and $a+b$ the maximum rate or 5% (0.5 + 4.5). The b-factor in the formula should then provide for a profit sharing or sliding-scale mechanism up to 4.5%. The mechanics of such a scheme were developed by Cawood (1999) and will change the $Y\% = a+b$ formula to $Y\% = 0.5+(X\div22)$, where X is the profit to revenue ratio as defined in the Income Tax Act for the purpose of determining the gold mining tax rate. The above formula will result in the following situation:

When X (% profitability) = 100, Y = 5%, which is the maximum rate;
When X = 50, Y = 2.8%
When X = 25, Y = 1.6%
When X = 10, Y = 1.0%
When X = 0, Y = 0.5%, which is the minimum rate.

The advantages of the proposed alternative method include reduced discretion, the regime will be easy to administer, will promote beneficiation, automatically take care of commodity price cycles, and will consider product uniqueness without any mineral discrimination.

Matters that are missing from the MPRRB

The following issues are missing from the MPRRB, which could add to both clarity and acceptability of the new royalty regime:

- Incentives for rural development, e.g. allowing royalties on low value commodities like clay and sand, or those minerals consumed in the local (municipal) economy, to go to a lower level of government
- Provision for establishing a dedicated Minerals Development Fund in order to manage mineral rents according to the principles of sustainable development. Examples include Namibia and the US Education Trust Fund
- Consideration for the historic immovable property status of old-order mineral rights and the constitutional principle of not changing ownership without compen-

sation (MPRDA Schedule II Section 10 and Constitution of South Africa Section 25). The MPRRB does not provide for either compensation or the deduction of original purchase cost for the purpose of determining the royalty amount. An obvious advantage of allowing these costs to be deductible is that it will probably nullify claims for compensation.

Recommendation

After analysing the proposed MPRRB and discussing the issues in this report, the following issues are emphasized for further consideration by the National Treasury before it goes to Parliament for final approval:

- The table of minerals contained in Schedule 1 will require frequent amendments when market cycles and corresponding mine economics change. Currently valueless or low-value minerals over time become valuable because of new inventions and substitutions. Likewise, currently valuable minerals will lose value when there are new inventions that result in their replacement. In addition, unlisted minerals will imply that the royalty rate is zero.
- The definition of gross sales value stops short of NSR. Ultimately, the NPV of the royalty must equal the resource value. This principle implies that royalties should be based on mineral resource value and not processed value
- The relief from royalties must be automatic and must preferably be determined through the use of a sliding-scale mechanism based on ability to pay, e.g. the X-Factor used in the gold mining tax formula. Such a mechanism will limit discretion, be more transparent and easy to administer because both SARS and the mining industry are familiar with its application.

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Appendix A

Section headings of the MPRRB

Definitions
Basic Royalty Regime
Reliefs
Connected Persons Rules
Royalty Liability Adjustments
State Royalty Rate Guarantee
Registration, Returns and Payments
Assessments
Refunds and Interest
Miscellaneous

SCHEDULE 1: Royalty rates and classification

A. Minerals with a single rate

Group	Minerals	Rate %
1	Unpolished natural diamond (gem and industrial), crystalline quartz (smokey quartz, citrine, rose quartz, amethyst, rock crystal), cryptocrystalline quartz (jasper, opal), chalcedony (blue lace agate, moss agate, onyx, rainbow chalcedony), chalcedonic replacements (silicified wood, tiger's eye), blue asbestos (crocodolite), beryl (emeralds, aquamarine, morganite, heliodor, goshenite, bixbite),chrysoberyl (cat's eye, alexandrite), corundum (rubies, sapphires), garnet (almandine, pyrope, almandine-pyrope, grossular, spessartine, uvarovite), lolite, kyanite, sodalite, sugilite (royal lavulite, royal azel), tourmaline, verdite (serpentine), topaz, copper minerals (azurite, malachite, chrysocolla), enstatite, epidote, feldspar group (moonstone, amazonite) and spinel.	5
2	Andulasite, asbestos, vermiculite, silliminite, kieselguhr, calcite, granite, marble and siltstone.	1
3	Feldspar, fluorspar, barytes, gypsum, magnesite, mineral pigment, sulphur, silica, talc, slate, shale, attapulgite, bentonite, flint clays, kaolin and fire clay.	0.5
4	Limestone, lime and dolomite, phosphate rock, salt, quartzite, schist, plastic clays, fire clay (construction grades), kaolin (construction grades) aggregate and sand.	0

Appendix A (continued)

B. Minerals with two rates—unrefined and refined rates

Group	Minerals	Unrefined rate %	Refined rate %
5	Platinum group metals (platinum, palladium, rhodium, iridium, ruthenium and osmium).	6	3
6	Chrome, manganese, silicon, vanadium, iron, cobalt, copper, nickel, lead, zinc, antimony and tin.	4	2
7	Illmenite, rutile and zircon.	3	2
8	Gold and silver.	3	1.5

C. Energy

Group	Mineral	Specification	Rate %
9	Coal.	Above 15% ash content.	1
		Below 15% ash content.	3
10	Hydrocarbon fuel (oil and gas).	Mining in water deeper than 500 m.	1.5
		Mining in water shallower than 500 m.	3
11	Uranium.	Oxide (yellow cake) and uranium hexafluoride.	1.5
		Uranium concentrate.	3

Appendix B

COMPARISON OF RATES FROM 2003 TO 2006 (ALL MINERALS)			
Mineral	**2003 Rate**	**2006 Rate**	**Change (%)**
Agate	5.0	5.0	0.0
Aggregate	1.0	0.0	-1.0
Alexandrite	5.0	5.0	0.0
Amazonite	0.0	5.0	5.0
Amethyst	5.0	5.0	0.0
Ammonium sulphate	1.0	0.0	-1.0
Andalusite	1.0	1.0	0.0
Anthracite (not listed in 2006); use average for coal	2.0	2.0	0.0
Antimony (refined)	2.0	2.0	0.0
Antimony (unrefined)	2.0	4.0	2.0
Aquamarine	5.0	5.0	0.0
Asbestos	1.0	1.0	0.0
Attapulgite	0.0	0.5	0.5
Azurite	0.0	5.0	5.0
Baryte	1.0	0.5	-0.5
Bentonite	0.0	0.5	0.5
Beryl	5.0	5.0	0.0
Bixbite	0.0	5.0	5.0
Brick	1.0	0.0	-1.0
Calcite	0.0	1.0	1.0
Cat's eye	5.0	5.0	0.0
Chalcedony	5.0	5.0	0.0
Chrome (refined)	3.0	2.0	-1.0
Chromite (unrefined)	3.0	4.0	1.0
Chrysoberyl	5.0	5.0	0.0
Chrysocolla	0.0	5.0	5.0
Citrine	5.0	5.0	0.0
Clay	1.0	0.5	-0.5
Coal (ash < 15%)	2.0	3.0	1.0
Coal (ash > 15%)	2.0	1.0	-1.0
Cobalt (refined)	2.0	2.0	0.0
Cobalt (unrefined)	2.0	4.0	2.0
Concrete	1.0	0.0	-1.0

Appendix B (continued)

Mineral	2003 Rate	2006 Rate	Change (%)
Copper (refined)	2.0	2.0	0.0
Copper (unrefined)	2.0	4.0	2.0
Corundum	5.0	5.0	0.0
Crocidolite	5.0	5.0	0.0
Cryptocrystalline	5.0	5.0	0.0
Diamonds (unpolished)	8.0	5.0	-3.0
Dolerite	1.0	0.0	-1.0
Dolomite	0.0	0.0	0.0
Emeralds	5.0	5.0	0.0
Enstatite	0.0	5.0	5.0
Epidote	0.0	5.0	5.0
Feldspar (listed twice in 2006)	0.0	0.5	0.5
Feldspar (listed twice in 2006)	0.0	5.0	5.0
Fire clay	1.0	0.5	-0.5
Fire clay (construction grade)	1.0	0.0	-1.0
Flint	0.0	0.5	0.5
Fluorspar	0.0	0.5	0.5
Garnet	5.0	5.0	0.0
Gas (water depth < 500m)	2.0	3.0	1.0
Gas (water depth > 500m)	1.0	1.5	0.5
Gold (refined)	3.0	1.5	-1.5
Gold (unrefined)	3.0	3.0	0.0
Goshenite	0.0	5.0	5.0
Granite	1.0	1.0	0.0
Gravel	1.0	0.0	-1.0
Gypsum	1.0	0.5	-0.5
Heliodor	5.0	5.0	0.0
Ilmenite (refined)	3.0	2.0	-1.0
Ilmenite (unrefined)	3.0	3.0	0.0
Iron (refined)	2.0	2.0	0.0
Iron (unrefined)	2.0	4.0	2.0
Jasper	5.0	5.0	0.0
Kaolin	1.0	0.5	-0.5
Kaolin (construction grade)	1.0	0.0	-1.0
Kieselguhr	0.0	1.0	1.0
Kyanite (listed twice in 2003)	1.0	5.0	4.0
Kyanite (listed twice in 2003)	5.0	5.0	0.0
Lead (refined)	2.0	2.0	0.0
Lead (unrefined)	2.0	4.0	2.0
Lime	1.0	0.0	-1.0
Limestone	1.0	0.0	-1.0
Lolite	5.0	5.0	0.0
Magnesite	1.0	0.5	-0.5
Malacite	0.0	5.0	5.0
Manganese (refined)	2.0	2.0	0.0
Manganese (unrefined)	2.0	4.0	2.0
Marble	1.0	1.0	0.0
Mica	1.0	0.0	-1.0
Mineral pigment	1.0	0.5	-0.5
Moonstone	0.0	5.0	5.0
Morganite	5.0	5.0	0.0
Mortar	1.0	0.0	-1.0
Nickel (refined)	2.0	2.0	0.0
Nickel (unrefined)	2.0	4.0	2.0
Norite	1.0	0.0	-1.0
Oil (water depth < 500m)	2.0	3.0	1.0
Oil (water depth > 500m)	1.0	1.5	0.5
Onyx	5.0	5.0	0.0

Appendix B (continued)

Mineral	2003 Rate	2006 Rate	Change (%)
Opal	5.0	5.0	0.0
Perlite	1.0	0.0	-1.0
Phosphate	1.0	0.0	-1.0
Plastar	1.0	0.0	-1.0
Plastic clay	1.0	0.0	-1.0
Platinum group metals (refined)	4.0	3.0	-1.0
Platinum group metals (unrefined)	4.0	6.0	2.0
Pyrophylite	1.0	0.0	-1.0
Quartz	5.0	5.0	0.0
Quartzite	0.0	0.0	0.0
Rubies	5.0	5.0	0.0
Rutile (refined)	3.0	2.0	-1.0
Rutile (unrefined)	3.0	3.0	0.0
Salt	1.0	0.0	-1.0
Sand	1.0	0.0	-1.0
Sandstone	1.0	0.0	-1.0
Sapphires	5.0	5.0	0.0
Schist	0.0	0.0	0.0
Serpentine	5.0	5.0	0.0
Shale	1.0	0.5	-0.5
Silica	1.0	0.5	-0.5
Silicified wood	0.0	5.0	5.0
Silicon (refined)	2.0	2.0	0.0
Silicon (unrefined)	2.0	4.0	2.0
Sillimanite (listed twice in 2006)	1.0	0.5	-0.5
Sillimanite (listed twice in 2006)	1.0	1.0	0.0
Siltstone	1.0	1.0	0.0
Silver (refined)	3.0	1.5	-1.5
Silver (unrefined)	3.0	3.0	0.0
Slate	1.0	0.5	-0.5
Sodalite	5.0	5.0	0.0
Sodium sulphite	1.0	0.0	-1.0
Spinel	0.0	5.0	5.0
Stone	1.0	0.0	-1.0
Sugilite	5.0	5.0	0.0
Sulphur	1.0	0.5	-0.5
Talc	1.0	0.5	-0.5
Tiger's eye	5.0	5.0	0.0
Tin (refined)	2.0	2.0	0.0
Tin (unrefined)	2.0	4.0	2.0
Titanium	3.0	0.0	-3.0
Topaz	5.0	5.0	0.0
Tourmaline	5.0	5.0	0.0
Uranium concentrate	1.0	3.0	2.0
Uranium oxide	1.0	1.5	0.5
Vanadium (refined)	3.0	2.0	-1.0
Vanadium (unrefined)	3.0	4.0	1.0
Verdite	5.0	5.0	0.0
Vermiculite	2.0	1.0	-1.0
Zinc (refined)	2.0	2.0	0.0
Zinc (unrefined)	2.0	4.0	2.0
Zircon (refined)	1.0	2.0	1.0
Zircon (unrefined)	1.0	3.0	2.0
Total	**144**	**Minerals**	**56.5**
Average	**2.2**	**2.6**	**+0.3%**
Note: Assume a zero rate for unlisted minerals Sources: MPRB (2003) and MPRRB (2006).			

Appendix C

Table I

Country	Royalty base stated	Actual definition	Rates	Remarks
Argentina	Mine-head value	NSR	0–3%	
Australia Western	Sales (ex-mine) value	NSR	0–7.5%	
Australia NSW	Unit/*ad valorem*/ profit	NSR/profit	4–7%	Variable options
Australia NT	Net back value	Profit	18%	
Australia Queensland	Unit/*ad valorem*	NSR	2.7–7%	
Bolivia	Complementary tax	Sales revenue?	1–6%	Base is not clear—'value of contained metal'
Botswana	*Ad valorem*	NSR	3–10%	
Brazil	Net invoice value	Sales revenue	0.2–3%	
Canada Ontario	Taxable income	Profit	10%	
Canada BC	Working profit/taxable income	Profit	2–15%	
Canada Quebec	Taxable income	Profit	18%	
Canada NWT	Profit	Profit	5–14%	
Canada Saskatchewan	*Ad valorem*/profit	NSR/profit	5–10%	
Chile	Free		0%	
China	Income of sale	Sales revenue	1–4%	
Dominican Republic	*Ad valorem*	Sales revenue	5%	
Ethiopia	*Ad valorem* at mine mouth value	NSR	3–5%	
Ecuador	Price of raw materials	NSR	1–3%	
Ghana	Gross mineral value	Sales revenue	3–12%	Sliding-scale rarely > 3%
Greenland	Free		0%	
Hungary	Market price of non-processed raw materials	NSR	2–5%	
India	Rate per unit/*ad valorem*	NSR	0.4–20%	Diamonds separate—20% mine mouth value
Indonesia	Rate per unit/negotiable	NSR	1–13.5%	Diamonds separate—5% sales revenue
Ivory Coast	*Ad valorem*	NSR	2.5–3%	
Kazakhstan	Negotiable	NSR/profits	Negotiable	Limestone separate—1% sales revenue
Mexico	Sales value	Sales revenue	0–3%	
Mongolia	*Ad valorem*	Sales revenue	2.5–7.5%	
Mozambique	Sales value	Sales revenue	3–12%	
Myanmar	*Ad valorem*	Sales revenue/NSR	1–7.5%	
Namibia	Sales value	Sales revenue	0–10%	10% applicable to diamonds, includes export levy Limestone separate—10% sales revenue
PNG	*Ad valorem* (realized) value	NSR	2%	
Peru	*Ad valorem*	Sales revenue	0–3%	
Philippines	Market value of production	NSR	2%	
Slovakia	Value of turnover	NSR	2–8%	Turnover multiplied by cost indicator to get to raw material value
South Africa (Royalty Bill)	Gross sales value	Sales revenue	0–6%	
Sweden	Free		0%	
Tanzania	*Ad valorem*	NSR	0–5%	
USA Arizona	Severance tax	Sales revenue	2%	Similar to export duty
USA Nevada	Profit	Profit	2–5%	
USA Michigan	*Ad valorem*	NSR	2–7%	
Uzbekistan	Gross sales value	Sales revenue	1–8%	Diamond separate—24% base not clear
Venezuela	*Ad valorem*	Sales revenue	3–4%	
Zambia	*Ad valorem*	NSR	2%	

Appendix C (continued)

Table II Further analysis of Table I

Different tax bases for royalty regimes			
Sales revenue	**NSR**	**Profit**	**Unit of production**
±30%	±45%	±20%	±5%