

ROYALTIES ON NON-RENEWABLE RESOURCES IN SOUTH AFRICA: AN INTERNATIONAL COMPARISON

by

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OPSOMMING

TANTIEME OP ONHERWINBARE RESERWES IN SUID AFRIKA: N INTERNASIONALE VERGELYKING

deur

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Regerings dwarsoor die wêreld ondervind wesenlike begrotingstekorte. Die regerings van Suid Afrika en Australië glo dat die belasting op mynbou-maatskappye nie die 'gewillige koper-gewillige verkoper' verhouding weerspieël nie. In beginsel beteken dit dat die mynbou-maatskappye in die twee lande nie armlengte-waarde betaal aan regerings vir die ontginning van minerale nie.

In Australië het owerhede die Minerale Super Winste Belasting gepromulgeer wat 40% heffings van berekende winste vereis. Mynbou-maatskappye is steeds in die donker oor hoe om hierdie nuwe belasting te hanteer wanneer dit op 1 Julie 2012 in werking tree. Die verlaging van die korporatiewe belastingkoers van 30% na 28% oor 'n tydperk tot en met die 2014/15 belastingjaaris egter 'n verandering wat voordelig is vir die maatskappye. Hierdie Minerale Super Winste Belasting sal ook van belasbare inkomste van mynbou-maatskappye aftrekbaar wees.

Suid Afrika het die Minerale en Petroleum Reserwes Tantieme Wet op 1 Maart 2010 gepromulgeer. Mynbou-maatskappye sal in die vervolg tantieme betaal wat gebaseer word op 'n heffingsformule spesifiek ontwerp vir verwerkte en onverwerkte minerale. Die minimum tantieme heffingsformule is 0.5% van bruto verkope ongeag of die mynbou-maatskappy verliese ly. Hierdie tantieme heffingsformule word wel beperk tot 5% vir verwerkte minerale en 7% vir onverwerkte minerale. Enige huidige ooreenkoms met

grondeienaars vir die betaling van spesiale tantieme word ongelukkig nie oorskryf deur die Minerale en Petroleum Reserwes Tantieme Wet nie.

'n Mynbou-maatskappy soos Kumba Resources Beperk het geen tantieme in 2009 betaal nie. In 2010 was Kumba Resources Beperk se tantieme 5.61% van rekeningkundige wins voor rente en belasting en in 2011 was dit 5.51%. Ondanks hierdie addisionele tantieme belê mynbou-maatskappye steeds in Suid Afrika. Die hoof-dryfveer vir beleggings is die bestuur van risiko en belegging in projekte wat positiewe netto huidige waardes lewer.

Tipiese risiko's wat bestuur moet word, is belastingwette, politieke onsekerheid en sosiale kwessies. Hierdie risiko's moet te alle tye onder beheer gehou word omrede mynbou-maatskappye heel waarskynlik van beleggings kan onttrek indien die risiko's buite beheer raak.

Sleutelwoorde:

Rekeningkundigewins voor rente en belasting

Politieke onsekerheid en sosiale kwessies

Verwerkte en onverwerkte minerale

Tantieme

Minerale Super Winste Belasting

ABSTRACT

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Governments across the globe are experiencing enormous budget deficits. The governments of South Africa and Australia felt that taxes on mining have not been reflecting a 'willing buyer-willing seller' relationship. This in essence means that mining companies in these two countries were not paying an arm's length value to governments for extracting the resources.

In Australia the authorities introduced the Resources Super Profits Tax to be charged at 40% of assessable profits. Mining companies still have to assess how to deal with this new tax when it is enacted on 1 July 2012. However, a change advantageous for the companies is the reduction in the corporate tax rate from 30% to 28% by the 2014/15 tax year. This Resources Super Profits Tax will also be deductible from the calculation of taxable income.

South Africa enacted the Mineral and Petroleum Resources Royalty Act on 1 March 2010. Mining companies would now pay royalties based on a charging formula specifically for refined and unrefined minerals. The minimum royalty charging formula is 0.5% of gross sales regardless of whether the mining company incurs losses. This royalty charging formula is capped at 5% for refined minerals and 7% for unrefined minerals. However, any existing arrangement between mining companies and land owners for special royalties payable is not replaced by the Mineral and Petroleum Resources Royalty Act.

A mining company such as Kumba Resources Limited never paid royalties in 2009, but were paying royalties in 2010 at 5.61% of accounting earnings before interest and taxes and 5.51% in 2011. Despite the additional royalties mining companies still invest in South Africa. The main drive for investment is managing risks and investing in projects that yield positive net present values.

Typical risks to be managed are taxation laws, political uncertainty and social issues. These risks should be kept under control as the likelihood of mining companies walking away from investments is high when these risks spiral out of control.

Keywords:

Accounting earnings before interest and taxes

Political uncertainty and social issues

Refined and unrefined minerals

Royalties

Resources Super Profits Tax

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ROYALTIES ON NON-RENEWABLE RESOURCES IN SOUTH AFRICA: AN INTERNATIONAL COMPARISON

CHAPTER 1 – BACKGROUND AND INTRODUCTION

1.1 BACKGROUND

An old tax is a good tax (Garnaut, 2010:8). This adage holds water merely because any new legislation takes time to understand. Part of the understanding process is also the development of case law. Mining royalties under the newly enacted Mineral and Petroleum Resources Royalty Act (28/2008) (MPRRA) is no exception. The MPRRA became effective on 1 March 2010. The proposed Resource Super Profits Tax (RSPT) in Australia is another example that creates and will in future create a myriad of uncertainties.

Mining royalties is generally a compensation paid to an owner (normally the government of a country) of a non-renewable resource for the depletion of that non-renewable resource (Van der Zwan, 2010:99). This compensation should be neutral for both the resource extractor and the government levying the royalty. Neutral should be viewed in the context where the resource extractor would still invest in mining activities despite the royalty levy. On the other hand the levying government would still relinquish its natural resource to the resource extractor due to competitive royalties being received.

Another important factor that could add to an imbalance in the collection of royalties is when excessive royalties that are most beneficial to the levying government are charged in times of economic upturn. The other side of the coin is where very low royalties that will be most beneficial to the resource extractor are paid by the resource extractor in times of economic difficulty.

It should be noted that the ultimate goal would be for the levying government to earn as much in royalties as possible while still attracting investment in resource greenfield projects (refer to the definition of greenfield exploration in Table 1) and expansion in resource brownfield projects (refer to the definition of brownfield expansion in Table

1).Therefore the royalty base and royalty rate should be carefully considered when amendments to royalty regimes are implemented.

Although the MPRRA has capped royalty rates at 5% for refined minerals and 7% for unrefined minerals, these rates are still well above the average royalty rates of 1.8% charged internationally. The latter is charged on a net smelter value that is also much lower than the gross sales value used by the MPRRA (Van der Zwan, 2010:95). These differences will create complications between resource extractors and the royalty levying government.

1.2 STATEMENT OF PROBLEM

The impact that the newly enacted Mineral and Petroleum Resources Royalty Act (MPRRA) has on the non-renewable resources sector has not been studied in detail. Similarly the proposed Resources Super Profits Tax (RSPT) in Australia also requires further research on the impact it may have on its non-renewable resources sector.

In a study conducted by Van der Zwan (2010:102) it was held that the level of royalties might reduce the profits of resource extractors and therefore affect their economic decision on where to perform explorations and investments. It was further highlighted that resource extractors will only further process mineral resources when there is sufficient compensation for the further refinement of the minerals.

At the different stages of mining (exploration, mine development and production) Garnaut (2010:18) recommends different royalty application methods as opposed to the RSPT proposed in Australia.

It is recommended that mainly empirical studies be performed to highlight the impact of the MPRRA on the non-renewable resources sector. These empirical studies will be based on existing facts from literature on hand. In contrast to the approach used for the South African leg of this research, a literature review only will be used to identify the possible effects of the RSPT in Australia.

1.3 STATEMENT OF PURPOSE

The main purpose of this study is to determine the impact that the newly enacted Mineral and Petroleum Resources Royalty Act (MPRRA) had on the non-renewable resources sector since its effective date. The possible implications of the proposed Resources Super Profits Tax (RSPT) in Australia will also be compared to the current royalty regime in Australia.

1.4 RESEARCH OBJECTIVES

The study will be guided by the following research objectives:

- Determine the impact that the Mineral and Petroleum Resources Royalty Act (MPRRA) has had on the earnings of mining companies since its effective date.
- Investigate if mining companies were unintentionally forced by the MPRRA to classify unrefined minerals as refined minerals causing mining companies to pay additional royalties.
- Identify other factors (if any) that will encourage or deter exploration activities or further mining activities in South Africa.
- Identify the possible impact that the proposed Resources Super Profits Tax (RSPT) in Australia may have on the mining activities in Australia.

1.5 IMPORTANCE AND BENEFITS OF THE RESEARCH

The research will add four valuable contributions to the existing knowledge of mining royalties in South Africa. First, the study will identify any impact that the Mineral and Petroleum Resources Royalty Act (MPRRA) had on earnings of mining companies since its effective date on 1 March 2010. Secondly, it will be highlighted whether the MPRRA unintentionally forced mining companies to classify unrefined minerals as refined minerals. Third, any behavioural changes of a resources extractor whether to continue exploration or mining activities will be identified, listing factors such as other taxation laws, political uncertainty, social issues and administrative burdens. The last comparison of this research

will use a literature review of the possible impact that the Resources Super Profits Tax (RSPT) may have on mining activities in Australia.

The next five chapters form the body of this research. The literature review follows, broken down into two chapters. The literature review commences with a review of the similarities and differences between the South African and Australian royalties. Effects that the MPRRA and RSPT have and possibly could have are outlined in the second chapter of the literature review.

Two chapters are devoted to firstly research design and methods for the empirical study, and secondly the data collection and analysis. Chapter 6 provides for a conclusion to the facts gathered throughout this research.

1.6 DELIMITATIONS

In order to have a meaningful research on royalties on non-renewable resources, a few limitations have to be identified. In the strategy of inquiry in sub-chapter 4.1.1 it was established that only mining companies listed on the Johannesburg stock exchange will be used in the research. The research will only identify the possible impacts that the Resources Super Profits Tax (RSPT) will have on Australian mining companies by means of a literature review.

It is worth noting that the Mineral and Petroleum Resources Royalty Act (MPRRA) is newly enacted and the RSPT is only in its concept phase in Australia. The research outcomes of both the MPRRA and RSPT will mainly spread over a period of a maximum of two years.

Literature reviews and comparisons will only extract information on the impact that the MPRRA had on exploration and expansion projects. The behaviour that resource extractors in South Africa display when faced with risks such as increased royalties, political and social instabilities and other administrative burdens was also outlined.

Any changes or amendments in the taxation laws, royalty applications or MPRRA after 31 August 2011 will not be covered by this research. Amendments made by the Australian government to the RSPT after 31 August 2011 will also not be considered.

1.7 ASSUMPTIONS

Some basic assumptions on which the research topic is built are identified below:

- Mining companies will support the research and will not interfere in the distribution of the questionnaire.
- Questionnaires will be completed by knowledgeable representatives of mining companies.
- Information supplied by mining company representatives will be a true reflection of the current state of affairs of mining companies.
- The majority of the completed questionnaires will be received in time to reach a conclusion on the research topic.
- Information extracted from Google scholar represents a legitimate literature source.

1.8 DEFINITIONS AND ABBREVIATIONS USED THROUGHOUT THE RESEARCH

The definitions in Table 1 below are used throughout the document as indicated by the cross-referencing:

Table 1: List of definitions used in this document

Term	Definition
<i>Ad valorem</i> royalty	(See Table 4, Chapter 2) <i>Ad valorem</i> royalties are based on a mineral's value (although the definition of value may differ). A profit or income-based royalty is an <i>ad valorem</i> royalty defined as a percentage of cash income less allowed expenses incurred. In contrast, a gross income royalty is also an <i>ad valorem</i> royalty based on a percentage of the gross market, gross sales, net market or net smelter value of the commodity produced and is charged whether profits are made or not (Richards, 2009:160).

Term	Definition
Assessable resource profits	(See Chapter 2, sub-chapter 2.2) Assessable revenue less deductible expenses (Including an allowance for capital expenditure) (Commonwealth of Australia, 2010: 24).
Brownfield expansion	(See Chapter 1 sub-chapter 1.1 and Chapter 3 sub-chapter 3.2) Sites classified for potential development that have had previous development undertaken on them (AskOxford.com, not dated).
Greenfield exploration	(See Chapter 1 sub-chapter 1.1; Chapter 3 sub-chapter 3.1 and Chapter 6) Exploration activities and the establishment of a new mining operation. (AskOxford.com, not dated).
Gross sales	(See Chapter 1 sub-chapter 1.1; Chapter 2 sub-chapter 2.1; 2.3 and Chapter 5 sub-chapter 5.3.4.2) Simplistically speaking, gross sales is '...the amount received or accrued during the year of assessment in respect of the transfer of that mineral resource' (Government Gazette Vol 521 No. 31635, 2008:8).
Mining royalties	(See Chapter 1 sub-chapters 1.1; 1.5; Chapter 2 sub-chapter 2.2; Chapter 3 sub-chapter 3.3 and Chapter 5 sub-chapter 5.3.1) Is referred to as the payment made to the owner of the mineral resource in return for the removal of the minerals from the land (Otto <i>et al</i> , 2006:41).
Resources Super Profits Tax	A tax on pure economic rent, one that yields government revenue without changing taxpayers' economic behaviour. The rent is the difference between the revenue received for the minerals and the cost of supplying them to the market (Ergas, 2010:369).
Transfer	(See definition of gross sales above) Section 1 of the MPRRA defines a transfer as the disposal or export of a mineral resource as well as the consumption, theft, destruction or loss of a mineral resource. A transfer excludes flaring or other liberation into the atmosphere during production or exploration (Government Gazette Vol 521 No. 31635, 2008:4).

The abbreviations used in the research topic are listed in Table 2 below.

Table 2: List of abbreviations used in this document

Abbreviation	Meaning
DME	Department of Minerals and Energy

Abbreviation	Meaning
EBIT	Earnings before interest and taxes (taking into account allowable deductions as per the Income Tax Act,1962 – Act no. 58 of 1962 including amendments). Accounting EBIT will be indicated as such in the research
MPRRA	Mineral and Petroleum Resources Royalty Act 2008 (Act No. 28 of 2008)
MPRDA	Mineral and Petroleum Resources Development Act 2002 (Act 28 of 2002)
RSPT	Resources Super Profits Tax (planned to be enacted on 1 July 2012 in Australia)

LITERATURE REVIEW

CHAPTER 2 - SIMILARITIES AND DIFFERENCES BETWEEN SOUTH AFRICAN AND AUSTRALIAN ROYALTY INCOME REGIMES

This chapter will provide an overview of the South African royalty income regime in sub-chapter 2.1 below. Sub-chapter 2.2 will review the Australian royalty income regime, with a brief chapter summary in sub-chapter 2.3.

2.1 SOUTH AFRICA

It is important to understand that the Mineral and Petroleum Resources Royalty Act (MPRRA) does not replace any prior royalty arrangements in place with other benefactors. Therefore in some instances mining companies are paying royalties based on these current arrangements, as well as royalties in terms of the MPRRA.

As defined in the MPRRA, a royalty must be paid by a person for the benefit of the National Revenue Fund in respect of the **transfer** of a mineral resource extracted from within the Republic. This person includes an insolvent estate, the estate of a deceased person and a trust.

The MPRRA defines a transfer as the **disposal** of a mineral resource or the **consumption, theft, destruction or loss** of a mineral resource. Transfer is typically not flaring or any other liberation into the atmosphere during exploration or production.

If the mineral resource has previously been disposed of, consumed, stolen, destroyed or lost, then no transfer has taken place.

In terms of Section 4 of the MPRRA, the royalty formula for the calculation of the royalty amount is broken down into two sections

- the first being royalties on refined minerals; and
- the second is royalties on unrefined minerals.

Royalties on **refined** minerals are calculated using the following charging formula:

$0.5\% + [\text{Earnings before interest and taxes (EBIT)} / (\text{gross sales in respect of refined mineral resources} \times 12.5)] \times 100$. This charging formula is capped at 5%.

Royalties on **unrefined** minerals are calculated using the following charging formula:

$0.5\% + [\text{EBIT} / (\text{gross sales in respect of unrefined mineral resources} \times 9)] \times 100$. This charging formula is capped 7%.

Simplistically, EBIT as per the MPRRA are calculated with gross sales of the mineral resource extractor being the starting point. Any deductible amount allowed in terms of the Income Tax Act, 1962 (including amendments) for the current year of assessment is deducted from gross sales. Gross sales in this section are used interchangeably between the gross sales of refined mineral resources and gross sales of unrefined mineral resources.

Gross sales for refined and unrefined mineral resources are the amount received or accrued for the disposal of that mineral resource. If the mineral resource was consumed, stolen, destroyed or lost then gross sales is deemed to be the amount that would have been received or accrued in an arm's length transaction.

It should be noted that when mining companies undertake capital projects, a large portion of this expenditure (if not all) can be deducted from taxable income in the same year of assessment as the expense. The detail about the deductions will not be discussed in this research, but cognisance should be taken of this fact. EBIT can in these instances be very little or EBIT can have a negative result. The percentage calculated for use in the royalty formula will be zero, should EBIT equate to a negative amount. However, the minimum charging percentage of 0.5% will always apply on both refined and unrefined mineral resources.

Table 3 below illustrates a simplistic calculation of royalties payable under the MPRRA for refined and unrefined minerals. The source for Table 3 used wear and tear interchangeably for the capital expenditure for the period. All South African mining

companies, save for gold, may in general deduct all capital expenditure in the same financial year if taxable losses are not created.

Table 3: Royalties on refined and unrefined minerals

Description	Reference	Refined (ZAR)	Unrefined (ZAR)
Information:			
Gross sales value		3 200	1 500
Less extraction cost (excluding depreciation)		(900)	(900)
Less processing cost (excluding depreciation)		(800)	0
Less wear and tear		(500)	(300)
EBIT		1 000	300
Determinants of the charging formula:			
Gross sales value	1	3 200	1 500
EBIT	2	1 000	300
0.5% of gross sales value	3	0.5%	0.5%
Factor	4	12.5	9
Cap	5	5%	7%
Charging formula $2/(1 \times 4) \times 100 + 3$	6	3%	2.7%
Royalties payable 1x6	7	96	41
Royalties as percentage of EBIT 7/2x100	8	9.6%	13.7%

Source: Van der Zwan (2010:94)

Royalties payable for refined minerals are more than double those of unrefined minerals as illustrated above. The royalties as percentage of EBIT is more meaningful as it brings the value of royalties paid into perspective with earnings before taxes.

2.2 AUSTRALIA

One of the major differences between the charging of royalties in South Africa and Australia is the collection departments. In South Africa, royalties are collected for the National Revenue Fund as part of the country's total revenues. Revenues are then distributed from the national budget.

The Australian territorial states impose royalty taxes for the specific state revenues. Table 4 below indicates the different royalty application methods across different states and territories in Australia.

Table 4: State and territory mining royalties in Australia

Jurisdiction	Mineral	Royalty
All states	Generally	<i>Ad valorem</i> royalty, generally ranging between 2.5 and 7.5 per cent of the value of mine output
All states	Certain low value commodities (Examples: clay and sand)	Specific royalty (amount per tonne)
Queensland	Coal	Base rate of 7 per cent of value. Additional 3 per cent applies to value over AUD\$100/tonne
Tasmania	Most minerals	Hybrid arrangements comprised of <i>ad valorem</i> and profit-based royalty
Northern Territory	Most minerals except petroleum	Profit-based royalty

Source: The Resource Super Profits Tax and the 2010/11 Federal budget (2010:14)

As a result of the various royalty application methods in different states, the administrative burden is increased for mining companies operating in different states. The different royalty application methods in Table 4 could be compared to the existing benefactors of royalties in South Africa. In sub-chapter 2.1 above it was explained that certain benefactors still enjoy royalties based on arrangements in place prior to the enactment of the Mineral and Petroleum Resources Royalty Act (MPRRA).

The Resources Super Profits Tax (RSPT) will be an additional tax levied by the Australian central government over and above the royalties levied by the different states and territories in Australia. Mining companies will therefore be further burdened by taxes. Territorial states should therefore revisit their royalty tax systems in order for the territorial tax systems not to adversely impact mining investment decision making. Again the RSPT can now be compared to the newly enacted MPRRA where royalties are payable under this act in South Africa to the National Revenue Fund.

A positive observation is that only profits realised from non-renewable resources will be taxed under RSPT. Normal return on invested capital (both local and foreign) will not be

taxed by RSPT, but will continue to be taxed under the company tax rate. In order not to over-tax mining companies on other returns on normal invested capital, the company tax rate will be reduced over a period from the current 30%. The first reduction will be to 29% in the 2013/14 income year and then to 28% in the 2014/15 income year (Commonwealth of Australia, 2010: 14).

The American economist Carey Brown claimed that a tax policy would not impact on investment decisions if taxes are levied on the net cash flows. '... investment behaviour that maximises the present value of cash flows after tax will also maximise the present values of before-tax cash flows ...'(Commonwealth of Australia, 2010: 23). The statement made by Carey Brown is often referred to as the Brown tax.

With the RSPT, the Australian central government has to immediately contribute to any mining investment by means of a rebate for negative cash flows. This will burden already stressed budgets further because future contributions cannot be predicted. RSPT implements an allowance for a corporate capital system whereby guaranteed tax credits for expenditure are allowed. A capital account will accumulate all tangible capital expenditure that has not been depreciated, as well as losses that can be offset against RSPT in subsequent years. In order to ensure the real value is maintained on the balance of the capital account over time, the capital account will earn an annual rate of interest equal to a ten-year government bond. This will incentivise mining companies to invest because the mining companies will be compensated for the delay in accessing the credit.

The Australian central government claims that the resource charge on mineral resource extractions has diminished from 34% in the first half of the 2000 to 2010 decade to only 14% in 2008/09 (Commonwealth of Australia, 2010:24). This is a result of unresponsive royalty regimes. RSPT will be charged at 40% of assessable resource profits. This RSPT will also be deductible for income tax purposes, similar to royalties that are deductible from taxable income in South Africa.

The RSPT capital account, as explained above, contains all undepreciated tangible capital expenditure. The RSPT taxable profit calculation allows for an annual depreciation at a

predetermined rate for tangible capital expenditure. All losses from prior years not utilised against the assessable resource profits are also included in the capital account. Losses from prior years can be used to reduce assessable resource profits in subsequent years. The opening balance of the RSPT capital account multiplied by the RSPT allowance rate equates to the RSPT allowance. This allowance, alternatively known as interest, can be deducted from the assessable resource profits to determine the RSPT project profit or loss as displayed in Table 5 below.

Table 5: Resources Super Profits Tax calculation elements

RSPT net profit or loss
Assessable revenue
Less deductible expenditure (including wear and tear)
Less RSPT allowance (RSPT opening balance x RSPT rate)
Less any prior year project losses
Equals RSPT project profit or loss
Add or less losses transferred (Losses can be transferred)
Equals RSPT net profit or loss

Source: Commonwealth of Australia (2010:25)

If the RSPT is a net loss, the net loss is carried forward to the following year. Any RSPT net profit is multiplied by 40% to determine the RSPT liability. The closing capital account will in effect then contain all undepreciated tangible capital expenditure and unutilised losses.

As mentioned above, the closing balance on a capital account will earn interest at an annual rate of interest equal to a 10 year government bond. The interest earned results in the preservation of the real value of RSPT losses carried forward. It was already highlighted in Table 5 above that RSPT losses originate from deductible expenditure exceeding assessable revenue. It will be allowable to transfer RSPT net losses to other profitable projects. However, no losses can reduce RSPT net profits below zero. Losses can be refunded on a reasonable basis, where for example the project is closed and the losses cannot be transferred to another project.

In concluding this section, please refer to Table 6 below for a simplistic example of how the RSPT tax liability is calculated. **Note** the following details used in Table 6:

- A project commences at the start of year one when R100 is spent on capital.
- Capital expenditure is recognised by government through wear and tear arrangements. Therefore, assume that wear and tear of R60 can be claimed in year 1 and R40 can be claimed in year two.
- The project does not have any receipts in year one and consequently reports a loss of R60.
- This R60 is carried forward to year two, as well as the R40 undepreciated capital expenditure. This R100 is then the opening balance of the capital account in year two on which the RSPT allowance or interest is calculated upon.
- Assume that in year two the project has assessable receipts of R150.
- The R40 depreciation, R60 loss from year one, as well as the RSPT allowance of R6 can be deducted in year two.
- The investor will therefore have an assessable profit of R44 in year two and will have to pay R18 RSPT.

Table 6: Resources Super Profits Tax example of tax liability calculation

Description	Year 1 (ZAR)	Year 2 (ZAR)
Assessable revenue	0	150
Less deductible expenses (such as wear and tear)	(60)	(40)
Less RSPT allowance (6% applied to RSPT opening balance of capital account)	0	(6)
Less unutilised losses carried forward from previous year	0	(60)
Net RSPT profit or (loss)	(60)	44
Taxable RSPT profit (Zero if loss recorded in line above)	0	44
Tax at 40%	0	18
Capital account balance:		
Initial capital expenditure	100	0
RSPT capital account opening balance	0	100
Carry forward losses	60	0
Un-depreciated assets	40	0
RSPT capital account closing balance	100	0

Source: Commonwealth of Australia (2010:27)

2.3 CHAPTER SUMMARY

Regardless of whether mining companies are profitable, the royalties are still payable at 0.5% of the gross sales value of mining companies in South Africa. As illustrated in Table 3 above, royalties on refined minerals equate to 9.6% of Earnings before interest and taxes (EBIT) for refined minerals and 13.7% of EBIT for unrefined minerals. Comparing the Resources Super Profits Tax (RSPT) to the Mineral and Petroleum Resources Royalty Act (MPRRA), the royalty rate equates to 40% of EBIT when applying the RSPT.

The rate of 40% on EBIT is high, but Australia is reducing its corporate tax rate from 30% to 28%. Prior year losses could also be carried forward in calculating the RSPT profits. However, royalties are payable with the MPRRA irrespective of whether losses are made. A RSPT capital account is also introduced where unutilised losses and unutilised capital expenditure can be carried forward to future profitable years. Maintaining the real value of the RSPT capital account is ensured with this capital account earning interest at the rate of a ten-year government bond.

Chapter 3 below will review the effects of the MPRRA and the proposed RSPT. In sub-chapter 3.2, it is shown that after introducing the RSPT Australia will have the highest effective tax rate in the world.

CHAPTER 3 – EFFECTS OF THE MINERAL AND PETROLEUM RESOURCES ROYALTY ACT (MPRRA) AND PROPOSED RESOURCES SUPER PROFITS TAX (RSPT)

This chapter commence with the effect the MPRRA had on South African mining companies since its enacted. The decisions made by Australian mining companies as a result of the proposed RSPT are then reviewed. In sub-chapter 3.3 the behaviour of mining companies to changes in royalty taxes, any political uncertainties or social responsibility issues are reviewed. A chapter summary concludes this chapter.

3.1 SOUTH AFRICA

Since the financial crises exploded in 2008, governments have struggled to sustain expenditure levels and alarming budget deficits were reported globally. South Africa, like many other governments, had to find other ways of supplementing income to cover the growing expenditure on housing, health, higher education and social development. Expenditure on housing, health, higher education and social development represented 3%, 4%, 5% and 20% respectively of the vote appropriation of R439billion (National treasury, 2010: 171) for the 2009/10 budget year. The budget deficits for the budget years 2008/09 and 2009/10 were R27billion and R177billion respectively, where the estimated deficit for the 2010/11 budget year is R175billion (National treasury, 2010: 160-161). This clearly indicates that funds have to be found elsewhere or spending has to be curbed.

The South African government has opted to use mining tax as an additional funding mechanism in the form of the newly enacted Mineral and Petroleum Resources Royalty Act (MPRRA). The estimated royalty income for the 2010/11 budget year is R3.5billion and only represents about 1% of the total revenue forecast for the 2010/11 budget year (National treasury, 2010: 169). However, the increase from prior years is significant. In the 2008/09 budget year the royalties collected were R256million, in 2009/10 it was only R68million (National treasury, 2010: 168-169). The reduction in the 2009/10 budget year is attributed to the financial crises where company operations and profits were dampened.

Although the MPRRA is newly developed legislation, the first round of amendments was already made two months after implementation in May 2010, though mainly definitions. Another amendment to this act was promulgated in the Government Gazette on 10 January 2012.

The latest amendments dealt with conversion of foreign currency and the percentage condition for unrefined Vanadium in Schedule 2. The conversion of foreign currency in Section 15 was changed so that foreign amounts for oil and gas companies are converted at the average exchange rate for that specific year of assessment. Foreign amounts for other extractors are still made at the spot rate on the date when the income was received or accrued or the date on which the expense or loss was incurred. The percentage condition of unrefined Vanadium in Schedule 2 was changed from >1% V₂O₅ concentrate to <10% V₂O₅ concentrate.

This will most certainly not be the last amendment as one needs to take into account that changes in the mining industry will bring about changes to legislation. Case law around the MPRRA has to be developed as well.

Companies such as Kumba Iron Ore Limited (Kumba) have already indicated in its 31 December 2010 financial results that the newly enacted MPRRA had adverse impacts on its profits.

Table 7 below displays the cost effect that the MPRRA had on Kumba's profits for the financial years ending 31 December 2009, 2010 and 2011.

Table 7: Kumba's income tax and royalties as a percentage of accounting earnings before interest and taxes (EBIT)

Description (ZAR million)	2011	2010	2009
EBIT (Accounting)	31 966	25 131	12 880
Income tax	9 760	6 813	3 949
Percentage income tax of EBIT (Accounting)	30.53%	27.11%	30.66%
Royalties	1 762	1 410	0

Description (ZAR million)	2011	2010	2009
Percentage royalties of EBIT (Accounting)	5.51%	5.61%	0%

Source: Kumba Iron Ore Limited (2011: 43;54); Kumba Iron Ore Limited (2012: 7;17)

In Table 7 above the income tax and royalties for the respective years were divided into accounting EBIT to display the percentage income tax on accounting EBIT of 30.53%, 27.11% and 30.66% for 2011, 2010 and 2009 respectively. The percentage royalties on accounting EBIT in 2011 and 2010 were calculated as 5.51% and 5.61% respectively. Income tax as a percentage of accounting EBIT in 2011 and 2010 was then added to royalties as a percentage of accounting EBIT in 2011 and 2010 to arrive at 36.04% and 32.72% respectively. The result of the additional royalty charges is that Kumba's effective tax paid in 2011 and 2010 increased to 36.04% and 32.72% respectively on accounting EBIT from 30.66% in 2009.

When reviewing the annual results for Exxaro Resources Limited (Exxaro) it is noted that royalties as a percentage of EBIT is 1.46% [R41million / R2.808billion] and 2.01% [R50million / R2.488billion] in 2011 and 2010 respectively (Exxaro Resources Limited, 2012: 3; 9). It appears as if Exxaro is paying less royalties in 2011 with an increased EBIT, but one has to consider the effect that the deductible wear and tear deductions have on the calculation of the royalties due.

Sufficient details are not provided in the published results of either Kumba or Exxaro to analyse the effect of deductible wear and tear on royalties due. The effect that deductible wear and tear has on royalties due will therefore not be analysed further.

Interesting to note from the Xstrata expansion strategy is that although the group is faced with the risk of higher royalties in South Africa, expansion projects are still undertaken. Greenfield (refer to the definition of greenfield exploration in Table 1) projects such as Atcom East in Witbank, Mpumalanga was approved in October 2009 when the MPRRA was still in draft form (Xstrata plc 2011, 32).

As described in sub-chapter 2.2 above, once after tax cash flows are maximised, before-tax cash flows will also be maximised. Xstrata must have based its investment decision of the investment analysis on this statement in order to proceed with the Atcom project.

3.2 AUSTRALIA

With a budget deficit peaking at AUD\$ 57billion in the 2009/10 financial year, the Australian federal budget prepared for an AUD\$ 41billion deficit in the 2010/11 financial year. This significant reduction came about on the back of an AUD\$ 93billion revenue rise over the financial years 2009/10 to 2012/13. The revenue rise partly results from a 40% Resources Super Profits Tax (RSPT) after allowing for extraction costs and the recovery of capital investment. An estimated AUD\$ 12billion in additional revenues will be collected from the proposed RSPT over the estimated financial years until 2013 (Novak, 2010: 3; 6).

With the introduction of the RSPT, Australia will have the highest effective mining tax rate in the world. The effective tax rate has increased from 43% to 57%. The effective tax rate for mining companies in America is roughly 40%, followed by Brazil on 38% and South Africa on about 32% (Novak, 2010: 6).

Resulting from the uncertainties of the proposed RSPT, a few companies already placed some greenfield exploration (refer to the definition of greenfield exploration in Table 1) and brownfield expansion (refer to the definition of brownfield expansion in Table 1) projects on hold. Examples are:

- Xstrata Copper North Queensland division has suspended an AUD\$ 30million copper exploration project in the areas of Mount Isa and Conclurry. The reason was stated to be the uncertainty of the impact that the RSPT will have on developing resources into viable operations (Novak, 2010: 9).
- Santos announced to defer the building of an AUD\$ 15billion liquefied gas plant in Gladstone, Queensland by up to six months (Novak, 2010: 9).
- Other mining companies such as BHP Billiton, Rio Tinto and AngloGold Ashanti are also reviewing the status of selected projects in view of the RSPT (Novak, 2010: 9).

Existing reading material regarding this new act is not readily available. It is however evident that mining companies in Australia are hesitant to invest in projects while uncertainty regarding this new act prevails.

3.3 BEHAVIOUR OF MINERAL EXTRACTORS: ROYALTIES, POLITICAL UNCERTAINTIES AND SOCIAL RESPONSIBILITIES

Change is inevitable and with change come new challenges and risks. Depending on the risk appetite of investors, investments will be made or discarded. In South Africa and similarly in Australia, governments normally consult with stakeholders prior to final enactment of new legislation. The Mineral and Petroleum Resources Royalty Act (MPRRA) was not any different and the Resources Super Profits Tax (RSPT) are already in consultation. Although legislation will eventually be imposed, the views of stakeholders are taken into consideration.

Currently South Africa has a unique situation in which mineral resource extractors are not only faced with increased mining royalties, but talks of mining nationalisation and super profit taxes are on the cards as well. Other factors such as compliance with the mining charter and the 'use it or lose it' principle on mineral rights also bear weight.

An interesting fact to take note of is that the Department of Minerals and Energy (DME) want to contest a ruling made by the Gauteng North High Court on 28 April 2011 regarding the transfer of mineral rights (Anon, 2011). The court held that even though the Mineral and Petroleum Resources Development Act (MPRDA) allowed the transfer of a mineral right to the state, Section 25 of the Constitution of the Republic of South Africa, 1996 (the Constitution) allows compensations for any asset expropriated.

Larger corporates identify political, regulatory and social risks in order to mitigate the effects on operations. Xstrata is one such company that identified the requirements of the mining charter and are now compliant in terms of employment equity, procurement and social development (Xstrata plc 2011: 46). Xstrata also noted the proposed changes in the tax regimes of Australia, Chile, Peru and South Africa in its 2010 annual financial statements. This is clearly an indication that mining companies consider risks relating

toroyalties, political uncertainties and social responsibilities in an effort to mitigate these risks.

3.4 CHAPTER SUMMARY

It is without a doubt that the Mineral and Petroleum Resources Royalty Act (MPRRA) has imposed additional royalties on mining companies in South Africa. The effective tax rate of South African mining companies is however only 32% compared to the 57% of Australian mining companies after the enactment of the Resources Super Profits Tax (RSPT).

Mining companies in both South Africa and Australia analyse risks such as additional royalties, political uncertainties and increased social responsibilities to ensure corporate survival.

The following two chapters focus on empirical studies based on a questionnaire that was issued to South African mining companies.

EMPIRICAL STUDY

CHAPTER 4 – RESEARCH DESIGN AND METHODS

This part of the research outlines how the research was designed with the methods used. The sampling population, method and size are also explained.

4.1 DESCRIPTION OF INQUIRY STRATEGY AND BROAD RESEARCH DESIGN

4.1.1 Strategy of inquiry used in the research topic

Originally the researcher considered using all mining companies in both South Africa and Australia. This approach created numerous obstacles because there is not a readily available database available for all mining companies in South Africa. It was also very difficult to identify other mining companies in Australia which are not listed.

It was therefore decided to base the research on Australian mining companies purely on a literature review. In South Africa only listed mining companies on the Johannesburg stock exchange were used. These listed mining companies on the Johannesburg stock exchange were extracted from the main board and Altx.

The assumption for choosing this approach was as a result of the Resources Super Profits Tax (RSPT) in Australia only being in concept phase and therefore information was limited. In South Africa, although the value of the royalties may be different from one mining company to the next, the impact of royalties did not differ between listed and non-listed mining companies.

It was therefore assumed that comparative studies will be appropriate to perform the research inquiry. Mouton (2001:154) describes comparative studies as the focus on the similarities and differences in groups or units of analysis.

The comparative studies used include for South African mining operations how the Mineral and Petroleum Resources Royalty Act (MPRRA) has increased royalties as a percentage of accounting earnings before interest and taxes (EBIT). It also established whether the MPRRA unintentionally forced mining companies to classify minerals as being refined which caused additional royalties for South African mining companies.

4.1.2 General characteristics of the research design of the research topic

The following are regarded to be appropriate descriptors that best describe the broad research design of the research:

- *Empirical research.* The research is regarded as empirical research because information was collected from mining companies in order to conclude on the impact of the Mineral and Petroleum Resources Royalty Act (MPRRA) on these companies. Literature reviews were mainly used for research on the Resources Super Profits Tax (RSPT) in Australia.
- *Basic research.* Managerial decision-making will not be influenced by the research. The research is a mere understanding of the possible impact that new taxation laws have and will have on mining activities in South Africa and Australia. The aim of the research is to expand the knowledge base. Hence it is a basic research.
- *Explanatory research.* A possible explanation of the effects that the MPRRA has and will have on current and future mining activity decisions will be given.
- *Evaluative research.* In order to succeed with the research, data gathered during the research was evaluated. This evaluation was done by establishing the impact of the MPRRA on mining activities.
- *Primary data.* Data collection was extracted from various sources. The data collected was information obtained for specifically this research. Existing data from previous similar studies (secondary data) was used in a very small part of the overall research.
- *Numeric (quantitative) data.* The empirical section of the research has a fairly large proportion of numerical data. Numeric data such as royalties paid before and after the MPRRA and calculations of these royalties were numerically analysed.

4.2 SAMPLING

4.2.1 Target population

The target population for the research is listed mining companies in South Africa as described in sub-chapter 4.1.1 above.

In respect of the Mineral and Petroleum Resources Royalty Act (MPRRA) in South Africa, the effect on mining activities as well as additional taxes and royalties were studied prior to the enactment date of 1 March 2010 and thereafter until 31 August 2011.

4.2.2 Units of analysis

During sampling, listed mining companies on the Johannesburg stock exchange were used as the units of analysis. As indicated in sub-chapter 4.1.1, all listed mining companies on the main board and AltX of the Johannesburg stock exchange were used.

4.2.3 Sampling method

In the research only mining companies listed on the Johannesburg stock exchange were selected. Saunders (2007:207) refers to this sampling method as non-probability or judgemental sampling with self-selection. This process made it easier to research only the significant role players in the mining industry in their specific field of mining.

It was assumed that other mining companies not listed will be affected in more or less a similar way to the listed mining companies. The view of the researcher was that, should listed companies experience difficulties with the taxes and royalties being implemented, then smaller non-listed companies will also experience difficulties. The difficulties referred to above are explained as additional taxes and royalties which cause exploration and expansion projects being placed on hold or even cancelling them.

Companies not listed were excluded from the research which is a limitation from an information outlook point of view. However, this was compensated for by the fact that all listed mining companies in South Africa were selected.

The companies selected as sample size in sub-chapter 4.2.4 below, was arrived at by using the following method:

- A list of listed mining companies on the main board and AltX of the Johannesburg stock exchange was requested from the Johannesburg stock exchange.
- This list of 73 companies was then further scrutinised to eliminate exploration companies, as well as any duplications.
- Any mining companies with only overseas offices were excluded as it was difficult to make contact with these companies.
- PPC was added to the list (it was not on the list from the Johannesburg stock exchange).
- The tax managers at these mining companies were contacted to determine whether they would participate in a questionnaire. A few tax managers could not be reached and therefore these companies were excluded. The impact of excluding these companies was first assessed and it was found that these companies were of the smaller listed mining companies. The impact on the research was therefore minimal.
- The final respondents on the list then amounted to 42.

4.2.4 Sample size

The mining companies used in the sample size determined in sub-chapter 4.2.3 above are classified in Table 8 below in the different resource sectors (Classification as per the Johannesburg stock exchange, except for PPC):

Table 8: Mining companies listed on the Johannesburg stock exchange per resource sector

Resource	Company
Coal	Coal of Africa, Exxaro Resources, Forbes and Manhattan coal, Hwange Colliery, Optimum Coal, South African Coal
Diamond and gemstone	Rockwell Diamonds, Transhex
General mining	Anglo American, African Rainbow Minerals, Assore, BHP Billiton, Chrometco, Firestone Energy, Infrasons, Merafe Resources, Petmin
Gold	Anglogold Ashanti, DRD Gold, Great Basin Gold, Goldfields, Harmony Gold, Pan African Resources, Gold One International
Lime& Gravel	PPC
Iron and Steel	Arcelor Mittal, Evraz Highveld Steel – Mapoch Mine, Kumba Iron Ore
Nonferrous metals	African Eagle, Metmar, Metorex, Palabora Mining
Platinum and precious metals	Aquarius Platinum, Anoraq Resources, Impala Platinum, Jubilee Platinum, Lonmin, Northam Platinum, Platfields, Platmin, Royal Bafokeng Platinum, Wesizwe Platinum

Source:Johannesburg stock exchange (13 October 2011)

CHAPTER 5 – DATA COLLECTION AND ANALYSIS

Chapter 5 provide an overview of the survey methods used to collect data for the research as well as details about the analysis of the data. The quality of the research design and the research ethics are also addressed below.

5.1 SURVEY METHODS

Two methods of collecting data for the research were considered, namely questionnaire data collection versus conducting interviews. Table 9 below lists some advantages and disadvantages of using the different survey methods.

Table 9: Advantages and disadvantages of using questionnaires versus conducting interviews for data collection

	Advantage	Disadvantage
Questionnaire	<ul style="list-style-type: none"> • Respondents are forced to provide specific answers which leaves no room for unwanted responses • Data analysis time is shorter compared to interviews where data have to be entered into a data base and then analysed 	<ul style="list-style-type: none"> • Any unclear questions will be completed incorrectly • Respondents have to be reminded frequently to complete questionnaires • Personal contact is lost which may deter respondents from completing the questionnaire
Interview	<ul style="list-style-type: none"> • Personal contact with interviewees which can assist with integrity of responses, as well as more willingness to participate • Feedback will be received in a shorter space of time compared to questionnaires 	<ul style="list-style-type: none"> • Conducting interviews takes up a lot of time, i.e. setting up of meeting dates • Respondents have to be met at various locations as mining activities are spread across South Africa

Based on the information supplied in Table 9 above, it appears that a structured questionnaire was the best fit for obtaining the required objectives defined in sub-chapter 1.4 above.

The greatest risk in using a survey is when questions are not correctly interpreted by respondents which will lead to answers not being usable. The questionnaire was carefully designed and Chapter 4 above has provided detailed research designs and methods to mitigate this risk.

Using the survey was a convenient way for the respondents to complete the questionnaire in his or her own time. Following up regularly on the completion of the questionnaires had to be done as respondents had other official duties as well. In sub-chapter 5.2 below it will be explained how the type of data collection methods was applied to achieve required measurements for the objectives in sub-chapter 1.4 of the research.

5.2 MEASUREMENT

It was mentioned in sub-chapter 4.1.2 above that primary data was used for this research. The data was obtained from the participants in the survey.

5.2.1 Questionnaire design

The four objectives listed in sub-chapter 1.4 above relating to South African mining activities were used to structure the questionnaire. It was imperative to extract from the answers to the questionnaire:

- What impact the newly enacted Mineral and Petroleum Resources Royalty Act (MPRRA) had on the accounting earnings before interest and taxes (EBIT) of mining companies.
- Whether more royalties are payable by mining companies purely as a result of the mining companies having to classify minerals as refined under the MPRRA.
- Whether mining companies will still invest in exploration or mining activities in South Africa after the enactment of the MPRRA.

Having the basic requirements in place, the questionnaire was then designed on www.surveymonkey.com by using ten questions. The first five questions dealt with the impact that the MPRRA had on accounting EBIT, as well as a general understanding of the geographical mining areas of minerals in South Africa.

Questions six to eight then focussed on the classification of minerals as refined or unrefined. These questions were used to determine whether mining companies are being burdened with additional royalties due to minerals now being classified as refined under the MPRRA. The last two questions dealt with whether mining companies still envisage exploration and or mining in South Africa to be beneficial.

Having dealt with the constraint on time for submitting completed questionnaires, it was decided to create the questionnaire with built-in checks and limitations. This approach increased the user friendliness of the survey and also ensured that answers can be selected from a pool of options instead of using open-ended questions.

Only one question was open-ended, with a limitation of 50 characters. The remaining nine questions used drop-down options or selection alternatives. In order to continue and complete the questionnaire, all ten questions had to be answered which ensured complete questionnaires are returned.

The questionnaire used in this research is included as Appendix A (See page46).

5.2.2 Pre-testing

In order to eliminate any weaknesses in the questionnaire and to ensure that the questionnaire addressed the research objectives listed in sub-chapter 5.2.1 above, the following persons participated in a pre-testing process

- Mr. P.C. Opperman (Research supervisor);
- Ms. I. Fabris-Rotelli (Statistician: University of Pretoria);
- Ms. M Coelho (Statistician: University of Pretoria); and

- Ms. J. Sommerville (Statistician: University of Pretoria).

During the pre-testing phase, all participants commented on the questionnaire created on SurveyMonkey. SurveyMonkey is a web based mechanism for creating questionnaires. Participants can complete questionnaires anonymously. Completed questionnaires can then easily be extracted and analysed after the questionnaire period has closed.

Each participant reviewed the questionnaire for ease of answering, whether the research objectives will be achieved and also provided valuable inputs about any possible frustrations that may be experienced by respondents.

After the main concerns in the paragraph above were addressed and eliminated, the questionnaire was issued for completion on www.surveymonkey.com

5.3 DATA ANALYSIS

5.3.1 Collection and data storage

The contact persons at the companies identified in the sample size in Table 8 of sub-chapter 4.2.4 was emailed with a link to the SurveyMonkey questionnaire. A typical email sent to a respondent is displayed below:

Subject: Dissertation: Mining Royalties

Good day

I am completing my dissertation in mining royalties at the University of Pretoria.

Below is a link to a 10 question survey:

PLEASECOMPLETETHISSURVEYBY15FEBRUARY2012https://www.surveymonkey.com/s.a_spx

This link is uniquely tied to this survey and your email address. Please do not forward this message.

This survey will not take longer than 10 minutes to complete. It is an anonymous survey and I therefore request that you inform me via email or on my cell phone once you have completed the survey.

Thank you for your participation

Regards

Jan Henrico

janhenrico@gmail.com

083 455 2435

Note:

Should you wish to opt out of this survey without completing the questionnaire, kindly select the link below:

<https://www.surveymonkey.com/optout.aspx>

SurveyMonkey flagged completed questionnaires, as well as respondents who opted out of the questionnaire and questionnaires not fully completed. The information submitted by each respondent was analysed by the statistics department of the University of Pretoria and was therefore still seen as an anonymous questionnaire.

The 42 respondents contacted completed the questionnaire as indicated in Table 10 below.

Table 10: Feedback on submitted questionnaire

	Number of respondents	Percentage of total questionnaires issued
Completed	20	47.6%
Exploration company	2	4.8%

	Number of respondents	Percentage of total questionnaires issued
No feedback	9	21.4%
Opted out / partially completed	11	26.2%

The completed and usable questionnaires only accounted for 47.6% of the total number of questionnaires issued as indicated in Table 10. Efforts were made to increase this sample by contacting respondents again and sending out reminder emails. However, the extra effort did not significantly increase the sample. Reasons given for not taking part in the questionnaire were a lack of time because some companies were dealing with the financial year end, other people could just not be contacted and some companies were even hesitant to comment on tax matters.

It was decided that the low response on issued questionnaires still supports the objectives of the research because in addition to the analysis of the responses, some information on royalties are also published in the annual results of the mining companies as highlighted in sub-chapter 3.1 above. The risk of the low responses on the issued questionnaires was therefore reduced to an acceptable level.

The completed questionnaires received were stored in SurveyMonkey. Access to SurveyMonkey is protected by means of a password. Therefore no unauthorised access can be obtained and the integrity of the data was maintained. Sub-chapter 5.3.2 below illustrates how the data was evaluated for accuracy and completeness.

5.3.2 Verification and evaluation of the accuracy and completeness of the data collected

SurveyMonkey issues questionnaires to individual respondents based on an email approach as described in sub-chapter 5.3.1 above. Contact numbers were issued with the email in order for respondents to contact the sender in case of any uncertainties during answering the questionnaire. This approach gave a little more personal perspective than just issuing a random email.

The accuracy and completeness of the data collection was further optimised by building a random number of checks into the questionnaire. Every question had to have at least one selection before the respondent could continue onto answering the following question. Other logic built in was where for instance question one had two minerals selected, then question two had to have demographic information completed for two minerals. The latter logic explained was also applied to question six, seven and eight.

When answering no to question three, then question four was discarded. The use of open-ended questions was limited to only one being question nine. In question ten only one option per factor could be selected.

Using the checks above increased the accuracy and completeness of the collected data. A further control measure was to use detailed, unambiguous questions with further explanations to questions one, two, six, seven and eight.

Some of the annual financial statements of the larger mining companies listed in Table 8 above were also reviewed to identify possible impacts that the MPRRA had on mining activities. This analysis was done in Chapter 3 above and will corroborate the findings in sub-chapter 5.3.4 below.

After the closing date for completing the questionnaire, the information was submitted to the statistics department of the University of Pretoria to be prepared for analysis as explained in sub-chapter 5.3.3 below.

5.3.3 Specific approaches to prepare data for analysis

The completed questionnaires were received in SurveyMonkey and extracted by the statisticians listed in sub-chapter 5.2.2 above. Partially completed questionnaires and the respondents who opted out were excluded and then the remaining twenty completed questionnaires listed in Table 10 above were used for the results analysis in sub-chapter 5.3.4 below.

5.3.4 Analysis of results

5.3.4.1 Introduction to results analysis

In order to understand the results, it was decided to first look at the type of minerals that are dealt with in the questionnaire. Responses to question one were combined for all minerals in order to identify the minerals mined by respondents as a percentage of the overall minerals listed in the questionnaire.

The results depicted in Figure 1 below contain the responses from the 20 respondents which mine a total of 35 minerals. Note that these minerals are not necessarily unique, but could be mined by every respondent or only by one company. The list of minerals mined in South Africa were obtained from the Council of Geoscience in Pretoria and were therefore already inserted in the selection options of question one.

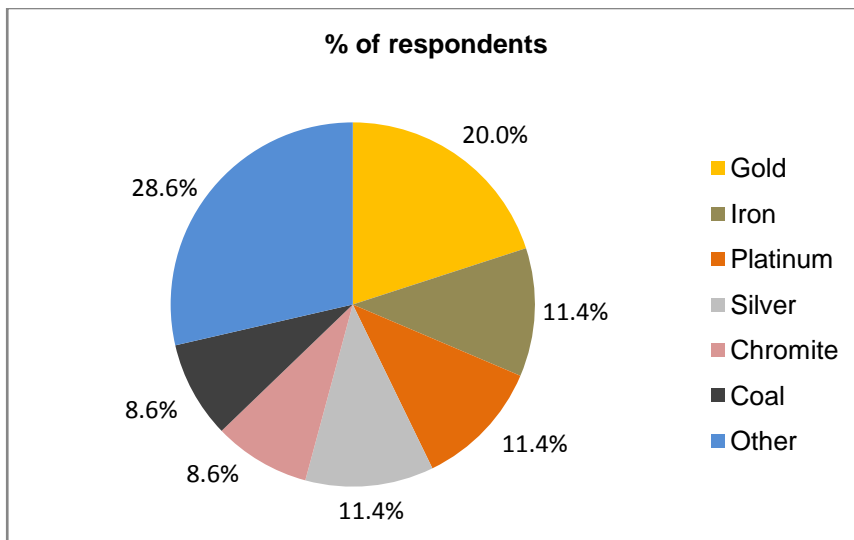


Figure 1: Composite of minerals analysed in questionnaire

Although the returned questionnaires only accounted for 48% of the issued questionnaires as identified in Table 10 above, Figure 1 still reflects the trend towards the main minerals mined in South Africa.

As a second statistical overview, the areas in which the minerals are mined are displayed in Figure 2 below. It was noted that the combined minerals per geographical area

amounted to 68, whereas the information used in Figure 1 only amounted to 35. This is only an indication that one mineral could be mined in more than one province.

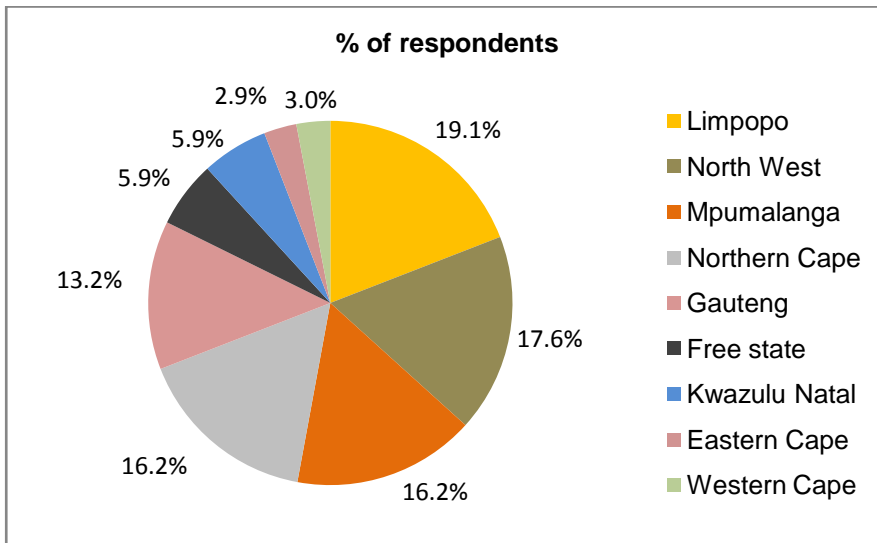


Figure 2: Minerals mined per province in South Africa

It is evident from Figure 2 above that minerals are mainly mined in the provinces of Limpopo, North West, Mpumalanga, Northern Cape and Gauteng.

In the next section the specific objectives of the questionnaire was addressed.

5.3.4.2 Analysis of results based on questionnaire objectives

Three objectives relating to South African mining activities upon which this research is based were listed in sub-chapter 1.4. The following objectives were the focus of the results analysis going forward:

- Did the enactment of the Mineral and Petroleum Resources Royalty Act (MPRRA) increase royalties payable by mining companies.
- Are there instances where minerals are classified as refined where no further processing is required? This will cause mining companies to incur additional royalty liabilities.
- What other factors may deter mining companies from further investment in South Africa?

Each objective above was interpreted individually based on the responses received from the questionnaires.

Increased royalties

Table 11 below categorises the number of mining companies paying royalties as a percentage of accounting earnings before interest and taxes (EBIT).

Table 11: Number of mining companies paying royalties before and after enactment of the Mineral and Petroleum Resources Royalty Act

Royalties as % of accounting EBIT	Before enactment	After enactment
No royalties	12	3
Up to 5%	7	13
Greater than 5%	0	3
Greater than 20%	1	1

It is noted from Table 11 that the number of mining companies paying zero royalties has decreased from 12 to 3. The minimum royalty payable is however 0.5% of gross sales and it can therefore be assumed that these three companies at least pay 0.5% royalty taxes after the enactment of the MPRRA.

The results further highlight that besides the fact that all mining companies are paying royalty taxes after the enactment of the MPRRA, three mining companies now also pay royalties in excess of 5% of accounting EBIT. Prior to the enactment of the MPRRA no mining company fell into this category.

Refined vs. unrefined

The analysis of all identified minerals for the twenty completed questionnaires, reflects that 21 minerals require further processing but only eleven are classified under the MPRRA as refined minerals.

There is not sufficient information to draw a conclusion. The facts do tend to indicate that the classification of minerals as refined according to the MPRRA has not further negatively impacted on the royalty bill payable by mining companies.

Other factors impacting on investments in South African mining activities

Respondents were requested to rate the likelihood of how factors such as increased royalties, other taxation law amendments, political uncertainty, social issues and administrative burdens will affect decisions of further investments in South Africa. Five options per factor were allowed. These options were: Most likely, likely, neutral, unlikely and most unlikely.

Table 12 below displays the selection of the respondents to the options of most likely and likely.

Table 12: Factors impacting on investment decisions

Factor	Percentage of respondents indicating 'likely' and 'most likely'
Increased royalties	60%
Other taxation law amendments	65%
Political uncertainty	65%
Social issues	50%
Administrative burdens	35%

Other taxation law amendments and political uncertainty appeared to be the most likely factors that will deter mining companies from further investment in South Africa. Increased royalties and social issues also influence further investment decisions.

Mining companies have further indicated that although the tax burden may increase, it still remains a business decision. No further investment will be incurred if the net present value of an investment decision is negative.

The following sub-chapter briefly assesses the quality of the research.

5.4 ASSESSING AND DEMONSTRATING THE QUALITY AND RIGOUR OF THE RESEARCH DESIGN

5.4.1 Sources of error that could influence the research findings

Small sample sizes were utilised for the research. Only mining companies listed on the South African stock exchange were approached to participate in the research.

Listed mining companies were used and from discussions in sub-chapter 4.2.3 above, these listed mining companies are assumed to be major role players in the economy. As a result, the small sample size did not pose a significant risk of error for the research.

Participants have submitted information in the questionnaires in the form of selections from a dropdown menu, as well as selections from a range of possibilities. Information supplied could be interpreted and measured inaccurately, as well as purposefully tampered with. It was therefore important to ensure that data submitted by the participants are accurate. Accuracy was tested by cross checking the supplied information with annual financial statements as the results obtained from the questionnaires should correspond with published annual financial statements.

5.4.2 Techniques used to provide evidence for the quality, credibility and rigour of the research findings

The following guidelines were utilised to ensure that the research findings were of acceptable quality, credible and sufficiently rigorous:

- *Statistical verification.* Statisticians assisted in structuring questionnaires in such a way that the most useful information was gathered. Data was subjected to statistical methods to extract quality findings.
- *Prior dissertations.* The credibility of this research was enhanced by comparing its findings to those of previous research endeavours. Although findings were different as different research objectives were investigated, some forms of correlation were found.
- *Research supervisor.* Where the researcher was uncertain how to research specific information the research supervisor assigned to this research topic was approached to highlight areas which could damage the quality of the research topic.
- *Actual results.* Actual results from annual financial statements were used to compare with information provided.

5.5 RESEARCH ETHICS

Specific ethical principles were applied to the research topic. The following list contains these ethical principles, **not** that the **potential ethical problems** are indicated in **bold**:

- *Copyright and plagiarism.* When using literature, the sources were always recognised and direct quotations were referenced correctly.

- *Voluntary participation and the right to withdraw from the research at any point without negative consequences.* Any participant had the right to participate or not to participate in the research.
- *Prohibition of the use of financial and non-financial incentives to encourage participation.* Participation in the research was of free will and by no means was participants bribed.
- *Avoidance of physical or psychological harm to participants.* Any abuse to participants by whatever means is unethical and was not tolerated.
- **Informed consent and the deception of participants.** Each participant was required to give his or her consent to participate. The research cannot be conducted without consent. Respondents to the questionnaire were personally contacted to obtain consent.
- *Confidentiality and privacy of participants.* Data gathered from participants was treated as confidential and the privacy of the participant was respected.
- **Anonymity.** Details of participants should remain anonymous. Questionnaires were carefully drawn up and collated to prevent any leaking of personal information of participants.
- *Archiving and storage of research data.* Data was archived and stored in such a manner that the anonymity of participants was retained.
- *Researcher's objectivity, honesty and integrity.* The professional manner in which the research was conducted should always be exhibited. This image should never be harmed.
- *Fabrication and falsification of data.* In order to execute well received and academically sound research, it was crucial to use legitimate data throughout the research.
- *Misleading or false reporting of research findings.* Instead of drawing inaccurate conclusions, conclusions were arrived at on the facts available. Some issues were merely mentioned rather than concluded upon so that future research can be conducted thereupon.

CHAPTER 6 – CONCLUSION

Risk such as increased royalties, taxation law amendments, political uncertainties and social issues will always be prevalent in any country. When these risks become unmanageable, mining companies will divest. However, as long as these risks are manageable and investment decisions keep yielding positive net present values then mining companies will remain extracting mineral resources.

This research aimed mainly at reviewing the impact that the Mineral and Petroleum Resources Royalty Act (MPRRA) had on the accounting earnings before interest and taxes (EBIT) of mining companies. A mining company such as Kumba Iron Ore Limited reflected an increase in total taxes and royalties from 30.66% of EBIT in 2009 to 36.04% of accounting EBIT in 2011. In 2009 Kumba Iron Ore Limited also did not pay any royalties.

Any previous arrangement that mining companies had with current land owners is not replaced by the MPRRA. The MPRRA is an additional royalty to any current arrangement with land owners. In terms of the MPRRA a minimum charging formula of 0.5% is always applicable regardless of whether a mining company is profitable or not.

The EBIT used in the charging formula is the taxable EBIT. Royalties could therefore be significantly lower in financial years when wear and tear increases dramatically due to capital investment. This impact on royalties could be analysed in future research proposals.

It appears that the classification of minerals as refined or unrefined in terms of the MPRRA did not have a material impact on the royalty liability. Sufficient data was not gathered to draw a full conclusion. It is noteworthy that of the total of 35 minerals mined as listed by the respondents, 21 minerals require further processing but only eleven minerals are classified as refined.

The last objective of this research focused on the possible impact of the Resources Super Profits Tax (RSPT) on mining activities in Australia. RSPT will be charged at 40% of

assessable profits, but the company tax rate in Australia will gradually be reduced from 30% to 28% by the 2014/15 tax year.

Uncertainties surrounding the application of the RSPT in Australia have caused mining companies to act with precaution when exercising investment decisions in Australia. A few mining companies already placed some greenfield exploration (refer to the definition of greenfield exploration in Table 1) and brownfield expansion (refer to the definition of brownfield expansion in Table 1) projects on hold. An example of a project being halted is Xstrata Copper North Queensland division which has suspended an AUD\$ 30million copper exploration project in the areas of Mount Isa and Conclurry. Santos also announced that the building of an AUD\$ 15billion liquefied gas plant in Gladstone, Queensland will be halted by up to six months.

The true effect of the RSPT on mining companies in Australia will only be experienced after the enactment in July 2012. At this point any indication is only speculative. Future research proposals could determine the true impact in Australia as well as whether such a tax in South Africa could be beneficial to both government and mining companies.

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APPENDIX A

- Questionnaire issued to mining companies -

1 LIST THE MAIN MINERALS MINED/EXTRACTED FROM HIGHEST TO LOWEST EBIT EARNED (MAX 4).

NOTE:

*** LEAVE COLUMNS BLANK IF LESS THAN 4 MINERALS ARE MINED/EXTRACTED.**

*** PLEASE MAKE A NOTE OF THE ORDER IN WHICH MINERALS ARE LISTED AS THE INFORMATION WILL BE USED THROUGHOUT THE QUESTIONNAIRE (IT IS ALSO POSSIBLE TO SCROLL BACK TO QUESTIONS SHOULD YOU PREFER)**

	Mineral mined
Mineral 1 (Highest EBIT)	<input type="text"/>
Mineral 2	<input type="text"/>
Mineral 3	<input type="text"/>
Mineral 4 (Lowest EBIT)	<input type="text"/>

2 IN WHICH PROVINCES IN SOUTH AFRICA DO YOUR COMPANY MINE/EXTRACT THE MINERALS LISTED IN QUESTION 1?

NOTE:

*** LEAVE ROWS BLANK IF LESS THAN 4 MINERALS ARE MINED/EXTRACTED**

*** IF A MINERAL IS MINED/EXTRACTED IN MORE THAN 1 PROVINCE, PLEASE INDICATE SUCH. IF NOT, SELECT "NOT APPLICABLE" FOR THE REMAINING ROWS**

	Province	Province	Province
Mineral 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mineral 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mineral 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mineral 4	<input type="text"/>	<input type="text"/>	<input type="text"/>

3 WERE ANY ROYALTIES PAYABLE BEFORE THE IMPLEMENTATION OF THE MPRRA?

- Yes
- No

4 IF ROYALTIES WERE PAYABLE BEFORE THE ENACTMENT OF THE MPRRA, WHAT WAS THE AVERAGE PERCENTAGE OF EBIT?

- 0 - 5%
- 6 - 10%
- 11 - 15%
- 16 - 20%
- more than 20%

5 WHAT IS YOUR COMPANY'S CURRENT ROYALTY LIABILITY UNDER THE MPRRA AS A PERCENTAGE OF EBIT?

- 0%
- 1 - 5%
- 6 - 10%
- 11 - 15%
- 16 - 20%
- more than 20%

6 WERE THE MINERALS LISTED IN QUESTION 1 CLASSIFIED AS REFINED OR UNREFINED BEFORE THE MPRRA? ALSO INDICATE THE ESTIMATED ROYALTIES PAYABLE AS A PERCENTAGE OF EBIT FOR EACH MINERAL LISTED BEFORE THE MPRRA?

NOTE: LEAVE ROWS BLANK IF LESS THAN 4 MINERALS ARE MINED/EXTRACTED

	Classification	Percentage of EBIT
Mineral 1	<input type="text"/>	<input type="text"/>
Mineral 2	<input type="text"/>	<input type="text"/>
Mineral 3	<input type="text"/>	<input type="text"/>
Mineral 4	<input type="text"/>	<input type="text"/>

7 UNDER THE MPRRA, ARE THE MINERALS LISTED IN QUESTION 1 NOW CLASSIFIED AS REFINED OR UNREFINED? ALSO, INDICATE THE ESTIMATED ROYALTIES PAYABLE AS A PERCENTAGE OF EBIT FOR EACH MINERAL LISTED?

NOTE: LEAVE ROWS BLANK IF LESS THAN 4 MINERALS ARE MINED/EXTRACTED

	Classification	Percentage of EBIT
Mineral 1	<input type="text"/>	<input type="text"/>
Mineral 2	<input type="text"/>	<input type="text"/>
Mineral 3	<input type="text"/>	<input type="text"/>
Mineral 4	<input type="text"/>	<input type="text"/>

8 IS FURTHER PROCESSING REQUIRED ON ANY OF THE MINERALS YOU LISTED IN ORDER TO MAKE THEM SALEABLE? LEAVE COLUMNS BLANK IF LESS THAN 4 MINERALS ARE MINED/EXTRACTED

Further processing

Mineral 1	<input type="text"/>
Mineral 2	<input type="text"/>
Mineral 3	<input type="text"/>
Mineral 4	<input type="text"/>

9 PROVIDE THE MAIN REASON, IF ANY, WHY YOUR COMPANY WOULD NOT INVEST IN ADDITIONAL EXPLORATION OR EXPANSION PROJECTS AS A RESULT OF THE ENACTMENT OF THE MPRRA?

10 RATE THE LIKELIHOOD THAT THE FOLLOWING FACTORS MAY DETER YOUR COMPANY FROM FURTHER INVESTMENT IN SOUTH AFRICAN MINING ACTIVITIES.

	Most likely	Likely	Neutral	Unlikely	Most unlikely
Increased royalties	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other taxation law amendments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Political uncertainty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administrative burdens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>