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UNIVERSITY OF THE
WITWATERSRAND,
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# COMPARATIVE ANALYSIS OF MINERAL POLICIES AND TAXATION SYSTEMS OF BOTSWANA AND SOUTH AFRICA

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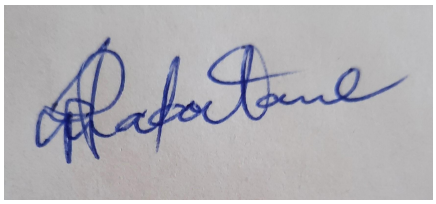
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A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, in fulfilment of the requirements for the degree of Masters in Engineering.

Johannesburg, 2021

**Declaration**

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## ABSTRACT

Mineral taxation instruments continue to be a hot topic of debate for most resource rich countries including South Africa and Botswana. The local populations are of the viewpoint that not enough revenue is generated from mining companies for economic growth and development whilst mining companies' primary objectives are to enhance shareholder value through generation of profits. The study focuses on three main parameters of mineral taxation instruments, namely mineral resource rents, mineral income tax and mineral royalties within both Botswana and South Africa. Botswana's and South Africa's mineral income tax, resource rents and mineral royalties are implemented differently but with the same overarching objective of attracting investments and maximising revenue returns. Further, while the mineral policies of the two countries are similar in terms of the objectives, the pathways or implementation modalities are different contributing to the different results that have been realised. Botswana and South Africa therefore must strike a delicate balance between their efforts to attract investments and maximise returns from mineral taxation systems. Botswana and South Africa adopt varying mineral taxation systems as they seek to address their mineral policy objectives.

A historic trend analysis of taxation regime data on royalty rates, corporate income tax rates as well as their associated mineral resource rent rates was conducted as directed by the availability of data. In addition, a desk-top review of the mineral taxation policies of Botswana and South Africa, and statutory laws that may facilitate or hinder the implementation of the respective countries' mineral taxation policies was conducted. South Africa adopts sliding scale formulas for the gold tax and mineral royalties whilst Botswana adopts a sliding scale formula only on the mining income tax. Both Botswana and South Africa apply differential corporate income tax to selected minerals, where in this instance Botswana applies differential taxation for diamond mining operations given the strategic nature of the commodity to the country whilst South Africa's 'gold tax' has been introduced to facilitate continued operations for marginal gold mining operations. South Africa implements a mineral income tax at a fixed income rate

of 28% save for gold mining operations whilst Botswana implements mineral income tax on a sliding scale or a variable income tax rate.

Each country aligns its mineral policies to the needs of its citizenry and therefore country comparison is always going to present challenges of misalignment of country objectives. The quantitative analysis outcome however revealed the effectiveness of each country's mineral taxation system, therefore enabling comparison between Botswana and South Africa. The mineral royalty taxes are lower in South Africa with a minimum of 0.5% for both refined and unrefined minerals. The mineral royalty regime for Botswana does not have the option of refined royalty rates which are subsidies meant to encourage beneficiation down the mine value chain. Botswana's royalty rates are fixed percentages set at 10% for diamonds, 5% for precious metals and 3% for base metals.

The corporate income tax is lower in Botswana with a minimum rate of 22% depending on profitability as it is applied on a sliding scale formula. In periods of "windfalls "and high profitability, Botswana's income tax goes up to a maximum of 55% whilst mineral income tax for South Africa is fixed at 28%. South Africa implements resource rents on mineral royalties and the gold tax. The gold tax formula is (Y = 45-225/X). The maximum tax rate derived from the gold tax formula is 42.75%. Botswana uses income tax formula: (tax rate = 70 -1500/X) as a form of resource rent for Botswana mineral taxation system. The formula is based on profitability rates of mining operations as denoted by the letter X on the formula, yielding maximum tax rate of 55 at 100% profitability rates and a minimum tax rate of 22%, whilst profitability rates below 21.4% is not liable to pay income. Botswana and South Africa have both seen economic growth and development as consequence of revenue generated from mineral development activities through their various mineral taxation instruments albeit at different degrees. Economic growth has not equally translated into socio-economic development as evidenced by the relatively high gini index in Botswana attesting to prevalent

inequalities. For South Africa, the mining charter attempts to address the inequities within the mining industry by specifically targeting historically disadvantaged groups.

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# 1.0 INTRODUCTION

## 1.1 Background

Mineral taxation is defined as any tax imposed on mineral resources by governments with the ultimate goal of attaining greatest benefit for the public whilst also encouraging investors into the mining industry of the country. Mineral taxation includes any tax levied on mineral resources to generate revenue for the country and this can be implemented in various modalities where each modality has associated benefits and unintended consequences. For several decades, developing countries have been trying to remain competitive in the development of their mineral resources (Balde, 2020). These countries count on their mineral exploitation projects to mobilise more essential revenue for their economic development. In an effort to remain competitive in attracting foreign direct investment most sub Saharan African countries were in a fiscal race to the bottom from around 1992 where increasingly lenient fiscal regimes were observed as a strategy to stimulate the mineral sector (Balde, 2020). In some countries, as a result of revision of fiscal regimes to attract investments, the mineral resource industry became favourable as compared to other sectors of the economy within these countries (Boadway and Flatters, 1993). The competitiveness of a fiscal regime is pivotal in attracting investment alongside geological risk, political and macro –economic risk. Governments have a difficult task in striking a balance for equitable share between investors and host nations as well as remain competitive in attracting investment (Shimutwikeni, 2011).

Mineral taxation has been used by countries endowed with mineral resources to achieve various objectives, chief among them to attain maximum benefit for the nation whilst also facilitating direct investment into the mining industry. Mineral taxation systems are varied as dependent on the objective of the host country, of critical importance are special taxation regimes namely standard income tax, royalties and resource rents. Mineral taxation is a complex suite of levies that requires administrative skills to solve its various properties for optimal/fair sharing of resource rents. The various mineral taxation properties make it very difficult to assess its impact

on sharing of mineral rents (Daniel. et al 2010). Contract negotiations between governments and multinational investing companies require skills in mineral taxation and mining regulations. Most governments lack the capacity to administer complex suites of mineral taxation instruments as a result of inadequate skilled personnel, whilst the multinational companies have abundant skills in all the relevant professions to recoup revenues for their investments. Cumulatively, these factors may undermine the efforts of mineral endowed countries to harness maximised revenues from mineral taxation and by extension limit the extent to which such countries realise their intended objectives through mineral taxation.

The mineral resource industry has been the backbone of most developing nation's economies over the years notwithstanding the limitations associated with the wasting nature of the non-renewal mineral resources (Shimutwikeni, 2011). Therefore, investors seek to make returns on their capital investment as early as possible to manage the risk of diminishing returns through an early payback period. Mineral rich developing countries are keen on creation of long term employment, stimulation of the host country's economy through economic diversification activities as boosted by revenue derived from mining. It is against this background that developing countries impose varied types of taxes on their mineral resource exploitation activities to maximise their revenues. Paredes and Rivera, (2017) assert that fiscal regimes in the mineral exploitation industry enable revenue raising tasks of resource dependent economies to protect citizens against economic shocks. Further, local governments may reduce their efforts in collecting other taxes with higher political costs. This is especially true for Botswana with the lowest standard income tax at 25% maximum for her residents. Residents of Botswana are still afforded free education and medical assistance with diamonds projected to deplete shortly after 2030. Perhaps it's the right time for Botswana to engage in a radical economic diversification drive.

The complexity of mineral taxation regimes is compounded by the competing interests of both the host country and the investing companies where investing companies require the existence of adequate profits and sufficient compensatory returns. For example, the government should

ensure security of tenure is provided to allow for security of investment for a specified period. Therefore, an optimal and fair mineral taxation regime with an equitable share of profits for all stakeholders is desired. The intention is to reflect both the needs and aspirations of host governments, mining investors and local communities, while at the same time addressing how available mining skill sets and knowledge can best be integrated in practice. Local capital development including human development remains a very critical aspect in mineral development drive for resource rich countries as it reduces training costs for investing companies.

Additionally, economic, social, political, and social status of mineral-rich countries are varied with optimal taxation subject to each jurisdiction, a factor which adds to the complexity of deciding and administering tax regimen. Besada (2016), states that policy debates on the continent are centred increasingly on how best to manage the exploitation of natural resources so that they produce benefits for all concerned. Although it is of paramount importance for countries to have a competitive mineral taxation regime to attract investment into the country, factors including geological endowment of the country, political stability and capital availability (skilled human capital and other project resources) are also critical in attracting investment. These factors may play a significant role in deriving a state mineral taxation regime. A combination of all these factors contributes to the uniqueness of each country with varied prioritization of areas of interest. Tilton (1992) contended that ultimately competitiveness must be on natural economic forces that present low operation costs for mining firms and that public policy may enhance the competitiveness of mining firms through incentives geared towards an enabling achievement of lower production costs. These costs are therefore dependent on the strategic intent of an individual state through regulations and mineral policy.

The mineral sector is unique and therefore resource-rich countries must take full advantage of the comparative advantage of mineral occurrence within their jurisdictions for economic growth and development as well as economic diversification. The World Trade Organisation (2010) asserts that comparative advantage in minerals will result in production and export of minerals along

with the production of non-traded goods for domestic consumption, and the import of all other goods that can be traded. Tilton (2018), asserts that the future threat of mineral depletion is often difficult to predict as a consequence of unreliable forecasting of technological changes needed to offset the cost increasing effect of depletion. Governments must generate revenue while minerals are still available, through imposing levies on income, capital gains or estate taxes for utilisation in the provision of public service and economic development. Special mineral taxes are levies that augment with increasing returns and allow the government to recoup differential rents for good grades and windfall profits. While special tax regimes are the widely used tax instruments for capturing of production 'windfalls', for some countries implementation of this instrument remains a challenge as often additional procedures and management and administrative skills are required which may not be readily available. Mineral taxation instruments include corporate income tax, royalties, resource rent tax and capital redemption. Banda & Kabwe (2019) state that resource rich countries sometimes fail to extract maximum benefits from mineral taxation as a consequence of poorly designed taxation regimes. Therefore, governments need to put much effort in designing robust fiscal instruments that provide the opportunity to equally recoup financial benefits as with mining companies. On the contrary mining companies are cognizant of the risk of investing in the mineral exploitation industry with upfront massive capital investment, long production periods and long payback periods. It is therefore in the interest of the mining company to favour/opt for mineral taxation systems that allow for high returns in investments.

Countries with regressive mineral taxation systems tend to lose out in maximization of returns in times of commodity price booms. It is therefore imperative that governments derive strategies from which opportunities are not lost as a consequence of regressive tax systems. Other governments introduced resource rent tax instruments to maximize returns during periods of commodity price booms. Resource rent tax instruments are rarely implemented on their own but are rather built into the corporate income tax or royalty tax. While special tax regimes are the widely used tax instruments for capturing of production 'windfalls', for some countries implementation of these instruments remains a challenge as often additional procedures and

management and administrative skills are required which may not be readily available (Commonwealth Secretariat, 2009). The commodity prices are also very volatile translating to inconsistencies and unreliability of revenue generation from mineral exploitation activities. These prices are a consequence of commodity supply and demand in the marketplace. Mining companies do not set the price for their commodities but are instead price takers as determined by the markets. Most metal price history exhibits swings resulting in operational losses and profits over the years. Mineral taxation regime must be cognizant of commodity price volatility and be able to maximize returns in windfall periods.

Good governance is required for prudent management of mineral resources to benefit the country as a whole and not to fall into a resource curse trap. The resource curse is defined as the failure of many resource-rich countries to benefit fully from their natural resource wealth, and for governments in these countries to respond effectively to public welfare needs (Farooki & Kaplinsky, 2014). Mineral exploitation returns derived from mineral taxation systems are greatly impacted by the level of checks and balances intended to apply effective institutional safeguards against their use for political mileage. Good democracies tend to provide robust pressures to resource rent-seeking attitudes through the provision of quality institutional oversight bodies mandated to ensure country-specific objectives are realised. Samis (2007), states that variability of minerals and energy prices has assisted governments justifying incorporation of windfall profits tax into their mineral taxation instruments. Mining companies must also be able to calculate the impact of windfall taxes on the economics of the project. All the risk to the project cash flow must be exposed for both the country and the investing company to be incorporated in determining the project economic viability. Samis (2007) reiterates the use of advanced mineral valuation techniques to inform both governments and mining companies on the impact of windfall taxes and royalty taxes.

### 1.1.1 Resource rent tax

Resource rent is defined as the excess of revenue from costs of production, including those of discovery and development as well as normal return on capital (International Monetary Fund, 2012). It is therefore important for resource rich countries to understand critical elements within resource rents to determine an optimal and economical neutral tax. "The key to an effective fiscal regime is to direct taxes at profits and not revenue" (Shimutwikeni, 2011). Laporte and Quatrebarbes (2015) explain rent in agricultural terms as dependent on the difference in fertility between pieces of land and thus correspond to the difference between marginal costs and commodity price. Cloete and van Rensburg (1984) assert that resource rent taxes are neutral and therefore should not influence the allocation of resources. They further explain that a portion of the earnings from production is not rent but rather the return necessary to attract or retain investment in mineral exploitation activities. Resource rent tax is mostly determined according to the application of a formula and becomes positive only after a specific profit is attained. At this threshold higher profitability leads to higher taxation rates. Governments need to have knowledge of commodity price, operational costs as well as discount rate. It is critical to understand all cost drivers and revenue generation parameters since profitability is a function of the difference between total revenue generated and total costs. Although it is not easy to acquire all the necessary information for governments to maximize returns, relevant data must be available to inform resource rent rates. Resource rent sharing between governments and investors is a very sensitive and delicate act between the desire to attract international investors for mineral exploitation and for sufficient capturing of rents by governments.

A study on resource rents performed by Cloete & van Rensburg (1984) revealed that as a variant of resource rent tax, the gold tax has some advantages which are beneficial to both the state and the mining firm. The risk associated with investing in mining projects is covered and the mineral resource base of the country is fully utilised by the mining of low grade ores resulting in substantially extending the existence of mining operations. However, this taxation instrument can also lead to suboptimal wealth creation for the country if the taxation threshold is not activated as

a consequence of misallocation of resources. The application of resource rent tax must be aligned to safeguard the interest of the country.

### 1.1.2 Mineral royalties

Mineral royalties are defined as payment to the holder of mineral rights for the utilisation of the mineral resource (Clinton, 2016). Royalties can be levied as a per-unit tax (fixed charge levied on a unit of production) or ad valorem which are fixed charges levied on value of output, or on gross revenues (World Bank, 2019). The mineral resource royalties are paid even when operations are making losses. It is important that both the government and the mining company on either side of the equation are equitably satisfied. Lilford (2017) asserts that both company and country are rarely satisfied by the application of mining royalty taxation instruments due to conflicting objectives where the government seeks to maximise returns for the benefit of the greater population whilst the mining company's objective is to increase shareholder value through increased profitability.

Clinton (2016) performed a study on seven Witwatersrand gold mines to consider the impact of mineral royalties and the benefit realised by the state. The study accessed the current tax and how it affected mining operations as well as investment decisions. The study used both the profit optimized and Net Present Value (NPV) optimized model. The study revealed that if royalties were levied only on profits then it could not be considered for cut-off grade purposes as is the case with income tax. Mineral resource royalty is considered as a cost and is considered when determining the cut-off grades. Mining companies are in the business of mining to create shareholder wealth and therefore will only invest their capital in areas with profitable mineral grades. The study revealed the effect of cost increment as it relates to mineral reserve reduction to attain profitable status. Further, Clinton (2016) confirmed that an increase in cut-off grade due to an increase in costs leads to a reduction of available mineral reserves above the calculated cut-off grade. It also emerged that excluding the mineral resource royalty results in less revenue to the state only if direct taxes are considered as taxation instruments. Although the revenue for

the state is lower without royalties as a cost to the mining company, it may be eliminated or reduced to enhance value through unlocking of marginal grade mineral resources and consequently the extension of life of mine. Each of the mines considered for the study were impacted by the mineral resource royalty in a different way, due to variation in grade distribution. Royalties are paid on total mineral sale revenue, it is considered an additional cost that causes the cut-off grade to increase thus reducing life of mine and the benefits of employment and continued generation of income tax for the government.

### 1.1.3 Corporate Income Tax

Corporate income tax is a form of taxation which is applied across the broad spectrum of all industries within the country. Corporate tax is charged on profits of a company's accounting period and is payable after the expiration of that period (Merrills and Fisher, 2013). The income from corporate capital is taxed both at the corporate level and individual level. These tax instruments are determined by the country of operation and therefore will vary across jurisdictions depending on the objectives of the country. Companies are expected to perform self-assessment and must return their profits after determining the amount of tax due to the state. Most corporate income taxes are usually progressive, that is average tax rates increase with increasing income (Hines, 2001). This translates to higher rates of taxes for large corporate companies with higher income. It is therefore of paramount importance that governments dedicate a lot of time on planning activities and corporate tax obligations of big mining companies since income is concentrated in a relatively small number of big mining companies. Corporate income tax is the major source of revenue for governments across all sectors of the economy.

## 1.2 Africa context

Local entrepreneurs and Governments lack the capacity to mine mineral resources themselves and therefore have to attract foreign direct investment and capture a fair share of mineral resource rent. The commodity price boom between 2002 and 2008 multiplied the total world

resource rent by 2.3%, whilst tax revenue earned by African governments only grew by a factor of 1.5% (Laporte and de Quatrebarbes, 2015). The sharing of mineral taxation revenue and resource rents between African countries and investors have often been referred to as unfavourable for African governments. Capacity building of local human resources and capital development within the African continent is of paramount importance to meaningfully engage through the mineral development process within the region.

Efforts to improve governance within the African continent emanated from the collective development of the African Mining Vision (AMV) which is a continental policy with the intent to align individual African countries with the continental policy. The AMV is a policy framework that is intended to assist Africa to utilise its mineral resources strategically for broad-based and inclusive development (United Nations Economic Commission For Africa, 2009). The AMV charts a path for creating and realizing various linkages arising from mineral exploitation through mineral development and technical upgrading. Since gaining independence most African countries were not fully integrating mineral exploitation activities into their economies. This includes lack of meaningful strategies for deliberate economic growth and development as well as infrastructure development. The AMV seeks to promote the alignment of national mineral policies, enhance policy coherence and stability in mining sector regulation, a key factor for transparency, competitiveness and promoting mining investments. Further, the AMV stipulates that companies working in the African mineral sector respect tax avoidance and evasion guidelines by ensuring they pay the right amount of tax in their host countries. Maximisation of revenue from mineral exploitation activities depends on the strength of mineral taxation systems of host countries as well as adopting good management practices. It also takes into consideration the mineral endowment opportunities within African nations, critical factors of consideration being the use of resource differential and windfall rents to improve the physical and knowledge infrastructure, downstream value addition, upstream value addition and technological advancements. Further, these activities through taxation of numerous sectors

linked to mineral exploitation activities are intended to generate additional revenue to the government as well as create employment for African countries.

According to Maponga & Musa (2020) the AMV, adopted by African Union Heads of State and Government in February 2009 as the continental blueprint for mining-related development, identifies local content as one of the strategies towards a stronger and more domestically orientated sector and the creation of opportunities for local stakeholders along the mine value chain (MVC). Africa is the world top producer of several minerals and has the world greatest mineral resources of many more minerals (UNECA 2009). Africa's mineral endowment is a comparative advantage to enhance economic growth and development strategy for Africa. These minerals are produced and exported as raw materials without significant value addition to developed countries. The potential for beneficiation and linkages to promote Africa's need to industrialise still exist. These mineral exploitation activities must therefore benefit the African community by revenue generation through implementation of robust mineral beneficiation activities as well as adoption of competitive mineral taxation instruments to prevent mineral revenue leakages.

Further, the AMV is particularly intentional in improving linkages between mining and the broader African economy and encourages individual member countries to promote local content and empowerment of citizens in policy and investing in human resource development especially in high technical skills required in the mining sector. Local content and local beneficiation are intended for increased levels of participation by locals to enhance developmental roles by mining and its contribution to economic transformation and industrialisation. Additionally, the AMV recognises the importance of artisanal small scale mining in terms of employment creation and revenue generation within communities for sustenance and local business development. This is consistent with the Abuja Treaty of 1991 that established the African Economic Community which called for coordination and harmonization of policies and programs across member states on areas of energy and natural resources including information exchange on prospecting, exploiting and using of natural resources including water (Salman, 2002). These included

harmonisation of policies on skills development to better position countries to fully harness the value of their mineral asserts Maponga and Musa (2020). Concurrently this will support the Lagos Plan of Action to promote Africa self-reliance through mineral resource development which seeks to promote skills transfer and development, economic data development between member states as well as infrastructure development. The policy directions on mineral exploitation, local content and beneficiation and linkages provided by the AMV are captured on various regional and national policies, legal and regulatory frameworks. The AMV direction resonates well with the Southern Africa Development Community (SADC) regional aspirations which seek cooperation and a level playing field to guide policy and transform the socio-economic landscape of the region.

### 1.3 Regional context: Southern Africa Development Community (SADC)

Southern Africa is home to the world's richest mineral deposits. South Africa alone is estimated to have non-energy minerals worth upwards of US$2.4 trillion, making it the wealthiest mining jurisdiction in the world, that is if petroleum reserves are excluded (World Bank, 2019). Although the region has the richest mineral deposit in the world, high levels of inequality are still very prevalent within SADC member states. Efforts to harness mineral development activities and leverage on comparative advantage within the SADC region are to be realised through the implementation of the SADC regional mining vision. The SADC regional mining vision is premised on the principles of the AMV and its objectives are to optimise sustainable development impact of mineral resource exploitation in the region, whilst also recognising the different stages of maturity of the mineral sector in the region (SADC, 2018). One of the critical aspirational elements of the vision is the realisation of mineral fiscal linkages in the SADC region, through optimal mineral taxation and other fiscal instruments, for tax collection and compliance and for the management of resource rents for equitable development, fiscal stabilisation and intergenerational equity. Although the SADC Regional Mining Vision is yet to be implemented in the region, its aspiration of optimal taxation and collection and equitable

sharing of the resource rents are of paramount importance in aligning the region to the best industry practices.

The SADC aspirations are critical in enhancing value for sustainable development and economic growth through maximisation of revenue from mineral exploitation activities. Recent mineral policies reviews seek to respond to changes in political and economic circumstances for host countries to maximise returns for economic growth and development. According to Mtegha, Cawood and Minnitt (2006) if all SADC regional countries had mineral policies then the development of a regional policy would be designed through a harmonisation process entailing multi-disciplinary engagement with different stakeholders to address socio-economic, political and environmental issues with the view to improve the quality of life for the greater regional population. The benefits of harmonisation are creation of a large regional market, higher pool of technical skills and enhanced capacity to positively respond to sustainable development challenges.

The SADC region protocol on mining provides the overall direction for the operation of the mineral sector with the main objective of fostering a sector capable of economic growth and development, contributing to poverty reduction and enhancing the overall standard of living within the region. The protocol significantly highlights collaboration within member states through harmonisation of national and regional policies, human resource development, private sector mineral exploitation and promotion of artisanal and small scale miners (ASM). Maponga and Musa (2020) assert that regionalization of local content is a critical strategy of the AMV and mineral sector policy harmonization as outlined in the SADC Protocol on Mining, along with its long term objectives of the SADC Industrialization Strategy and Roadmap (2015-2063), and it's Action Plan and the SADC Revised Regional Indicative Strategic Development Plan (2015-2030). SADC member states are dependent on the use of both royalties and CIT as mineral taxation instruments through which they obtain their share of resource rents. These taxation instruments are however not adequate to maximise returns during periods of high profits, as a consequence some member states incorporated the resource rent taxes. SADC

(2018), indicates a number of countries within the region have introduced resource rent taxes or variants, examples of which are Zimbabwe, Mozambique and Malawi. South Africa and Zambia have mining tax variants based on return on sales.

SADC (2018) highlights the effects of royalties in stimulating investments in new mines and mining more reserves from existing mines. The royalty taxes influence the cut-off grades and therefore is a major determinant in mineable reserves and consequently the life of mine. Higher royalties tend to sterilise potential ore reserves with the subsequent unfortunate decision to reduce life of mine. Marginal grade new mining projects are also made economically non-viable at higher royalty taxes. Member states of SADC produce two-thirds of Africa's mineral exports by value (KPMG, 2013). Southern Africa is home to the world's richest mineral deposits. South Africa alone is estimated to have non-energy minerals worth upwards of US$2.4 trillion, making it the wealthiest mining jurisdiction in the world, that is if petroleum reserves are excluded (World Bank, 2019). Although the region has the richest mineral deposit in the world, high levels of inequality are still very prevalent within SADC member states.

## 1.4 Overview of Botswana and South Africa mineral taxation history

Botswana and South Africa are two of Southern Africa's mineral-rich economies. For many developing countries, it is often the government that owns the mineral resources and by extension the recipient of any revenue flows from the harnessing of these resources (World Bank, 2010). This concentration of revenues with the government as the conduit of benefits to the rest of the economy can lead to a host of problems, including rent-seeking, corruption, and the efficiency losses with consequences of economic retardation. The mismanagement of mineral exploitation revenues tends to slow down economic growth and development as a result of a lack of investment to grow the economic base.

Taxation regimes across sectors of the economy are evaluated and assessed in accordance with standards under prevailing market conditions. Countries tend to adopt a single national taxation system across sectors of the economy under the pretext of administrative consistency and

political fairness. As Banda & Kabwe (2019) state, the mineral sector has several characteristics which makes its taxation very important for countries whilst also very difficult to administer. These attributes include high sunk costs, long production periods and long pay back periods which are a significant risk to the investing company. The mineral taxation system is unique/different to other sectors of the economy as a consequence of risk and uncertainties faced with the industry, relating to capital intensity and application of tax relief to recoup capital expenditure. As such mineral taxation, as opposed to other sectors of the economy, is levied for extraction of minerals from the ground. Royalties are levies imposed solely to compensate for the extraction of minerals and are not profit-based, while resource rents provide an opportunity for imposing higher mineral taxation than in other sectors of the economy.

The existing comparative advantage of mineral resource endowment of both Botswana and South Africa requires stable political systems with good democratic ideals to dispense good oversight and robust corporate governance principles. Taxation regimens are derived from the existing mineral policies and legislation which are meant to serve the interest of both the host country and investing companies. Negotiations for determination of mineral tax rates between governments and mineral extraction companies have proven to be susceptible to bribery by extractive companies. Further, government delegates may have deficient knowledge about the true value of the mineral asset as compared to their extractive company counterparts. Cumulatively, these factors may result in lost opportunities for the host countries in realizing the objective of maximising returns from the mineral taxation system. Otto et. al., (2006) state that governments are rarely satisfied by the rates of mineral taxations and conversely mining companies never feel they pay too little tax, whilst the citizens never feel they get the full benefits of their mineral wealth. The selection of optimal mineral taxation is dependent on the tax evaluation methods which are derived from mining projects evaluation experts. Notwithstanding all the evaluation processes, the correct balance is determined by the economic context of the state and consequently the political aspirations of the state. Therefore, the selected taxation system might be optimal for one country and be sub-optimal for the next country depending on the prevailing

economic and political needs of the country. However, resource rich countries' strategy is to maximize returns from mineral exploitation and broaden the economic base through implementation of strategies meant to boost other sectors of the economy.

South Africa's modern mineral sector was established in the late 1800s with the discovery of gold and diamonds. Large scale mining started in the nineteenth century with a great focus on gold mining leading to rapid industrialisation accelerated by revenue generated from mineral exploitation. The agricultural sector was surpassed by the mineral sector as with other mineral-rich countries. Curtis (2009), asserts that mining was one of the industries at the forefront of the economy. Notwithstanding that, the gold resources are currently substantially depleted and with existing resources at great depth resulting in high operational costs for the mining companies. This has led to reduced gold contribution to the economy over the recent years as well as reduced employment within the sector which was once the mainstay of South Africa's economy. The gold tax formula was introduced in 1936 upon the recommendations of the Corbett Commission (Cawood and Macfarlane, 2003) and is applied to gold deposits only whilst other minerals are incorporated in the standard corporate income tax.

Nonetheless South Africa still has massive mineral resources, with coal and iron assuming very important positions in the economy of South Africa (IMF, 2015). The transformational process of substituting the old South African regime started soon after the 1994 national elections. The intent of the African National Congress's radical mineral development transformational process was captured in the Freedom Charter of 1955 (University of Witwatersrand, 2013) which called for the mineral wealth of the country to be restored to the people of South Africa as a whole and opening up South Africa's mineral resources for foreign investment. These processes played a key role in shaping the current South Africa's mineral investment environment (Cawood, 2004) with subsequent mineral policy development leading to the introduction of the Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry hereafter referred to as the Mining Charter, as a transformational effort by the government of South Africa.

These policies are designed to enhance economic growth within populations which were previously disadvantaged. It is an undisputed fact that the majority of South Africa's black population remains disadvantaged with regard to enjoying the mineral endowment of their country. As a strategy to address this long-standing inequity, the mining charter proposes, amongst others, two regulatory instruments concerning ownership and shareholding as well as procurement of goods and services within the mining industry to achieve its objectives. These instruments are to enhance socio-economic status of mining communities and to advance employment and penetration into the mining industry by black population of South Africa.

Revenues and economic activities generated from mineral exploitation, therefore, must be used to benefit all the citizens of South Africa through infrastructure development and economic growth. One of the objectives of the Mineral and Petroleum Resource Development Act (MPRDA) of 2002 is to allow people of South Africa to harness the benefits from the mineral resources of the country and to give ownership of resources to the country. Ainsley, (2013), asserts that the inability of countries to derive value out of their mineral wealth and generate income for infrastructure development and economic growth is pertinent and is seemingly in Africa's largest economy. South Africa is not spared of the resource curse symptoms as it relates to slow GDP growth, entrenched poverty and high unemployment rates thus comparing favourably with Sub- Saharan countries as opposed to its upper middle income peers. Most of the middle and upper income jurisdictions have robust welfare, infrastructure and economic development trajectory for all. It is therefore of paramount importance for all resource rich countries to realise the full benefit from their mineral wealth for all of its citizens, including South Africa. It is therefore critical to analyse the mineral taxation systems of both Botswana and South Africa to identify the extent to which they harness their mineral wealth for the benefit of their citizenry.

Similar to South Africa, Botswana has seen its best mining years in the recent past with significant economic contributions derived from diamond mining. Botswana's large-scale mining started in the 1970s with the introduction of diamonds, copper and nickel mines leading to the

domination of the sector as a major contributor to the gross domestic product (GDP) (World Bank, 2010). Diamonds significantly changed the trajectory of Botswana's economy with major revenue contributions to enhance rapid economic growth and development. Although diamonds were major drivers of the economy, there was the subsequent discovery of other minerals albeit in small quantities, namely gold, coal and industrial minerals. The country has since realised a significant decline in diamond production with mines operating at depth coupled with loss of production as a consequence of depletion of the Letlhakane open pit diamond mine. Further, Botswana has a few base metal mines which are rather marginal in terms of profitability as evidenced by previous liquidations in almost all their mining operations consequent to recent commodity price decline.

The mineral taxation instruments for both Botswana and South Africa include mining royalties, corporate income tax with varying degrees of mineral taxation instruments implemented to recoup profits during periods of windfalls. Botswana implements an income tax of a minimum of 22% having been amended from 25% in 2009, and a royalty tax that is resource-dependent. The South African corporate income tax is at 28% for all commodities except gold. The government of South Africa as custodian of mineral rights has a claim on mining revenue in three ways; a) royalties, b) corporate income tax and c) dividends tax. Cawood (2010), describes these as positions that are either first or middle on the hierarchy of claims on mining revenues which are held by governments. While both Botswana and South Africa are some of the mineral-rich countries in the African continent, the extent to which both countries harnessed their mineral wealth to benefit the current generation, as well as future generations is a subject of continual debate. Both countries have gone through a transitionary period where the main driver of economic growth was the mining sector. Due to the depletion of mineral resources with continual production, and predictably so, both countries have realised a diminishing contribution of mineral revenue to economic growth and development, albeit with South Africa's decline occurring earlier. South Africa just like Botswana had its economy reliant on mining in her earliest years of mineral discovery. The mineral contribution to South Africa's economy has

since declined with slow depletion of its mineral reserves. This is despite the institution of various taxation instruments in the country

## 1.5 Purpose of the Study

The study focuses on three main parameters of mineral taxation instruments, namely mineral resource rents, mineral income tax and mineral royalties within both Botswana and South Africa. While the two countries are well endowed with minerals, they have implemented different taxation regimes on the mineral resources yielding different results for the nations. Further, while the mineral policies of the two countries are similar in terms of their objective in maximising returns and attracting investments, the pathways or implementation modalities are different contributing to the different results that have been realised. The objective of each country is to maximise returns through collection of mineral taxation revenue from mining operations, with a view to still remain attractive to investors. It is therefore critical for the purposes of this study to compare mineral taxation rates for both countries and identify possible areas of revenue leakages for possible future improvements on Botswana and South Africa mineral taxation systems. The study will analyse the ability of Botswana and South Africa's mineral taxation system to recoup profits during times of commodity price booms as well as their mineral contribution to each country's GDP over the years. Therefore, the study summarily is a comparative analysis of mineral taxation systems of both Botswana and South Africa

### 1.5.1 Research questions and study objectives

The primary study question is:

a) From a mineral taxation perspective, to what extent did the mineral taxation suite of instruments implemented in Botswana facilitate the country realising the objectives of its mineral taxation policy compared to South Africa.

**The specific objectives of the research are**:

a) Discuss theoretical and empirical aspects of mineral taxation;

b) Identify any similarities and differences in implementation of mineral taxation modalities in Botswana and South Africa;

c) Describe the benefits and limitations of various mineral taxation instruments as used within mineral taxation policies in Botswana and South Africa; and

d) Analyse the influence/impact of mineral taxation systems on the national taxation regime across all sectors of the economy in both South Africa and Botswana.

### 1.5.2 Scope of the study

The report will specifically focus on corporate income tax, resource rents and mineral royalties as components of the mineral taxation regime. This will entail the extent to which both countries are continually reviewing their mineral taxation policies to remain competitive and benefit both the current generation as well as the future generations.

### 1.5.3 Limitations of the study

Mineral taxation information is not readily available for analysis and interpretation, therefore this report used mineral taxation information which is not classified as confidential. In the case of Botswana, diamonds are classified as strategic minerals for the country as it creates more monetary value to the country than other mineral commodities. Further, access to diamond taxation is confidential as it is an agreement negotiated between the investor and the country. The Covid -19 pandemic created an added challenge of restricted travel within zones in Botswana as well as across the border into South Africa to obtain relevant information for the report. Government and private sector employees were working from home for extended periods of time and therefore access to some information at their place of work presented some challenges.

Data limitations are significant, restricting research conclusions on whether the benefits from mining for both countries are negative or positive. Additionally, there was some dispute over the

mining charter. In 2019, the Minerals Council South Africa (MCSA) filed an application to take the third mining charter on Judicial review (World bank, 2019). The council challenged a number of provisions in the charter with a special emphasis on the "Once empowered always empowered" principle. Although the mining charter is gazetted for implementation, assessment of compliance to all the elements of the charter is yet to be determined. Previous assessments have shown that mining operations were not compliant to the elements of the mining charter.

Comparing two different countries with unique country objectives presented its own challenges since their mineral policies as well as mineral taxation systems will be set to satisfy country specific objectives. Although the broad mineral policy objectives are the same, the modes of implementation are variedly different.

### 1.6 Outline of the report

The report is divided into two main sections where coarsely, the first section focuses on review of the existing knowledge base and evidence whilst the latter section focuses on methods and approaches as well as findings and recommendations from the current study.

*Chapter 1*: The first chapter of the report provides a historical context of mining development in Botswana and South Africa and a consideration of economic diversification efforts in the two countries. The section also provides an overview of mineral taxation as a development exercise, and how the two countries have implemented mineral taxation over time using the various taxation instruments. Specifically, this section will focus on three mineral taxation instruments namely, income tax, mineral royalties and resource rents. The last part of the initial part of the report will provide descriptions of regional and continental mining frameworks including efforts for harmonisation with country level policies. A brief synopsis of both the regional and SADC policy strategy in development of mineral resource management capacity with specific interest in mineral taxation.

*Chapter 2*: This chapter highlights characteristics of the mining industry and how they influence mineral taxation systems. This chapter discusses the application of mineral taxation instruments as used in mineral taxation regimes. This chapter discusses critical elements of consideration in management of transfer pricing and resource rent management as these are critical elements in the government's effort to maximise returns from the resource sector.

*Chapter 3*: The third chapter focuses on mineral development efforts of Botswana with special emphasis on the country's mineral policy, Botswana's economy, mineral taxes and minerals industry contribution to Botswana's GDP. An analytical view of how the mineral industry supports and nurtures other industries as it is pivotal in realizing economic structural changes is undertaken. This is critical since mineral resources are a wasting asset and therefore long term dependence on the mineral industry may prove to be detrimental to the economy as mineral resources deplete. It has however been advanced that resource rich countries should prioritize developing industries with comparative advantages rather than to erode the economic base in a bid to diversify.

*Chapter 4*: This section focuses on the mineral development efforts of South Africa, specifically on mineral policy development as outlined in the mining charter, mineral taxes and minerals industry contribution to South Africa's GDP and the impact of mineral taxation systems on the national economy. The chapter also provides an analysis on the performance of the mineral industry contribution to South Africa's GDP over the years.

*Chapter 5*: This part of the report will focus on a detailed description of the methods and approaches employed to attempt to respond to the research question and a detailed description of the findings obtained. This part of the report will analyse mineral taxation instruments through a mixed method approach entailing quantitative and qualitative analyses to mineral taxation trends and policy objectives of each country. The mineral taxation instruments of interest are income tax, mineral royalties and resource rents.

*Chapter 6*: Focuses on the comparative analysis of mineral taxation systems and the mineral policies of Botswana and South Africa with special emphasis on similarities and differences between the mineral taxation policy of South Africa and Botswana. The chapter will also attempt to highlight implications of the different mineral tax regimes for Botswana and South Africa as well as the learnings from Botswana's mineral development.

*Chapter 7*: Summarises key findings of the report and highlights recommendations for future improvements as derived from the research question. The chapter will also provide conclusions on comparative analysis of mineral taxation systems of both Botswana and South Africa with special emphasis on similarities and differences.

## 2.0 MINERAL TAXATION THEORETICAL AND EMPIRICAL CONCEPTS

Natural resources are a valuable asset for many countries and the management of revenue generated from these resources can have a significant impact on governments and nations, either positively or negatively (IMF, 2010). Therefore, in applying different taxation regimes, in principle governments are cognizant of the non-renewable nature of mineral resources and the criticality of the country exploiting the resources for accelerated economic growth and development. Mineral endowments have projected some countries into the path of sustained economic growth while for some countries corruption, maladministration, and persistent poverty, with little sustainable development to benefit future generations have been entrenched. (World Bank, 2020). In practice, the mineral resource sector is distinct with some characteristics that make its taxation distinctively unique but also particularly challenging. These features are not themselves unique to the resource sector alone but what is typical of them is their sheer scale and these include; a) high sunk costs; b) long lead periods to production; c) prospects of substantial rents and taxation revenue; d) uncertainty; e) market power; and f) international consideration and their exhaustibility (IMF, 2010).

*High sunk costs*: Mining projects often require substantial upfront capital investment into exploration, developing and operational activities which may cost millions of dollars. The

associated expenses are incurred earlier at the initiation phase of the project, mostly at a time where the operation has no cash flow and as such are sunk into the project leaving few to no options for the money to be withdrawn and invested elsewhere. This high opportunity cost means that investors will require a certain level of consistency in the fiscal regime of the country including offering incentives such as optimal tax rates for the entirety of the mining project (IMF, 2010) and if it is too risky or difficult to predict, investors may choose not to invest. Once the investors have incurred these sunk costs they have limited options but to go ahead with the project. Failure by governments to assume an accommodative and optimal tax rate may result in the "hold up" phenomenon where investors are reluctant to invest due to future uncertainty in the taxation regime. This is often a country specific risk that is associated with stability of the political and tax systems (Mathivha, 2016) the latter assessed through an analysis of behavioural patterns of government in previous investments and during periods of"windfalls" and price busts. To remain competitive, some resource rich countries use capital redemption against qualifying capital investment expenditures such as shaft sinking and equipping the mine (Van Blerck, 1998). The applicable capital redemption which is off-set against tax liabilities during the early phases of operations varies between countries, with Botswana and South Africa offering 100% capital redemption. Further, some assets eligible for partial deduction of capital expenditure include residential facilities, vehicles and railway lines (DME, 1998). Mining projects require high capital investment for shaft sinking, developments, expansion and equipment replacement. Capital costs are recovered over the life of mine as deductions revenues as a form of tax shield known as capital redemption. The capital costs are redeemed in the early years of mining production therefore allowing mining investors to recover their capital expenditures.

*Long lead periods to production*: Given the highly competitive nature of the mining industry and the numerous potential investment destinations for investors (World Bank, 2020), one of the features of the industry that makes taxation a complexity is the fact that investors are attracted to jurisdictions where the investors project the ability to operate profitable entities for a long period, and often this confidence is linked to the stability of the political and financial environment. This has resulted in some countries implementing a 100 percent capital redemption for investors to

recapture all their initial capital investment expenses on the project. In this scenario, governments can only apply tax to profits after capital costs are fully recovered.

*Uncertainty*: At all stages of mineral resource projects from development to project closure, a considerable amount of uncertainty persists. Geology also possesses its own uncertainties in terms of resource quantification as well as resource quality. It is critically important for both the investor and the government to fully understand the nature of the mineral asset prior to making investment decisions and taxation designs. Geology is a fundamental aspect underpinning the determination of the project economic feasibility for investor decision making on whether to pursue or discard the project. Other forms of uncertainty are commodity price volatility, which is a distinctive characteristic of the resource sector. Large and rapid price changes are associated with uncertainty and variability in aggregate rents acquired over the life of the project. Commodity prices are subjected to long cyclical periods of either booms and busts with critical implications on the national economies (World Bank, 2020). This ultimately impacts strongly on public discourse on the tax treatment of the resource sector and ultimately impacts decision making processes pertaining to tax design and its effect on total rents. This is a considerable risk for the government in fiscal management as a consequence of the creation of the period's lack and abundance with the government to implement cushionary measures against economic shocks.

*International consideration and their exhaustibility:* The technical and managerial competencies and skills required for developing and extracting natural resources are not readily available in countries endowed with minerals. Foreign-owned companies commonly undertake the development of resource projects in partnership with either government or privately owned companies. This is not unique to the sector but has several implications where more than one jurisdiction may seek to tax mining projects. Therefore, governments and investors concerned may benefit from assessing the combined impact of these taxes. This is premised on the fact that an effective tax rate is dependent upon the cumulative effect of taxation systems in the host

country, home countries of the investing entity, and countries of residence for the owners of the investing company. While standard corporate and withholding taxes are creditable to the home country, royalties are not. Therefore, an awareness of the interactions between different taxation systems may impact the design of mineral taxation (IMF, 2010).

The CIT is a critical component of the fiscal regime of all countries. In designing a corporate tax regime, an awareness of current global trends by governments is important and this includes sensitivity to corporate tax competition and any changes to corporate tax regimen in other countries as such changes are often focused on attracting investment and may affect the revenue yield for the country. Mineral companies may be subjected to a higher tax rate within the standard corporate income tax regime, and in some instances this may be varied in accordance with taxable income. As these regimes are designed and implemented differently across resource rich countries, some countries design their mineral taxation systems based on negotiations between the government and investor rather than assuming a blanket taxation approach across all sectors. Corporate income tax is less distortionary as compared to royalties since they are profit based but are relatively more complex to administer (IMF, 2010).

A steady decline of corporate income tax has been observed over the years across the globe suggestive of tax competition, with the average CIT rate in Organisation for Economic Cooperation and Development (OECD) countries decreasing from 36 percent in 1997 to 27.8 percent in 2007 (IMF, 2010). The European Union nations have recorded a significant decrease with the average rate sliding down from 35.5 percent to 24.2 percent. Most minerally endowed countries in Sub-Saharan Africa have seen a decline from 40 percent to 35.4 percent from 1980 to 2005 (IMF, 2010). This taxation transformation is aimed at attracting internationally mobile capital. Although the tax rates have been reduced in OECD the general corporate tax revenues as a proportion of the GDP has remained stagnant whilst in developing countries the reduction in tax rate resulted in loss of revenue. This suggests insufficient and or lack of broadening of the tax base in developing countries whilst the opposite is true for OECD countries.

Mining royalties are unique to the resource sector and have manifested themselves in a number of ways, based on either the profitability or quantity of the material being produced or its value (Commonwealth Secretariat, 2009). Royalty is used as an instrument for compensation in exchange for granting mining companies access to minerals and the right to develop the resource for its own benefit (Cawood, 2004). Royalties have advantages and disadvantages regarding economic efficiency and division of risk between the country and the company and have been classified as a cost as it imposes tax on each tonne of metal mined leading to inefficiencies in production decisions for mining companies. Mining royalties ensure continual payment of taxes from initial project production stage to project closure mostly without regard for profitability. Royalties can be applied in one of three ways;

a) *Unit based royalty*: These are applied at a fixed and specific rate per tonne of production (IDMC, 2012). This approach is associated with stable and early revenue and is relatively easy to administer and audit. However, unit based royalties can be economically inefficient and very distortionary as they do not adjust to circumstances of increased profitability. Further, they are insensitive to operational costs and are regressive in nature.
b) *Ad valorem royalty*: This type of royalty is based on the value of production thus making them responsive to fluctuating commodity prices and giving the tax some of the pro-cyclical features of a profit tax (Clausing and Durst, 2015). They can be applied on the realised value of sales making it easy to administer since it's based on the predetermined sales information (IMDC, 2012). This approach also makes it advantageous where audits, administrative costs and dispute resolutions are concerned. Ad valorem royalties can also be applied as the gross value of the mineral or metal contained in the mineral product sold. Their computation requires the multiplying of the total weight of the mineral by their grades to obtain contained metal and the value is then derived from using the commodity price for the day of the sale. This approach requires validation calculations which might present some challenges for auditing

purposes. Further, ad valorem royalties could give rise to some transfer pricing concerns with incorporation of external prices, although at a smaller scale than in corporate income tax with smaller price manipulation on the tax base (Clausing and Durst, 2015).

c) *Hybrid royalty tax:* This is a combination of taxation instruments that incorporates at a minimum a unit based and ad valorem component to minimize the possibility that the government may not collect revenue in the years that a project does not realise profits (IDMC, 2012). This type of royalty ensures generation of a minimum revenue stream into government financial reserves and also ensures that the government is prepared to take some of the risk in marginal mining operations by allowing for minimum rates for less profitable operations.

## 2.1 Resource rent design and tax administration

Both investors and governments will not deny the existence of mineral rents as derived from mineral exploitation activities (Cawood and Minnitt, 2002). The management of resource rents to determine both the size and nature of rents have proven to be a major mineral taxation administration challenge. As a taxation instrument, resource rent tax can be applied to profits and as a combination with other instruments to attain a balanced and predictable tax system (IMF, 2020). A well designed resource rent tax will not distort investment decisions as a consequence of its neutrality and efficiency over other taxation instruments (IMF, 2010). Recent experience in mineral commodity price boom and bust has revealed the extent to which resource tax systems respond weakly to changes in the economic environment. Nonetheless, a balanced tax system provides host governments with predictable revenue options through the existence of the mining operations and also generates additional revenues as determined by the profitability of mining operations. A combination of other fiscal instruments with resource rent tax provides an assurance of earlier and more predictable revenue streams as well as reducing administrative challenges.

There is a need for a more balanced and flexible way to uphold the interests of both the host country and investors in all economic circumstances. A resource rent tax creates opportunity for maximization of revenue whilst controlling for distortion unlike other taxes. It is likely that countries with no resource rents are losing out on revenue generation during periods of high profitability in the mineral sector. Notwithstanding that profit based taxes can pose greater administrative challenges than non-profit taxes. The weak administrative capacity and challenges in good governance common in resource rich countries compounds the complexity and the pressure upon their limited capacity.

## 2.2 Transfer pricing and tax avoidance

Transfer price is the price of a transaction between two companies that are part of the same group of companies. For example a company based in one jurisdiction might sell equipment, machinery or mineral products to a subsidiary company based in another jurisdiction. The agreed price between the two companies is the transfer price. The challenge in monitoring and taxing this kind of transactions is that they do not take place in an open market (National Resource Governance Institute, 2016). Therefore, in executing its mandate of managing mineral resources including revenue generated thereof, it is critical for governments to formulate policies and procedures on management of mineral revenues. Over the years, governments were continually faced with challenges regarding protection of the revenue base in the face of aggressive tax planning. Multinational companies almost always are at the forefront of tax planning with a significant advantage in terms of access to operation profitability information as well as competent personnel to assist achieve the mandate of the company (IMF, 2010). Governments are likely to leak revenue meant to benefit its citizenry through abusive transfer pricing when prices are misstated in order to shift the apparent source of profits to the taxpayer or countries that provide the most advantageous tax outcome. Abusive transfer pricing is characterised by minimising income and maximising deductions in a high taxation jurisdiction.

Abusive transfer pricing is a phenomenon that is often used to assist mineral exploitation stakeholders to minimise tax burdens from jurisdictions with high taxation rates with a view of increasing operational profits. It is usually in the interest of the taxpayer to make higher profits in lower taxed jurisdictions and lower profits in higher taxed jurisdictions to reduce their overall tax bill. For governments, this is a source of revenue leakage that ought to be addressed through protective measures and effective implementation of legislation and strengthening of tax administration capacities. Often, it is resource rich African countries that are exposed to this aggressive tax planning and tax evasion facilitated by widespread use of offshore companies (Clausing and Durst, 2015). This is compounded by the high levels of intra company trade and business surrounding foreign investment activities, and limited capacity in human, financial and technical resources critical to secure tax compliance and the commercial market intelligence needed to access company tax liabilities (Clausing and Durst, 2015). The insufficiencies in administrative capacity identified within African countries contribute significantly to revenue losses within the resource sector. Moreover, the income and the resource rent tax are vulnerable to transfer price manipulations by taxpayers since they are profit based. According to Natural Resource Governance Institute (NRGI) 2016, transfer pricing becomes abusive only if the taxpayer distorts the price of a transaction to reduce their taxable income. This makes both taxation instruments difficult to administer as a consequence of tax avoidance and the complexity associated with collecting tax.

## 2.2 Evaluation of Mineral taxation regimes

Mineral taxation systems are evaluated primarily based on the following criteria; a) neutrality, b) progressivity; c) investor and government risk; and d) administrative efficiency (Banda and Kabwe, 2019). These criteria, described below, are of major consideration in designing mineral taxation systems towards achieving the desired balance of a number of government fundamental objectives.

a) *Neutrality*: This is the ability of a taxation instrument to cause the least possible distortion to private economic decisions that would otherwise be made in the absence of tax (Daniel *et al*, 2008). A neutral tax does not change economically marginal decisions on project investment or trade that would have been undertaken in the absence of tax. A fundamental condition of neutrality is that the optimal size of the reserves incorporates all ore blocks with a grade equal to or greater than the cut-off and this optimized reserve is not affected by fluctuations in tax rate (IDMC, 2012). Non-neutral taxation systems result in either too much extraction of the mineral resource or not extracting enough of the resource with a focus on high grading leading to sterilisation of marginal mineral resources.

b) *Progressivity:* A tax instrument is considered to be progressive where the instrument yields a rising present value of government revenue as the pre tax rate of return on a project increases. Simply put, a tax is progressive when such a tax increases automatically with increasing profitability. These types of taxes, which are also less burdensome in periods of low profitability mean that governments with progressive taxes also bear a fair share of the risk associated with mineral exploitation activities. On the contrary, a regressive tax instrument gives rise to a heavy burden on projects of low profitability (Daniel *et al*, 2008). Mineral taxation systems with the highest ad-valorem royalties and standard corporate income tax systems are likely to be the least progressive (IMF, 2010). A taxation system that responds flexibly to economic changes is considered to be stable and it is less likely to increase risk since it will recoup less or nothing in periods of low profitability.

c) *Investor and government risk*: Mineral taxation systems are evaluated through calculations of the Net Present Value (NPV) before tax and after tax cash flows. These calculations are used to incorporate the investor's assessment of risk as a cost input. The Discounted Cash flow (DCF) method is used to calculate the NPV and future cash flows of the project. The future cash flows are discounted using risk adjusted discount rates or the hurdle rate (Daniel et al, 2008). For governments, the main risk associated

with this approach is variation in NPV of the project resulting in variation of proportion of revenues over the life project. Fiscal management for resource dependent countries therefore creates cyclical periods of surplus and lack depending on the rate of profitability of the mining projects. Despite public ownership of mineral resources, private companies are exposed to the risk associated with early substantial capital investment required, long exploration and pre-production periods during which no revenue is generated. At this stage of the project, return on investment is less likely guaranteed with uncertainties in future commodity prices as well as technical, political and environmental circumstances. The risk associated with unstable fiscal regimes is that higher taxation rates may be levied on currently operating mines that are captive to jurisdictions in which their resources are located (IDMC, 2012). This may lead to discouragement in future exploration and development investment in the country and instead the mobile capital will be directed towards countries with stable fiscal regimes. Therefore it is necessary for the government to strike a balance between the need to impose heavy taxation burden against inflow for necessary exploration and development capital to secure the future of mineral development projects.

d) *Administrative efficiency*: Resource rich countries set mineral taxation rate and royalty policies that represent acceptable compromise and reflect some level of capacity to administer them. Implementation of the more administratively complex profit based, resource rents and associated hybrid royalty taxes have been rare in the past. The profit or rent base is determined on a project by project basis and therefore different application of capital recovery rules, allocation of common expenses and cost overheads may make determination of normal profits ambiguous and hard to audit (IDMC, 2012). Most resource rich countries have good legislation and rules to govern their tax administration but serious challenges arise in enforcement and implementation. This is more pronounced in underfunded or in countries that cannot attract the necessary skilled personnel. According to IDMC (2012), the most effective and efficient way for weak institutions to increase government share of economic rent is to retain specific and

ad valorem royalties and implement selective increases in corporate income tax applicable to mining.

**Summary**. Natural resources are a valuable asset for many countries and the management of revenue generated from these resources can have a significant impact on governments and nations, either positively or negatively (IMF, 2010). Therefore, in applying different taxation regimen, in principle governments are cognizant of the non-renewable nature of mineral resources and the criticality of the country exploiting the resources for accelerated economic growth and development. A number taxation instruments can be applied within the mineral resource sector and these include corporate income tax, royalties, and resource rents. Royalties can be applied as unit based, ad valorem or as a hybrid modality. However, taxation within this sector is particularly challenging given the distinct characteristics associated with the sector and the scale of these features which include high sunk costs, long lag in production periods, uncertainty, market power to mention a few. Different tax regimens create different and distinct tax profiles and in evaluating these regimens some of the factors to consider include neutrality, progressivity, investor and government risk, and administrative efficiency.

## 3.0 BOTSWANA'S MINERAL DEVELOPMENT

Botswana is located at the centre of Southern Africa, landlocked by South Africa, Namibia, Zimbabwe and Zambia. Botswana gained independence in 1966 almost concurrently with the discovery of diamonds. Botswana continues to be governed under a very stable political and economic environment. Immediately after independence there were some significant discoveries of minerals, specifically diamonds, copper and nickel resources. Subsequent to these discoveries Botswana developed the 1977 mining code which was replaced with the 1999 mineral act and regulations (Matshediso, 2005). Botswana is richly endowed with mineral resources with the occurrence of various mineral commodities within its jurisdiction. Prospecting for diamonds and other mineral commodities is continuing throughout the country, both by the Government and the private sector. Botswana produces diamonds, coal, soda ash, copper, nickel, silver, gold, industrial minerals and semi-precious stones. Other known deposits are uranium, iron ore, coal-bed-methane and platinum group metals (PGMs). Prior to the discovery of minerals, Botswana was one of the poorest countries in Africa and following the advent of mineral discovery, with the country one of the leading diamond producers by value, the country was catapulted to an economic powerhouse almost surpassing Asian tiger economies in terms of economic growth between the 1990's and 2000's. Diamonds are therefore a strategic mineral

resource to the government of Botswana and their taxation rates are negotiated between companies and the government.

Botswana's economic growth and political stability has often been referred to as "an African Miracle" owing to Botswana's avoidance of the resource curse phenomena (Pegg, 2010). The International Monetary Fund (IMF, 2007) argues that Botswana benefitted from good governance practices as well as occurrence of abundant diamonds to boost economic growth. Between 1995 and 2005, the mining sector contribution towards the GDP peaked at 34.5%, with diamonds constituting nearly 94% of the country's export value. However, the contribution towards GDP is now in a diminishing state of return at an estimated 17.8% in 2015 and 15.2% in 2019 (Statistics Botswana, 2020). Diamonds are projected to deplete just beyond 2030 hence the need for authorities to develop economic diversification programmes to create new sources of income for the country.

Predating the discovery of diamonds and copper and nickel mines in Botswana, mineral discoveries were in existence in small mining towns albeit in small quantities (Gwebu, 2008). These minerals entailed gold, manganese and asbestos which were discovered in various districts within Botswana. Over the years, the booms from mineral exploitation stagnated the agricultural sector with continued importation of food from neighbouring countries. According to the United Nations Research Institute for Social Development (UNRISD, 2008), the economy of Botswana was initially reliant on the agricultural sector and heavily dependent on foreign aid. However, the advent of mineral discovery led to rapid economic growth with special emphasis on diamonds as strategically led by the state in a liberal market and a multi-party democracy. Following minerals discovery in the early 1960's, the first Botswana's mineral policy is yet to be fully endorsed by parliament. This is despite the fact that the formulation process of this policy was initiated in 2010, subsequent to the 2008 global economic downturn, with the view of attaining maximum utility out of the remaining mineral resources. (Ministry of Mineral Resources, Green Technology and Energy Security, 2017).

The government of Botswana continues to invest in mineral exploration activities with the main objective of attracting investment through reduction of early mineral exploration costs including conducting a detailed aeromagnetic survey for over 80% of the country (Ministry of minerals, 2017). However, part of the country remains unexplored with locked value in untapped mineral occurrences and given the limited financial resources, the challenge remains to create an enabling environment for private sector-led exploration and development of the untapped mineral resources of Botswana in a sustainable and transparent manner. The mineral sector is to position itself for continued significant contribution to future economic growth and development in alignment with economic development strategies of the government of Botswana.

Botswana mineral development strategy is inclusive of diversification plans within the mineral sector to facilitate and promote development of various mineral commodities to widen the revenue resource base. The current revenue resource base is dominated by revenue generated from diamond exploitation activities alone, through mineral taxation and shareholding negotiated agreements. It is therefore in the interest of Botswana to unlock value in existing mineral resources including the confirmed multi-million Pula uranium deposit project which has been delayed for over three years. The off-take of these uranium mining projects was greatly affected by the collapse of uranium markets worldwide. Further, the Botswana Institute for Development Policy Analysis (BIDPA, 2012) opines that Botswana has an estimated potential coal deposits of 212 billion tons, probably the largest in Africa presenting a great potential for the country to diversify away from a diamond dependent economy. There are however some rail infrastructural developments to link production sites to the coast for export and South African markets. Although the window of opportunity is still open, the long term opportunity for Botswana could be hindered by the current effort to shift away from fossil fuels to green energy sources.

Another avenue that the country is harnessing towards managing the mineral resources of the country is to develop the national capacity in the form of human skills and competencies

development and acquisition of technological advances required within the mineral sector. This entails creating an enabling environment for mining investors through provision of skilled labour. The country has focused on human capital development in areas of mineral taxation administration as well as mining operational professions. This is envisaged to address the perceived mineral taxation leakages particularly in transfer pricing arrangements between the government and its partners such as the DeBeers Group.

### 3.1 Botswana's economy

Botswana was classified as one of the poorest countries at independence in 1966, it rapidly became one of the world's economic development and growth success stories as a consequence of mineral discoveries. Prior to that, Botswana had only 12 kilometers of tarred road, with only 22 citizens having graduated from universities and only 100 citizens who had attained secondary level education (Hillbom, 2013). To date, Botswana is one of the longest liberal democracy in Africa with good governance, record and market based economy (UNRISD, 2008) As a country that is well endowed with mineral resources, the government of Botswana has implemented various strategies geared towards economic growth and development through diversification of its economy. The country's development path avoided the resource curse phenomena and the "mineral led economy syndrome" – the Dutch disease (UNRISD, 2008). Some scholars claim that although Botswana is an economic growth miracle, it has not experienced some economic structural change away from being reliant on mineral revenues. (Hillbom, 2008) asserts that Botswana has not yet experienced "modern economic growth" characterised by structural change in patterns of production as well as social and political institutions. The analysis explains the difference in terms of the economy and society, with significant economic growth as opposed to development which allows for significant poverty rates and extremely unequal resource and income distribution in the midst of plenty. As a middle income economy that is stable, Botswana boasts of low interest rates, a low inflation rate, and a stable exchange rate which is vital when dealing with the sale of minerals and products.

Botswana capitalised on the wind of nationalization sweeping across developing countries and Africa where the government negotiators' leverage resulted in a 50 percent shareholding with De beers and good reason for investors to prevent outright nationalisation (Gaolatlhe, 1997). Afraid of the consequences of nationalization, the mining company was willing to offer more shares to the Government of Botswana that took advantage of the situation to negotiate for a greater share of the mineral wealth (Harvey and Lewis, 1990). The outcome of the negotiations was a mutual relationship between the Government of Botswana and De Beers with company operational management entrusted with De Beers to avoid pitfalls made by countries like Zambia.

However, the diamond revenues on which the country depends is likely to decline in the near future (Harvey, 2015) affecting the economic base of the country primarily due to the susceptible nature of commodity prices to price fluctuations and the depleting nature of mineral resources. Botswana is therefore at a critical juncture to diversify its economy away from minerals and invest in more proficient broad based human and physical capital for the future. While some scholars opine that Botswana's comparative advantage is still embedded in the diamond and base metal endowment, it ought to be underscored that the continual existence of minerals cannot be guaranteed due to their finite nature, hence the imperative to diversify the economy away from a mineral based economy.

Mineral rich economies tend to become increasingly dominated by a syndrome in which three factors interact, namely high bias against agriculture and export diversification. This factor is true about Botswana where the agricultural sector has been relegated to lower levels of contribution to Botswana's GDP since realization of increased revenue from mining exploitation activities. Auty (2001) argues that agricultural production is constrained by low and unreliable rainfall with sandy soils that favour livestock farming and wildlife management, a factor that has also somewhat contributed to the shift in the economic mainstay from agriculture to mining exploits. According to Usui (1997), comparison of the Dutch disease problem between Mexico and Indonesia through policy options adopted during periods of oil booms in both countries yielded contrasting results. Indonesia implemented sound economic policies including fiscal,

borrowing and exchange rate to avoid the outcomes of the Dutch disease. Mexico lost an opportunity to benefit from her resources as a consequence of her policy options. (Usui, 1997) assets that are equally important is the investment use of oil revenues to strengthen the tradable sector and diversify the economy is another factor for the success of Indonesia. Notwithstanding the fact that the country has avoided most of the negative effects associated with a booming natural resource sector, it has failed to diversify from diamonds to achieve structural changes towards higher value activities within the economy (Barczikay, Biedermann & Szalai, 2020). Botswana's tourism sector has consistently been the second most contributor to Botswana's GDP, tourism is therefore a source of ultimate renewable revenue stream (Harvey, 2015). It is in the interest of Botswana to promote environmental sustainability and preserve its pristine wilderness. The deliberate strategic shift from the government to boost the agricultural sector and other sectors of the economy from mineral revenue has not generated the desired results of economic transformation. The implementation of special agricultural programs and special economic zones over the years are yet to yield results that indicate that the depleting mineral asset will be successfully replaced. Perhaps the development of Botswana's mineral policy will attempt to address economic transformation insufficiencies through involvement of stakeholders from various industries within the economy. Botswana's mineral beneficiation efforts are currently focusing on diamonds alone with almost non-existent beneficiation plans for other mineral commodities. These may prove to be detrimental to the government's effort to maximize returns from mineral exploitation activities as it is currently losing out on revenue generation from the beneficiation of other mineral commodities. Most base metal mines in Botswana are either at their youthful stage or at a commissioning stage granting the government an opportune time to derive base metal beneficiation plans resulting in creation of both employment and taxation of associated industries.

Botswana's public investment was geared towards rectifying the country's backlog of economic infrastructure and to improving education and health systems. Although Botswana is hailed as an African miracle due to the coexistence of good governance and abundant occurrence of diamonds that significantly developed the economy, there is evidence to support partial Dutch

disease in Botswana (Koitsiwe and Adachi, 2015). Botswana avoided most negative effects of its booming natural resource sector but have clearly failed to diversify from diamond extraction and achieve a structural change towards high value activities. Barczikay, Biedermann and Szalai (2020) states that around 20% of GDP and 85% of exports are generated from the diamond industry with the economy ranked low in terms of economic complexity and struggles with significant unemployment. Mogotsi. (2002) proposed that Botswana had suffered from a mild Dutch disease because of high unemployment at the start of the diamond boom. Economic stagnation in other important sectors of the economy, with special emphasis on agriculture and manufacturing continue to present challenges to a relatively narrow economic base of Botswana. According to Pegg (2010) Botswana has done about as well managing its resource wealth as could have been ideally expected but is unlikely to diversify its economy away from diamonds anytime soon. Auty (2001) argues that while Botswana has experienced success as a result of coherent economic policies with a resultant rise in social welfare, it is still premature to judge Botswana as wholly successful. Notwithstanding that, other drivers of the Botswana economy have emerged as indicated by a 19.6% contribution to the GDP by the Trade, hotels and restaurants sector ahead of the mineral sector at 18.1% for the first time in history (Statistics Botswana, 2018). The structural change on the economy with improvement in Trade, hotels, and restaurants could be attributed to tourism-related to products of diamond beneficiation with people coming into the country to buy processed diamonds. The results are an indication of structural change in the economy to develop absorptive capacity and protect the economy against eventual shocks that will arise from the depletion of commodities, especially diamonds which are strategic to the country. Beneficiation of strategic minerals in Botswana is still to be improved with a sizable proportion of diamonds produced within the country still being cut and polished in the United Kingdom. Notwithstanding intentions by the Botswana government through appointment of a team tasked specifically for mineral beneficiation, revenue generated from fiscal, production and consumption linkages may be used to further promote economic diversification.

It is, however, necessary for Botswana to broaden and expand industries with comparative advantage within the country rather than reconfigure the whole economy and change the economic base. This will leverage and enable continuous improvement in sectors that already exhibit potential growth without structurally changing the whole economy. Jefferis (1995) asserts that Botswana's manufacturing is however relatively undeveloped and comprises mostly small and medium sized companies. Deliberate policy decisions to develop and grow the manufacturing and other sectors of the economy are still to be fulfilled by the government of Botswana offering a window of opportunity for the revenue from minerals to contribute towards broadening the economy for sustainable development and to benefit future generations.

Botswana's other diversification enhancing policies have had limited success as set up in their different special economic zones. One such special economic zone is the SPEDU region (Special Economic Diversification Unit) is located in the central district of Botswana and is mandated with diversifying the economy away from over reliance on the mineral sector. The Government of Botswana set up these special economic zones in various places within the country with the intention to support industrialisation through the economic sectors of tourism, manufacturing and agribusiness. The tourism industry has been performing fairly well but the manufacturing and agribusiness are falling short of their mandate with Botswana still not self-sufficient on food security. Further, the reliance of the economy on natural resource wealth is often not coupled with a strong focus on human capital development to build a skilled workforce that can support not only the mining sector but also drive economic diversification efforts of the economy away from mining, and this has proven to be the case for Botswana. In addition to the limited national capacity for economic diversification, Botswana needs significant skills development and competencies required to adequately administer mineral taxation systems within Botswana for efficient mineral tax collection to close mineral revenue leakages. It is therefore important to analyse the effectiveness of the mineral taxation system of Botswana to identify potential areas of mineral revenue leakages on mineral income tax, mineral royalties and resource rents.

### 3.2 Analysis of Botswana's mineral policy

The mineral development management is guided through various forms of legislations in the form of Mines and Minerals Act, Diamond Cutting Act, Mines, Quarries, Works and Machinery Act. One of the policy frameworks that Botswana is implementing for regulation and management of mining exploits in the country is the Mineral policy of 2017, albeit in draft form. The mineral policy, which is awaiting approval by the national assembly, has been developed through a participatory, interactive and consultative process by the custodian Ministry of Minerals, Green Technology and Energy Security with guidance and support from the commonwealth secretariat for consistency with the best international practices. The consultations were throughout the whole spectrum of stakeholders to capture their valuable contributions (Ministry of Mineral Resources, 2017). The strategic intent of the government of Botswana in decisions relating to mineral development for sustainable development are guided by this mineral policy which is harmonized to Botswana's National Vision 2036 goal of achieving prosperity for all by 2036 and the National Development Plan 11(NDP 11) broad priorities of social upliftment and human capital development, land and citizen economic empowerment policies. The policy is also synchronized to the African Mining Vision as well as SADC mining protocol and places special emphasis on emerging issues such as Beneficiation & Value addition; Citizen Economic Empowerment and Local Participation (Ministry of Mineral Resources, 2017) and also seek to strengthen government's role in mineral resources management and enhance private sector participation as well as strengthening institutional frameworks. The primary objective of Botswana's mineral policy is to maximize economic benefits to the nation whilst allowing private investors to earn competitive returns recognising the competitive nature of the industry regarding attracting direct foreign investment vis a vis meeting investor expectation of acquiring a timely return on investment. The policy also seeks to foster an enabling environment for private sector participation in the mineral sector and create linkages with other sectors of the economy to create employment opportunities for Botswana. The guiding principles of the mineral policy include timely development and implementation of mineral projects, security of tenure, provision of competitive environment, provision of a stable, progressive, transparent and

predictable fiscal regime. The emphasis is for the mineral revenue to contribute towards sustainable economic growth and development of the country. This policy, once approved, is expected to promote the mining industry through reviews of the mining legislation to improve Botswana's attractiveness as an investment destination. The objectives of the government as articulated verbatim in the draft mineral policy are;

1. To maximise national benefits from mineral development while providing competitive environment for investors;

2. Provide framework for maximisation and equitable distribution of benefits such as revenues, employment generation, and local supply of goods and services; and

3. Provide a framework for development of local upstream and downstream linkages to add value to minerals development in Botswana.

Botswana considers minerals as pivotal for economic growth and is expected to remain one of its key economic drivers. All minerals are therefore vested in the states for the benefit of all citizens of Botswana. The country also ensures that revenue generated from the mineral sector is managed prudently for the benefit of the nation and future generations. The government of Botswana is intentional on giving priority to mineral development and attracting investment in the mineral sector. The emphasis is primarily on beneficiation and value addition activities to increase the contribution of the mineral sector to the economy of the country.

The delayed endorsement by national policymakers may attest to a lack of political will to advance the objectives of the policy chief of which is to attain economic transformation from a resource-based economy to a knowledge-based economy. This is despite the fact that it provides the operational parameters and guidelines, and also the checks and balances to protect all concerned stakeholders. Mtegha, F.T Cawood, R. C.A Minnitt (2010) asserts that mineral policies ought to be aligned or interrelated to other national policies. A content analysis of the policy confirms this assertion to be true as the policy is aligned with other frameworks that seek

to facilitate social upliftment and human capital development including the citizen economic empowerment and land policies. This alignment was achieved through assuming a formulation process that was consultative and iterative bringing on board a wide range of stakeholders across various sectors culminating in a policy that contributes directly to the NDP 11. The delayed endorsement has multiple implications including an opportunity cost for Botswana to realise maximised benefits from its mineral wealth. Secondly, this delay may lead to reduced stakeholder's confidence in the security of their investments as they may not be assured of predictability and stability in mineral taxation regimes. Therefore, this compromises the general investor outlook in terms of country risk profiling for investment decisions and consequently affects the ability for a country to maximise returns from their mineral wealth.

### 3.3 Mineral taxes for Botswana and their impact on national taxation regimes

The discovery and subsequent mining of diamonds in Botswana together with the concurrent economic growth resulting in implementation of low tax rates in other sectors may be attributed to the country having one of the lowest national taxation rates in Africa. Over the years, Botswana's economic climate has gone through some transformation from one of the poorest countries in 1966, when she gained her independence. The immediate impact of diamond mining in the early 1990's with its concurrent economic growth resulted in implementation of low taxes in other sectors of the economy. The diamond revenue resulted in the dramatic increase in state funds and is still the most significant source of revenue for the government of Botswana. Over the years since the discovery of diamonds, the tax reforms did not broaden the tax base far enough until after the 2008 economic recession (Ndlovu, 2016). Mineral revenues are still the main contributor to Botswana's GDP, which might be an indication of perhaps slow economic diversification in Botswana. The recent COVID -19 pandemic impacted negatively on mineral revenues with significant loss of diamond sales in the global market. Whilst Botswana has strong macroeconomic fundamentals, the economy was expected to contract by 13.1 percent due to COVID 19 impact on mining.

The restructuring of Botswana's economy from 1965 to 1995 from Agricultural led economy to mineral led economy is found in the expansion of the diamond sector. Previously, the colonial administration used the tribal chiefs for collection of colonial taxes. The tax levels from mining employment were relatively low with a mine worker able to pay the annual hut tax several times over with a one month wage (Hillbom, 2013). Comparing Botswana with other regions in the British Empire, the tax levels were kept low throughout the colonial era. The tax revenue per capita was 99 and 131 pence per year in 1911 and 1925 respectively, it took an unskilled urban worker an average of 23 days to earn enough to pay the tax (Hillbom, 2013).

Botswana remains one of the lowest tax countries in Africa even with its narrow diamond dependent economic base. According to (KPMG, 2014) Botswana's approved manufacturing income tax was as low as 15%, mainly to encourage investment within the manufacturing sector. Whilst other taxable income is at 22%, which is one of the lowest in the African continent. Mineral revenues generated especially from diamonds created the perfect conditions for economic growth. Harvey (1992), suggests that diamond revenue increased so rapidly that the government was able to overspend and at the same time run up surpluses. Government continued to accumulate large foreign exchange reserves while expenditure grew at a slow rate as a consequence of policies that maintained low inflation rates and encouraged growth. Many scholars have argued that Botswana has managed its mineral resource revenue well, in fiscal terms as well as in infrastructure development. The infrastructure development parameter entails both the physical infrastructure and human capital development

The occurrence of diamonds within the borders of Botswana presented a comparative advantage to the country with strategies adopted to boost government revenues, through a range of mineral taxation instruments, namely royalty payments, mineral rent tax, income tax and the state 50% shareholding in De Beers Group and Botswana partnership commonly referred to as Debswana has ownership of the highest precious stones/diamonds producing operation by value. Botswana implemented progressive fiscal regimes to maximize revenues to the state while maintaining reasonable returns for the investors. The government of Botswana considers that minerals are the

stimulators of growth for Botswana's economy and are expected to continue being one of its key drivers for the foreseeable future. Therefore, the focus is rather on internal investment promotion within the mineral sector, in order to grow the overall contribution of minerals to economic output. The emphasis is on beneficiation and value addition activities to increase the contribution of the mineral sector to economic growth. The decision by De Beers Group / Government of Botswana partnership to relocate the diamond sorting and valuing centre from London to Botswana in 2012 is considered one of the great efforts by the country in local value creation (Barczikay, Biedermann and Szalai, 2020). Nonetheless, diamond production information is not as transparent as required by Extractive Industry Transparency Initiatives (EITI), but it is estimated that only less than 20% of Botswana's diamond production is locally polished and sorted. Currently, there is a dearth of information pertaining to the mining agreements between Botswana and De Beers Group, including information on revenue generation and taxation. Auty (2001) confirms the lack of published data on diamond rents making it impossible for the World Bank to estimate its resource rent rates.

Botswana's government minimized the front end taxes by offering rapid depreciation of capital. These capital redemption allows for a tax shield at the initial stages of mining operations as an attraction strategy to investors. Due to the country's diamond wealth, Botswana has had the luxury to avoid imposing unpopular taxation policies on its citizens (Ulriksen, 2017). In addition, the government of Botswana has focused on enhancing economic development and social upliftment of the greater population rather than focus developments on provinces where minerals occur and benefit a few selected individuals and communities. Nonetheless, the decision by the Botswana government not to impose service tax and to minimally tax its citizens on corporate income tax may be detrimental as the mining industry's contribution to the GDP gets diminished with aging mines and depleting mineral resources. Also, the mineral wealth has resulted in policies that are minimally redistributive whilst still ensuring legitimacy through social service and infrastructure development spending. The minimal social transfers are cushioned by revenue derived from mineral exploitation activities to further increase inequality in Botswana with a

Gini coefficient of 0.52 (Statistics Botswana, 2018). The depletion of minerals could potentially inherently present risk that requires strategic changes in the country taxation policies as a whole. The consequences of which might be to impose unpopular levies to enable social transfers and mitigate against demand for social transfers from low-income groups.

On the contrary, there is a second school of thought that illuminates Botswana's early success story on good governance as evidenced in their careful planning, economic management and diplomacy as highlighted in the skilful negotiations with De Beers Group (Good, 1994). Appropriate priorities were chosen at the time, attesting to high quality leadership and sound governance systems. At the time Botswana developed on three main pillars namely, economic development and growth (which grew at around 8.4% per year for over a decade upto 1992), multi party democracy and an efficient central state. which grew at around 8.4 percent per year for over a decade to 1992 (Good, 1994). Moreover, the country has utilised this revenue to build up sovereign fund reserves which have proven critical in recent months for the country in driving capital development projects that were carried forward from previous national development plans. Further, these strategic reserves have augmented the government efforts to cushion the economy against the adverse effects of the COVID-19 pandemic.

It is however important that past success be maintained and must not lead to complacency, and that policy reforms may be required due to changing global competitiveness and circumstances (Jeffries, 2016). The peak of mineral contribution to the economy of Botswana appears to have elapsed, as production levels decline with increasing cost of production. The mineral contribution is likely to continue in the current state of diminishing returns with emergence of symptoms/characteristics closely related to resource curse. Cumulatively, these factors are likely to compound the development challenges faced by the government including being ranked amongst the most unequal societies in the world with a Gini index of 52% (Statistics Botswana, 2018) , high levels of unemployment, and slow growth of non-mining exports. Escaping the resource curse and the middle income trap will require Botswana to harness the good foundation laid in the formative years post-independence to consolidate good governance and

implementation of strategic policies that will propel the country into a solid trajectory of economic transformation that is not resource dependent.

**Summary.** The discovery of minerals in Botswana catapulted the country from a low income economy to an upper middle income economy. The country has managed to boost its revenue through various mineral taxation instruments, namely royalty payments, mineral rent tax, and corporate income tax. To date, minerals remain the mainstay of the Botswana economy albeit the contribution of mining to the GDP is in a phase of diminishing returns. Despite the strategic importance of the mineral sector to the economy, Botswana's first mineral policy is yet to be fully endorsed by parliament, suggestive of lack of political will particularly where there are concerns pertaining to lack of transparency on issues of Botswana and De Beers partnership and diamond revenue. Once endorsed this policy seeks to maximise national benefits from minerals while providing a competitive environment for investors; and provide a framework for development of local upstream and downstream linkages to add value to minerals development in Botswana. Efforts to diversify the economy from one that is mineral resource based to a knowledge based economy continue albeit with minimal progress.

## 4.0 SOUTH AFRICA'S MINERAL DEVELOPMENT

South Africa's modern mineral sector was established in the late 1800s with the discovery of gold and diamonds. Large scale mining started in the nineteenth century with a great focus on gold mining leading to rapid industrialisation accelerated by revenue generated from mineral exploitation. The agricultural sector was surpassed by the mineral sector as with other mineral-rich countries. Curtis (2009), asserts that mining was one of the industries at the forefront of the economy. Notwithstanding that, the gold resources are currently substantially depleted with existing resources at great depth resulting in high operational costs for the mining companies. This has led to reduced gold contribution to the economy over the recent years as well as reduced employment within the sector which was once the mainstay of South Africa's economy.

South Africa was once ranked as number one gold producer in the world but since 2007 it has always been plummeting down the rankings. In 2014, South Africa dropped to sixth position behind Peru, USA, Australia and Russia, with China at position one. Although the gold mining industry has lost its initial impact in terms of its contribution to the economy, mineral commodities like coal and platinum are still contributing significantly to employment creation.

(Department of Statistics South Africa, 2014), estimates depletion of various minerals at current production levels, with the available gold resources projected to last for 33 years whilst the remaining platinum resources will run for 218 years and 119 years of coal resources remaining.

Coal is one of South Africa's valuable minerals with deposits at easily mineable depths within the provinces of Mpumalanga, Limpopo and the Free State. A sizeable amount of the coal production is consumed locally with the national power utility, Eskom, while 28% of the coal is exported. South Africa is one of the world's largest producers of platinum and chromium and these minerals are significantly important to the economy of South Africa and commonly occur in the Rustenburg area and in the northern part of Pretoria. There are vast iron ore and manganese resources in the Northern Cape area. Additionally, diamond mining used to be concentrated around the Kimberly areas but now new discoveries are located around various localities within the country. There are a host of other mineral commodities including, uranium, palladium, nickel, copper, antimony, vanadium, fluorspar, and limestone.

The Department of Mineral Resources and Energy (DMRE) assumes the custodianship of all minerals on behalf of the citizens of South Africa. This governmental department promotes mineral development and plays an advisory role to enhance the competitiveness of the country in its bid to attract investment. Further, to remain competitive, the government engages in macroeconomic research and analysis for meaningful stakeholder engagements as well as revision of mineral policies and legislation to attract investment. Given the complex and risky nature of the mining business, which requires huge initial capital investment with repayment expected sometime in the future, the role of the government is to ensure stable security of tenure and protection against expropriation. Investor's interest are attracted towards a stable fiscal and regulatory environment as they seek security of their investments.

The Government of South Africa seeks to accelerate transformation within the mining sector by monitoring and ensuring compliance with the mining charter. Government intends to promote exploration and investment leading to increased mining output (DMRE, 1998). A Mining and

Minerals Policy for South Africa, 1998). To ensure discovery and development of new mines, exploration intentional decisions to fund exploration activities must be prioritised. Exploration is also essential in lowering initial capital costs and availing the necessary geological information for investing companies. A factor that is critical for making investment decisions and choice of country to invest company resources with better understanding of geological setting.

It is, however, worth noting South Africa's reduction in mineral exploration expenditure over the years which translates to less efforts in identifying new mineral resources for future mining. The mineral exploration is in essence securing the future of the mining industry and sustaining long term production through potential discovery of new mineral resources. This phenomena was mainly created by the acceptance of South Africa into the global economy post 1994 with companies shifting their exploration budgets to countries which did not exceed the risk threshold of mining companies.

### 4.1 South Africa's economy

South Africa is richly endowed with mineral resources including gold, diamond, platinum, iron and coal being the common minerals and base metals being mined. The country is the largest producer of platinum in the world, with over 80% of global reserves (World Bank, 2019). Since inception, the South Africa mining industry has been the backbone of the economy until recently with decline in performance from the gold mining sector. Minerals are a wasting resource, once removed from the ground they are gone for good. The World Bank (2019) asserts that most of the mineral wealth benefits in Southern African countries are consumed rather than saved and invested. Therefore, Southern African countries including South Africa need to reduce consumption and mobilise additional savings from other sectors of the economy to maintain their national wealth when depleting mineral resources. Sustainable mineral exploitation principles that revenue generated from minerals be utilised to also benefit future generations (Stilwell *et al.*, 2000). South Africa possesses the world largest mineral resources by value and continues to be an important global producer of other mineral commodities (Dworzanowski, 2013). These

mineral occurrences create a comparative advantage to enhance economic growth and development through facilitating access for investors to develop the mineral industry within South Africa. There are various forms of factors which impede economic growth and consequently diversification in resource rich countries, and of great importance is efficient management and good governance of natural resources to avoid the "resource curse" phenomenon. Farooki and Kaplinsky (2014) state that the 2002 commodity price boom with resultant increased resource rents has been linked with "resource curse" raising concerns of resource rich countries being locked into a cycle of resource dependence and consequently slow implementation of economic diversification efforts. This phenomenon supports arguments that economies with large mineral endowment have had lower rates of economic growth compared to countries that import raw materials.

South Africa's economy has had to contend with various economic and political challenges over the years. Critical among them being the disparity of income due to racial policies of the past, in the process creating a very narrow fiscal base. (Stilwell *et al.*, 2000) states that South Africa has a well-developed first world financial system but has a typical third world income distribution profile. Therefore, South Africa's mineral policies are meant to address previous deficiencies created by policies of the past. Novak and Ricci (2006) argue that South Africa's long run prospects in economic growth depend on policies and institutions that will assist maintain productivity growth, reduce labour costs relative to capital and improve the investment environment. Countries with robust diversification policies are most likely to succeed in the drive to structurally change the economy as well as create absorptive capacity for the economy. These policies can also facilitate the creation of absorptive capacity of the economy. Furthermore, concurrent initiatives to develop globally competitive human capital is also essential in transforming the economy. Resource rich countries that invest in education through significant budget allocation to education from primary to tertiary level, are likely to achieve their diversification objectives. These also support technological innovations in all sectors of the economy which assist reduce operation costs (World Bank, 2019). Human capital development

has proven to be critical in addressing issues of shortage of skills in complex tax administration from the mineral sector as well as assisting host countries to acquire improved contractual agreements with multinational companies.

China and other developed countries continue to import raw materials, especially mineral resources from South Africa. This phenomenon is viewed as detrimental to the economic growth and development of South Africa as a consequence of indirectly exporting employment and its associated benefits as key drivers of economic growth. This is a missed opportunity for South Africa as a mineral rich country to promote local raw material processing and beneficiation as captured in the mineral policy (Mining Charter, 2018). In addition, the country will have an opportunity to sell back the finished products at higher prices encapsulating the associated labour and production costs. The implementation of the refined royalty tax with subsidies in mining operations for undertaking further processing of minerals will provide mileage in promoting raw mineral processing and beneficiation efforts. The intentions of resource rich countries must be for the current generation to mine responsibly without compromising the ability of future generations to achieve their objectives. Therefore, the recent policy reviews in South Africa to enhance economic growth and development through processing of raw materials and beneficiation of minerals within their jurisdictions is a step in the right direction towards maximising the economic benefit from mineral exploitation activities. Further, the implementation of the mineral royalty act of South Africa with reduced taxation rate for refined minerals is a classic example of encouraging local processing of raw materials. The South African mineral policy strategy advocates for processing of raw materials internally rather than exporting raw materials to developed countries and thereby creating massive economic benefits for the developed countries. It is therefore in the interest of South Africa to determine the effectiveness of its mineral taxation instruments for potential improvements to enhance economic growth and development.

The economic evidence suggests that while South Africa has seen its good years in mining, the country is faced with declining revenue as a result of depletion of mineral resources, especially gold. In 1993, gold mining was estimated to contribute 3.8% to the GDP, and a decrease was recorded with an estimated contribution to the GDP of 1.7% in 2013 (Department of Statistics South Africa, 2015). Further, in 1980, gold accounted for 67% of mineral sales compared to an estimated 12.5% in 2014. Other factors that have contributed to this declining revenue include diminishing profit margins due to declining commodity prices and price volatility (Neingo and Tholana, 2016), diminishing quality of ore resources as well as increasing operational costs. For example, Neingo and Tholana (2016) asserts that gold has experienced a decline in prices per ounce from US$1826.80 recorded in September 2011 to US$1189.95 recorded in March 2016. This factor is also negatively affecting mineral taxation revenue generation as a function of mineral exploitation profits and mineral taxation contribution into the GDP of South Africa. Although the mineral sector contribution to the country's economy has been diminishing over time, there is still some significant contribution to South Africa's tax revenue.

The introduction of the Royalties Act in 2008 has seen an increase in taxes from R10 billion to R25.7 billion between 2009 and 2011 with subsequent increase to approximately R27 billion in 2013 (Cawood and Oshokoya, 2013). The Act was enacted as an effort to redistribute mineral wealth amongst all South African citizens. Although legislation and mineral acts are enacted to maximise on mineral taxation, whilst on the other hand the production, exploration expenditures and capital investments are declining as a consequence of uncertain regulatory framework (Cole and Broadhurst, 2020). The government proposed policy is based upon the premise that "mining industry has the capacity to generate wealth and employment on a large scale" (Stilwell *et al.*, 2000).The decline in the mineral industry contribution to the national economy as a consequence of gold depletion resulted in down scaling (Minnitt, 2001). The job losses refocused the efforts of the mining operations on reskilling to absorb the labour into other economic sectors. Re-skilling prepares for life after mining to enable former mine workers to continue earning a living and self-employed after the end of their careers.

### 4.2 Analysis of South Africa's mineral Policy

The discovery of gold and diamonds in the late 1880s resulted in industrialisation of South Africa with significant economic developments (Cole and Broadhurst, 2020). The prominent industry before the discovery of minerals was agriculture which was subsequently surpassed by mining industry contribution to GDP following the discovery of minerals. Mineral taxation became a hot topic of debate post-apartheid era in South Africa resulting in policy revisions with the objective to effect changes in the South Africa's economy. The post-apartheid policies aimed at the equitable redistribution of mineral wealth for all citizens of South Africa and not just a selected few were subsequently revised (Birch, 2016). The mineral policy history of South Africa up to the national election of 1994 was a product of colonial past (Dale, 1997). The Dutch colonised the cape of Good hope in 1652, they brought with them Roman Dutch Law which dictates that land ownership extended to depth, translating to ownership of mineral rights with no provision for the state to own mining rights. However, this was subsequently followed by Sir John Craddock proclamation in 1813, post annexation of the Cape colony by the British Crown. Subsequent land grants had provisions for the state to own rights of gold, silver and precious stones. The early discovery of gold and diamonds respectively in 1866 and 1867 led to the enactment of laws and regulations by the British authorities and the Boer Republics where the right to mine minerals was reserved to the state.

The state initiated a harmonization of mining legislation in the 1980's resulting in the Minerals Act 50 of 1991 (Dale, 1997a) which underwent subsequent revisions yielding to the MPRDA of 2002. The MPRDA mandates the government with management of mineral resources on behalf of its citizens. It also focuses on redressing historical inequalities and enhancing contribution towards socio-economic development (Cole and Broadhurst, 2020) whilst also providing the regulatory framework for equity in access and the sustainable development of resources. This act serves as the overarching model for policy reform in the industry. Prior to the revision of the MPRDA, a white paper was passed on Mineral and Mining Policy for South Africa of 1998 with the following strategic intentions:

a) To create a macro environment that facilitates economic development at all levels while also enabling businesses to operate profitably and meet the demands of shareholders and employees alike.
b) Maintain and cultivate a legal and financial environment that maximises the mining industry's contribution to the economy at all levels.
c) To encourage exploration and investment in the mining sector while also safeguarding the tenure of prospecting and mining ventures.
d) Encourage and support development and sustainability of small scale operations to enable them to contribute positively to the economy at all levels.
e) To maximise the benefit derived from the mineral sector by the entire populace by promoting the initiation of industries focusing on value addition to raw minerals.
f) Support the mineral industry through addressing issues of market failure.
g) Engage and cultivate a culture of research and innovation transfer to maintain a relatively competitive industry.
h) To encourage equity in opportunity of ownership and management in the mining industry (DME, 1998).

Given the significance that black ownership and management within the mining sector holds for the country, the Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry hereafter referred to as the Mining Charter was developed and gazetted (Department of Mineral Resources, 2018). The objectives of the charter (a few are stipulated below) augment and expand on a key strategic intent of the Mineral and Mining Policy of South Africa; specifically the objective to encourage equity in opportunity for black people. The charter was first developed in 2004 and has undergone two comprehensive reviews as informed by assessments which revealed deficiencies in compliance to implementation of various elements as well as shortcomings in embracing the objectives of the mining charter. In a bid to rectify the injustices of the past where mining developments were shaped by a race based, institutionalised migrant labour system designed to control rural black labour and channel to it various sectors of

the economy (Cole and Broadhurst, 2020), the charter aims to achieve numerous objectives including but not limited to:

1) Enabling meaningful participation of Historically Disadvantaged South Africans (HDSAs) in the mining industry by expanding opportunities for HDSAs
2) Improving the socio-economic status of employees and mining communities and their welfare
3) Substantially and meaningfully expand opportunities for Black Persons to enter the mining and minerals industry and to benefit from the exploitation of the nation's mineral resources;
4) Recognising the internationally accepted right of the State to exercise sovereignty over all its mineral resources; and
5) Catalysing growth and development of the local mining inputs sector by leveraging the procurement spend of the mining industry (DMRE, 2018).

A few elements as selected from the mining charter are discussed below.

a) ***Ownership and shareholding:*** It is a requirement of the mining charter that companies issued with new mining rights have a shareholding of at least 30% allocated to Historically Disadvantaged South Africans of which 20% should be for black economic empowerment (BEE) entrepreneurs and 5% for communities where a mine would be located. For companies with already existing mining rights and demonstrable compliance to the previous charter where a minimum shareholding of 26% was mandated, this will not be raised to 30% (Mining Charter, 2018). By apportioning shares to mining communities through community trusts, it may be argued that the probability of realization of one of the charter's objectives to economic empowerment of communities will be heightened. As Cook (2013) states that, although the strategy of apportioning shares to a community versus individuals has proven beneficial to the

communities within the Royal Bafokeng company jurisdiction, implementation of this strategy across the country has not been easy.

Furthermore, the charter remains silent on the intended implementation plan of the same, that is, whether expropriation will be used to re-allocate the required shares to historically disadvantaged South Africans or other mechanisms will be explored. The implementation plan is critical as history teaches us that the use of expropriation in the redistribution of resources is often associated with negative outcomes. For example, when the government of Zambia nationalized the mines in 1973, for a period of 24 years production declined drastically reaching the lowest levels in the year 2000 accompanied by job losses, averaging 2000 lost jobs annually (Sikamo, Mwanza, Mweemba, 2016). However, when the decision to privatize the mines was implemented, this resulted in an increase in investment to upgrade the assets and start extensive exploration programs leading to subsequent steady improvement in production levels and employment creation by the industry.

b) ***Human capital development:*** Given that the mining industry is knowledge based, mining rights holders are required to invest at least 5% towards skills development activities including technology, science, engineering and mathematics. Further, in undertaking the skills development, target beneficiaries must be informed by demographic profiles at provincial and national levels, and exclude those individuals holding director level and executive positions.

c) ***Employment equity:*** To ensure workplace diversity and equity in representation as a channel for social cohesion and transformation, the charter requires that the composition of the board and executive management include a minimum of 50% of historically disadvantaged persons, of which 20% are to be women. Further, previously disadvantaged persons are to account for 60% of senior and middle management

positions, with 25% being women while historically disadvantaged persons will account for 70% of junior management positions, 30% being women.

d) ***Procurement, supplier and enterprise development:*** As a strategy to develop local enterprises, the charter stipulates that a minimum of 70% of all procured mining goods be manufactured in South Africa, of which 21% be obtained from BEE companies, 44% from BEE compliant manufacturers and the remaining 5% be sourced from companies with a minimum 5% shares held by a female or person classified as youth (Mining Charter, 2018). Where services are required, it is a requirement by the mining charter that 80% of such services be rendered by South African based companies, of which a minimum 50% should be from historically disadvantaged persons. The requirements on procurement of goods and services may prove a deterrent for a number of factors. Firstly, it may be argued that the availability of advanced technological equipment and services, or manufacturing companies with sufficient capacity to meet the demand of the said equipment in the event of a 'rush' by mining companies might be limited in South Africa. As a consequence, mining companies may be faced with escalating purchase prices secondary to an increased demand for technologically advanced machinery in the face of limited capacity to meet the demand. The requirement that 70% of procured mining goods be manufactured in South Africa could potentially lead to a cost escalation, in the face of limited local capacity to manufacture the desired machinery and equipment versus demand for the goods ultimately leading to South Africa based companies resorting to acting as 'middlemen' between externally based manufacturing companies and the end user of the equipment being the South African mining companies. Cumulatively, these factors pose a serious threat to the adoption and implementation of the mining charter, which seeks to address gaps from pre-democratic era relating to the inclusion of the previously disadvantaged population of South Africa.

Given the substantial risk in South Africa, relating to expropriation, industrial action and corruption, creating a stable regulatory environment to de –risk mining investments and increase

investor confidence is important (World Bank, 2019). Most elements in the mining charter are still hotly contested and therefore mining investment decisions could be affected by the unstable regulatory environment within South Africa. South Africa could also be losing out on the opportunity to create an effective system to capture mineral rents for the benefit of the whole nation and not just for BEE which might not trickle down to the rest of the population. Perhaps this is the opportune time for the government to explore other mechanisms to ensure that all South Africans benefit from the mineral endowment of their country as opposed to the economic empowerment of a select few individuals. Perhaps it is time the government of South Africa turn their attention to the models adopted in neighbouring countries like Botswana where all citizens benefit from the country's mineral wealth regardless of race, gender or any status variable.

### 4.3 Mineral taxes of South Africa and their impact on national taxation regimes

South Africa's mineral industry is just over a century old but the country is still known as one of the world's largest occurrences of mineral and metal commodities. According to Minnitt (2001) mineral exploitation motivated economic growth and development of the country's extensive physical infrastructure and the emergence of the secondary industry sector is related to mineral wealth hosted by South Africa. Taxation has been an important source of economic sustenance for South Africa, with its important pillar of state control. Taxation was also a means to induce male Africans into the labour systems with increased labour requirements since the discovery of minerals in the 19$^{th}$ century (Ndlovu, 2017). These formed a critical pathway for an extractive capitalist system based on migrant labour, stimulated by the mining revolution and the need for cheap labour. As mining scope intensified, desperate labour shortages in other sectors of the economy were prevalent as migrant labour made their way into urban centers. These colonial tax policies, political landscapes as well as racial cleavages have been instrumental in influencing the trajectory of the tax state development in the 20$^{th}$ century. Fiscal history suggests that although mining was the main driver of South Africa's GDP, the national taxation structure was not influenced by the mineral industry alone but by political landscapes and racial cleavages. The

formation of apartheid government and the subsequent political turmoil affected the fiscal systems and consequently influenced the taxation trajectory of South Africa (Ndlovu, 2017).

The new democratic South Africa gave rise to the introduction of restructuring of the fiscal institutions to broaden the tax base. The main objective being to improve compliance and subsequent revenue collection for enhanced efficiency geared towards provision of basic services and delivery of public goods (Ndlovu, 2017). As outlined in the Minerals and Mining Policy for South Africa, taxation of mining operations is consistent with taxation in other sectors of the economy except for the following features:

a) *Income tax:* The income tax for all sectors is currently set at 28%, however this is different for mining operations depending on the resource being exploited, with gold mining operations subjected to a different taxation formula.
b) *Expenditure deduction:* South Africa's Income Tax Act allows for redemption of capital expenditure associated with certain aspects of mining operations such as sinking of shaft and mine development.
c) *Ring fencing:* The income tax act safeguards the taxable income of a mine by limiting the deduction of capital expenditure against the taxable income.
d) *Gold formula tax:* This is applied to gold mining operations only and takes into consideration the profitability of operations, the effect of which marginal operations are liable for a lower tax rate compared to more profitable operations.
e) *Royalties:* This is compensation made to mineral rights owners by the mineral exploiters for depleting the non-renewable resources and an ad valorem or sliding-scale formula method can be used for charging royalties. The sliding-scale formula mechanism imposes no specific rate for any minerals, though its definition of value acknowledges profitability and automatically recognizes downstream beneficiation of minerals (Cawood and Minnitt, 2001). This payment can be based on production or value.

**Summary**. The discovery and mining of mineral resources within South Africa, particularly gold led to rapid industrialization accelerated by revenue generated through this sector. While recent years have seen the decline in impact of gold mining to the economy, the sector continues to contribute significantly to the economy. The country is endowed with a number of mineral resources including coal, platinum, chromium, iron and manganese. As the custodian of all minerals, the Department of Mineral Resources promotes mineral development and plays a critical advisory role to enhance the competitiveness of the country in its bid to attract investments. Since becoming a democratic state in 1994, the mineral policy environment of South Africa has undergone a paradigm shift with the revision of the Mineral and Ming policy revised to create amongst others a macro-economic environment that facilitates economic development at all levels while also enabling businesses to operate profitably as well as to encourage equity in opportunity of ownership and management in the mining industry. Recognising the significance that black ownership and management within the mining sector holds for the country, South Africa has a well-defined policy, the mining charter, towards enabling meaningful participation of black South Africans in the mining industry by expanding their opportunities. The country has also focused on broadening its tax base through a number of taxation instruments that are applied differentially including income tax, capital redemption, ring-fencing, gold formula tax and royalties. Notwithstanding this, the contribution of the mining sector to the South African economy is in a diminishing phase. This has been attributed to a decline in the number of high value gold mining operations amongst other factors.

## 5.0 METHODOLOGY AND FINDINGS

The study will assume a mixed-method approach as follows:

***Qualitative analysis*:** A desk-top review of the mineral taxation policies of Botswana and South Africa, and statutory laws that may facilitate or hinder the implementation of the respective countries' mineral taxation policies will be conducted. This will be undertaken to review the current and historical policy viewpoint of all the stakeholders as it relates to mineral wealth profit sharing. These will entail the strategic intent of both host nations and investing companies with special emphasis on sustainable mineral exploitation to benefit the present and future generations. Mineral policy analysis for both countries was identified as the most appropriate research method for undertaking this study. The current paper intends to compare and contrast the available policy strategies in order to achieve aims and objectives of the report. The analysis is drawn from key strategic documents including;

*Botswana* - The draft Mineral Policy of 2017 and Machinery, Mines and Quarries Act of 1999

*South Africa* - The Mineral and Mining Policy for South Africa (1998), the Broad-Based Black Socio-Economic Empowerment Charter for the South African Mining and Minerals industry of 2018 and the Mineral and Petroleum Resources Development Act (MPRDA) of 2002.

Qualitative analysis will allow for empirical investigation using multiple sources of evidence and is the most suitable strategy for the report. This method will allow for understanding of the context of the research as well as the processes followed.

***Quantitative analysis*:** a historic trend analysis of taxation regime data on royalty rates, corporate income tax rates as well as their associated mineral resource rent rates will be conducted as directed by the availability of data. This will include data on the contribution of the mineral sector to the country's economy over the years. This data will be extracted from the national statistical agencies for the two countries namely Statistics Botswana and the Department of Statistics South Africa. Quantitative approaches are essential in studying to identify processes used for selection and exclusion as it relates to both host countries and investing companies. Quantitative analysis of mineral taxation instruments will highlight the strategic intent of each country with the evolution of its mineral policy over time. This study presents an approach for quantitative analysis of mineral taxation systems, through mathematical methods by description of economic parameters used as well as transition targets. Where formulas are used detailed arithmetic value derivation will be calculated for comparison with the mineral taxation rate absolute numbers. The study highlights the importance of determining the optimal mineral taxation rates to satisfy both the host country and the investing companies.

## 5.1 Findings

### 5.1.1 Income tax of Botswana and South Africa

Botswana's corporate income tax prior to 2006, was set at 25%, a figure which was revised to 22% in a bid to fulfil the objective of attracting foreign direct investment (FDI). A variable rate

income tax was introduced under which mining profits are taxed according to the following formula:

$$Y = 70 – 1500/X$$

X is the profitability ratio, whilst Y is the income tax rate. The income tax rate shall not be less than the company tax rate of 22%. The maximum theoretical tax rate that can arise under the formula is 55%.The actual tax rate applicable each year therefore varies, depending on the profitability of the mining operation. At the profitability ratio of 100%, the tax rate is 55% income tax. The income tax rate decreases with a decreasing profitability ratio. The formula suggests that mining operations with profitability ratios of less than 21.5% will not be taxed.

South Africa mineral income tax was revised from 35% to 30% in 1999, with a view to remain competitive in attracting foreign direct investment. The mineral income tax was subsequently revised from 29% in 2007 to 28% in 2008 with the tax rate of 28% applying to all mineral commodities except for gold. The government developed some strategies to assist the ailing gold industry, one of which was the introduction of the gold tax formula. The gold tax formula is expressed as $Y = 45 – 225/X$. Y is the percent tax payable, whilst X is the ratio of mining profit or the profitability ratio. At 100% profitability ratio, the tax payable is 42.75%. The tax payable Y decreases with decreasing profitability ratio. The formula implies that mining operations with profitability ratios of less than 5% will not pay income tax.

### 5.1.2 Mineral Royalties of Botswana and South Africa

Botswana's royalty rates are 10% for diamonds, 5% for precious metals and 3% for base metals. The mineral royalty regime for Botswana does not have the option of refined royalty rates which are subsidies meant to encourage beneficiation down the mine value chain. South Africa applies two different formulas for royalty rates depending on the state of refinement of the mineral. The royalty rate is decreased with further processing of the raw material as it appreciates and attracts

good prices. These formula recognises that refined products have high value than raw materials and are as follows:

$$\text{Refined rate} = 0.5 + x/\ 12.5$$

$$\text{Unrefined rate} = 0.5 + x/\ 9.0$$

The minimum rate is 0.5% for both refined and unrefined minerals as derived from the two formulas above where x is the Earnings before Income Tax (EBIT) divided by aggregate gross sales. The factors 12.5 and 9.0 determine the maximum royalty rate at 5% refined and 7% unrefined minerals respectively. The maximum royalty rates are set at the maximum profitability ratio of 60% instead of 100%, which is thought to be an improvement from the idealistic thought of 100% profitability ratio. The mineral royalty formulas are applicable across all mineral commodities and depicted in Table 1 below which shows refined and unrefined royalties for profitability ratios starting from -10% (loss making) to 60%, with a minimum of 0.5% royalty rates for both unrefined and refined and maximum of 7% and 5% for unrefined and refined royalty rates respectively at profitability ratio of 60%.

*Table 1. South Africa's unrefined and refined royalty rates at various profitability ratios.*

| **Profitability ratio (%)** | **Unrefined royalty rate (%)** | **Refined royalty rate (%)** |
|---|---|---|
| -10 | 0.5 | 0.5 |
| 0 | 0.5 | 0.5 |
| 5 | 1.1 | 0.9 |
| 10 | 1.6 | 1.3 |
| 20 | 2.7 | 2.1 |
| 30 | 3.8 | 2.9 |
| 40 | 4.9 | 3.7 |
| 50 | 6.1 | 4.5 |
| 60 | 7.0 | 5.0 |

### 5.1.3 Resource rents of Botswana and South Africa

Botswana opted to utilise the income tax instrument to recoup its fair share of profits during times of price booms and "windfalls", whilst also prepared to share the risk during times of price bursts and economic downturn. The income tax formula: (tax rate = 70 -1500/X) is used as a form of resource rent for Botswana mineral taxation system. The maximum profitability ratio is assumed to be at 100%, and therefore the maximum tax rate is at 55%. The formula dictates that the minimum tax rate is 22% and any rate below 21.4% profitability ratio is not liable to pay income tax. The Botswana corporate income tax is very progressive as it increases with increasing profitability hence enabling the government to maximise returns during periods of price booms. Further, this instrument is designed to recoup resource rents during periods of high profitability without having to distort the company's future investment decisions. South Africa applies a sliding scale on its different facets of mineral taxation instruments, namely royalties and the gold tax formula. Figure 1 below depicts South Africa's gold tax sliding scale against Botswana's income tax sliding scale at different profitability ratios.

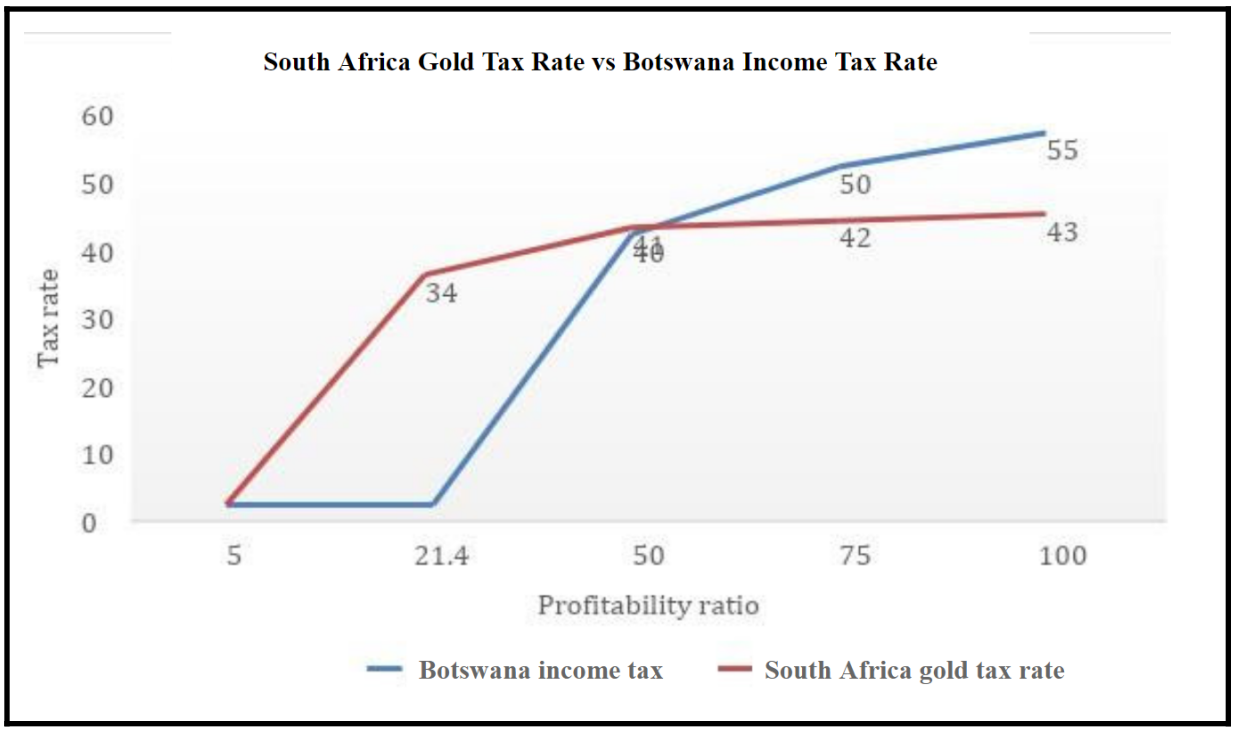



*Figure 1. RSA Gold tax sliding scale formula versus Botswana income tax sliding scale formula at different profitability ratios*

The gold tax formula is applied explicitly on gold mining operations, whilst other mineral commodity operations are set at 28% corporate income tax rate. The mining royalty formulas are another aspect of resource rent tax application as it rates slides depending on profitability of the mining operations. Gold tax is a progressive type of tax and shows the government is able to bear a fair share of the risk associated with mineral exploitation activities. Table 2 summarises the mineral taxation regimes of Botswana and South Africa.

*Table 2. Summary of mineral taxation regime of South Africa and Botswana*

| Mineral resource | Botswana | South Africa |
|---|---|---|
| Precious stones royalties | 10% | Refined rate = 0.5 + x/12.5 whilst Unrefined = 0.5 + x/9.5 |
| Precious metal royalties( Au,PGM's) | 5% | |
| Base metal royalties | 3% | |
| Income tax | (70-1500/X) Minimum tax rate at 22%, with exception of diamonds | 28%, with exception of Gold |
| Mineral taxation aimed at profitability | (70-1500/X) Minimum tax of 22%, with exception of diamonds | Gold tax: Y = 45 - 225/X |

### 5.1.4 Mineral sector contribution to Botswana's GDP

The mining industry has contributed significantly and consistently to the GDP of Botswana as depicted in figure 2 below. Although the country's mineral industry is experiencing some form of decline in its contribution to GDP, the mining industry still remains a very important source of foreign exchange for Botswana with diamonds being the single largest contributor with over 90% mineral production. Mineral revenues and foreign exchange offer the basis for industrial development and stimulate improvements in Botswana's infrastructure. As the mainstay of the economy, it follows logically that any changes in commodity price or production capacities would have a direct bearing on the mineral contribution to GDP of the country. According to the Organization for Economic Cooperation and Development, and African Development Bank (2002), Botswana's slow economic growth preceding the 1999/2000 period could be attributed to the diamond production that had reached a plateau. The 2008/2009 economic downturn and

associated mineral commodity price decline and scaling down of mining operations also significantly impacted the contribution of the mining sector to the national GDP, as illustrated in figure 2, evidenced through a pronounced dip in the graph.

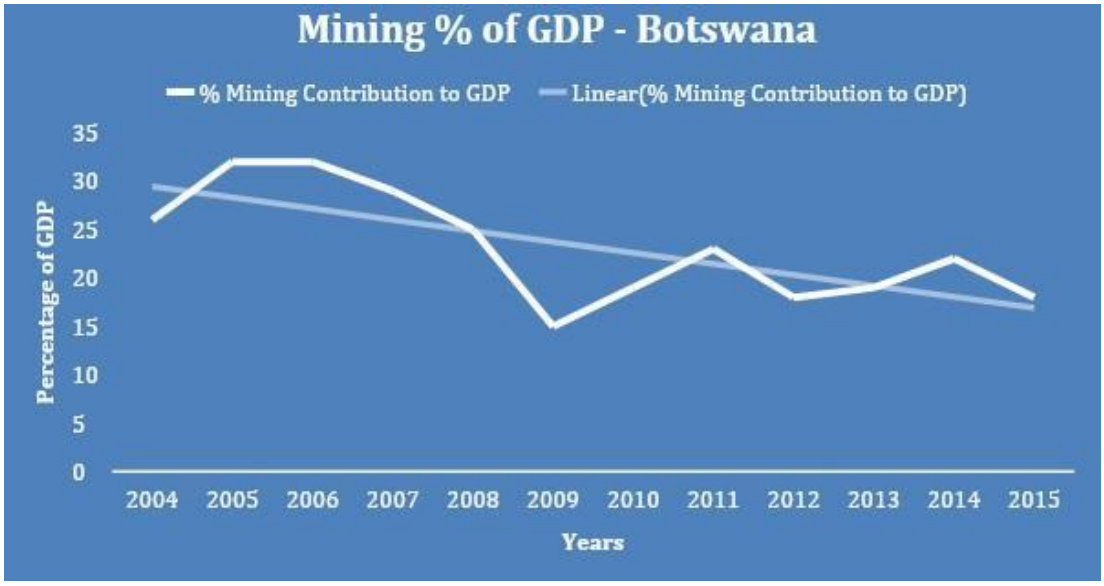



*Figure 2: Botswana's mining contribution to GDP over the years*

There was a significant decline from 2008 to 2009 as the world was going through an economic downturn, which resulted in declining mineral commodity prices and consequently reduction in mining operations profitability. Subsequent to the 2009 period, there was a slight rebound following recovery from the economic downturn of 2008, with no clear apparent growth or decline in contribution to GDP post 2011. The slag in growth could be attributed to the strategy adopted by both Botswana government and De beers to invest in big capital projects and suppress production in one of the world's highest value mine (Jwaneng Mine).

### 5.1.5 Mineral sector contribution to South Africa's GDP

South Africa's mining has seen a consistent structural decline since the mid 1960's from approximately 20%, to less than 5% of total output (Fedderke, 2018) while the service sector has continued to grow, contributing more to the economy compared to the mining and agriculture sectors including creating the much needed jobs for citizens. Fedderke (2018) asserts that

manufacturing showed an upward trend from 1960 to 1980, rising from 10% to 18% in two decades. It had recently declined in importance with a gradual downward trend, now contributing only 13% to 14% of the total aggregate production. Similarly, the declining trend in output from the mining industry is also evident through continual reduction of employment. Minnitt, (2001) asserts that the decline is due to a huge growth in the secondary industry and the tertiary sector of the economy and the contraction of the gold mining industry. Perhaps economic growth from other sectors of the economy indicate significant structural changes to broaden the economic base and diversify away from over reliance on mineral revenue. The high value gold mining industry is no longer one of the highest contributors to economic growth and development in South Africa with iron and the platinum group metals currently assuming prime production positions for the country, whilst the gold resources are getting deeper and are of marginal grades. The decline in mining industry contribution to South Africa's GDP has seen a consistent gradual drop since the 1970's to 2016, with some signs of steadiness from 2012 to 2016 depicted graphically in Figure 3 below.

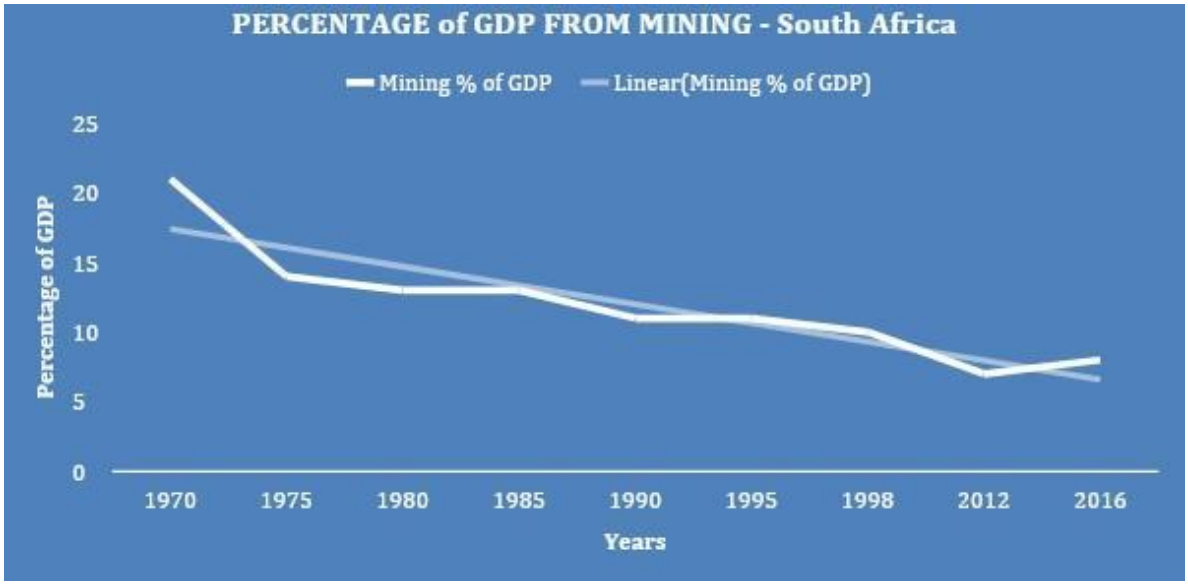



*Figure 3: South Africa's mining contribution to GDP over the years*

**Summary**. The study assumes a mixed method approach where a qualitative desk-top review of the mineral policies of Botswana and South Africa were reviewed to determine similarities and differences. The quantitative analysis focuses on a historic trend analysis of taxation regime of the two countries including contribution of the mining sectors to their respective country's economies. The two countries have both realised a steady decline in the contribution of the mining sector to the GDP. While this may be suggestive of success with economic diversification efforts, it could also suggest a decline in profitability of mining operations.

# 6.0 DISCUSSION

The study has revealed that although Botswana and South Africa are somewhat richly endowed in their mineral resources, the strategies and approaches implemented by the two countries towards harnessing the economic opportunities inherent in the mineral endowment are varied. Some of the key similarities and differences between the strategic approaches of the two countries as well as the limitations of the taxation instruments used are discussed below;

## 6.1 Similarities in mineral policy and taxation systems of Botswana and South Africa

a) ***Strategic intent*:** One of the key similarities between both Botswana and South Africa is inherent in the objectives of the two countries' key objective of maximising returns and attracting foreign direct investment in mining operations, to the benefit of the citizenry of the countries. Further, in aligning with this strategic intent, both countries have remained flexible with implementation of various taxation instruments to align with the operational context vis a vis the need to remain globally competitive. This is evidenced through the revisions made to corporate income tax payable by both countries at various time points as influenced by developments in the mining sector. Botswana and South Africa both implement various mineral taxation instruments to capture mineral rents and their taxation regimes are developed to maximise returns through implementation of mineral royalties, mineral income tax and resource rents.

b) ***Differential taxation for selected commodities***: The two countries have a blanket policy for mineral taxation that includes all the minerals except their strategic minerals, namely gold and diamonds for South Africa and Botswana respectively. Although the two countries apply different formulas for income tax purposes, that is the sliding scale

formula for Botswana versus a fixed rate for South Africa, gold and diamond are taxed differently given their strategic nature to the two countries. South Africa has introduced a 'gold tax' to facilitate continuation of marginal gold mining operations, while it is widely accepted that Botswana implements a different tax regime to diamonds notwithstanding that the details of this modality are not publicly available. Therefore, the similarity between the two countries remains the application of a targeted 'policy lever' as necessary for minerals of strategic importance as demonstrated by application of a differential tax regime depending on the commodity.

c) ***Policy implementation:*** Implementation bottlenecks pertaining to mineral policies in both countries persist. Botswana's mineral policy is yet to be approved by national policymakers since its development in 2017, a factor that has stalled its implementation. Currently, the mining sector is guided by different facets of the mineral acts and regulations which have been adopted for compliance by all stakeholders. Although the South African mining charter has been gazetted, implementation of the charter has proven a challenge. In one of the assessments informing the revision of the charter, implementation bottlenecks were revealed including major challenges in compliance to some elements of the charter. Logically, it follows then that for any policy instrument to achieve its intended objectives, implementation of the same is key. Both Botswana and South Africa are faced with challenges in implementation of their respective policies, albeit from different quarters, a factor that may be projected to limit attainment of the policy objectives.

A summary of the similarities in mineral policy and taxation systems of Botswana and South Africa is listed on table 3.

*Table 3. Summary of similarities in mineral policy and taxation systems of South Africa and Botswana*

| Feature | Botswana | South Africa |
|---|---|---|
| ***Policy Implementation*** | Botswana's mineral policy is yet to be approved by national policymakers since its development in 2017 | Challenges with implementation of the mining charter as result of contestation and non-compliance to mining charter requirements |
| ***Differential treatment for selected mineral commodities*** | Blanket policy for mineral taxation that includes all the minerals except for diamonds | Blanket policy for mineral taxation that includes all the minerals except for gold |
| ***Strategic intent*** | Maximise returns to benefit the citizens | Maximise returns to benefit the citizens |

## 6.2 Differences in mineral policies and taxation systems of Botswana and South Africa

a) ***Mineral income taxation***: Botswana implements mineral income tax on a sliding scale or a variable income tax rate that ranges from a minimum tax rate of 22% (assuming profitability ratio of 21.5%) to a maximum tax rate of 55% determined from a profitability ratio of 100%. On the other hand, South Africa implements a mineral income tax at a fixed income rate of 28% save for gold mining operations where operations with a profitability ratio below 5% are exempt from mineral income tax.

b) ***Royalties***: Botswana implements a fixed tax rate on mineral royalties for all classified minerals as follows; diamonds - 10%, precious metals - 5% and base metals - 3%. Contrary to Botswana, South Africa implements a variable tax rate for refined and unrefined minerals at a minimum rate of 0.5 for both refined and unrefined minerals and a maximum applicable rate of 5% and 7% (at a maximum profitability ratio of 60%) for refined and unrefined minerals respectively.

c) ***Transparency in mineral taxation****:* The two countries also differ on issues of transparency and accessibility of information pertaining to revenue generated from their strategic minerals. Whereas information on gold revenue is somewhat available, the opposite is true for Botswana where even details of negotiation agreements between the government and De Beers Group are not publicly made available.

d) ***Shareholding and equity arrangements:*** Botswana had a unique set of circumstances that allowed the government to reach an agreement with De Beers Group in terms of shareholding and diamond beneficiation agreement including an earmarked amount of rough diamonds to be processed locally. This is in alignment with the country's draft mineral policy objective of value creation and beneficiation for economic growth and development. Additionally, mining companies are mandated to conduct corporate social responsibility within communities in which they operate. This corporate social responsibility policy is meant for mining operations to economically uplift the livelihoods of the communities in which they do business. At the forefront of securing government interest in current and future mining operations is the Mineral Development Company of Botswana (MDCB) which was formed as an act of parliament, the purpose of which is to optimise returns to government from its equity stakes in the mining industry. The South African government implements shareholding and ownership through the mining charter and its requirements are variedly different from Botswana's policy position. It is a requirement of the mining charter that companies issued with new mining rights have a shareholding of at least 30% allocated to Historically Disadvantaged South Africans of which 20% should be for BEE entrepreneurs and 5% for communities where a mine would be located. For companies with already existing mining rights and demonstrable compliance to the previous charter where a minimum shareholding of 26% was mandated, these such be treated as compliant for the duration of their mining rights. Unlike the Botswana government, the shareholding in South Africa is given to BEE as opposed to allocating the benefits of mineral wealth to the greater population through government. The arrangement might just benefit a few individuals within the historically disadvantaged population consequently increasing the inequality gap.

e) ***Human capital development:*** Another difference between the two countries is the level of investment in human capital development, where revenue from the mining sector in Botswana, is used to drive policies on free education for citizenry including up to

tertiary level. This is in line with the draft mineral policy objective of creating and availing the technical skills needed for mining operations and remaining competitive in infrastructure development to attract investment in the mineral sector. On the contrary, South Africa introduced portable skills development under section 189a of the Labour Relations Act of 1995, aimed at developing skills to encourage self-reliance and or self-employment at the end of their mining careers, mine closure or when affected by labour restructuring (World Bank, 2019). It is therefore a legal obligation for mining companies to invest a minimum of 5% on essential skills development. South Africa also aims to develop skills that enhance productivity of the workforce and increase the chance of employment prospects of Historically disadvantaged persons (Mining Charter, 2018)

A summary of the differences in mineral policy and taxation systems of Botswana and South Africa is provided in Table 4.

***Table 4. Summary of differences in mineral policy and taxation systems of South Africa and Botswana***

| **Feature** | **Botswana** | **South Africa** |
|---|---|---|
| ***Mineral Income tax*** | Mineral income tax implemented on a sliding scale formula (70-1500/X) ranging from a minimum of 22% to a maximum of 55% | Mineral income tax is set at 28% except for gold |
| ***Royalties*** | Implements a fixed tax rate on mineral royalties for all classified minerals as follows; diamonds - 10%, precious metals - 5% and base metals - 3%. | Implements a variable tax rate at a minimum rate of 0.5% for both refined and unrefined minerals and a maximum applicable rate of 5% and 7% respectively |
| ***Transparency in mineral taxation*** | Diamond sales information and contractual agreements between Botswana and De Beers are not publicly available | Gold production and sales information is available |
| ***Shareholding and equity arrangements*** | Government gets into shareholding and equity agreement on behalf of its citizen | Mining charter requires at least 30% shareholding be allocated to previously disadvantaged South Africans, with 20% shareholding for BEE, 5% community and 5% workers. |
| ***Human Capital development*** | Free education for citizenry including up to tertiary level provided by the government | South Africa has focused its human capital development on portable skills development, for sustenance for self-employment at the end of their mining careers. Development of skills to enhance productivity of the workforce. |

### 6.3 Implications of the different tax regimens for Botswana and South Africa

The differential application of income tax on a sliding scale basis with a minimum tax rate of 22% and a maximum rate of 55% for all commodities except diamonds by Botswana means that the country is better placed to maximise its returns from the mining industry. This also means that Botswana is able to capitalise on production windfall and thus better placed to reach its objective of maximising the returns for the benefit of its citizenry. Further, the exemption of operations with recording profitability ratios below 21.4% means that marginal operations are not subjected to tax rates, a factor that may also drive the strategic objective of attracting investors into the country. For South Africa, this appears to be a missed opportunity, where no additional benefit is derived from production windfalls save for the income tax fixed at 28%. Additionally, the application of the fixed term rate across the spectrum of minerals (except gold) regardless of profitability, in an era where operational costs are escalating due to commodity depletion and deepening of mines amongst other reasons, may serve as a deterrent for investor attraction into the country and thus not facilitate realisation of one of the objectives of the policy frameworks to drive economic empowerment, especially of the historically disadvantaged groups.

Notwithstanding that, the application of income tax based on a maximum profitability ratio of 100% as in the case of Botswana, and the exemption from taxation at profitability ratio below 21.4% has two implications. Firstly, it is widely accepted that a profitability ratio of 100% is not realistic and that the average profitability ratio is in the range of 1% - 60%. Therefore, while in theory Botswana is enabled to attain maximum returns from mining activities through the income tax, in practice this is far from reality given the profitability of operations. Secondly, anecdotal evidence suggests that a significant proportion of mining operations in Botswana are marginal as demonstrated through frequent cessation of operations during periods of unfavourable climate such as a dip in commodity prices. Therefore, exempting such operations from income tax means the government has a small pool of operations with a profitability ratio

above 21.4% for it to draw benefit from. Botswana is possibly leaking a lot of revenue from quite a number of mining operations making marginal profits, especially base metal operations. While South Africa implements a sliding scale approach to taxation of gold, the narrow focus of the special tax on only one commodity means missed opportunities for accelerated revenue generation given the broad range of mineral resources in South Africa. However, compared with Botswana's sliding scale income tax on minerals that is applicable at profitability ratios above 21.4%, the application of the gold tax regardless of profitability of operations means that South Africa is able to maximise on its returns by targeting a significant proportion of marginal operations, which arguably represents the operational context of many companies.

The strategic nature of diamonds Botswana means that the income tax rate of diamonds is negotiated between the government and the applicant covering commercial and technical aspects of the project. (Mines and Mineral Act, 1999). While the exact agreement between De Beers and the government of Botswana is confidential, it is generally believed that the Government receives around 75% of the profits from diamond mining, whether in the form of mineral royalties, profits tax, dividends on its shareholding, or withholding tax on dividends paid outside of Botswana (Jeffries 2009). Good governance dictates that governments be transparent on issues relating to financial management of revenue from mineral resources to enhance public confidence in managing rent seeking and corruption. Additionally, Botswana and South Africa could benefit from subscribing and complying to EITI rules and regulations to enhance public trust with management of their resource revenue. Data limitations are significant, the implication of which is that authorities are barred from making informed decisions on whether the benefits from mining are positive or negative, or on balance for Botswana (World Bank, 2019).

Overall, the study findings reveal that neither of the two countries are the same in any of their mineral taxation instruments. This is despite similarities in mineral policy objectives for both countries with the main focus to attract investment for mineral developments. The two countries' pathways in terms of setting competitive mineral taxation frameworks are different and aligned to their political, economic and ideological imperatives. However the desired balance is

determined by the economic context of the country which is advised by political decisions (Banda and Kabwe, 2019).

### 6.4 The learnings of Botswana's mineral development

Botswana is aware that mining capital is mobile and that mining companies have many potential investment destinations. Mining is a competitive industry since many other countries are endowed with mineral resources and therefore investor confidence to run operations in a stable fiscal and political environment is important. This is contrary to the contention of implementation of the third mining charter in South Africa which is aimed at improving the social and economic wellbeing of rural communities through the requirement of 10% shareholding (World Bank, 2019).

Botswana government formed Botswana Geoscience Institute through the act of parliament to undertake research in the field of geoscience and provide specialised geoscience services including exploration to significantly reduce the cost of exploration for mining investors. The government of Botswana conducted airborne geophysical exploration studies on over 80% of Botswana to attract investment through provision of geological information. In developing government policies such as the mineral policy or the mining charter, it cannot be stressed enough the need for the government to engage and work collaboratively with all relevant stakeholders, in this particular case the mining and minerals industry so as to facilitate paths of least resistance where implementations of such policies are concerned. Botswana's mineral policy was formulated through an interactive, consultative and participatory process through government with support from the commonwealth secretariat to ensure that policy statements, objectives and strategies are consistent with international best practice.

The consultations included academics, business community, non-governmental organisations to bring in their valuable contributions. The Botswana policy was harmonised with national development plans to provide measures and initiatives for economic growth and development of Batswana as well as synchronised with African Mining Vision and SADC mining protocol.

Extensive research is required into the costs and associated benefits of implementing the model as well as the projected economic impact of adopting the mineral policy as it is on the lives of black South Africans. Ideally, this research would be conducted by independent researchers in the form of think tanks or academic institutions to eliminate or reduce any influence that might emanate from industry or government.

**Summary**. A number of key similarities exist between the mineral policies of Botswana and South Africa and these include; a) the intent to balance maximising returns whilst attracting foreign direct investment against ascertaining benefit for the citizenry of the respective countries; b) application of differential taxation regiment for their strategic minerals, diamonds for Botswana and gold for South Africa; c) challenges with policy implementation at various levels where for Botswana the policy is yet to be endorsed by the national assembly, whilst for South Africa the complexities of the Mining Charter have manifested in challenges with implementation resulting in a number of revisions of the charter. Some key differences include application of mineral income tax, royalties and transparency in mineral taxation within Botswana and South Africa. The application of income tax on a sliding sale by Botswana means that the country is better placed to maximise on its returns compared to South Africa which applies a fixed income tax rate. On the contrary, South Africa's narrow focus on applying a special tax to only one commodity (gold) represents a missed opportunity for accelerated revenue generation.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

### 7.1 Conclusion

Botswana and South Africa are two countries in the Southern African region with an envious mineral endowment that has been successfully harnessed for the economic development of the countries, albeit at different extents. Both countries have recorded high contributions to the GDP from the mining industry at different points in the economic trajectories of the countries, and this was achieved through implementation of strong policy frameworks premised on attainment of the socio-economic advancement of the countries' citizenry. Notwithstanding that, there is evidence of regulatory uncertainty in both countries. Firstly, while the government of Botswana is entrusted with management of ownership and shareholding of mineral rights on behalf of its citizens, the policy environment has not changed since implementation of the Machinery, Mines

and Quarries Act of 1999, and to date, the mineral policy of the country has not been endorsed by national policymakers, a factor that may be partially attributed to the lack of political will exacerbated by the limited transparency on the issue of diamond revenue as the economy's mainstay. The multiple revisions of South Africa's mining charter may be construed to reflect significant challenges in national ownership and effective implementation of the charter. Different instruments have been used including various forms of taxes ranging from income tax, resource rents, and royalties with special formulas used for minerals of strategic relevance to the two countries. Through implementation of resource rents, Botswana is able to maximise its returns during periods of high profitability, an opportunity that is lost for South Africa in its application of fixed income tax rates. Nonetheless, lack of transparency on issues of diamond taxation and revenue means that other countries are denied the opportunity to learn from Botswana, a country that is recognised for its success in harnessing its mineral endowment for national development particularly where diamonds have maintained their relevance in driving the GDP of the country.

The study has also revealed that toa large extent, Botswana has succeeded in maximising its mineral resource endowment for the benefit of its citizenry. At attainment of independence, Botswana was classified amongst the poorest nations in the planet, but upon the discovery of minerals, the country was catapulted into an enviable economic trajectory setting the country on a path to its current classification as an upper middle income country. The specific combination of various taxation instruments including royalties, CIT and resource rents may be attributed to this notable success. Notwithstanding that, economic diversification of the economy from a mining mainstay remains elusive as the mining sector continues to be among the top contributors to the country's GDP albeit in a diminishing fashion. With gold accounting for the higher proportion of mineral sales for a significant time period in the history of the South African mining industry, the introduction of the gold tax formula in South Africa has proven critical in maximising the benefit from gold mining operations, particularly marginal operations. Compared to Botswana, South Africa has made commendable progress towards economic diversification

with sectors such as services and agricultural sector featuring more prominently in their contribution to the GDP compared to the mining sector. While progress has been made towards socio-economic development, the gini index of Botswana reveals the extent of inequalities in the country. For South Africa, this manifests in efforts by the government to address the inequities in the mining sector through the mining charter,specifically targeting historically disadvantaged persons.

This study contributes to the current debate on best practices in managing mineral resource endowment, where different approaches have been implemented yielding different results as in the case of Botswana and South Africa. Specifically, the results reported here may be resourceful in mobilising political support for the endorsement of the mineral policy in Botswana. The findings may also be useful to South Africa in informing its mining charter, should a window of opportunity to revise the charter become open. Further research is required to analyse the impact of both countries' mineral taxation instruments on economic growth and development. This will help generate knowledge on other alternate approaches to resource taxation and to explore their implication to the indigenous people and mining companies. To the author's knowledge, studies are yet to be conducted to analyse the amount of losses incurred as a result of the structure of the income tax for Botswana and South Africa.

The economic and political circumstances of each country are unique, therefore a mineral taxation system that is optimal for one country might be impractical for another. The mineral taxation system depends on the circumstances of the parties involved in terms of economic projections and the trajectory or vision that the country needs to achieve.

## 7.2 Recommendations

Botswana and South Africa seek economic development and growth through generation of maximum returns from mineral taxation instruments by encouraging mineral development

activities within their borders. In an effort to maximise returns perhaps each country needs to consider the following;

*Botswana:* The Mineral Act of Botswana was last revised in 1999, and it will be imperative for this overarching framework to be reviewed to align it to the global context and constraints faced by resource developers and investment institutions. In carrying out this revision, it will be important for Botswana to be cognisant of the need to balance the fiscal environment and associated stability with the objective to remain globally competitive.

*South Africa*: The objective of the South African government is also to maximise returns from mineral taxation systems with greater emphasis on correcting long-standing inequity within its greater population. In developing government policies such as the mining charter, it cannot be stressed enough the need for the government to engage and work collaboratively with all relevant stakeholders, in this particular case the mining and minerals industry so as to facilitate paths of least resistance where implementations of such policies are concerned. While it is an undisputed fact that in the past the black population of South Africa has been disadvantaged economically, caution must be exercised when drafting policies to correct any past misgivings lest a problem of alienating one sector of the population is created while trying to address the issues of another sub-populations. Perhaps this is the opportune time for the government to explore other mechanisms to ensure that all South Africans benefit from the mineral endowment of their country as opposed to the economic empowerment of a select few individuals by drawing lessons from its neighbour Botswana.

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