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Export Restrictions on Raw Materials

**EXPERIENCE WITH ALTERNATIVE POLICIES IN
BOTSWANA**

Jane Korinek

JEL Classification: O24, O55, Q32, Q37, Q38

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ABSTRACT

EXPORT RESTRICTIONS ON RAW MATERIALS: EXPERIENCE WITH ALTERNATIVE POLICIES IN BOTSWANA

Demand for non-renewable natural resources is forecast to rise steadily over the coming decades. Underlying trends of long-term rising demand and falling supply of mineral resources will inevitably increase pressure on prices and intensify competition for scarce resources. This can create a substantial opportunity for development for minerals-rich countries. However, as suggested by the “resource curse” debate, broad-based economic development based on the extractive industries is far from assured. History suggests that not all countries, in particular many of those outside the OECD area, have benefitted economy-wide from their mineral resources: good governance and good policies are essential to benefit from their huge potential growth.

Some countries have successfully regulated their mining sectors without resorting to highly distortive policies such as export restrictions. One such country is Botswana. This paper examines some of the policies in place in Botswana that have contributed to the governance and management of its substantial minerals sector. Lessons are drawn for minerals-rich countries keen to manage their raw materials sectors for increased economy-wide growth.

Key words: Botswana, mining, diamonds, regulation, taxation, royalties, tax revenue management, beneficiation, export restrictions, extractive industries, sovereign wealth funds, SWF, resource curse debate, De Beers, Diamond Trading Company, Debswana, gemstones, extractive industries, sustainable budget index, South African Customs Union, SACU, Pula Fund.

JEL Classification: O24, O55, Q32, Q37, Q38.

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Executive Summary

Long-term trends of rising demand and falling supply of non-renewable mineral resources will inevitably increase pressure on prices and intensify competition for scarce resources in future. This situation will create the potential for substantial revenue creation among minerals-rich countries. However, as the “resource curse” debate suggests, economic development from mineral deposits is far from assured.

One country that has benefited greatly from its rich deposits is Botswana. At the time of its independence in 1966, Botswana was one of the poorest countries in the world, and was included in the UN’s group of Least Developed Countries. Botswana graduated from the list of least developed countries in 1995, only one of three countries to have done so. Today, Botswana is an upper middle income country, in large part due to good governance and sound policies regulating its minerals sector. This paper identifies some of the good practice areas in mining regulation in Botswana whose economy has shown strong growth over most of the last four decades.

Stability and predictability of regulatory policies are important for investors in the highly capital intensive extractive industries. In particular the predictability of tax policies factors heavily in long-term investment decisions. The tax code in Botswana has remained stable and changes have been instituted in stages. Furthermore, Botswana benefits from a strong reputation for good governance and transparency and thus changes in the tax regime that need to be implemented can often be done so without causing significant damage to investor confidence.

Harnessing the economic potential of the mining sector for the benefit of the economy at large implies that the interests of the public and private sectors should be aligned to the extent possible. The long-standing joint venture between De Beers S.A. and the Government of Botswana has allowed Botswana to benefit from global private sector expertise in all aspects of the management and strategy of the company while retaining ownership of the resources being extracted. Currently, 80-82% of the revenue minus costs of Botswana’s diamond production is recovered by the Government either in tax or in joint-venture profits.

To maximize the long-term economic benefits of revenues from non-renewable mineral resources, Botswana has followed a principle of asset replacement: since revenues derived from minerals result from the sale of a non-renewable asset, the revenues are used to finance investment in other assets, and are not used to finance recurrent government spending. Botswana has used its mineral revenues to invest in its people, through spending on health and education, and in its infrastructure. Over the past three decades as a whole, mineral revenues have been entirely devoted to investment in physical and human capital assets, and have not been used for recurrent spending which has been financed by recurrent revenues. Public investment spending has been divided between physical assets (44%), education and training (42%) and health spending (14%). The results of these priorities can be seen in its educational attainment and social indicators which have risen remarkably from very low levels.

To isolate expenditure patterns from the cyclical nature of mineral revenues, and hence to avoid some of the problems associated with the ‘resource curse’ requires sound financial management. Public expenditure in Botswana has generally been counter-cyclical, or at least acyclical, as compared with revenue streams. Botswana has therefore been able to smooth

government spending despite the volatility of natural resource revenues by accumulating reserves during periods of relatively high commodity prices or demand for diamonds, and drawing them down when prices or demand slacken. The government has felt under no obligation to spend all mineral revenues, e.g. when suitable investment opportunities could not be found. Unspent revenue from mineral resources is saved in a long-term investment fund called the Pula Fund. It is invested on foreign markets and in foreign denominated currencies thereby easing pressure on the exchange rate and on exporting firms.

Some public investment projects undertaken by some mineral rich countries have resulted in very minimal economic gain. The projects undertaken, but also the process by which public spending priorities are set, are of prime importance. Botswana establishes general development policy objectives and determines public investment projects in its National Development Plan (NDP). This is a very inclusive process that combines bottom-up as well as top-down elements and provides the forum where development projects are proposed and negotiated: no projects are financed outside the NDP process. Discussion about priorities takes place at all levels of government and civil society and is in part based on traditional consultative structures.

Botswana's minerals sector has been the engine of its development strategy and efforts have been made to ensure its continued development. Early on, with the help of development assistance funds, good quality, detailed geological information was collected to obtain a comprehensive view of the country's resources. Such information is of prime importance for minerals-rich countries wishing to attract investment.

Minerals, including diamonds, are exhaustible resources, and long term vision is required to prepare the economy for the moment when minerals revenues dry up. In an effort to retain diamond activity in the country, Botswana has moved to engage at other stages in the diamond value chain to advance its goal of becoming a "diamond hub". In the first instance, the country's diamonds have been sorted and valued in-country, creating jobs and increasing the level of expertise. By the end of 2013, the entire selling operation of the De Beers group, i.e. the largest market for diamonds worldwide, will take place in Gaborone. Further down the value chain, the Government of Botswana has leveraged its relationship with potential rough diamond purchasers to encourage a diamond cutting and processing industry that has created 3 500 jobs.

There is much good practice in the case of Botswana's management of its minerals sector. Although the economic situation in Botswana has its specificities (e.g. small population, low population density, substantial mineral reserves), many of the policy priorities and their implementation can be regarded as models for other minerals-rich countries. There are challenges as well, however, which indicate that some policies may need revision in order to continue the country's strong growth now that Botswana has reached the stage of a mature mineral economy. In view of future declining revenues from diamond mining, the Government of Botswana will likely feel increasing pressures to use the accumulated reserves in the Pula fund to finance current expenditures. Increasing transparency and establishing clear rules around the management of the fund should therefore receive high priority. Diversification of activities, especially into those with high content of skilled and semi-skilled labour, will require continued attention to maximize the returns to past, diamond-financed investments in human capital.

Introduction

Public interest in the area of access to commodities rises and falls with commodity prices. When prices for commodities, whether agricultural, energy-related, or minerals, are high, there is a pressing call for analysis of policy instruments that can curb the volatility, and those that have contributed to causing it. When prices are moderate, interest may wane among policymakers. However, as regards mineral raw materials, supply-side constraints are forecast to rise steadily over coming decades. Population and income growth, demand for sophisticated goods and new technologies and sharply falling ore grades combine to ensure that the problem of access to supply of industrial raw materials will not go away. To the contrary, underlying trends of long-term rising demand and falling supply of non-renewable mineral resources will inevitably increase pressure on prices and intensify competition for scarce resources.

This can create the potential for a substantial opportunity for development among minerals-rich countries. Potential for revenue creation from rich mineral deposits in some countries is huge, particularly in some developing countries whose deposits have not been exploited thus far. However, as suggested by the ‘resource curse’ debate, broad-based economic development from mineral deposits is far from assured.¹ History suggests that not all countries, in particular those outside the OECD area, have benefitted economy-wide from their mineral resources. Good governance and good policies (some analysts would add “and good luck”) are essential to benefit from the huge potential growth from mineral resources.

Recently, some countries have resorted to using export restrictions on industrial raw materials in an attempt to increase the domestic value added obtained from the mineral sector or to counter the presence of negative spillovers from mineral extraction such as illegal exports or environmental degradation. The most common reasons given for using export restrictions are: developing downstream or upstream industries; increasing government revenue; offsetting exchange rate impacts; controlling illegal exports; environmental protection; protection of citizens’ health; and slowing down rates of resource extraction.²

However, export restrictions are not necessarily the most efficient way of achieving these stated goals. Some countries have successfully regulated their mining sectors without using export taxes and quotas. One such country is Botswana. At the time of its independence in 1966, Botswana was one of the poorest countries in the world, and was included in the United Nation’s group of Least Developed Countries. Botswana graduated from the list of least developed countries in 1995, one of only three countries to have done so. Today, Botswana is an upper middle income country, in large part due to good governance and sound policies regulating its minerals sector.

This paper will examine in some detail a subset of the policies in place in Botswana that have helped govern and manage its substantial minerals sector. Botswana’s minerals policy is still work-in-progress and is at present being reviewed by its authorities. Its Mines and Minerals Act is being revised and a new version is expected to be enacted in 2014. Moreover, some of the policies reviewed have yet to be fully implemented or to fully bear fruit. A close examination of Botswana’s policies in the minerals sector over the past few decades suggests, however, careful

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1. The substantial body of literature on the resource curse is too lengthy to summarize here. It is well explained in the WTO’s *World Trade Report 2010: Trade in Natural Resources* and in Humphreys, Stiglitz and Sachs (2007).
 2. See Fliess and Mard (2012). The OECD has developed a substantial body of work examining different aspects of export restrictions: their presence and economic impacts, existing disciplines governing their use, transparency considerations, and alternative policies to their use. This work is available here: <http://www.oecd.org/tad/benefitlib/exportrestrictionsonrawmaterials.htm>

management of its resources and the revenue generated by them and foresight in anticipating future changes.

Although the case of Botswana is interesting in its own right, one of the main aims of this paper is to draw lessons for minerals-rich countries keen to manage their raw materials sectors for increased economy-wide growth. This study is one of a series covering minerals-rich countries that have successfully managed their resources: a study on Chile, *Mineral Resource Trade in Chile: Contribution to Development and Policy Implications*, is in the public domain. Some similarities exist between the cases of Chile and Botswana but the specific context and constraints are important in each case.

Context: Botswana's economy and the mining sector

Botswana is a relatively large, sparsely populated, landlocked, semi-arid country in Southern Africa. It measures 582 000 square kilometres, comparable in size to Kenya and to France. It shares borders with Namibia, South Africa, Zambia and Zimbabwe. Botswana's population of 2 million in 2011³ is comparable to that of neighbouring Namibia (2.3 million) and, within the OECD area, Slovenia (2 million). The majority of the population is concentrated in the eastern part of the country; the Kalahari Desert occupies much of the southwest.

At the time of its independence in 1966, Botswana was one of the poorest countries in the world. There was almost no infrastructure: twelve kilometres of tarred road, virtually no capital city or government buildings, very few public services and low indicators of health and education levels. Twenty two citizens had obtained a University diploma and 100 had graduated from secondary school in 1965.^{4,5} GDP per capita was USD 90 (World Bank DataBank); Botswana was declared a Least Developed country by the United Nations.

In 1967, deposits indicating the presence of diamond-rich ores were found. Diamond mining thereafter profoundly changed Botswana's economic prospects. The country's ability to manage revenues from its vast deposits of natural resources including diamonds, coal, copper, nickel and soda ash have contributed greatly to its outstanding economic performance. Botswana's prudent management of its vast natural resources has resulted in investment in infrastructure, health and education and accumulation of funds for future use (African Development Bank et al., 2013; Acemoglu et al., 2003).

Botswana graduated from the list of least developed countries in 1995, one of only three countries to have done so (UN General Assembly resolution A/RES/49/133). Today, Botswana is an upper middle income country. It has one of the highest GDP per capita in Sub-Saharan Africa, about USD 9 537 in 2011, which is comparable to that of Malaysia (USD 9 941) and Mexico (USD 10 184).⁶

Botswana is one of the fastest growing economies in the world, with the average real growth rate of about 9% per year since 1966 (World Bank DataBank). Real GDP growth rates in recent years have varied between 8.7% in 2007 and -7.8% in 2009. Strong recovery was recorded in 2010 (8.6%) and 2011 (6.1%). Growth in 2012 was lower, at 4.2% (Statistics Botswana);

3. Statistics Botswana, Census Office

4. 10th National Development Plan

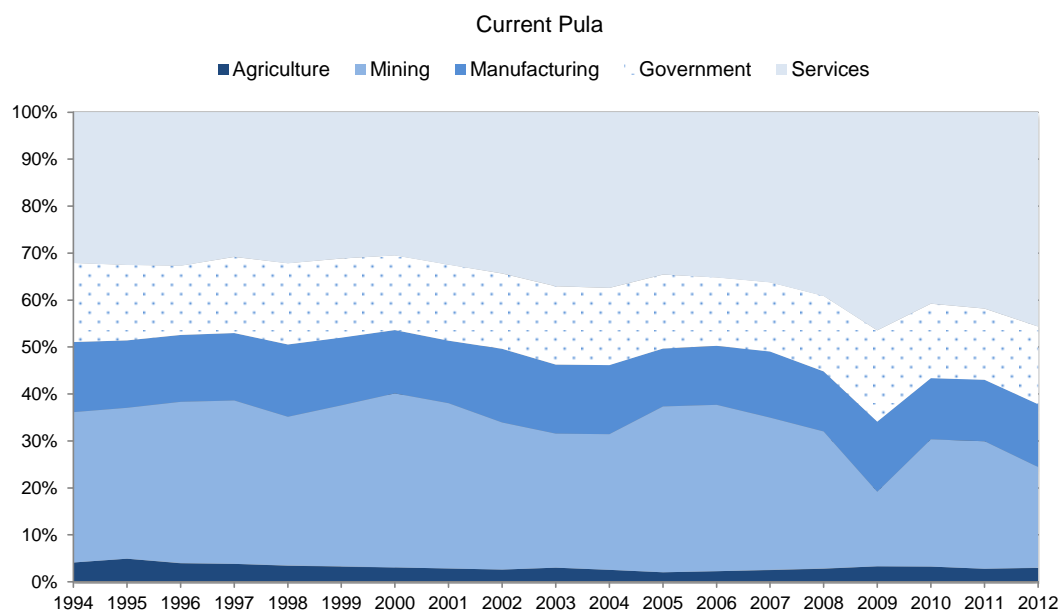
5. Chapter 14 in Acemoglu, and Robinson (2012); Acemoglu, Johnson and Robinson (2003)

6. World Bank databank.

projections for 2013 and 2014 are 5.6% and 5.5% respectively (African Development Bank et al., 2013).⁷

The mining sector now creates about one quarter of the value added in Botswana's economy. The sector's share in value added has decreased from 37% in 2000 to 22% in 2012 in favour of construction and particularly services sectors. Mining activity shrank by 46% in 2009 in real terms due to the global economic crisis, underlining the country's reliance on global demand for diamonds and other products of the extractive industries (Figure 1).

Figure 1. GDP by sector of activity



In addition to diamonds, Botswana produces coal, copper/nickel matte, gold and soda ash. Other minerals that have been identified include uranium, zinc and coal-bed methane (CBM). The country's unexploited mineral resources include asbestos, chromite, feldspar, graphite, gypsum, iron and manganese many of which are located in remote areas or beneath a thick sequence of the Kalahari sands (Hancock, T., 2011; Olson, D., 2012).

The Government of Botswana is encouraging diversification into other minerals such as coal, copper and silver. Despite the known adverse effects of coal on the environment, the Government of Botswana is in the process of developing a Coal/Coal Bed Methane Road Map with the assistance of the World Bank to make use of the country's substantial coal reserves.

Minerals constitute a major part of total exports; the contribution of diamonds, copper and nickel to total exports is over 80%. Total exports in 2012 were USD 6.0 billion, of which diamonds were USD 4.7 billion (Table 1). The main destinations for Botswana's exports are the European Union, namely United Kingdom, Belgium, Switzerland and Finland; South Africa; Norway; Israel; Zimbabwe and the United States (UN Comtrade database). Botswana's foreign

7. Botswana's Ministry of Finance and Development Planning estimate a slightly higher real GDP growth rate of 6.1% for 2012 and 5.9% for 2013.

trade policy is defined in large part by its membership in the Southern Africa Customs Union (Box 1).

Table 1. Share of diamonds in Botswana's exports, 2000-2012

USD billions and %

	Exports total	Exports of diamonds*	Share of diamonds trade
2000	2.8	2.3	82.7
2001	2.5	2.1	84.9
2002	2.7	2.2	80.6
2003	3.8	3.0	78.3
2004	3.5	2.7	75.5
2005	4.4	3.3	75.0
2006	4.5	3.3	73.6
2007	5.1	3.2	63.7
2008	5.0	3.1	63.2
2009	3.5	2.2	62.7
2010	4.7	3.2	68.4
2011	5.9	4.4	75.6
2012	6.0	4.7	79.4

Note * HS7102, classification HS1996.

Source: UN COMTRADE.

Box 1. Southern Africa Customs Union

The Southern Africa Customs Union (SACU), established in 1910, is comprised of five members: the Republic of South Africa, Botswana, Lesotho, Namibia and Swaziland, and is the world's longest standing customs union. SACU is a full customs union in that goods traded within the area are not subject to tariffs if they comply with rules of origin in place; there is a common external tariff; and tariff revenue sharing takes place according to an agreed formula.

Since the late 1980s SACU's trade barriers have been substantially reduced and SACU's formula for sharing tariff revenue between its members has been re-negotiated several times. The revenue sharing formula was again on the agenda of a SACU Summit in 2013. One of the specificities of this customs union is the difference in the size of its members' economies. South Africa's large and relatively diversified economy includes a substantial manufacturing sector, for example, which contrasts with SACU's four other members. South Africa's GDP accounts for 92% of the total GDP of SACU countries.¹

The revenue sharing formula in SACU is made up of three components: the customs, excise and development components. Total customs revenues collected are distributed according to each country's share of total intra-SACU imports. Botswana's share in the customs revenues is around 27%, and South Africa's portion is 20% (Kirk and Stern (2003) based on 1998/9 intra-SACU trade). The excise component of the revenue sharing formula is distributed according to relative GDP of each of the SACU members. Therefore, South Africa receives approximately 92% of the excise revenue portion, and Botswana 4%. The "development component" of the revenue sharing arrangement accounts for the smallest share of the shared revenue pool. This portion is distributed in nearly equal shares between the five SACU members.

The share of government revenue coming from SACU customs revenue in the government budget has very recently surpassed the share provided by mineral taxation. In 2013, customs revenue from SACU accounted for 31% of the Government of Botswana's revenue. Thirty percent was from the minerals sector, 20% from income tax and 6% from VAT.

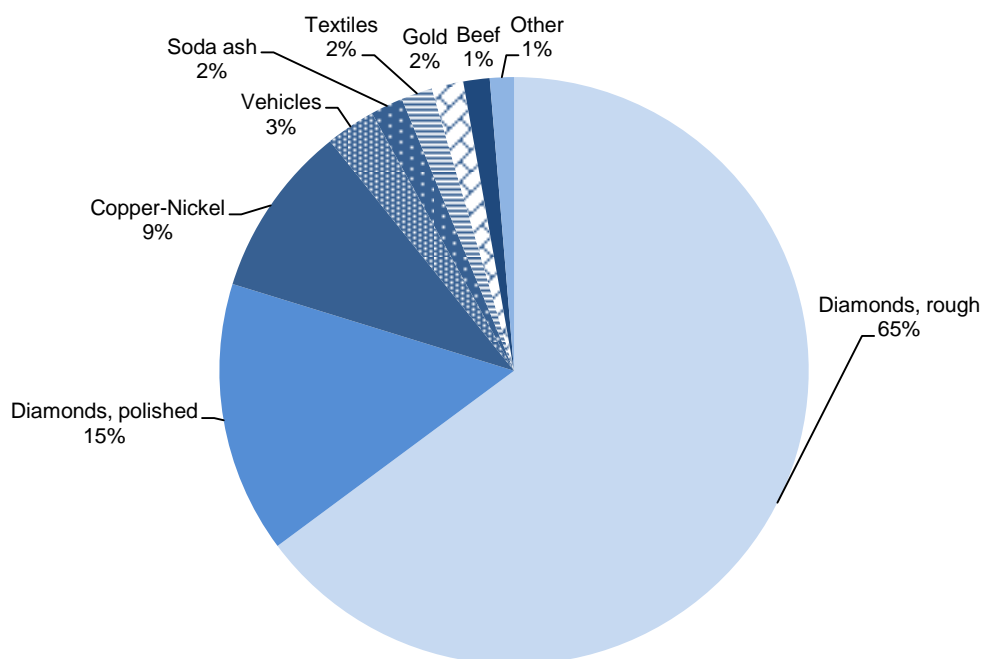
1. Measured using 2012 nominal GDP, according to the World Bank's World Development Indicators.

2. Since SACU customs revenue is distributed according to the share of intra-SACU imports (as opposed to an indicator of the final destination for extra-SACU imports) the smaller countries within the agreement receive a proportionally large share of the revenue. This may increase the trade diversion effect of the agreement.

3. The development portion of the revenue sharing agreement, combined with the method of calculation of the customs component, suggests that the smaller countries within SACU obtain a substantial share of the customs and excise revenue compared to the share of revenue that would be collected on the basis of final-destination importers.

Although meat and meat products only represent 1% of Botswana's exports today, cattle-raising was traditionally the most important economic activity (Figure 2). Early on, Botswana negotiated access for its beef into the European Economic Community at prices above world market prices under the 1975 Lomé Convention (Maipose, 2008). Beef exports grew as a result. More recently, however, beef exports from Botswana have declined substantially. This is due in part to greater domestic demand. It also reflects the difficulty Botswana cattle farmers face when exporting. As an example, an EU directive issued in 1997 made it mandatory for beef exported to the European Union to be identifiable and traceable “from farm to fork” using a computerized system. Botswana introduced a livestock identification and trace-back system (LITS) in 1999 to fulfill the EU export requirements since the European Union was by far the most important destination for Botswana beef exports. This policy, which was reportedly quite onerous for Botswana, contributed to a substantial decline in beef exports to the European Union (Marumo and Monkhei, 2009), although rising domestic demand in a context where beef imports were banned was probably more important. In February 2011, exports to the European Union were halted due to a number of issues, primarily the failure of the LITS; Botswana's exports of beef fell by 89%. In June 2012 the ban was lifted after the Department of Veterinary Services applied stricter veterinary and quarantine procedures. The situation of beef exports illustrates some of the difficulties Botswana faces in diversifying its export composition.

Figure 2. Export composition 2012



Source: Statistics Botswana.

Botswana's main imports in 2010 were fuel, machinery and electrical equipment, diamonds, food, vehicle and transport equipment and medicine originating from South Africa, United Kingdom, China, Israel and United States (UN Comtrade).

The real value of the Botswana currency, the Pula (which means “rain” in Setswana), against most major currencies has remained stable in line with its crawling peg regime. Botswana’s Pula is managed according to crawling band exchange rate regime to a basket of currencies comprised of the South African rand (55%) and SDR (45%) through continuous adjustment of the trade-weighted nominal effective exchange rate with the rate of crawl based on the differential between the Bank of Botswana’s inflation objective and the forecast inflation of trading partner countries. The rate of crawl is thereby determined using a forward-looking approach and is revised on a regular basis (AfDB et al., 2012). Botswana’s inflation rate was 4.1% in November 2013. This is in keeping with the Bank of Botswana’s medium term objective which is to keep inflation in a range of 3-6%.

Despite its dominant role in Botswana’s economy and in its export composition, the mining industry employs only a limited share of the labour force, about 3% in 2011. Botswana’s mining industry provides direct employment to approximately 12 000 people.⁸ It is important to note however that formal sector employment only represents an estimated 30% of the total labour force in Botswana. The remaining 70% constitute the unemployed and informal sector employment, the vast majority of the latter being involved in agriculture (Sarraf and Jiwaji, 2001).

Table 2. Employment by sector of activity selected years, %

	2001	2002	2005	2006	2009	2010	2011
Agriculture	2.4	2.3	1.9	1.9	1.5	1.7	1.7
Mining and quarrying	2.5	2.7	3.3	3.6	2.8	3.0	3.1
Manufacturing	21.8	22.4	20.5	20.7	15.8	17.2	16.9
Services	32.9	34.0	35.8	36.1	30.2	33.2	32.2
All sectors	100.0	100.0	100.0	100.0	100.0	100.0	100.0

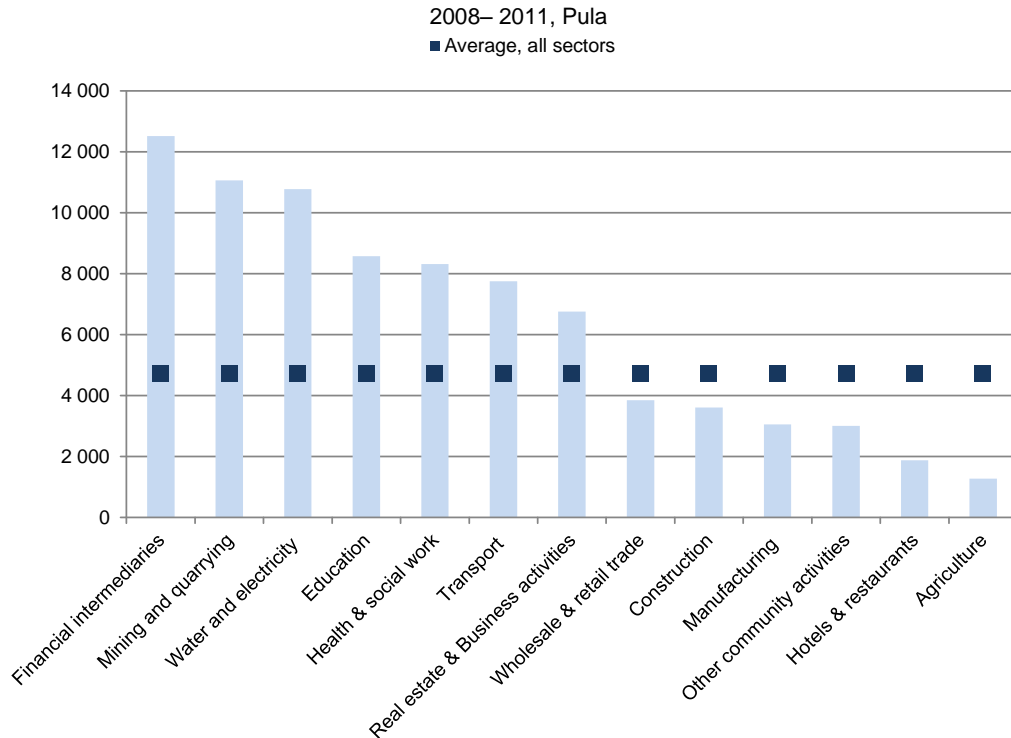
Notes: Data point, March of every year. Manufacturing includes water, energy and construction. Services include: trade; hotels and restaurants; transport; banks; insurance and business services; general government and social and personal services.

Excludes working proprietors and unpaid family workers. 2001-2006 all figures are rounded to the nearest 100, including the sub-totals and totals. Because of this, numbers do not always add up to the stated totals. “All sectors” includes public sector employees. Sectoral totals refer to private sector only.

Source: Statistics Botswana, Labour Statistics. 2008-2011 Stats briefs: December 2010 and June 2011, Formal sector employment 2001-2007, Labour Statistics Reports 2007-2010.

As is common globally, wages in the mining sector are high compared to other sectors of the economy (Figure 3). Average monthly wages in the sector were about 11 000 Pula per month in 2011 (approximately USD 1 600). Average monthly earnings for all sectors in Botswana’s economy during the same period were approximately 4 700 Pula (USD 690).

8. Estimate for March 2011, Statistics Botswana, Labour Statistics 2010.

Figure 3. Average monthly earnings of formal sector employees by economic activity (excluding government)

Note: All employees include citizens and expatriates.

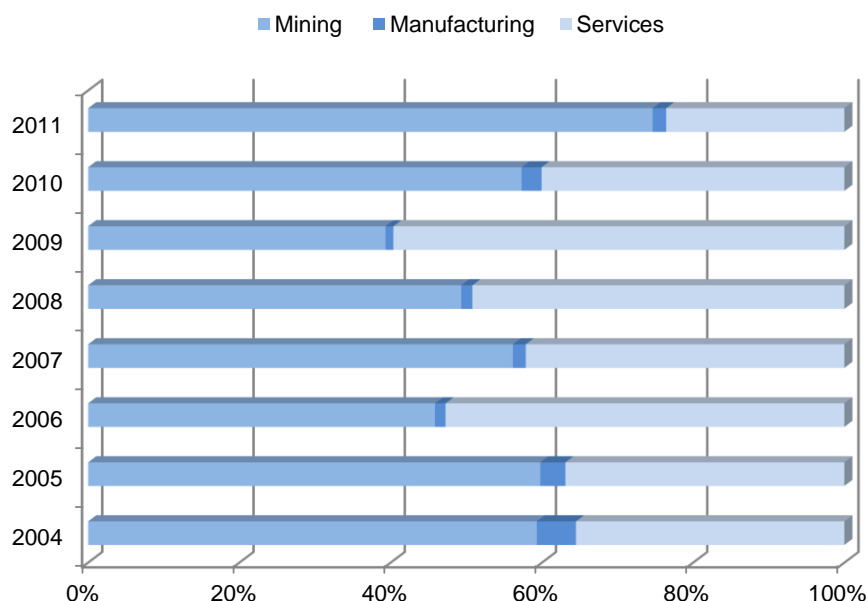
Source: Statistics Botswana, Labour Statistics. 2008-2011, Stats briefs: December 2010 and June 2011, Formal sector employment 2001-2007, Labour Statistics Reports 2007-2010.

Foreign direct investment continues to flow in its majority to the mining sector (Figure 4). Total FDI inflows in 2011 were USD 587 million, which equals 6.2% of gross domestic product (UNCTAD, 2012). The mining sector accounted for approximately 60% of FDI and the financial sector brought in about 30% in 2005 (UNCTAD, 2008). Most FDI originates in the European Union, especially Luxembourg where the DeBeers investment firm is registered, and from South Africa.

Botswana is an attractive destination for foreign investment. Its rich mineral resources coupled with a stable democratic government and successful history of sustainable macro-economic management have increased its desirability for investors globally. Botswana was ranked the eighth most attractive place for mining investment after Australia, Canada, Chile, Brazil, Mexico, United States and Colombia in 2012.⁹

9. Behre Dolbaer 2012 *Ranking of Countries for Mining Investment* – Where ‘not to invest’ is an annual political risk assessment of the 25 key players in the global mining industry. Countries’ economic and political systems, level of corruption, social and bureaucratic issues, stability of currency and competitiveness of tax policy are all taken into consideration.

Figure 4. FDI stocks by sector of activity



Source: Bank of Botswana.

Botswana's policies and regulation in the mining sector were ranked 17th best out of 96 jurisdictions by managers and executives in the mining industries.¹⁰ It ranked higher than last year's top ten performer, Chile, and behind North American states and provinces, Finland, Ireland and Sweden. Botswana is therefore very highly regarded by mining sector professionals in terms of its regulatory environment, infrastructure and stability.

The general business environment in Botswana is considered to be relatively free from corruption. Mining firms rank Botswana, together with Chile, as having the lowest level of corruption among developing nations.¹¹ Even more interesting, Botswana is perceived to be less corrupt than four Canadian provinces (Quebec, Manitoba, British Columbia, and Alberta), and two US states (Montana and Washington) involved in mining activities.

Economy-wide measures of corruption perceptions confirm the results suggested by surveys in the mining sector. Transparency international's Corruption Perceptions Index places Botswana 30th out of 176 countries and territories, by far the highest among African countries. Economy wide, Botswana is ranked at the same level as Spain, and is considered less corrupt than a number of OECD countries (Transparency International, 2012).

10. The Fraser Institute's Policy Potential Index is a composite index that captures the opinions of managers and executives in the mining sector on the effects of policies in jurisdictions with which they are familiar. It includes information on the following policy questions: uncertainty concerning the administration, interpretation and enforcement of existing regulations; environmental regulations; regulatory duplication and inconsistencies; taxation; uncertainty concerning disputed land claims and protected areas; infrastructure; socioeconomic agreements; political stability; labour issues; geological data base; and security.
11. Fraser Institute Survey of Mining Companies 2012/13, <http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/mining-survey-2012-2013.pdf>.

Institutions framing the diamond mining and processing industries in Botswana

Diamonds were discovered in Botswana shortly after its independence in 1966. Diamond production started in 1971 and Botswana has since become the world's largest producer of diamonds from the most profitable diamond mines in existence. It produces approximately 25-30% of the world's gem-quality diamonds. Diamonds mined in 2011 represented about USD 4.5 to 5 billion and 23 million carats.¹² In Botswana, as is generally the case globally, all minerals belong to the State.

The Government of Botswana (GRB) has been involved in a joint venture with the largest private diamond-producing firm, De Beers, since its diamonds were discovered. In 1969, the De Beers Botswana Mining Co. was established to develop the country's diamond deposits. At the time, the Botswana government held a 15% share in the company (Evan-Zohar, 2002). This was increased to 50% in 1975 once production was underway and the joint venture firm was named Debswana. Production originally took place in Botswana's Orapa location. A few smaller diamond deposits were discovered at a second location near Letlhakane, and production was started there in 1977. The world's most profitable diamond mine, Jwaneng, started production in 1982. Botswana's diamonds represent about 70% of De Beers' total production in value (Evan-Zohar, 2002).

Botswana has established a number of institutional structures for the management of mineral revenues. The high-level Minerals Policy Committee sets the framework for taxation and revenue-raising as regards the mining sector, and takes a lead role in negotiations with mining firms.¹³ This group has been particularly important in the context of negotiations with De Beers regarding the distribution of revenues from Debswana. Botswana has negotiated astutely and has used its leverage to win concessions that have resulted in a favourable revenue sharing formula. This leverage was first used in the 1970s during negotiations for additional mining licences as described above, which were used to increase the Government of Botswana's share in Debswana from 15% to 50%. It was used again in the 2000s when the original mining licences came up for renewal, which was used to increase the Government of Botswana's overall revenue share. In 2011, negotiations for the renewal of the Debswana marketing contract were used to win concessions regarding the building of downstream diamond industry activities and the establishment of an independent marketing channel outside of the De Beers Diamond Trading Company (DTC) marketing structure. (This issue will be examined more closely in a later section of this paper on the development of the downstream industry). Botswana's leverage arises from its role as the world's largest producer of rough diamonds, and from its related position as the largest single contributor to De Beers' sales and profits. The Government of Botswana has invested substantially in its relationship with De Beers in this regard.

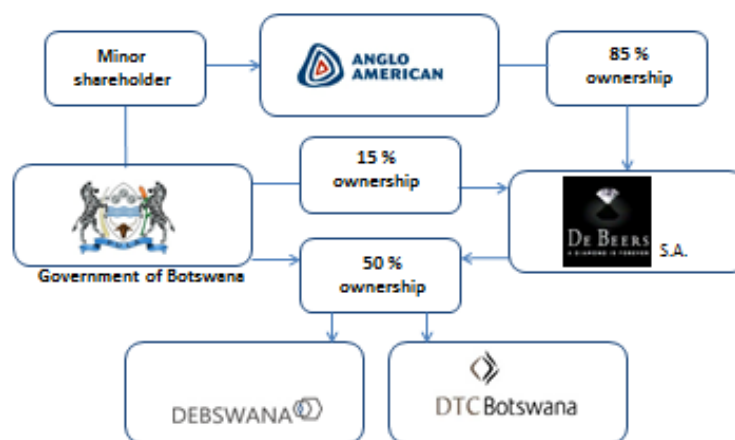
Debswana, the firm licensed to extract the vast majority of Botswana's diamonds therefore is a 50-50 joint venture between the Government of the Republic of Botswana (GRB) and De Beers S.A., the largest diamond producing firm worldwide. Debswana's Board of Directors is comprised of six members appointed by the GRB and six by De Beers S.A, as well as one *ex-officio* member, its Managing Director.

12. The exact figure in value is not published in a transparent fashion. This was calculated by combining De Beers company totals with shares for Botswana's production that were communicated by in-country regulators and executives.
13. The Minerals Policy Committee is comprised of the Permanent Secretary, Ministry of Minerals, Energy and Water Resources (MMEWR); the Permanent Secretary, Ministry of Finance and Development Planning (MFDP); the Permanent Secretary to the President; the Governor of the Bank of Botswana; and the Attorney General.

In addition, the Botswana Government, through Debswana, owns a 15% share in the De Beers global group since the late 1980s. During the 1980s, when diamond prices were low, Debswana stockpiled a substantial amount of rough diamonds. When the market recovered in 1986, this stockpile was sold to De Beers and Debswana was paid partly in cash and partly in shares in De Beers. The Botswana Government also obtained the right to appoint two directors to the global De Beers firm's board.¹⁴ In this way, the GRB obtained access to high-level information regarding the operation of the global diamond industry (Jefferis, 2009).

At present, De Beers is owned jointly by Anglo-American (85%) and the Botswana Government through Debswana (15%). Debswana also holds shares in Anglo-American which equalled 2% of Anglo-American's value in the early 2000s although half its shares were sold in 2004 (Evan-Zohar, 2002).

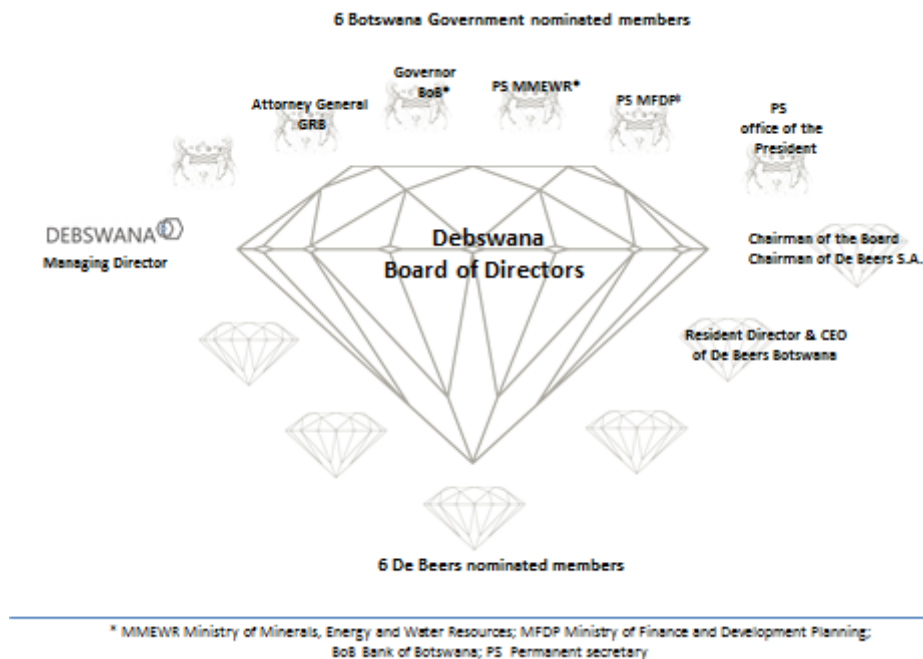
Figure 5. Botswana's diamond industry: Ownership structure



Responsibility for regulating the diamond mining industry, and for minerals policies generally, lies with the Ministry for Mineral, Energy and Water Resources (MMEWR). The MMEWR regulates all mining, prospecting and exploration activities as well as mineral processing activities; collects and disseminates geological information; and is responsible for all financial, commercial and administrative issues arising in those mineral sector companies in which the GRB is a shareholder. The Permanent Secretary of the MMEWR sits on the Board of Debswana, the Botswana Diamond Trading Company (DTCB), the selling arm of the De Beers network, and De Beers S.A. The Ministry of Finance and Development Planning oversees revenue collection including that of the minerals sector among other responsibilities. The Permanent Secretary sits on the Board of Debswana and of De Beers S.A. Other Debswana Board Members appointed by the GRB are the Governor of the Bank of Botswana, Attorney General, and the Permanent Secretary of the Office of the President (Figure 6).

14. <http://www.debeersgroup.com/en/About-Us/Governance/Board-Of-Directors/>.

Figure 6. Debswana: Board of Directors



Availability of geological information

The quality of geological information available in Botswana is generally good. Three-quarters of investors said the quality of geological information available encourages investment (21%) or does not deter investment (52%). Twenty-seven per cent indicated that geological information was a mild deterrent to investment in Botswana (Fraser Institute, 2012/13). In terms of the quality of geological information, Botswana ranks 43 out of 96 mining jurisdictions surveyed. It is ranked second-highest among non-OECD jurisdictions (after South Africa) in this area.

The quality of available geological information is of great importance to potential investors. A good, consolidated database of all available information is a strong public good. It provides policymakers in mining ministries with precious information with which to make informed decisions. An aero-magnetic study of the entire country was completed in the late 1970s and early 1980s supported by development assistance. In 1993, a study was undertaken to provide more detailed information than the four kilometre line spacing previously available. The higher level of detail provides more salient information on potential deposits for potential prospectors (on a scale of 1:125 000). Geo-chemical maps are also used.

Best practice, according to MMEWR officials, would dictate that databases of geological information be updated regularly with information that is obtained quarterly from prospectors once their licences have not been renewed or retained. Although there is a substantial effort in this area, it is considered somewhat incomplete. Nonetheless, the availability of up-to-date and easily accessible geological information from the Geological Survey department has made it quicker, easier and less costly for exploration firms to get started (Matshediso, 2005).

Legal framework for mining operations: licensing

The legal framework for mining operations is based on the Mines and Minerals Act of 1999 which regulates, inter alia, the process by which licences are granted. Firms wishing to undertake mineral exploration in Botswana must obtain a prospecting licence. The licence is

valid for three years, renewable for two two-year periods (i.e. potentially seven years in total). Its cost is 5 Pula (USD 0.60)/sq. km. with a minimum of 500 Pula (USD 57) for industrial minerals and 1000 Pula (USD 115) for all other minerals (Mines and Minerals Act, 1999). The granting of a prospecting licence involves a commitment to a minimum level of expenditure over the licence period. When applying for renewal, prospecting firms must submit reports regarding their exploration activities and information on existing deposits to the Geological Survey of the MMEWR. In the case that the prospecting licence does not lead to an application for a retention or mining licence, the information submitted to the MMEWR can be made available to other companies that apply for a prospecting licence in the same area.

In the case that prospectors find significant deposits that are not economically viable to mine under present conditions, they can apply for a retention licence. The retention licence is granted for a period of three years, renewable for three years. A retention licence costs 5000 Pula (USD 573) per sq. km. for the first year, increasing annually by 5 000 Pula per sq. km. for the second and subsequent years. The relatively high cost of the retention licence, and its progressive increase over time, aims to give an incentive for prospecting or potential mining firms to release concessions that they do not intend to mine.

In the case that a mineral deposit is found to be economically viable during the prospecting phase and subsequent feasibility study, the holder of the prospecting licence has a preferential right to apply for a mining licence. Mining licences are granted for up to 25 years and are issued only to firms registered in Botswana. Mining licences can be automatically renewed subject to the fulfilment of certain conditions that are specified in the Mines and Minerals Act. Licence applicants must show proof of technical competence and access to adequate financial resources. A mining licence costs 100 Pula (USD 12) per sq. km. The granting of a mining licence automatically gives the investor a lease on the land covered by the licence (Jefferis, 2009).

All applicants for a mining or retention licence must carry out an Environmental Impact Assessment (EIA) that forms part of their project feasibility study that accompanies the licence application. At the end of the mining operation, the holder of the mineral concession is obliged to restore the top soil of affected areas and restore the land to a substantial degree to the condition it was prior to the start of operations (Jefferis, 2009). Regarding environmental impacts, the diamond mining activity in Botswana is relatively limited compared with other operations in the mining industry. The diamond mines are open cast and processing generally involves washing and sorting rather than chemical processes. The main environmental impact comes from the extraction and use of underground water.

Debswana's 25-year licence for mining diamonds was renewed in September 2004 (Iimi, 2007). There are no legislated restrictions prohibiting other companies from mining and marketing diamonds (WTO, 2009). A number of firms are presently prospecting and mining diamonds in Botswana.¹⁵ According to Botswana legislation, diamond mining licences are subject to negotiated settlement regarding terms and conditions, including taxes and royalties. For all other minerals, however, the terms are not subject to negotiation and the tax and royalty regimes are laid out in the legislation.¹⁶ In practice, however, it seems that all new diamond mining firms are subject to the same terms as other mining firms and there is little or no potential for negotiation (source: author's personal contacts). The way in which this aspect of Botswana's mining concessions process is implemented seems to constitute good practice,

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15. Diamonex (Australia) opened the Lerale mine in 2008, but it was closed as a result of the global financial crisis. Firestone Diamonds opened the BK11 mine, but it is currently closed on a care and maintenance basis. Lucara Diamonds (Canada) currently operate the Karowe mine near Orapa. Gem Diamonds (UK) are developing the Ghagoo mine which is due to start production in 2014.
 16. Mines and Minerals Act and the Income Tax Act.

i.e. all firms are subject to similar terms. It would be more transparent, however, if this were clearly stated in appropriate legislation.

At the time a mining licence is issued, the GRB retains the option of acquiring up to 15% working interest participation in any mining company (Matshediso, 2005). This practice, however, has not been exercised recently. Mining concessions that have been granted in the last years have not seen the GRB exercise this option and the option has therefore lapsed in these cases. There are a number of reasons for this. First, recently-licensed mining operations have been relatively small, which affects the balance of costs and benefits from the GRB exercising a shareholder function. Second, the GRB considers that the existing tax system is quite efficient at capturing mineral rents and there would be little additional revenue to be gained. Third, the 15% shareholding has to be paid for (at cost), but perhaps more importantly, GRB as shareholder would be obliged to provide the relevant share of future capital expenditure requirements for mine development.

An amendment has been proposed to the Mines and Minerals Act whereby the 15% working interest participation, in particular in foreign entities, will be opened to Botswana citizens, in the case that the GRB does not exercise its right to minority participation. The motivation is to facilitate the participation of Botswana in such ventures. As the details of such a policy are important to its outcome, it will be important to follow the evolution of such an amendment.

Moving down the value chain: Institutions surrounding the processing and selling of diamonds

Once diamonds are extracted, they are sorted and valued. Diamonds are sorted and valued according to four basic criteria, called the “four C’s”: carat, colour, clarity and cut (Box 2). Diamond valuation is more complex than it may seem: no two diamond experts will give the same value to a given diamond. Each will give a personal view based on the importance of each of the four major factors. In this way, diamonds are not a “commodity” since each one is different and valuation is a complex and imperfect process. This is one of the major differences between diamonds and most other products of the extractive industries.

Rough (uncut) diamonds (i.e. those sold by Debswana) are valued according to their carat, clarity, colour and the cut that can be made most efficiently and the amount of the stone that will potentially be lost in the cutting process. Rough (uncut and unpolished) diamonds are not sold on the retail market and it is against the law to hold rough diamonds without a licence under strict penalty (Mines and Minerals Act, 1999).

Once diamonds are sorted and valued according to the characteristics outlined above, they are “aggregated.” “Aggregation” is the process by which stones are combined in order to be sold as a package to licensed buyers of rough diamonds. Buyers of rough diamonds then cut and polish them using laser technologies and polishing wheels that use diamond dust and residue to polish the hard stones. Polished stones are sold to jewellery manufacturers who supply design and production of jewellery. The end of the value chain is the retail sellers who specialize in commercial operations and marketing.

Box 2. Diamond valuation: Four C's

The value of a diamond is based on four characteristics, called the “four C's”: carat, colour, clarity and cut. The carat refers to the weight of the diamond. Each carat is divided into one hundred points and is equivalent to 0.2 grams. It is also a determinant of the size of the diamond. A cut, round 1 carat diamond measures 6.5 mm in diameter; a 3 carat diamond measures 9.5 mm. The name carat comes from the carob seed, used by early traders as near-uniform counterweights to balance their scales.

Diamonds are found in a range of colours, the rarest being colourless or fancy colours such as red, blue or green. A stone's colour is determined on a scale from colourless to near colourless to faint yellow to light yellow to dark yellow.

Clarity is graded according to the visibility of inclusions or blemishes under tenfold magnification. Stones are characterized as internally flawless if they have no internal inclusions or blemishes that penetrate the stone. Other grading categories include “very, very slight inclusions”, “very slight inclusions”, “slight inclusions” and “included”. Stones may appear fully clear to the untrained naked eye if they are classified in the “slight inclusions” category or higher.

The cut of a diamond is the only element that is determined by human intervention. Cuts can be basic round or “fancy” cuts of other shapes (oval, marquise, heart, pear, triangle, radiant, princess, emerald, cushion or asscher). Aside from the shape of the diamond, a cut is evaluated on the precision of its critical angles, its symmetry, proportions and polish. Proportions concern the relationships between the different parts of the diamond: the table (top flat facet), the crown (visible top of the diamond), the girdle (the line or edge around the middle of the diamond) and the pavilion (the underside). These relationships can affect the way the diamond interacts with light.

Valuing a diamond therefore takes into account a multi-faceted range of characteristics. No two diamonds are the same, a concept which has been widely used in marketing the stones further down the value chain.

Source: Diamonds and Gemstones, European Gemological Laboratory, College of Gemology, South Africa; and <http://www.debeers.com/the-art-of-diamond-jewellery/beauty-of-diamonds/the-4-cs/>

The sorting and valuation stages in the diamond value chain in Botswana are done exclusively by the Diamond Trading Company Botswana (DTCB). The DTCB is a 50-50 joint venture between the GRB and De Beers. Its Board of Directors is made up of ten people, in equal measure nominated by the GRB and by De Beers. The DTCB puts together “packages” of diamonds to be sold to licensed Botswana Sightholders in sales that are held ten times per year (Box 3). The diamonds that are not sold to Botswana Sightholders are sold to Diamond Trading Company International (DTCI).¹⁷ DTCI is a subsidiary of De Beers, and handles the aggregation of rough stones, combining diamonds from Botswana with those from other mines in the De Beers group, specifically Namibia, South Africa and Canada.

The creation of the DTCB was a major step in Botswana's push to increase its value addition in the diamond industry and increase the number and skill level of the industry participants. DTCB is the largest diamond sorting and valuing facility in the world, and uses state of the art technology. It employs 400 people and includes an in-house diamond academy to train new recruits in sorting and valuing techniques.

17. DTCI has recently been renamed De Beers Global Sightholder Services.

Box 3. "Mazal": The business of selling rough diamonds

Diamond transactions take place in a climate of trust and on the basis of reputation. Sellers of rough diamonds want to ensure the value of the final goods remains high, which is dependent upon the jewelry production and design stages of the value chain, as well as the marketing and retail stages. Diamond cutters and polishers, and the jewelry manufacturers that will buy the polished diamonds, are concerned about securing access to supply of the type and quality of stones that they require. For example, if the jewelry manufacturer and retailer Tiffany markets a line of jewelry with heart-shaped stones at a given price, the jewelers will want to ensure they will have access to an appropriate quantity of heart-shaped stones at a given price.

In order to provide access to supply of appropriate stones, the Diamond Trading Company has combined diamonds from all four countries where De Beers mines its diamonds (Botswana, Canada, Namibia and South Africa). Diamonds are aggregated according to the specifications of DTC's 81 buyers or "Sightholders" (<https://www.dtc-sightholder.com/en/Sightholder-directory11/>). Sightholders come together ten times per year at pre-defined dates to view the diamonds that have been packaged according to their previously-determined preferences. Sightholders must take the entire box of diamonds or leave it – they cannot choose a subset. Sightholders are, however, allowed to reject up to 10% of their "box." According to the tradition in the industry, Sightholders indicate their willingness to accept a given "box" by using the Hebrew word for good fortune, "Mazal".

Sightholders are under contractual agreement with DTC for a specific type and quantity of diamonds. Sightholder contracts are valid for three years and renewal is based on previous performance. Sightholders do not usually refuse a box of diamonds as their future contractual agreement with the DTC may be hindered. The year 2009 was an exception, however, as the global economic crisis provoked a strong decline in the demand for diamonds. A majority of Sightholders refused purchase of their boxes in that exceptional situation.

1. One reason that this situation continues may be that, according to a diamond specialist, it is impossible to differentiate between a natural diamond and a synthetic one with the naked eye.

Until 2013, Debswana was under contract to sell the entirety of its production to DTCI and DTCB. DTCI and DTCB, however, are not obliged to buy all of Debswana's production. This particular contractual agreement has been derived in part due to competition policies prevalent in markets for its final goods. In accordance with United States antitrust legislation and EU competition directives, DTCI cannot hold excess inventory.¹⁸ So as not to allow the price of diamonds to fall, and since diamond sales are based on a three-year predefined contract, DTCI does not buy diamonds it cannot sell in a reasonable amount of time. Since Debswana cannot sell its production elsewhere, according to its contractual agreement with De Beers, it halts production when demand falls sharply or for an extended period. This happened in 2009 when global demand for diamonds fell: Debswana, the largest private sector employer in Botswana, halted all production of diamonds for several months, sending several thousand of its 5 510 permanent employees home on extended leave with full pay while cutting 580 jobs.¹⁹

De Beers has agreed, in its last contractual discussions with GRB, to move all of its aggregation and rough diamond sales operations of the entirety of diamonds sold within the De Beers network to Botswana's capital, Gaborone. This is part of the Government of Botswana's and De Beers' local "beneficiation" strategy to generate greater benefits in diamond-producing

18. In 2001, several law suits were filed in US courts alleging that De Beers "unlawfully monopolized the supply of diamonds, conspired to fix, raise, and control diamond prices, and issued false and misleading advertising." After multiple appeals, in 2012 the US Supreme Court denied final petition for review, and a settlement in the amount of USD 295 million with an agreement to "refrain from engaging in certain conduct that violates federal and state antitrust laws" was finalized.
19. The Telegraph, "De Beers to suspend work at Botswana diamond mine as sales slide, 23 February 2009, <http://www.telegraph.co.uk/finance/financialcrisis/4789233/De-Beers-to-suspend-work-at-Botswana-diamond-mines-as-sales-slide.html>

countries through the development of downstream activities in the diamond industry, ranging from sorting and valuing diamonds, to cutting and polishing, to the manufacture of jewellery. This topic will be covered in substantial detail in a subsequent section of this paper.

Sharing the benefits of the mining sector: Taxation

One of the main ways by which wealth from the mining sector is shared and can be used to promote growth throughout the economy is through taxation and investment and redistribution of tax revenue. An appropriate level of taxation implies that the government receives an equitable share of the profits from the mining sector while fostering a sustainable level of production and sufficient investment in the mining sector. If the sector is taxed too heavily, investment and production are sub-optimal; if it is not taxed enough, an important source of fiscal revenue is needlessly foregone. Finding the optimal tax level and designing a tax system that creates the desired incentives for mining firms can, however, prove challenging.

A tax regime that is progressive and based on profits is commonly considered best practice for natural resource-endowed countries (Barma et al., 2012). These regimes are most likely to capture the bulk of resource rents from the sector, while ensuring the required investment associated with capital-intensive extractive industries. However, countries without strong institutions and traditions of compliance often find this model challenging and even impossible to enforce.

Some considerations regarding taxation of extractive industries²⁰

The optimal level of taxation is not easy to determine (Otto et al., 2006). It requires knowledge about firm behaviour in the present and potential trade-offs in future, as well as future revenue streams which depend on future metals prices and production costs. Excessive taxes will result in firms refusing to invest or undertaking sub-optimal extraction or exploration. Taxes that are too low will represent foregone income for the government of the host country. The difficulty in finding an optimal system is compounded by the prevalence of asymmetric information on geological reserves and production costs. Mining sector firms often have incentives to engage in strategic reporting and they may have substantial accounting expertise that they use to reduce the amount of tax they pay (Barma et al., 2012)

Many different types of taxes are applied to the minerals sector. The optimal mix of these policies implies finding a balance between advantages and disadvantages of each instrument with respect to economic efficiency; trade-offs between development at different stages of mining operations; and the division of risks and rewards between the state and the exploiting enterprises. In terms of implementation of the tax regime, many other considerations come into play such as the ease of administration and the information gap between tax administrators and mining enterprise officials.

The choice and design of tax instruments affect firms' decisions in many ways. An output or volume-based royalty, for example, will create the incentive for firms to exploit mines that offer high-grade ore, but to stop production once only lower-grade ores remain. Mining operations may therefore be closed sooner, and some mines will be underexploited, than in the case of a profit-based tax. Depending on how they are structured, however, profit-based taxes can reduce the economic attractiveness of new projects.

The design of tax instruments impacts the distribution of risk between firms and the state. Mining is a particularly risky activity. The probability of finding new, exploitable deposits is

20. This sub-section is drawn largely from a similar section in Korinek, J., *Mineral Resource Trade in Chile: Contribution to Development and Policy Implications*, OECD Trade Policy Papers, No. 145, OECD Publishing, 2013.

low. The development of new mines is a long-term activity which requires making assessments about a number of elements, including investment and regulatory climate, future production costs and political and economic stability in the host country. Generally, unit-based or value-based royalties shift more of the risk to exploiting firms. Profit-based corporate taxes share risk between firms and the state (Otto, 2000).

Different tax instruments affect mining operations at different times along the life cycle of a project. Import duties on exploration and development equipment tax mining firms before they are at the production stage and therefore before they generate revenue. Such taxes provide government revenue early. Revenue from unit- or value-based royalties commences as soon as operations enter the production stage. Profit-based royalties or corporate profit taxes provide revenue once mining operations are profitable. The latter type of tax is optimal from the point of view of investors.

Regulatory stability, including stability of the tax regime, is a particularly important element of firms' decisions to invest in a mineral project. Firms that are considering investing hundreds of millions or even billions of dollars in a new mine are very wary of possible changes in the tax burden after their investment is made and no longer mobile (Otto et al., 2006). Firms are well aware of the difficulties of promising tax regime stability. Firstly, a new government may be voted in once the project has started. Secondly, the bargaining power of mining firms is reduced once they have invested in the exploration and development stages and invested capital is sunk and cannot be withdrawn from the country. This shift is called *obsolescing bargain* (Vernon, 1971) and is well-documented with respect to the mining sector.

Tax stability may be somewhat easier to ensure if the fiscal regime includes an element of progressivity. "There may be circumstances – as with the very high oil and minerals prices of mid-2008, perhaps – in which outcomes are so extraordinary, relative to what might have been conceived when tax arrangements were entered into, that some renegotiation is seen even by investors as generally reasonable" (Broadway and Keen, in Daniel et al., 2010, p. 57). The very substantial profits that are made by firms, many of them multinationals, may bring a strong reaction from local populations for higher tax rates. A progressive tax, or additional tax, when profits are very high may be one way of foreseeing such situations. In practice, however, many fiscal regimes for the extractive industries are regressive rather than progressive implying that the government's share falls as profitability improves (Land, 2007, referenced in UNCTAD, 2007). It is difficult to ascertain why this has occurred – potentially due to weaknesses in tax administrations (UNCTAD, 2007).

Generating confidence in the stability of tax structures is very important for the sector, but is not always simple to achieve. Countries that have achieved high levels of perceived governance overall are in a much better position to reap such benefits.

Transparency of taxation systems and requirements are of great importance in the sector, as are guarantees that tax revenue is used for public goods and services. The Extractive Industries Transparency Initiative (EITI) is a multi-stakeholder effort to strengthen governance by improving transparency and accountability in the extractive sector. Firms agree to publish all payments they make to governments and governments reveal all revenue that they have collected from extractive firms (www.eiti.org). Payments and revenues are reconciled by an independent auditor. Such initiatives are of particular importance in countries where governance has been challenged in the past.

The administrative capability of the tax authorities determines in part the optimal tax design. Even for well-performing tax administrations, some tax instruments can prove challenging due to the asymmetric information regarding revenue, marginal and fixed costs, etc. Profit- and income-based taxes are more difficult to implement than unit- and value-based royalties. In the case of profit-based taxes, auditors will be needed to confirm levels of revenue and of costs that

can be deducted. Since these require handling more complex issues, including assigning a value to depreciation of capital, they are better implemented by more sophisticated tax authorities.

Taxation of the mining sector in Botswana

The mining sector in Botswana is taxed through three separate instruments: a royalty; corporate profits tax, and withholding tax on dividends. Royalties are calculated on the gross value of minerals as they leave the “mine gate”. Diamonds and other precious stones are subject to a 10% royalty rate; precious metals 5% and all other metals 3%. Royalties calculated on the value of metals extracted commence when a mine goes into production, and, if the value of the goods produced is easily ascertained, this is a fairly straightforward form of tax to collect. There may be some problem, however, correctly valuing the market price of rough diamonds as the market is very small and specialized and, within the De Beers network, quite firmly controlled. The issue of proper valuation of diamonds has been considered by the Botswana authorities and will be examined more fully later on in this paper.

Mining firms pay corporate tax as do all other private firms, however mining firms are subject to a specialised tax regime. The general corporate tax rate in Botswana has been 22% since 2011 (previously it was 25%). Mining profits tax is calculated according to a formula: $70-1500/x$, where x is the ratio of taxable income to gross income (subject to a minimum of the general corporate tax rate). Mining firms may deduct capital expenditures made in the year in which such expenditure was incurred with unlimited carry forward of losses. This formula effectively leads to a variable rate income tax, whereby the tax rate increases with the profitability of the mining company. It is well designed, therefore, to capture mineral rents. It is also transparent and provides a degree of certainty to investors.

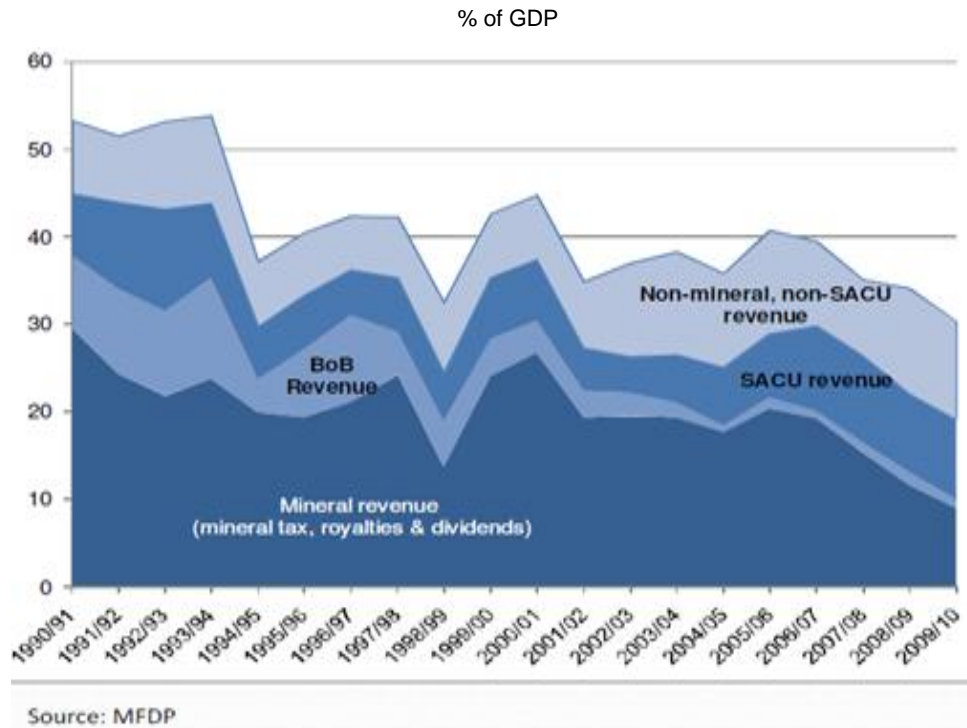
Finally, investors pay withholding tax on dividends distributed to residents and non-residents of Botswana alike. Withholding tax is now 7.5% of the value of dividends.

Remaining profits in the case of the largest firm in the diamond mining sector, Debswana, are distributed equally between the GRB and De Beers SA within the terms of their joint venture. While the exact agreement between De Beers and the Government of Botswana is confidential, it is believed that the Government receives between 80 and 82% of the revenue after cost (including capital expenditure) of Debswana.²¹

A very substantial portion of the revenue from the diamond sector therefore goes to the Botswana Government. Despite this, mineral revenues have been declining as a share in the government budget since 2006. For the first time in 2011, revenue from SACU (customs and excise) surpassed mineral revenue in the Botswana Government budget (Figure 7).

21. Although De Beers only receives 18-20% of before tax profit, the company makes more profit in Botswana than anywhere else in the world. This reflects the very large scale and very high profitability of diamond mining in Botswana (Jefferis, 2009).

Figure 7. Government revenue by source of income



Lessons from Botswana: Taxation

One of the main challenges facing many countries remains proper implementation of their tax code. Some countries apply a tax code that is very complex, and in some cases, contradictory. For example, high tax rates and generous tax incentives often lead to low compliance and high administrative costs (Barma et al., 2012). A simplified tax code is therefore preferable. Botswana's tax policy can be classified in this way. It is clear and relatively transparent, not least of all in its implementation.²²

Many lower income, resource dependent countries exhibit low capacity and challenges in terms of governance in revenue administration. Foreign firms or investors may have access to better accounting and tax expertise and can reduce the amount of tax they pay. One of the reasons that the GRB entered into a joint venture with De Beers by creating Debswana and, years later, obtained two seats on the Board of Directors of De Beers S.A., was to gain experience and understanding of the diamond mining industry in a globally competitive, state-of-the-art setting. This knowledge has been of critical importance for Botswana and has allowed the country to benefit greatly through its understanding of the constraints and the potential of diamond mining in Botswana. It has been able to design and revise its tax policy and more generally its minerals policy toward the industry in a balanced fashion.

One of the most important issues facing extractive industries investors is stability and predictability of policies that affect them, not least of all in the area of taxation. The tax code in Botswana has remained stable and changes have been instituted in stages. Botswana benefits from a strong reputation for good governance and transparency and in this way, changes in the

22. The tax policy vis à vis diamond mining firms is, in principle, subject to negotiation. In practice, however, according to industry executives, a similar rate and tax base is used in that industry as in other mining industries.

tax regime that do need to be implemented can often be done without causing significant damage to investor confidence. This issue is of prime importance as regards the extractive industries since investors are wary of making the substantial investments necessary up front without being relatively sure of future revenue. For investors, the extractive sector is risky: it is capital-intensive and long term, and with a high degree of uncertainty and unpredictability in demand and production, price volatility, and varying extraction costs as higher grade ores are exhausted. For host governments, exploration and extractions risks, as well as commodity price volatility, make the revenue flow highly variable and cyclical. Both investors and government benefit from stable fiscal policies (Barma et al., 2012).

The GRB has benefitted greatly from its joint venture in the diamond industry. The joint venture has aligned the interests of the GRB and its private sector partner. It has allowed the GRB to benefit from global private sector expertise in all aspects of the management and strategy of the company while retaining ownership of the resources being extracted. There are, however, substantial risks involved in such public-private partnerships. The GRB assumes a large part of risk by being an equal (or even minority) shareholder. The GRB has opted for a 15% equity share in some mining firms in the past in accordance with its equity option that is available at the time of granting of mining licences. For reasons of credibility, the government may not choose to let a mining firm in which it has equity fail. The GRB has in the past stepped in and invested additional funds to ensure continuous operation. This sort of undertaking can quickly become very onerous and the government is probably not best placed to manage this type of operation.

Maintaining close contact with private sector ambitions and processes has also provided the GRB the potential to influence its minerals policies to its advantage. One issue that has arisen regarding tax and royalty payments is correct valuation of rough diamonds. The value attributed to rough diamonds is of utmost importance in order to calculate the amount of royalty perceived whereas within the De Beers system, rough diamonds are valued through a controlled process using information from buyers under contract with DTC, its selling operation. Since the GRB has been closely involved in the overall management of the joint venture, and cognizant of the fact that valuation is of utmost importance to it, it will soon sell some of its rough diamonds through a parallel system outside the De Beers network. This new arrangement will be explored in more detail in a following section; its implications for royalty revenue are non-negligible.

Sharing the benefits of the mining sector: Management of mineral revenues²³

The previous section covers the tax regime of Botswana with regard to the minerals sector. Equally important, however, is how the revenues from the minerals sector are distributed and ultimately invested. One of the conclusions from the resource curse debate is that extractive industries can both foster and hinder economic growth, with the outcome in part determined by how governments use the taxes and other funds they receive from the sector (Otto et al., 2006). This section examines Botswana's expenditure and investment policies, especially as they reflect earnings from the mining sector.

Institutions and policies

Revenues from the minerals sector in Botswana are not institutionally segregated but are included in the general revenue pool. Historically, the expenditure policy framework specified that, broadly speaking, revenues derived from minerals, as they are the result of the sale of an asset, should be used to finance investment in other assets. The intention is twofold: i) to preserve the country's overall asset base, and ii) to provide the basis for the generation of

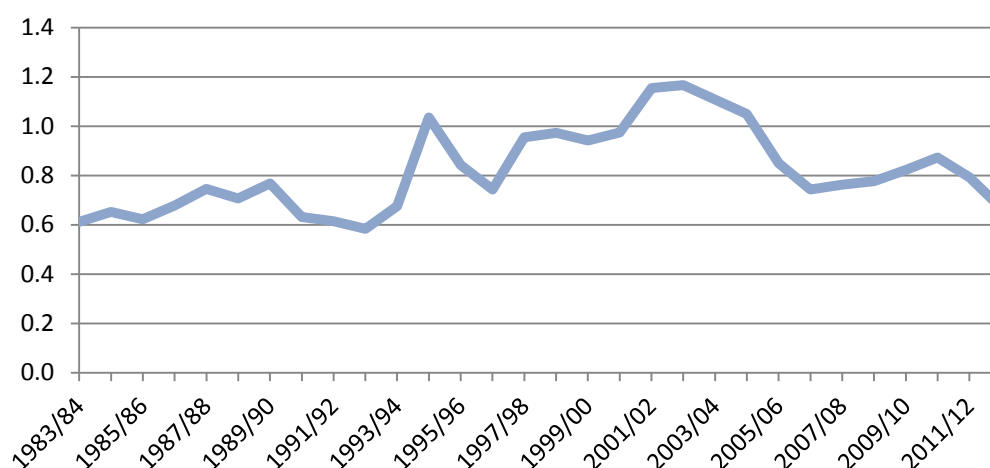
23. This section was prepared by Keith Jefferis, Managing Director of econsult Botswana, formerly Deputy Governor of the Bank of Botswana.

income that can replace mineral income when it eventually declines. A corollary to the asset replacement principle is that recurrent non-investment spending must be financed from recurrent, i.e. non-mineral, sources.

The implementation of this principle has been monitored since 1994 by the Sustainable Budget Index (SBI), defined as the ratio of non-investment spending to recurrent revenues. An SBI value of more than one means that non-investment spending is being financed in part from mineral, or non-recurrent, revenues. If the SBI is less than one, mineral revenue is either being saved or spent on public investment, while recurrent spending is being financed from non-mineral (recurrent) sources; an SBI of one or less is therefore interpreted as being “sustainable”. In calculating the SBI, the normal budget classification of expenditure is adjusted slightly in that recurrent spending on education and health is classified as investment in human capital.

It should be noted, however, that the SBI has no statutory basis. Neither the SBI nor the principle underlying it is mentioned in the current National Development Plan, NDP 10, which spells out the general policy objectives for a six-year period (Government of Botswana, 2009). For most of the period since 1983/4 the SBI has been less than 1 and the budget has therefore been “sustainable”; however, it remained above 1 between 2001 and 2005, after having been on an upward trend for many years, indicating that part of the recurrent spending was financed by mineral revenues. Since 2006, however, the SBI has been well below 1, as the share of development, including health and education, spending in the budget rose sharply (Figure 8).

Figure 8. Sustainable Budget Index

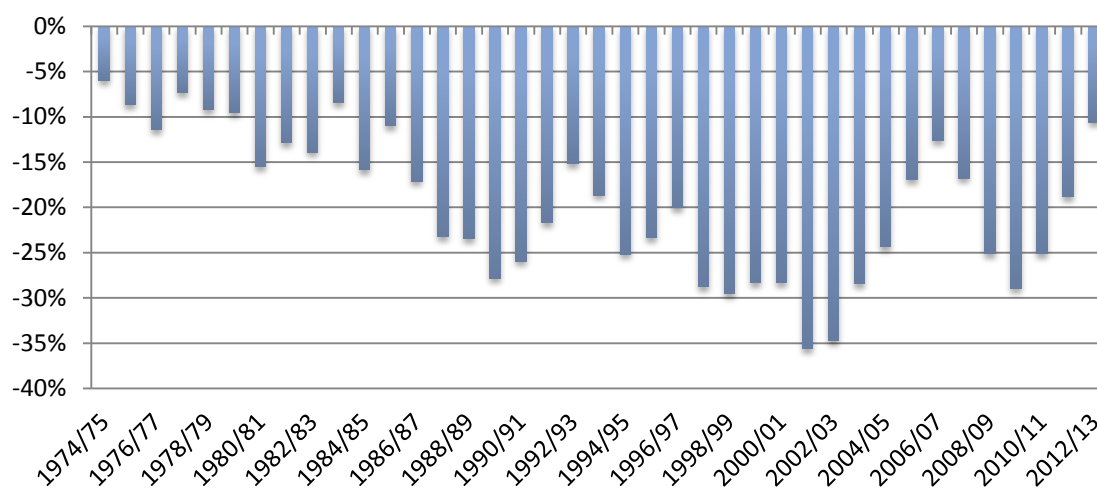


Source: Authors' calculations, based on data from MFDP.

In recent years increased attention has been paid – particularly by the International Monetary Fund in Article IV reports and other economic assessments – to the non-mineral budget balance as an alternative indicator of sustainability, focusing more on the level of spending that can be financed in the absence of mineral revenues, rather than how mineral revenues are used – in other words looking forward to the post-mineral era. This approach rests on the Permanent Income Hypothesis, and derives the sustainable long-term level of government spending from the income that would be derived if mineral revenues were invested to generate a long-term financial return rather than spent, i.e. to generate permanent annuity income. As Figure 9 shows, the non-mineral primary balance, as a percentage of non-mineral GDP, has been consistently and

substantially negative.²⁴ The IMF estimates that, according to this methodology, the sustainable non-mineral primary balance is around 5% of non-mineral GDP (IMF, 2012a).²⁵

Figure 9. Non-mineral primary budget balance
% of non-mining GDP



Source: Authors' calculations, based on data from MFDP.

One important institutional mechanism of public financial management in Botswana is the National Development Plan (NDP) process. NDPs establish general policy objectives and include all public investment projects over a six-year period. Public funds cannot be spent on projects unless they are included in the NDP, which is in turn approved by Parliament. The annual budget includes the provision of funds for recurrent spending for the year ahead, as well as the annual portion of development project funding for projects in the NDP. This also has to be approved by Parliament. Public finance discipline is reasonably effective and historically there has been little off-budget spending although the amount of off-budget spending financed by various off-budget “levies” and dedicated funds has been increasing in recent years.²⁶

24. The non-mineral primary balance is computed as the difference between non-mineral revenue and expenditure (excluding interest receipts and interest payments), divided by non-mineral GDP.
25. This difference is substantial and has hence motivated the GRB to adopt policies in a number of areas. One of these is its prioritized accelerated development of its vast coal reserves for export.
26. Some examples include a levy on alcoholic drinks to fund alcohol awareness and various youth empowerment schemes; a levy on electricity bills to fund rural electrification; and a fuel levy to finance the Motor Vehicle Accident Fund. The expenditures from these funds are not subject to the normal parliamentary scrutiny for budget expenditures.

Box 4. Assessing development priorities: From *kgotla* to Parliament

The National Development Plan (NDP) establishes the policy objectives and outlines all public investment projects for the upcoming six-year period. Preparation of the NDP is overseen by a multi-sectoral Reference Group. This group consists of government employees from the Ministry of Finance and Development Planning (MFDP), the Office of the President and representatives from the private sector, non-governmental organisations, the Vision Council and the Bank of Botswana.

The District Planners Handbook explains the National Development Planning process as “... a ‘bottom-up’ approach whereby the people express their needs, and these needs, in turn, should be the basis for district and, eventually, national planning...”. In terms of inclusive planning, the most important step in the NDP process is consultations with local communities by the 16 local authority administrations. These local authority administrations include 10 district councils, two city councils and four *kgotla* or town councils. Part of this consultative process is based on a traditional structure: in pre-colonial and colonial times, the *kgotla* was a public forum in which issues of public interest were discussed (Acemoglu et al, 2003). It is during these consultations that local issues are raised by the community and possible solutions are envisaged. In this process, all Botswana, including those in remote areas, can have input in the NDP, at least theoretically. During consultations, workshops are held with the local *Dikgosi* (chiefs), Village Development Committee (VDC) members, Councilors, and representatives from the business community, religious groups, women’s organisations, youth, the disabled and farmers’ committees.

After episodes of consolidation and refinement, issues raised by the community during the different workshops then dovetail into the Local Authority Key Issues paper (LAKIP). Each of the 16 local authorities prepares a LAKIP, which then feeds into both the local administration’s Development Plan (either a District Development Plan or an Urban Development Plan depending on the type of locality) and the Sectoral Key Issues Paper (SKIP) of the Ministry of Local Government. The latter in turn feeds into the Macroeconomic Outline and Policy Framework of the next NDP. Proposed projects during the NDP planning process will, after screening, make up the Development Budget of the NDP.²

The process of proposing projects for inclusion in the NDP is therefore largely “bottom up”. However, not all projects that are proposed at the community or district level can be accepted for implementation. First, projects are screened to ensure that they are compliant with national policy guidelines. These mainly relate to the size of the local population and the type of facilities that will be provided (e.g. a settlement or district with a small population may not get a full-scope secondary school or a tarred road, even if the community so desires, because the facility would be underused). Secondly, projects that meet policy guidelines are prioritized in accordance with the availability of financial resources at the national level. Although detailed cost-benefit analyses are not carried out for some projects, this system has largely been driven by technical expertise and not political considerations (Pegg, 2010).

The tension between local desires and national policies has become more acute in recent years. Many of the main national infrastructure priorities have been met (roads, schools, hospitals, water, electricity, etc.), and much of the remaining demand comes from communities where further infrastructure provision may not be cost-effective. This is particularly a problem in Botswana which has large and sparsely populated rural areas. While some such projects do proceed, they are justified in social or political terms, and yield little economic return. It has been argued that the bottom-up process has led to too much emphasis on social projects and not enough on projects that support business (e.g. internet bandwidth).

However, not all projects included in the NDP are proposed by the community; some are “top-down” and driven by national policy needs (e.g. core utility and transport infrastructure such as the electricity grid and airports). Nevertheless, these “top-down” projects retain a democratic consensus because they are informed by national policies debated and passed in Parliament.

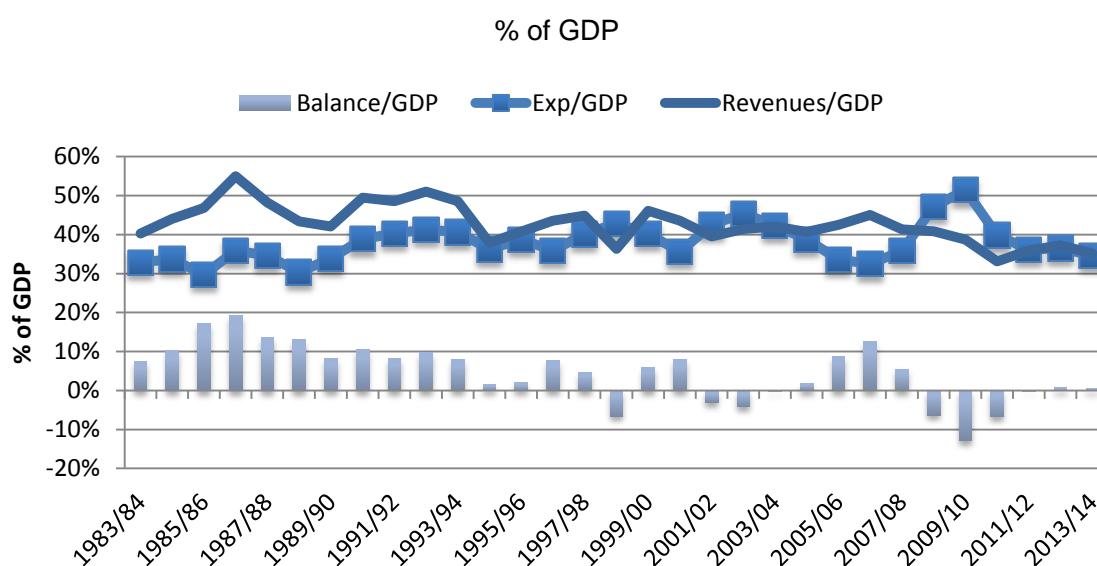
1. Botswana’s people are called Batswana.

2. More information has been collected on the workings of this process and the procedures followed for these consultations but is somewhat more detailed than the scope of this paper permits. Little information is publicly available on this process; interested parties may contact the author for more details.

There is an important legal restraint on the accumulation of public debt. Under the Stocks, Bonds and Treasury Bills act, Government borrowing is subject to a statutory limit of 40% of GDP with sub-limits of 20% of GDP for each of domestic and foreign debt and guarantees.²⁷

An additional “fiscal rule” was introduced in the Mid-Term Review of NDP 9 in 2007, which sought to limit government spending to 40% of GDP on average throughout the economic cycle. It was, however, more of a guideline than an enforceable rule. According to sources in the Ministry of Finance and Development, the 40% figure is to be brought down to 35% by the end of the NDP 10 cycle, and to 25% of GDP in the NDP 11.

Figure 10. Government revenue, expenditure and balance, 1983/84 – 2013/14 (prov).



Source: Authors' calculations, based on data from MFDP.

Expenditure patterns in Botswana have generally been counter-cyclical as compared with revenue streams, as can be seen in Figure 10. Botswana has therefore been able to smooth out government spending despite the volatility of natural resource revenues by accumulating reserves during periods of relatively high commodity prices and drawing them down when prices slacken (IMF, 2012c). Policies pursued in the context of the Medium Term Fiscal Framework are expected to enhance the certainty and stability of government expenditures from the volatile revenue streams.

Public expenditure patterns

Expenditure on the different classes of assets can easily be traced, reflecting policy priorities as laid out in NDPs and other policy documents. Total mineral revenues at 2010 prices over the period 1983/4 to 2012/13 were P 347 billion. These can, in principle, be apportioned between spending on the different types of assets, or on recurrent spending in the case that the SBI constraint has not been observed.

27. The limits are set out in Section 20 of the Stocks, Bonds and Treasury Bills Act, 2005 (Chapter 56:07).

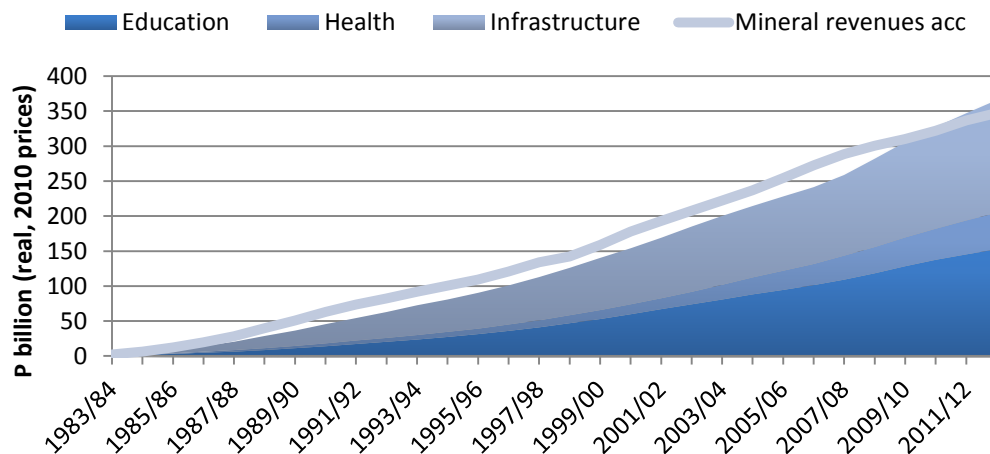
Table 3. Total revenues and spending, 1983/84 – 2012/13

2010 real values

Category	P billion
Recurrent revenues, excluding grants and sale of property	379.5
Recurrent spending, excluding health and education	314.5
Mineral revenues	347.1
Total investment (physical and human capital)	365.6
Education spending	152.4
Health spending	52.4
Other development (investment) spending	160.8
Memo: Net financial savings (GIA less net debt, December 2012, nominal)	-1.5

Source: authors' calculations, based on data from MFDP

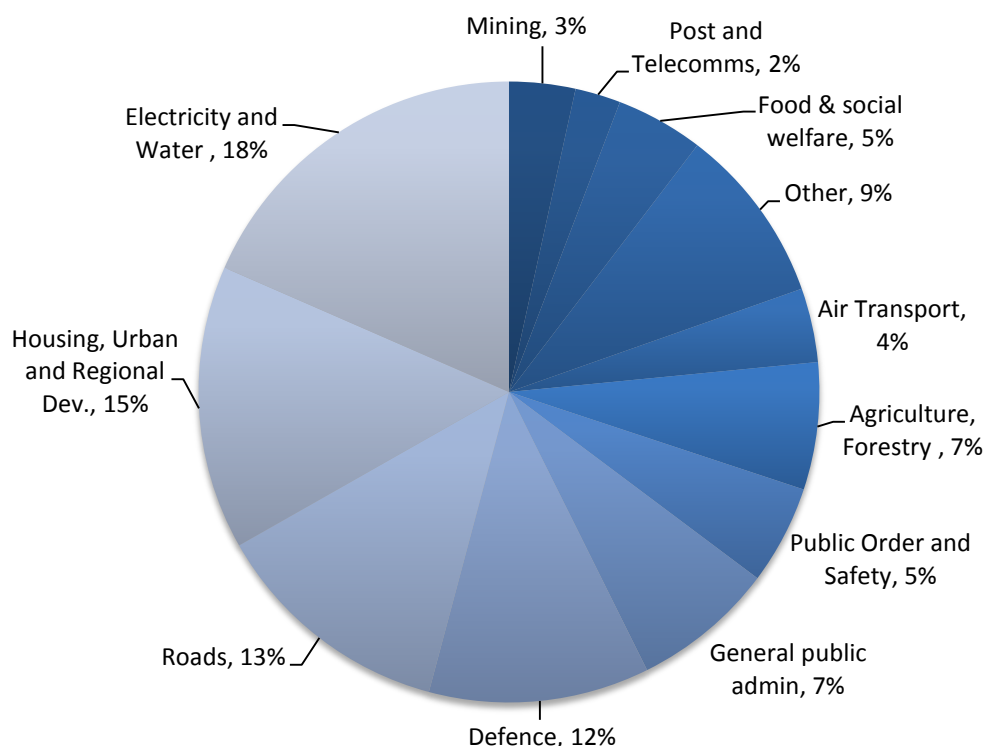
The data in Table 3 and Figure 11 show that, on average over the whole period, mineral revenues have been entirely devoted to investment in physical and human capital assets, and have not been used to finance recurrent spending which has been financed by recurrent revenues over the period as a whole, if not in individual years. Public investment spending has been divided between physical assets (44%), education and training (42%) and health spending (14%). One example of the importance given to spending on education is the financing of overseas tertiary education. Citizens of Botswana who are accepted into internationally accredited, competitive Universities around the world have their tuition fully paid by the GRB and receive a stipend for living expenses through government scholarship programmes.

Figure 11. Gross accumulated mineral revenues and public investment

Source: Authors' calculations, based on data from MFDP.

Physical investment, excluding health and education facilities, has been undertaken across a range of assets with the three largest areas of investment being electricity and water (18%); housing and urban infrastructure (15%) and roads (13%) (Figure 12).

Figure 12. Allocation of development spending excluding education and health 1983/84 – 2012/13



Source: Authors' calculations, based on data from MFDP.

Public financial assets

Despite the fact there has been rapid growth in public spending, over most of the review period the budget has been in surplus, resulting in the accumulation of financial assets. Public finance decision-making has generally been cognizant of the limits imposed by absorptive capacity constraints, and the government has felt under no obligation to spend all mineral revenues when there were concerns about overheating of the economy or when suitable investment opportunities could not be found. As a result, there were 15 consecutive years of budget surpluses from 1983 to 1997. The situation has, however, changed in recent years, as there have been budget deficits in eight of the 15 years since 1998/9.

Nevertheless, the result of budget surpluses over many years is that significant financial assets were accumulated. It is important to note that these assets are accumulated as a fiscal residual rather than through any process of targeting specific amounts of financial savings.

There are two specific pools of financial assets/savings that are relevant.

- From a public finance perspective, budget surpluses are accumulated as government savings balances at the Bank of Botswana, in the Government Investment Account (GIA). The GIA appears as liabilities on the central bank's balance sheet.

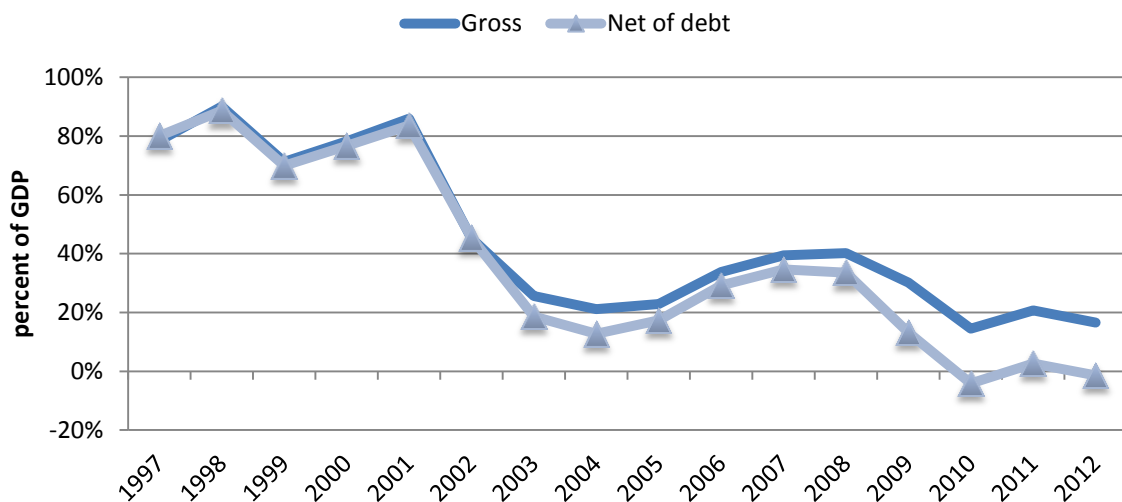
- From a macroeconomic perspective, balance of payments surpluses are accumulated as foreign exchange reserves, which are in turn divided into a Liquidity tranche and the Pula Fund tranche, which appear as assets on the balance sheet of the Bank of Botswana.

The proceeds of accumulated budget surpluses – government’s gross financial savings – therefore appear in the form of the GIA. Offset against this are the Government’s debt liabilities, including domestic debt (bonds and Treasury Bills) and foreign borrowing. Government’s net financial savings position is therefore the balance of its financial savings in the GIA and its domestic and foreign borrowing.

Historically the government has accumulated significant financial savings and undertaken very little borrowing. The government of Botswana’s net financial savings reached 88% of GDP in the late 1990s (Figure 13). These savings were then partially depleted in the early 2000s by the decision to establish a new pension fund for government employees, which involved financing the contingent liabilities accumulated under the previously unfunded government pension scheme. Net financial savings were partially rebuilt in the mid-2000s, recovering to around 40% of GDP, but were then substantively depleted following the global financial crisis and several years of large budget deficits, financed by a mixture of draw-downs of savings and new borrowing.

It is important to note that while the government accumulated financial savings in the GIA over part of the mineral development period, this was not pursued as an active policy. As noted earlier, financial assets were accumulated as a residual from the budget surpluses that resulted once spending decisions had been made. Importantly, there were no rules regarding the payment of any mineral revenues into this fund, nor any rules regarding withdrawals. As a result, the fund could in principle be depleted quite quickly. Although no interest is paid on the GIA, a nominal return is calculated and this is paid into the general government budget as a “dividend” from the Bank of Botswana.

Figure 13. Net public assets



Source: authors' calculations, based on data from MFDP and BoB.

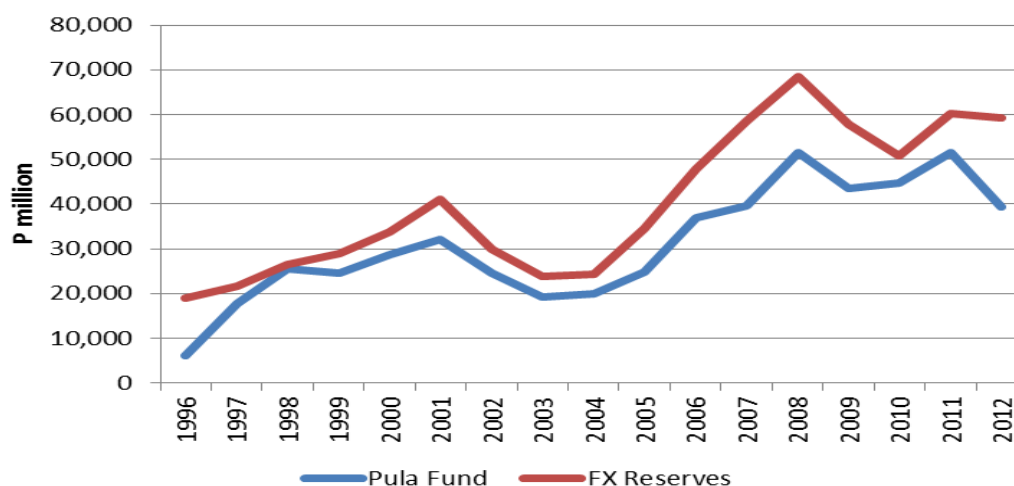
The Pula Fund

The counterpart to the GIA is the “Pula Fund” portion of the foreign exchange reserves. The Pula Fund is sometimes referred to as Botswana’s Sovereign Wealth Fund (SWF). It has some similarities with other SWFs in that it is managed for long-term investment returns rather than short-term liquidity purposes.²⁸ However, unlike some other SWFs it is not an independent entity; although it was established in its present form under the Bank of Botswana Act 1996, the Pula Fund has no separate legal status or balance sheet of its own.

Although the GRB’s savings have fallen as a percentage of GDP, foreign exchange and Pula Fund reserves have risen in both nominal and real terms (Figure 14). Both Pula Fund and total foreign exchange reserves of the GRB have risen steadily with the exception of the 2001-2003 period, when a previously unfunded government pension liability was fully funded, and following the 2009 economic crisis.

The overall foreign exchange reserves are therefore divided primarily into two portions: the Pula Fund and the Liquidity/Transactions Tranche. The latter is analogous to the foreign exchange reserves that central banks hold for the purposes of financing short-term foreign exchange needs for imports of goods and services, net income and capital outflows, etc. The overall reserves change depending on balance of payment surpluses or deficits, and the size of the Pula Fund is determined as a residual once the Liquidity/Transactions portion of the reserves has been allocated, rather than through an active policy of maintaining a specific level of assets. As with the GIA, there are no other rules prescribing the level of payments into or withdrawals from the Pula Fund.

Figure 14. Pula Fund and total foreign reserves



Source: Bank of Botswana, authors' calculations.

28. One model sovereign wealth fund in terms of long-term investment management and transparency is often considered to be that of Norway. Norway's SWF was created with funds from its ownership of petroleum fields, taxes on oil and gas, and dividends from a 2/3 stake in Statoil, the country's largest energy company. Another case of sound management of revenues from mineral resources is Chile's SWF. The mechanisms behind that fund are outlined in *Mineral Resource Trade in Chile: Contribution to Development and Policy Implications*, OECD Trade Policy Papers, No. 145.

Although the Pula Fund is not a separate legal entity, a nominal Pula Fund Balance Sheet and Income Statement are included in the Notes to the Bank of Botswana's Annual Accounts. The accounts do not explicitly present the rate of return on the Pula Fund. Pula Fund returns are quite volatile, perhaps unsurprisingly given that they are invested in long-term financial assets.

The Bank of Botswana's Annual Report and Accounts provides some information on the asset composition of the Fund, its notional balance sheet and an income statement. This information is provided annually, and the value of the Fund is published monthly as part of the Bank's balance sheet. No reports are published specifically on the Pula Fund, and no information is provided on Fund transactions.

As part of the foreign exchange reserves, the Pula Fund is invested entirely offshore. The detailed currency composition of investments is not published, but the Bank of Botswana uses an SDR benchmark for constructing the investment portfolio.

The bulk of the Pula Fund is invested in bonds, with the second largest share in equities. Over the past four years (2008-2012), the composition of the Pula Fund has averaged 71.5% bonds, 25.9% equities, and 2.6% other assets. Fund managers have moved to invest a slightly higher percentage in the last year in equities, bringing the share to 65% bonds and 35% equities.

No public information is provided on the identity of the Pula Fund managers or on their asset allocation, mandates or performance, or on detailed asset holdings. Half of the short and long-term fixed income investment instruments of the liquidity portfolio and the Pula Fund are managed by the Bank and half are managed by its nine fund managers.

Best-practice principles for the management and transparency of SWFs

The governance of a SWF can be assessed against two sets of international principles, the Linaburg-Maduell Transparency Index and the Santiago Principles. The Linaburg-Maduell Transparency Index was developed by the Sovereign Wealth Fund institute, and awards one point for compliance with each of ten principles.²⁹

The SWF Institute lists a total of 69 SWFs around the world as at mid-2013. Of these, 48 are rated in terms of the Linaburg-Maduell Transparency Index. The Pula Fund is rated at 6 on a scale of 1 to 10, placing it 27 out of 48 rated funds. The composition of this score, i.e. which principles are adhered to, is not publicised although the information in the preceding section suggests which principles defy compliance in the case of the Pula Fund. The SWF Institute recommends a minimum rating of 8 in order to claim adequate transparency.

The Santiago Principles were developed by the International Working Group (IWG) on Sovereign Wealth Funds, of which Botswana is a member, with the support of the IMF. The

29 The ten principles that make up the Linaburg-Maduell Transparency Index are the following:

1. Fund provides history including reason for creation, origins of wealth, and government ownership structure;
2. Fund provides up-to-date independently audited annual reports;
3. Fund provides ownership percentage of company holdings, and geographic locations of holdings;
4. Fund provides total portfolio market value, returns, and management compensation;
5. Fund provides guidelines in reference to ethical standards, investment policies, and enforcer of guidelines;
6. Fund provides clear strategies and objectives;
7. If applicable, the fund clearly identifies subsidiaries and contact information;
8. If applicable, the fund identifies external managers;
9. Fund manages its own web site;
10. Fund provides main office location address and contact information such as telephone and fax.

IWG agreed on a set of generally accepted principles and practices (GAPP), which were adopted at a meeting in Santiago, Chile in 2008.³⁰

The IWG does not publish any assessment of compliance of different SWFs with the Santiago Principles. However, the Oxford SWF project carried out an assessment of compliance in 2011. The Pula Fund was rated 22nd out of 26 SWFs, with only 15% compliance with the Santiago Principles.

Finally, Edwin Truman of the Peterson Institute of International Economics developed a scoreboard for SWFs. This uses 25 questions falling into four categories (1) structure, (2) governance, (3) transparency and accountability, and (4) behaviour, with the answers based on publicly available information. The rating was first carried out in 2007, when the Pula Fund received a score of 14/25 (56%). The most recent rating was in 2009, when the rating remained unchanged, and the Pula fund ranked 32nd out of 53 SWFs.

The Revenue Watch Institute compiles a Resource Governance Index (RGI) which measures the quality of governance in the oil, gas and mining sector of 58 countries.³¹ The RGI incorporates various aspects, including an assessment of mineral revenue management and natural resource funds. Botswana's overall assessment on the RGI is "weak", with a score of 47/100, in part because of the poor quality of reporting for the Pula Fund.

Botswana is not a member of the Extractive Industries Transparency Initiative (EITI) whereas De Beers S.A. is a member. The GRB's reluctance to subscribe to the EITI reflects a number of factors, including the historical secrecy of the diamond industry, the confidentiality of the revenue sharing agreements with De Beers, and a desire not to give away confidential commercial information to competitors.³²

Lessons from Botswana: management of mineral revenues

Botswana has risen from a least-developed country to an upper-middle income country in large part due to its handling of revenue from the minerals sector. The over-riding principle that has motivated expenditure of revenue from the minerals sector has been the following: revenues derived from minerals are the result of the sale of an asset and should therefore be used to finance investment in other assets. An examination of the expenditure of revenue from the minerals sector in Botswana over the last three decades confirms that it has been spent in its entirety on human and capital investment and has not been used to finance recurrent spending.

Use of mineral revenues for the purpose of investment in Botswana's people and infrastructure has been monitored through use of its Sustainable Budget Indicator (SBI). This has been an overriding indicator of the use of revenue from mineral resources for investment in human and physical capital.

Public investment spending over the last three decades has been divided between spending on infrastructure (44%), education and training (42%) and health (14%). Investment on infrastructure, excluding health and education facilities, has been undertaken across a range of assets with the three largest areas of investment being electricity & water (18%), housing and

30. *There are 24 GAPPs, grouped into three broad categories: i) Legal Framework, Objectives, and Coordination with Macroeconomic Policies; ii) Institutional Framework and Governance Structure; iii) Investment and Risk Management Framework. See <http://www.iwg-swef.org/pubs/eng/santiagoprinciples.pdf> for details.*

31. www.resourcewatch.org

32. <http://collections.europarchive.org/tna/20070701080507/>;
<http://www.dfid.gov.uk/pubs/files/eitidraftreportbotswana.pdf>

urban infrastructure (15%) and roads (13%). Education expenditure has also been substantial. In addition to expenditure on local schools and the University of Botswana and other tertiary training, the GRB finances tertiary education overseas for many of its eligible citizens.

The decision-making process by which development priorities and expenditure on projects have been determined is an inclusive one. Expenditure on investment projects is determined within the National Development Plan process: no projects are financed outside the NDP process. The NDP process is bottom-up as well as top-down and provides the forum where development projects are proposed and negotiated. Discussion about priorities takes place at all levels of government and civil society. Priorities and projects are proposed by inter-ministerial groups at the highest level of government; by local government authorities; by interest groups and representatives of different groups within the population; by the business community; and by local *Dikgosi* (chiefs). Most of the projects retained in the six-year development plan come from these bottom-up consultations. Projects are then screened for compliance with national policy guidelines and availability of financial resources at the national level.

This broadly based consultative system with consultations from the village level to the highest levels of government is a more open process than in many other countries. Many stakeholders thereby feel committed to the resultant plan, with its outline of priorities and retained projects.

As a result of the policies described above, Botswana improved its socio-economic performance considerably over the past three decades. Despite a widely dispersed population, and starting from low levels, access to education, health services, sanitation, and clean water increased dramatically. About 95% of the population had access to clean water by 2004. Virtually all Botswana children now attend junior-secondary school (as compared with 100 secondary school graduates in total at independence) and the adult literacy rate is more than 85% (Maipose, 2008).

The GRB has felt no obligation to spend all mineral revenues when there were concerns about overheating of the economy or when suitable investment opportunities could not be found. Public finance decision-making has generally been cognizant of the limits imposed by absorptive capacity constraints. As a result, there were 15 consecutive years of budget surpluses from 1983 to 1997.

Expenditure patterns in Botswana have generally been counter-cyclical or acyclical as compared with revenue streams. Botswana has therefore been able to smooth out government spending despite the volatility of natural resource revenues by accumulating reserves during periods of relatively high commodity prices and drawing them down when prices slacken or demand for diamonds drops. This has provided Botswana with relative macroeconomic stability and avoided the boom-slump cycles that characterize many mineral-based economies (Lewin, 2011). The periodic slowdowns in the diamond industry have thus by and large not been passed on to the rest of the economy.

In order to save some of the revenues from its minerals assets for future generations, and for stabilisation purposes, the GRB created a long-term investment facility called the Pula Fund. The Pula fund is managed like a sovereign wealth fund in that it is used for long-term investment rather than short-term liquidity purposes. As part of the foreign exchange reserves, the Pula Fund is invested entirely offshore. The Bank of Botswana uses an SDR benchmark for determining the currencies in which the Pula Fund is invested. The bulk of the Pula Fund is invested in bonds, with the second largest share in equities. Investing offshore in foreign-denominated assets helps prevent pressure being exerted on the local exchange rate, an essential mechanism by which the “Dutch disease” phenomenon occurs in minerals exporters.

Diamonds are not forever: Development throughout the value chain

It has been shown thus far that Botswana's tax policies *vis-à-vis* the mining sector and its use of revenue from the sector have contributed to the country's successful path of economic growth. The GRB is, however, cognizant of the fact that its diamond reserves, albeit the largest in the world, will not last indefinitely. The peak of production from Botswana's diamond mines has passed, given all known reserves, and will further decline from 2030 onward when Botswana's two largest mines will move underground implying lower production levels at higher cost. It is considered unlikely that new diamond deposits will be found.³³

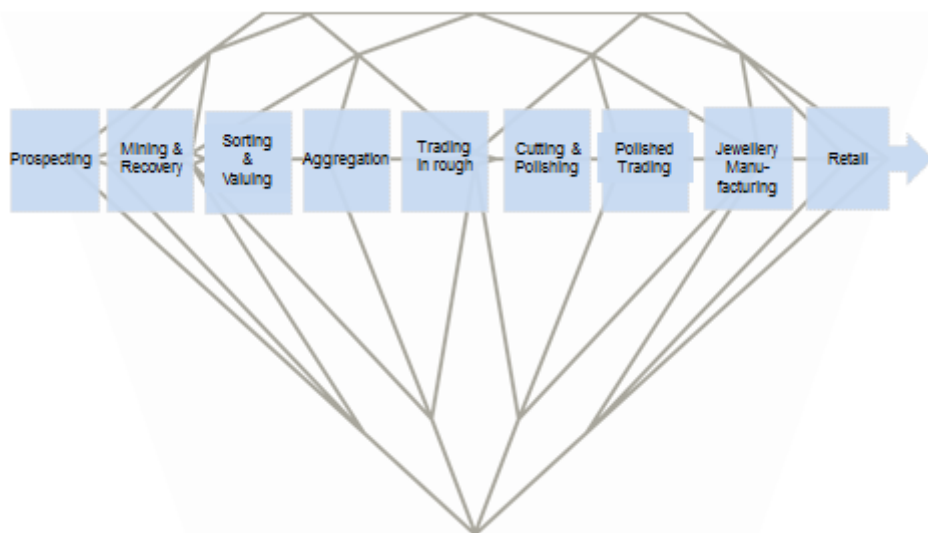
It has been seen above that the mining sector does not employ substantial numbers of people, compared to its share in the country's GDP. The Government of Botswana has consistently, over the years, attempted to move down the diamond value chain in order to extract greater value from its diamonds and to create needed jobs. It calls this process "beneficiation," a word which is used most commonly in Southern Africa and most commonly in reference to the diamond industry. Beneficiation entails undertaking more and more processing within the country where diamonds are extracted.

Sorting, valuing, aggregation

A view of the diamond industry value chain can be seen in Figure 16. Botswana entered the diamond industry value chain at the Mining and Recovery stage when it started production at its first mine in 1971. In 2004, the renewal of two 25-year mining licences for the Jwaneng and Orapa mines with De Beers provided the forum for the GRB to negotiate the opening of sorting and valuing operations in Gaborone. In 2008, the Botswana Diamond Trading Company (DTCB) expanded operations in Gaborone to sort and value the entirety of Botswana's diamond production and started selling a portion of its production locally. DTCB is the world's largest sorting and valuing facility and employs 400 people. It has opened a Diamond Academy to train sorters and valuing staff. Diamond sorters have a minimum secondary school education and receive six months training in the Diamond Academy followed by 18 months training "on the floor." Salaries and benefits in the sector are high.³⁴

Aggregation is the process by which sorted diamonds are combined according to specifications of rough diamond buyers. In the De Beers selling operations, rough diamond buyers are under contract for three years. Their contracts specify what types of diamonds they wish to purchase, and how many. They are then offered a set of diamonds that conform to the specifications of their contract in buying sessions that are held ten times per year. The aggregation process prepares these "boxes" of diamonds for potential buyers. Aggregation of diamonds started in the Gaborone facilities at the beginning of 2013.³⁵

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- 33. The last substantial diamond deposit discovery dates from 1973 and, as has been seen in a previous section, geological information available in the country is quite comprehensive.
 - 34. As an example, in addition to salary, DTC Botswana covers 60% of employees' mortgages.
 - 35. In order to undertake further aggregation, De Beers opened 26 part-time Gaborone-based positions requiring a University degree. Applications were received from 11 000 applicants.

Figure 15. The diamond industry value chain

Source: DTC Botswana.

Selling rough

The GRB has recently negotiated a further move down the diamond value chain. In a 10-year contract signed on September 16, 2011 governing the marketing arrangements between Debswana, DTCB and DTCI, the GRB obtained that the entire De Beers rough diamond selling operation be transferred to Gaborone by the end of 2013. This is the longest selling contract reached between the GRB and De Beers; previous contracts were for five years. By end 2013, all De Beers' rough diamonds will be sold to all contracted rough buyers (Sightholders in De Beers terminology) in Botswana. All 81 Sightholders, or their brokers, comprising 200-300 diamantaires, travel to Gaborone ten times per year to view and purchase diamonds.

De Beers has thereby moved its entire selling operation from London to Gaborone. Eighty-four DTCI employees and their families have been relocated. Additionally, a number of new positions have been filled. The first Sightholders meeting was held in Botswana on 11-14 November 2013. It is notable that despite the change in venue for Sightholders from London to Gaborone, not one of the 81 Sightholders has revoked its status. They will therefore travel from Europe, India, Israel and the United States in their majority to view diamonds in the small Southern African capital.

Other diamond mines that have obtained licences in recent years include a condition to market their diamonds in Botswana. For example, the Boteti Mining Company conducts rough diamond viewing in both Gaborone and Antwerp and the GRB expects them to migrate the sales function fully to Botswana by 2015.

The GRB aims to create a “diamond hub” in Botswana before its diamond reserves diminish. Moving De Beers selling operations to Gaborone is one large step in this process. The GRB hopes the move will encourage other mining companies to sell their rough diamonds in Botswana. It also hopes the increased travel to Botswana and increased visibility will develop related industries such as tourism, financial services, business services, transport and security.

The 2011 contract negotiation for Debswana also specified that 10-15% of Debswana's rough diamond production would be sold outside the De Beers Sightholder system. The GRB has established the Okavango Diamond Company to sell the diamonds in a live, sealed-bid auction in Botswana to a selected cross-section of buyers. Okavango has also developed an

online auction site through which to sell its diamonds. Up to 12% of Debswana's diamonds will be sold to Okavango in 2013, rising by one percentage point per year to equal 15% of Debswana's production by 2016. A pilot auction took place in Gaborone in June 2013 ahead of the launch in September 2013.

The sale of diamonds outside the controlled De Beers selling operation will provide the GRB with an alternative mechanism for valuing its diamonds and will provide greater insight into diamond market trends. This will provide the GRB with an independent valuation mechanism of its primary mineral resource.

There may be a number of reasons this was not done in the past. Rough diamond marketing has traditionally been done in a controlled environment among market participants that have long-standing relationships; it is a business based on trust. Part of the reason for the workings of the diamond industry is that it is based on the premise, established many years ago by De Beers, that diamonds are the materialization of love.³⁶ Underlying this premise is that price is a secondary criterion in the choice of a diamond. De Beers has traditionally kept the diamond price stable but rising and has quelled speculation in the market as this would go against the concept of the purchase as an heirloom (Spar, 2006). It was quite natural that the GRB market its diamonds through the stable, if somewhat opaque, marketing channels of its joint venture partner and industry leader, De Beers.

However, by selling its diamonds exclusively through the De Beers network, the GRB has foregone access to some market information regarding the value of its product. This has become more of an issue as diamonds have come on stream from firms outside the De Beers network that necessarily have different marketing and selling strategies. Until the end of the 1980s De Beers controlled 90% of rough diamond sales; today the figure is 36%. Although it is still the market leader, many other selling strategies exist that may prove to maximize gains from the sale of diamonds. One study suggests that BHP Billiton, and other market participants, have obtained higher prices for their diamonds since 2010, generally through auction sales (Cramton, Dinkin and Wilson, 2012). These results merit further study however since they represent a smaller share in the rough diamond market and their prices are less stable than those for De Beers' diamonds.

Another reason the De Beers Sightholder or Supplier of Choice system exists is to ensure stability of supply of diamonds as a heterogeneous good. An example of this follows. Suppose a jewellery firm such as Tiffany and Co. wishes to market a heart-shaped diamond ring or necklace. A marketing campaign will be undertaken to create the demand for this unusually-shaped stone. The firm will contract to buy a substantial number of heart-shaped stones over the coming months and years. However, the number of rough diamonds that can efficiently be cut into heart-shaped polished stones is very small. In order to be sure of obtaining such stones in sufficient number, a firm such as Tiffany and Co. would need to be part of a large network of rough diamond buyers that can ensure supply of these uncommonly shaped stones in large numbers. An auction or on-the-spot system could not ensure such supply, nor could a diamond mining firm that does not sell a substantial share of global rough diamonds.

Therefore, the success (or otherwise) of the Okavango Diamond Co. will be of great interest to the GRB, as well as the rest of the industry, as an indicator of the value of Botswana diamonds in an alternative market structure.

36. The majority of gem diamonds are purchased as engagement rings. De Beers's early advertising was very successful in securing the engagement ring market for its product. Its advertising slogan "A Diamond is Forever" was given the *Advertising Age* award for "slogan of the century".

Cutting and polishing

Cognizant of the fact that diamond mining has brought substantial financial gain to Botswana but not high levels of employment, the GRB has attempted to develop the diamond processing industry further down the value chain. It should be noted that, according to industry participants, the greatest gains in the diamond industry are upstream and downstream, in other words in mining on the one hand and in retail sales on the other (Figure 15). Value added is small in the sorting, aggregation, cutting and polishing stages. These intermediate stages of processing do, however, require employment of semi-skilled labour. Additionally they do not require the substantial long-term capital investments necessary in the upstream portion of the value chain (mining and recovery) nor the network of retail outlets and industry-specific commercial knowledge of the downstream (retail) portion of the value chain.

The GRB has been encouraging cutting and polishing firms to set up factories in Botswana using commercial access as leverage. In the 2006 negotiations for the five-year renewal of DTC Botswana's contract, the GRB obtained the contractual agreement to sell a percentage of its diamonds in-country. Since 2007, a portion of Debswana's production has been sold to local Sightholders, outside the central De Beers Sightholders system, that have set up cutting and polishing operations in Botswana. New three year contracts for these Sightholders were signed in March 2012, raising the number of local Sightholders to 21 from 16.³⁷ This reflects a larger share of Debswana's production being sold locally: in 2012 it amounted to USD 800 million, up from USD 550 million in 2008. All 21 local buyers have opened cutting and polishing facilities in Botswana.

The cutting and polishing facilities now operating in Botswana employ 3 500 Batswana. Most firms are subsidiaries of larger firms that also cut and polish diamonds elsewhere: most of the global cutting and polishing industry is located in India with higher-end facilities in Tel Aviv or New York. Not all diamonds are efficiently processed in Botswana. Very small diamonds are more efficiently processed in India due to lower labour costs and lower value added of very small stones. Very large or unusual stones are generally cut and polished in facilities with deep experience given the value of the good and the substantial financial loss in case of error.

In order to maximize the amount of stones actually processed in each facility located in Botswana, while allowing for some flexibility in the processing of very large or very small stones, local Sightholders are allowed to process up to 20% of their stones bought locally in their facilities outside Botswana. DTC Botswana checks cutting and polishing facilities periodically to ensure conformity with this requirement.

Firms that buy locally in Botswana do so partly because there is less competition for stones than in the general De Beers/DTC system. They have a better chance of obtaining the amount and kind of stones that they desire by purchasing directly in Botswana and opening a cutting and polishing facility there. Local Sightholders are chosen according to a number of criteria, one of which is the amount of training and transfer of knowledge and technology that they are willing to undertake.

Lessons from Botswana: Beneficiation

The Government of Botswana has been successful in leveraging its position as global leader in diamond reserves to move operations in the diamond value chain to Botswana step by step. Whereas in the 1980s and early 1990s, it extracted more value from the mining and recovery stage of production, negotiations since the late 1990s have concentrated on creating facilities in-country with a view to creating a Diamond Hub. This has been done step by step, starting with

37. http://www.dtcbotswana.com/about_us.php

the creation of sorting and valuing facilities. Botswana now successfully sorts and values its own diamond production in its entirety.

Aggregation of Botswana's diamonds started at the beginning of 2013 and by year-end, all of De Beers selling operations were moved to Gaborone, Botswana's capital. This move seems unprecedented. Approximately 30-35% of the world's rough diamonds are now sold in Gaborone at ten Sightholders' meetings each year.

Diamonds are not exchanged in an open consumer-driven market for reasons of history, heterogeneity of the product, the basis on which they are bought (sentiment as opposed to need), and the necessity of security of supply of some types of stones. In order to verify the value of Botswana's diamonds, and to sell a portion of its asset through alternative auction-based channels, the GRB negotiated the sale of up to 15% of its production through a parallel firm, the Okavango Diamond Company. That firm had its first formal auction in October 2013.

Moving further down the value chain, Botswana has welcomed 21 diamond cutting and polishing firms that have created 3 500 jobs for Botswana. Although this may seem a small number, it is significant on the scale of Botswana (population 2 million with a substantial share of young people) and compared to the entire mining sector which employs 12 000 directly. Cutting and polishing firms have been drawn to Gaborone in part due to the easier access to sought-after types of stones.

Conclusions

Policy lessons from Botswana

It has been seen that Botswana's strong economic growth in the past four decades, and formidable advances in terms of education, access to clean water, infrastructure and well-being of its people, are in large part due to effective management of its mineral resources. Although the economic situation in Botswana has its specificities (e.g. small population, low population density, substantial mineral reserves), many of the policy priorities and their implementation can be regarded as models for other minerals-rich countries. In particular, Botswana has achieved a strong but balanced system of mineral taxation, effective management of revenue, strong investment in its people and its infrastructure and policies to encourage creation of a diamond hub, in a climate of stability with very limited corruption.

Particularly important to potential investors in the mining sector is Botswana's political and regulatory stability. Because it is a highly capital intensive industry that demands long-term investments, potential mining investors value such stability very highly. Botswana's tax system, in particular, can be qualified as very stable. Countries such as Botswana that have achieved high levels of perceived governance overall are in a much better position, if changes are needed, to mitigate their impact on investment.

Although Botswana's mining sector provides a substantial share of government revenue, it continues to draw investors. The mining sector accounts for a large majority of FDI stocks. Botswana has made concerted efforts to attract FDI into export-oriented manufacturing and services, so as to reduce reliance on diamond exports and to diversify its supply-side capacities. The Ministry of Trade and Investment of Botswana has partnered with the OECD in undertaking a comprehensive review of its investment policies, so as to identify areas that need further reform in order to attract more diversified and sustainable investment, both domestic and foreign.³⁸

38. Investment policy is one area that has not been covered in this study. The OECD is in the process of completing an Investment Policy Review for Botswana to be released during the last quarter of 2013.

The Government of Botswana has managed extraction of its main mineral resource, diamonds, through a joint venture with De Beers, the largest private firm in the industry. The GRB receives 80-82% of the revenue minus costs from its joint venture. It has managed its relationship with De Beers strategically. In the early days of Botswana's diamond production, the 1970s and 1980s, negotiations concentrated on obtaining a greater share of the revenue from its natural resource. In the late 1980s and 1990s, the GRB took advantage of its leverage in the joint venture to increase its management capacity, including by obtaining a share in De Beers and two seats on the Board of Directors of the global firm. It thereby obtained access to the highest levels of experience and strategic business acumen in the industry. Since the late 1990s, the GRB has used its leverage to advance its priority of creating a Diamond Hub in Gaborone, with the ensuing employment potential.

The Government of Botswana has, through its relationship with De Beers, and through its development policy over the past decades, emphasized the need to build internal capacity within the country in order to undertake contract negotiations with foreign investors on an equal footing, and properly regulate its minerals sector. The internal capacity building in the diamond industry has been an important element of Botswana's success in obtaining and managing the revenue from the minerals sector.

In this way, the Government of Botswana has heavily invested in its relationship with De Beers. It has managed that relationship well, and has used its leverage to obtain important advances for its population. Given its low levels of capacity at the outset of this relationship, this is all the more commendable. This suggests that it may be easier for a country with low levels of capacity to manage one or a small number of relationships rather than putting into place the governance structures that are necessary to regulate many small firms. It also suggests that the capacity building aspects of the joint management structure have been substantial.

Through its relationship with the private sector, the GRB has aligned its interests in terms of levels of production and rates of extraction of its non-renewable resource and management policies of its largest joint venture. This may have had a dampening effect on any potential inclination to over-tax or over-regulate the industry, which has occurred in some other mineral-rich environments. A greater understanding of the constraints and the formidable potential of the mining sector has served the GRB well.

In this way, the GRB has successfully “leveraged” its position as the global leader in diamond reserves to extract substantial revenue from its resources in the last four decades. As important as revenue creation is, however, even more crucial is the way in which its revenue is spent. In this way, Botswana has generally been quite exemplary.

One of the main problems mineral exporters face, as described in the vast literature on the resource curse, is associated with public expenditure that follows the cyclical patterns of revenue generated from mineral resources. The GRB has overall resisted the impulse to spend the entirety of its revenue from the mining sector and has generally avoided both overheating the economy and investing in unsound projects. Expenditure of mineral revenues has generally been counter-cyclical or acyclical.

In order to invest such revenue over the long term, the GRB established the Pula (“Rain”) Fund in the mid-1990s. The Pula Fund has been described both as an inter-generational fund and a stabilization mechanism. The Pula Fund is invested offshore in foreign currencies which furthermore avoids putting pressure on the national currency.

Botswana's overriding development strategy and its main expenditure projects are decided in a very inclusive process every six years. The buy-in generated by the consultative process that touches all levels of state and local government, interest groups, traditional chiefs, business owners, etc. is drawn from traditional structures but has been refined to the current context. All development projects that are undertaken have been retained through this consultative process.

Projects have been retained largely driven by technical matters and in accordance with established priorities and not political considerations.

One of the cornerstones of Botswana's revenue management strategy has been that revenues from its mineral assets have been invested in their entirety in other assets – health and education of its citizens or its infrastructure. Recurrent expenses have been financed entirely from non-mineral revenue. The substantial advances in social indicators are probably largely due to this policy. Investment expenditure over the last three decades, largely financed from minerals revenues, has been 44% on infrastructure, 42% on education and training and 18% on health. Today, virtually all Botswana have access to clean water, and virtually all Botswana children attend junior secondary school, compared to the country's 100 high school graduates at the time of independence.

Botswana's minerals sector has been the engine of its development strategy and efforts have been made to ensure its continued development and presence in the country. Early on, with the help of development assistance funds, good quality, detailed geological information was collected to obtain a comprehensive view of the country's resources. Such information is of prime importance for minerals-rich countries wishing to attract investment. The geological information has been refined and more detailed data collected over time. Information collected by prospectors complements existing sources and is, in principle, made available when a prospector releases his right to explore or retain the concession.

In an effort to retain diamond activity in the country, and cognizant of the non-renewability of its main mineral resource, Botswana has moved to engage at other stages in the diamond value chain. The first step was to sort and value the country's diamonds in Botswana, creating jobs and increasing the level of expertise. At the beginning of 2013, aggregation, one further step in the value chain, was commenced. Since November 2013, the entire selling operation of the De Beers group, i.e. the largest market for diamonds worldwide, takes place in Gaborone. This seems unprecedented and is the result of the GRB using its leverage within the De Beers group to further its aim of creating a Southern African diamond hub in Gaborone. Further down the value chain, the GRB has leveraged its relationship with potential rough diamond purchasers to encourage a diamond cutting and processing industry that has created 3 500 jobs.

Cognizant of obtaining as much value from its natural resource as possible, while retaining incentives for investment and leaving open space for competing enterprises, the GRB now sells a share of its diamonds on an alternative auction-based platform. This initiative will provide additional information about the value of its diamonds moving forward, and may inform about the trade-off in diamond revenue between volatility and price levels. Correctly valuing diamonds is of primary importance to the GRB not least of all in order to calculate the royalties due from diamond extraction. This represents a clear understanding and good use of market mechanisms to extract maximum gain from its resource.

Challenges to the Botswana model

The economic and social advancement that Botswana has experienced and the positive policy messages that can be drawn from its example do not discount certain challenges it faces. Botswana has been very successful in bringing itself to the level of an upper-middle income country. Further advances, however, may prove more challenging, particularly faced with falling diamond revenues. Consensus may break down somewhat as priorities in terms of access to electricity, basic and secondary education, clean water, basic health services and transportation have largely been met. It will be increasingly difficult to choose between competing priorities especially without more sophisticated systems for undertaking cost-benefit analysis and monitoring and evaluation.

Botswana's expenditure of its revenues from the minerals sector on health, education and infrastructure may have been the single most important factor in its phenomenal performance. In

the past few years, however, these expenses have grown substantially and will likely be unsustainable in the face of falling mineral revenues. The Pula Fund has been used in recent years to top up such expenditure: investments in human and infrastructure capital have continued to be heavily funded as opposed to financial investments for future generations, despite the fact that basic infrastructure investments have been accomplished. It has been suggested that the returns to some of these investments in recent years have gone down.

The rules that have governed the allocation and expenditure of Botswana's revenue have worked well until now but they have no statutory basis. This implies that it would be possible to spend accumulated assets indiscriminately. Although there is no history of this in Botswana, a more structured legal framework for the different budget and fiscal rules would make it even less likely.³⁹ In addition, there are no explicit rules regarding the accumulation of financial savings from minerals. Agreement on certain rules or targets for public asset accumulation would add to Botswana's policy portfolio as would more transparency in management of public assets.⁴⁰ Greater transparency in public expenditure is also more appropriate as Botswana's labour force has accessed higher education. Greater oversight, including that of outside, independent bodies, will be increasingly desirable.

Diamonds are not immune to future challenges. Diamonds have lost in market share to other high-end luxury goods over the years. This may be due in part to the gradual reduction in market share of De Beers whose marketing campaign for the good still serves as a classroom model. With no majority-share producer, and therefore less incentive to continue extensive marketing campaigns for diamonds as a luxury good, demand has not grown as much as in the past.

Botswana's drive to create a "diamond hub" is ambitious. Its critics suggest that it is unfeasible, especially in the face of falling diamond revenue. It is more expensive and it takes longer to cut and polish diamonds in Botswana as compared with traditional centres in India. This may be a particularly pressing issue since diamond processors buy their rough diamonds on credit; they are therefore paying interest on every additional day it takes to process the diamond in Botswana. Barring the development of sophisticated financial services, this will not increase the potential for such factories to remain in Botswana once the diamond reserves become more scarce.

Finally, the Government of Botswana's critics have underlined, and this paper has touched upon, the continuing problem of unemployment in the country. Although Botswana has managed to raise the level of education of its population substantially, it has not managed to encourage enough job creation to employ them. Additionally, a substantial share of the population is employed in the public sector, which will be increasingly difficult to finance as minerals revenues fall.

A final word

Outstanding issues notwithstanding, policy lessons from Botswana are numerous as outlined in detail in this paper. Botswana has managed its mineral revenues to achieve economic development and social advancement. Its path to an upper-middle income country provides many lessons for other mineral rich countries. Understanding what worked for Botswana and why may suggest some policy priorities for other mineral-rich jurisdictions. Every situation has its own context, however, and Botswana is no exception. Botswana is a small, sparsely

39. One country that has managed very well in this respect is Chile as outlined in *Mineral Resource Trade in Chile: Contribution to Development and Policy Implications*, OECD Trade Policy Papers, no. 145.

40. A relative lack of transparency in the management of the Pula Fund has resulted in relatively low ratings of SWF management indicators.

populated country; it is landlocked; it has formidable mineral resources including the largest reserves of gem-quality diamonds in the world; and it started from very low levels of economic and social development at the time its diamond resources were discovered. Botswana's rich economic history can provide a formidable example to other countries that may want to follow its path.

Botswana has followed its development path in a sustained, step-by-step fashion. Reforms have been instituted in stages; capacity, both human and physical, has been built up over time. Botswana has also by and large avoided the use of distortive policy instruments, including trade policy instruments such as export restrictions. Policies have been instituted through commercial negotiation in the case of the diamond sector and, more generally, by establishing clear, stable regulation. In this way, it has built up its economic policy capital creating a long-standing, regulatory environment that has served it well.

Botswana has in many respects reached the stage of a mature mineral economy. As it has matured, the historical structures that served it so well in the past few decades may now need some re-thinking. The country is itself searching for a revised model to move forward as an upper middle income country faced with declining diamond reserves. Alternative models exist: one example is that of Chile. The Chilean case is outlined in a companion case study to this one, *Mineral Resource Trade in Chile: Contribution to Development and Policy Implications*.

The importance of overall good governance and the relative absence of corruption in Botswana cannot be overstated. It is the backdrop to all the successful policies that have been implemented thus far. In addition, Botswana's policy of prudent management and stability — “evolution rather than revolution” in the words of a senior policymaker — have made its substantial economic and social advances possible.

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