

The role of TNCs in the extractive industry of Botswana

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This article reviews the involvement of transnational corporations (TNCs) in the extractive industry of Botswana and the role of government policy that has governed its development. First, it reviews the trends and determinants of TNC involvement in various sub-sectors of mining. Then it assesses the economic, environmental and social impacts of mining, which have been largely positive in Botswana. To identify the factors contributing to the success, the article describes the government policy and involvement in the extractive industry. The article concludes by offering some recommendations.

Keywords: Botswana, mining, transnational corporations, policy

1. Introduction

Extractive mineral industries have played a crucial role in the development of Botswana, and transnational corporations (TNCs) have played an important role in the development of Botswana's mining sector. As a result of mineral-led economic growth, the country has been transformed from one of the poorest countries in the world at the time of independence in 1966 to an upper-middle income country. Botswana's main mineral export is diamonds, of which it is the world's largest producer in value terms. Other important mineral exports include copper and nickel.

As has been well documented, mineral producing countries are often afflicted by a "resource curse", which has often led to lower growth than in non-resource countries, and a range of other economic, social and political problems. Botswana's record of mineral-led development is remarkable not just for its rapid growth, but for apparently avoiding most other aspects of the resource curse. The country is relatively free of the corruption and environmental damage that is often associated with mining industries. Public finances are strong, debt is minimal, and the country enjoys investment-grade credit ratings.

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TNCs have played a central role in Botswana's mining sector development. Although the Government has studiously avoided the worst aspects of "resource nationalism", and has never nationalized mining companies or attempted to run mining operations itself, it has entered into long-term partnership with mining TNCs, with the Government enjoying an ownership stake in all major mining operations and carefully worked out revenue- and risk-sharing agreements. In doing so, it has taken a long-term view, promoting private-sector investment in the mining sector, and ensuring that it is itself well-resourced when entering into negotiations with mining TNCs. As a result, it has been able to enter agreements that have given Botswana considerable benefits. Botswana's approach has not been based on offering low-tax incentives, but on a stable, open and transparent policy regime, free of corruption and political interference, that allows investors freedom to operate once agreements have been reached.

Botswana has earned considerable revenues from minerals, leading to favourable balance of payments and fiscal positions. It has also paid a great deal of attention to how these revenues are spent, with an overriding objective of devoting mineral revenues – derived from the sale of a non-renewable asset – to investment in other assets (economic, social and financial) that will help to generate future economic growth. Significant financial reserves have been built up that enable the economy to ride out the economic shocks that inevitably accompany reliance on a narrow range of mineral commodities. The Botswana experience has considerable relevance for other mineral exporters, and these are developed at more length in this paper.

2. Trends and determinants of TNC involvement in Botswana's mining industry

a. Overview of the mining industry

Botswana's history of post-independence economic growth has been integrally linked to the development of the minerals sector, and to investment by TNCs. Although there was little mining activity prior to independence in 1966, it was known that there were deposits of copper, soda ash and coal, and there was thought to be considerable long-term potential in exploiting these minerals. Diamonds were discovered shortly after independence, and the construction of copper-nickel and diamond mines began in the late 1960s. Production of both minerals began in the early 1970s. Diamond production continued to grow rapidly, with the initial mine at Orapa supplemented by two more mines at Letlhakane

and Jwaneng. During the 1970s and 1980s the country emerged as one of the world's major diamond provinces, and by the late 1980s, it had become the world's leading diamond producer, measured by the value of production.

Mining has come to dominate the economy, accounting for around one-third of GDP, one half of government revenues, and nearly 90% of exports. GDP growth has been rapid, led by mineral sector development, and over the 30 years from 1970 to 2000, Botswana was the fastest-growing economy in the world. The structure of the economy has been transformed; at independence in 1966, agriculture (mostly cattle-rearing) accounted for 40% of GDP, while mining was virtually non-existent; by 2006, agriculture accounted for only 2% of GDP and mining 40%. FDI has played a crucial role in this mineral-led growth, reflecting both the lack of domestic resources in the early years of the mining industry and the Government's general development philosophy of attracting foreign investment.

Besides mineral production, a great deal of mineral exploration activity is being undertaken in Botswana. Prospecting in Botswana is difficult, as much of the country is covered with the deep sands of the Kalahari Desert, and minerals located in the underlying bedrock have historically been difficult to find. Many conventional prospecting techniques have been expensive and not particularly effective, making the Kalahari one of the most difficult on-shore terrains to exploit. However, recent technological developments in the prospecting field have changed the situation. In particular the advent of airborne gravity detection techniques measure minute variations in the earth's gravitational field caused by the presence of minerals, allows geologists to see "through" the deep Kalahari sand cover, revealing underlying geological features. This supplements earlier aero-magnetic techniques, which measure variations in the earth's magnetic field caused by mineral deposits. Earlier prospecting was reliant on soil sampling and the detection of indicator minerals. These developments have encouraged further prospecting, and the number of prospecting licences has continued to rise, increasing the prospect of further significant mineral discoveries.

b. The role of TNCs in specific mineral activities

The development of Botswana's minerals sector has been integrally related to the role of TNCs. As noted above, the sector began to develop soon after independence in 1966. At that time, it was recognized

that “the exploitation of these resources must depend upon foreign capital investment, and the promotion of a satisfactory climate for such investment is clearly of the greatest importance”.¹ This approach, of welcoming FDI through a supportive investment climate, supplemented by measures to ensure a range of benefits for the Botswana economy, has characterised the development of the minerals sector ever since.

(i) *Copper-nickel*

The first major investment in Botswana’s mineral sector was by Bamangwato Concessions Ltd (BCL), established in the 1960s to develop the copper-nickel ore bodies at Selebi-Phikwe.² BCL operates three linked copper-nickel mines in the Selebi-Phikwe area of north-east Botswana, and an associated smelter producing copper-nickel matte, which is sent abroad for refining. The development of the mine required significant investment in associated infrastructure. This included the establishment of a new town at Selebi-Phikwe, the Shashe Dam and associated water pipelines, a diesel power station, roads and a rail spur. All of these were provided by the Government, with a loan from the World Bank. The total investment required for the mine, smelter and associated infrastructure was around P160 million (then \$220 million), equivalent to around 150% of GDP in 1968/69 (Harvey and Lewis, 1990, p. 137). The establishment of the project provided a huge economic impetus and boost to GDP through construction and related expenditure.

BCL is a large mining operation by world standards, and is the second largest private sector employer in Botswana, with around 4,000 employees. However, initial expectations that it would be a highly profitable and lucrative venture for both Botswana and the shareholders were dashed from the early stages. The project was planned during a period of high metals prices during the 1960s, but came on stream as prices fell sharply in the early 1970s. This, combined with operational problems at the smelter and delays in commissioning, caused the project to incur substantial losses from the beginning. BCL has never operated profitably, and the shareholders have incurred significant financial losses, as have the main lenders to the project.³ Nevertheless, the Government

¹ See Overseas Development Ministry, 1965, p.104

² The ultimate owners of BCL were initially Anglo American Corporation of South Africa (Anglo) and American Metal Climax (AMAX) of the United States, along with public shareholders and a small shareholding held by the Botswana Government.

³ Despite its financial problems, BCL has continued to operate, and has received significant financial support from the Government of Botswana. The original shareholders have divested their shareholdings, and the Government is now the largest shareholder.

considered it socially imperative to keep BCL in operation due to the social costs that would result from its closure. Only in 2005, after the sharp rise in copper and nickel prices, the mine was able to make an operating profit.

Other copper-nickel mining operations in Botswana include the Tati Nickel Mining Company (TNMC), which operated the Selkirk underground and Phoenix opencast mines near Francistown, and was owned by Anglo American. Anglo sold its shares to the Canadian company LionOre at the same time as it divested its shareholding in BCL.⁴ While the Selkirk deposits have been exhausted and the mine placed on a care-and-maintenance basis, the Phoenix mine is being expanded. Concentrate from Phoenix is toll-treated by the BCL smelter at Selebi-Phikwe.

(ii) Diamonds

Diamonds are currently mined in Botswana by Debswana, a 50-50 joint venture between the Government and De Beers Centenary AG. De Beers first began prospecting for diamonds in Botswana in 1955, after a few diamonds were found in the gravel bed of the Motloutse River.⁵ The Orapa kimberlite pipe was eventually found 12 years later, in 1967, just after Botswana's independence.⁶ Although the pipe was large, it was not thought to be particularly valuable, and as the Government was fully occupied with the "Shashe project" and establishing the Selebi-Phikwe mine and town, it agreed to let De Beers develop the Orapa diamond deposit alone; the Government's involvement was limited to a 15% shareholding in the mine. Construction of the mine began in 1969, as a simple opencast pit, and production began in 1971. Over the subsequent few years, however, further diamond discoveries were made in the area which led to a doubling of production at Orapa and the opening of a new mine nearby at Letlhakane. In 1976, De Beers announced that it had discovered another major diamond pipe at Jwaneng, further to the south;

A residual public shareholding remains, but the shares (in Botswana RST, the holding company for BCL) are no longer quoted or traded, and are essentially worthless.

⁴ LionOre, an international producer of nickel concentrate with operations in Botswana, South Africa and Australia, was taken over by Norilsk Nickel (Russian Federation) in mid-2007. Currently, the Government has a 15% shareholding in TNMC, with Norilsk holding the remaining 85%.

⁵ While it was known that these diamonds had been brought downriver from a source kimberlite pipe, locating the pipe proved to be difficult, as the course of the river had shifted over the years and its (unknown) original source was located under the sands of the Kalahari Desert, which can be up to 200m deep.

⁶ See Hart, 2001, for more details of the discovery of diamonds in Botswana.

mine construction began in 1979, and full production was reached in 1982. Although the Government's initial shareholding was 15%, the new discoveries opened the opportunity for government to negotiate an increased shareholding, which rose to 50% in 1975.

The Government's relationship with De Beers, however, goes further than the joint venture partnership of Debswana. During the 1980s, the international diamond market was weak, and Debswana could not sell all of the diamonds it was producing. As a result, the company accumulated a significant stockpile of unsold diamonds. When the market recovered, after 1986, Debswana negotiated the sale of the stockpile to De Beers. In exchange, Debswana was paid partly in cash, and partly in shares in De Beers. Following this transaction, Debswana achieved a 5% ownership stake in De Beers, and had the right to appoint two directors to the main De Beers board. The Government of Botswana, through Debswana, thereby got access to high-level information regarding the operation of the global diamond industry. All of Debswana's diamond production is sold to De Beers marketing arm, the Diamond Trading Company (DTC), based in London.

De Beers' origins lie in the South African diamond industry, which it came to dominate early in the 20th century. Over time, De Beers came to dominate the global diamond industry, through combination of its own mines (wholly or partially owned), and its marketing of diamonds from other producers. At its peak, De Beers was responsible for the marketing of more than two-thirds of global rough diamond production, and exerted significant control over pricing. This structure enabled diamond producers to earn monopoly profits, and as a major producer, Botswana managed to negotiate a very favourable revenue distribution arrangement with De Beers (described below), which gave Botswana a share of these monopoly profits.

For most of this period, De Beers was a public company, listed on the Johannesburg and London Stock Exchanges, although with a major block of shares held by Anglo American. In 2001, De Beers was restructured, and became a privately owned company. As a result, the ownership of De Beers changed to: Anglo American (45%); Central Holdings (Oppenheimer Family) (40%); and Government of Botswana (15%). The restructuring gave the Government an even greater say in the operations of De Beers, and access to significant dividends from De Beers' profits.

Besides its involvement in diamond mining through Debswana, De Beers plays several other roles in Botswana's mining industry. De

De Beers Prospecting carries out extensive prospecting activities throughout the country, either alone or in partnership with other prospecting companies, making use of a variety of exploration techniques, and has pioneered innovative methods of exploring for minerals under the deep Kalahari sand cover. All of Debswana's diamond production is sold to De Beers marketing arm, the Diamond Trading Company (DTC), based in London. De Beers and the Government of Botswana are also joint owners of the Botswana Diamond Valuing Company (BDVC), which sorts and values all of Botswana's diamonds, prior to their sale to the DTC. In 2006 it was announced that De Beers would also establish a branch of the DTC in Botswana, to undertake sorting and aggregation activities for diamonds sourced from other parts of the De Beers group. Botswana will thereby become a key centre for the sorting and selling of diamonds in the De Beers global network, and it is hoped that this will support the emergence of a larger diamond cutting and polishing industry in the country.

Although De Beers have traditionally dominated diamond production in Botswana, it is not the only company involved in diamond exploration. Other TNCs (including Falconbridge, RTZ etc.) have been involved in exploration, but have not brought any discoveries to the production stage.

(iii) Gold, soda ash and coal

Gold has been mined in Botswana for several hundred years, with many old mine workings identified in north-east Botswana. Botswana's gold deposits were relatively small and difficult to mine, and attention soon turned to the much richer South African gold deposits on the Witwatersrand. However, in 1998, Gallery Gold, a small Australian company, discovered a substantial gold deposit at Mupane. Production began in 2004, and now averages around 250kg of gold a month. In 2006, Gallery Gold was taken over by a major international gold mining company, Iamgold (Canada).

The brine deposits of the Makgadikgadi Pans have long been known as a potential source of soda ash and salt, although the remoteness of the area and lack of infrastructure deterred investment for many years. In 1991, Soda Ash Botswana (SAB) was established as a joint venture between three major South African companies – AECI, Anglo American and De Beers – and the Government of Botswana. However, due to financial difficulties, a new operating company was formed – Botswana

Ash – which is 50% owned by the Government, 21% each by De Beers and Anglo American, and 8% by financial institutions.

Botswana has extensive coal deposits, which were first prospected during the 1950s. Mining began in the 1970s. The only operating coal mine is the Morupule Colliery, near Palapye, which has as its main customer the adjacent Botswana Power Corporation (BPC) power station. Morupule Colliery is a subsidiary of Debswana. Botswana's other main coal deposits are at Mmamabula, south of Mahalapye and extending east to the border with South Africa. The combined Morupule and Mmamabula coal deposits amount to some 17 billion tonnes, giving Botswana the second largest coal reserves in Africa, after South Africa. Consideration is now being given to a possible power station on the Mmamabula coalfield, to generate electricity for export to the South Africa.

Extensive exploration and prospecting is taking place, and several new mining operations are likely to be established in the next few years (Annex 1).

c. General trends in the ownership of mining companies

As is evident from the above description, the nature of TNC involvement has changed over the years. Initially, major companies (especially De Beers and Anglo American) were the key drivers of the industry, in partnership with the Government. More recently, smaller companies have become more prominent. Much of the activity of the smaller companies is based in revisiting mineral deposits that were in the past prospected by the majors but which were not then considered viable.⁷ There are a number of reasons for this. Prices, markets and production techniques may change, and make the exploitation of a deposit viable even if it was not viable at some time in the past. New prospecting techniques may enable a more accurate assessment of the value of a deposit. In addition, major TNCs tend to focus on large-scale projects and have less interest in smaller deposits, whereas smaller mining companies can exploit smaller deposits more profitably. It is also a general characteristic of the minerals industry worldwide that much of the exploration and early stages of mine development is done

⁷ Diamonex and African Diamonds are both developing mines based on deposits that De Beers initially prospected and then allowed to lapse. Similarly, African Copper is establishing a mine on a deposit at Dukwe that was earlier prospected by Anglo American and Falconbridge, but never developed. CIC Energy is intending to develop the Mmamabula coal fields that were earlier prospected by BP and Shell.

by junior mining companies, who may then enter into a partnership, or sell out completely, to a major once a viable mining project has been identified.⁸

The ownership of major mining projects in Botswana can be summarized in table 1. Many of the companies engaged in mining and prospecting in Botswana have been listed on the Botswana Stock Exchange (as dual listings given that their primary listings are in London, Toronto or Australia). This gives the Botswana public and investors an opportunity to take an ownership stake in these mining projects. This is particularly important for Botswana institutional investors, such as pension funds, which otherwise lack sufficient opportunities to acquire local investments.

3. Impacts of mining on development

Mining has had a significant impact on development in Botswana. It has contributed massively to economic growth, rising per-capita incomes, balance of payments surpluses, and government revenues. The latter have in turn been used to finance a wide range of social and economic infrastructure, including roads, water supplies, education and health – including the most comprehensive response to HIV/AIDS in Africa – as well as social services and welfare support schemes.

a. Impact on growth

The impact of TNCs on the Botswana economy is integrally linked with the impact of the mining sector as a whole on the economy, as all mining companies are either wholly-owned by TNCs or operated as joint ventures with the Government. This impact has been extensive, notably on key macroeconomic indicators of GDP growth, exports and government revenues.

⁸ In the case of the Diamonex mine, it is believed that De Beers prospecting results were affected by theft of stones from bulk samples. Renewed prospecting and sampling, with tighter security, revealed higher grades than De Beers had found, making a small mine viable. In the case of the AK6 pipe near Orapa, earlier prospecting by De Beers underestimated the surface area of the kimberlite pipe, which was more accurately identified by African Diamonds, which picked up the prospecting lease that De Beers had allowed to lapse. Higher copper prices have made the Dukwe deposit viable to mine, which was not the case in the 1970s. The viability of coal mining at Mmamabula, which will be used to generate electricity, reflects a regional electricity shortage and rising prices, whereas twenty years ago there was a regional surplus of electricity.

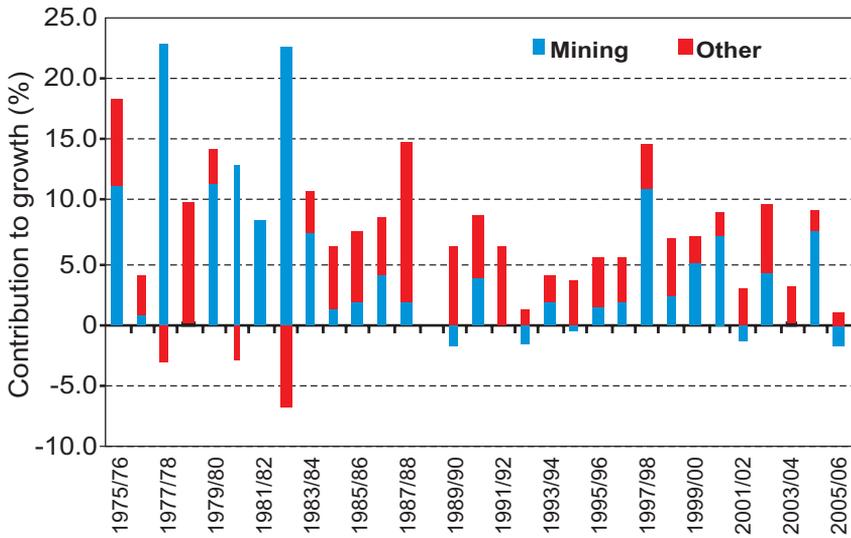
Table 1. Ownership of mining companies in Botswana

Company	Mineral	Nature of Ownership	Main Mines or Prospective Mines
<u>Companies with Mining Licences</u>			
African Copper BCL	Copper	African Copper (UK ^{*a}) Public & misc. 38%; Norilsk Nickel (Russia) 29%; GoB 33%	Dukwe Selebi-Phikwe
Diamonex	Diamonds	Diamonex (Australia [#] *) 100%	Lerala
Debswana	Diamonds and coal	De Beers (private [†]) 50%; GoB 50%	Orapa, Jwaneng, Letlhakane, Damtshaa (diamonds); Morupule (coal)
Tati Nickel	Nickel, copper, cobalt	Norilsk Nickel (Russia) 85%; GoB 15%	Phoenix
Mupane Gold Botswana Ash	Gold Soda ash & salt	Iamgold (Canada [‡] *) 100% Anglo American (21%); De Beers (21%); GoB (50%); banks (8%)	Mupane Sua Pan
<u>Companies likely to establish mines over the next 5 years</u>			
African Diamonds	Diamonds	African Diamonds (UK ^{*a}) 100%	AK6 (Orapa)
Discovery Metals	Copper, nickel, silver	Discovery Metals (Australia [#] *) 100%	Maun (copper); Dikoloti (nickel)
Meepong Resources	Coal	CIC Energy Corp. (BVI/ Canada ^{* ‡}) 50%; International Power plc (UK [@]) 50%.	Mmamabula

Notes: * listed on the Botswana Stock Exchange; ‡ listed on the Toronto Stock Exchange; #listed on the Australian Stock Exchange; ° listed on the Alternative Investment Market (AIM), London
 @ listed on the London and New York Stock Exchanges; † Ownership of De Beers is Anglo American (UK) (45%); Central Holdings (South Africa) (40%); Government of Botswana (15%)

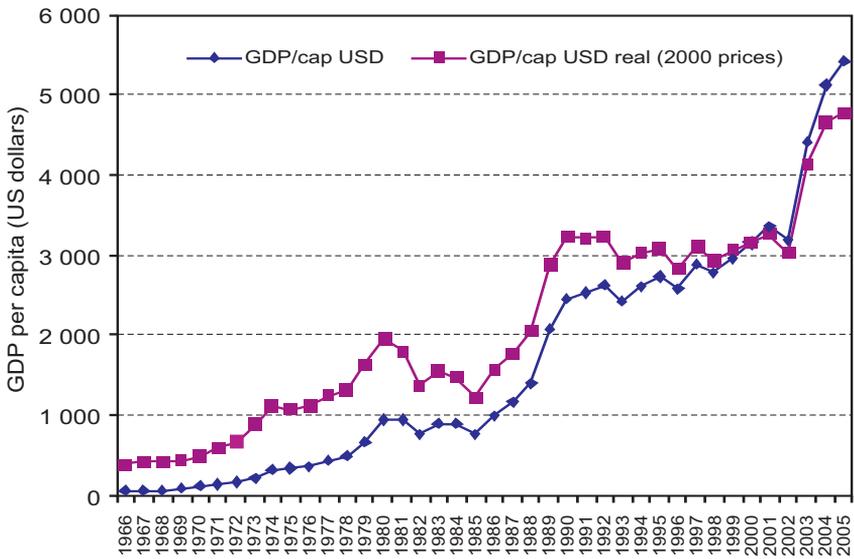
Over the period 1975–2006, the mining sector has directly contributed 44% of Botswana's total GDP growth, although the contribution was much higher in the early period when the diamond sector was growing rapidly (figure 1, table 3). The total (direct and indirect) impact of the mining industry is even greater, as its contribution to government finances has enabled the rapid expansion of government activities, which itself has further impacted on other sectors, especially construction. The rapid growth of mining has underpinned the increase in per capita incomes, which rose from \$76 at independence in 1966 to \$5,500 in 2005/06 (figure 2). In real terms, per-capita GDP grew by tenfold over this period, at an average annual rate of 6%, transforming Botswana from one of the poorest countries in the world into an upper-middle income country.

Figure 1. Contribution of Mining Sector to GDP Growth, 1975-2006



Source: CSO

Figure 2. GDP per capita



Source: IMF

Table 1. Contribution of Mining Sector to GDP Growth

	1975-85	1986-1995	1996-2006	1975-2006
Mining	73.6%	20.4%	49.0%	45.6%
Other	26.4%	79.6%	51.0%	54.4%

b. Impact on exports

Minerals have had a similar impact on exports, which rose from \$15 million in 1969, to \$4,400 million in 2005. Diamonds and copper-nickel accounted for an average of 86% of total exports over 2001–2005. The strength of mineral exports has enabled Botswana to run current account and balance of payments surpluses, and to accumulate substantial foreign exchange reserves. At over two years of import cover, Botswana’s foreign exchange reserves are amongst the largest in the world relative to the size of the economy, and a major factor in enabling the country to earn an investment grade credit rating – the highest of any country in Africa – from the rating agencies, Moody’s and Standard & Poors.⁹

c. Impact on government finances

Minerals are also a crucially important source of revenues for government. From zero in the 1960s, minerals grew to a peak contribution of to contribute around 60% of total government revenues, although this has now declined to around 40%. Total government revenues have grown from under 30% of GDP to average around 40%, enabling a major increase in government spending while still permitting a budget surplus in most years. Most of the mineral revenues paid to the Government are from diamond mining.

d. Impact on employment

While mining has had a substantial impact on GDP growth, the balance of payments and government finances, its direct impact on employment has been smaller. The sector is relatively capital-intensive and mining activities employ only about 9,200 people, or around 3% of the employed labour force.¹⁰ Its contribution to total wage income is greater

⁹ The rating reports from Moodys and Standard and Poors can be found at www.bankofbotswana.bw.

¹⁰ Mining companies employ somewhat more than this, as employees not directly engaged in mining activities are classed into other economic sectors.

than 3%, as mining jobs tend to be relatively well paid. The sector has also contributed to human resource development. For example, Debswana has had an intensive training and apprenticeship programme, and also offers scholarships to employees to study for advanced qualifications both within and outside of Botswana. Many of these employees have subsequently left the company and thereby provide a skilled resource available to other economic activities. The specialized skills required by the mining sector have been provided both through training carried out or sponsored by the mining companies themselves, and by government.¹¹ While local educational institutions tend to focus on general training, e.g. in science, geology and engineering, the Government has sponsored large numbers of students to take more specialized courses abroad. A new university currently being established is planned to provide more specialized training in science, engineering and technology.

The proportion of expatriate workers has been fairly stable over the past 20 years, although it fell from 5.6% in August 1984 to 4.2% in September 2006. While total employment in the mining sector rose by around 30% over this period, the number of expatriates remained stable. This suggests that citizens have increasingly been trained to take up skilled positions over the years. The main employment impact of the mining sector has been indirect, through the revenues contributed to government. Government is by far the largest employer in the country, employing over 40% of the employed labour force, and this is only possible on the basis of revenues received from the mining sector.

e. Indirect impacts

Besides the financing of a wide range of government activities, the main indirect impacts of the mining sector have come through the provision of infrastructure and urban developments. Several towns in Botswana (Selebi-Phikwe, Orapa, Jwaneng, Letlhakane, Sowa) owe their existence exclusively or mainly to nearby mining activities. These towns account for around 10% of Botswana's urban population. Wages paid to mining employees, and purchases by mining companies, provide the basis for secondary economic activities in these locations. The mining sector has also provided the impetus for the development of water and power supplies, and of road and rail infrastructure.

The major mining companies (BCL and, especially, Debswana) have invested extensively in health and education facilities in their communities. Both companies operate hospitals which are open to both

¹¹ Between 1992 and 2005, Debswana provided scholarships to 1,500 students, including both company employees and the general public.

company employees and the general public. Debswana has been active in responding to HIV/AIDS, and was the first company to provide anti-retroviral therapy (ART) to employees and family members, free of charge. Debswana's hospitals at Jwaneng and Orapa now have specialized Infections Diseases Care Centres, which provide ART and related treatment in partnership with the Government of Botswana to local communities. Other social initiatives undertaken by Debswana include the provision of significant urban infrastructure, such as airstrips, roads, housing and water supplies; the funding and management of primary and pre-primary schools; the establishment and management of game parks; the establishment of the Harry Oppenheimer Okavango Research Centre in partnership with the University of Botswana for the study and conservation of the wetland ecosystem in the Okavango Delta; the funding of a venture capital fund (Peo) that provides finance for the development of business projects owned by small and medium size entrepreneurs; a donations fund providing over \$1 million a year to deserving causes and organizations.

f. Environmental impacts

Botswana's mining operations have traditionally had a limited environmental impact. The diamond mines are opencast, and the main environmental residue has been spoil heaps which, given Botswana's extremely low population density, have not been a major concern. Recovery processes are mechanical or physical rather than chemical and thus pose no major effluent problems. In due course, the need to deal with the large open pits will become an issue, but, given that diamond mining is expected to continue in the current locations for many more years, this will only arise many years in the future. In general, diamond mining operations based on kimberlite pipes have much less environmental impact than those based on alluvial deposits.

However, some specific issues have arisen. The main environmental concern has been related to the BCL copper-nickel smelter at Selebi-Phikwe, which has had consistent problems with the levels of sulphur dioxide emissions that, in certain climatic conditions, cause problems for nearby residents. A second problem has arisen from abandoned mines, especially old gold mines in the Francistown area. As there are no proper records of these mines, many of which date back to the 19th century, the abandoned shafts cause serious problems from time to time.

The Mines and Minerals Act now requires all mining operations to take environmental considerations into account and conduct operations so as to "preserve as far as is possible the natural environment, minimise

and control waste or undue loss of or damage to natural and biological resources, to prevent and where unavoidable, promptly treat pollution and contamination of the environment". All applicants for mining or retention licences must carry out an Environmental Impact Assessment (EIA) that must form part of the Project Feasibility Study Report that accompanies the license application. At the end of operations, the holder of a mineral concession is obliged to restore the top soil of affected areas and restore the land substantially to the condition in which it was prior to the commencement of operations.

Environmental policies have generally been adhered to by the mining companies. The lack of environmental incidents reflects both commitment to environmental policies and the fact that most mining operations have a low environmental impact due to the nature of their processes. However, the main environmental pollution to date, sulphur discharges from the BCL smelter, partly reflect the nature of the smelting process and the fact that the company – which has run at a loss throughout most of its existence – has been unable to finance the relatively expensive pollution control equipment that could resolve this problem. An important test of the discharge of environmental responsibilities by mining companies will come when future mine closures take place.

g. Population displacement

Although the land in these areas was tribally (communally) owned rather than privately owned, those who were relocated were compensated for their loss of use rights to the land. Rather than displacing people, mining operations tend to attract population movements due to the potential job creation and other economic opportunities and social services.

There has been some controversy in recent years over the movement of people from the Central Kgalagadi Game Reserve (CKGR) in central Botswana, and the issue of the Basarwa/San/Bushmen has generated a great deal of international attention, mostly negative. The controversy stems from a Government decision to move several hundred Basarwa/San/Bushmen from the CKGR to resettlement villages outside of the reserve.¹² A group of former CKGR residents took the Government to

¹² The Basarwa are the earliest inhabitants of the territory now comprising Botswana, along with much of the rest of Southern Africa, and traditionally enjoyed a nomadic hunter/gatherer lifestyle. However, over the past several hundred years, the Basarwa have been pushed into ever more remote territories as incoming groups have encroached on their traditional lands.

court, claiming that they had been illegally removed from the reserve. After the longest and most expensive court case in Botswana's history, in December 2006, the High Court found in favour of the Basarwa, concluding that the Government had indeed acted illegally. Those who had been removed from the reserve are now in the process of returning to their former homes. However, the court found that there was no connection between the removals and possible mining in the CKGR

h. Corruption

Reported levels of corruption are relatively low in Botswana. The Transparency International Corruptions Perception Index, published annually, ranks Botswana as one of the least corrupt countries in the world. In 2006, the CPI rated Botswana at place 37 out of 163 countries, making it the least corrupt country in Africa, and less corrupt than Italy, Greece, Malaysia and South Africa.¹³ The low level of corruption partly reflects pre-emptive action taken by the Government, which in the 1990s had become seriously concerned about the detrimental effects of corruption and economic crime should it take hold in the country. In developing new legislation and anti-corruption structures, the Government reviewed the approaches taken elsewhere in the world, particularly Hong Kong (China), and saw that significant results had been achieved by implementing a “three pronged attack” of detailed investigation, corruption prevention and public education. It was also clear that the greatest success had been enjoyed in those countries which had established separate bodies specifically set up and designed to deal with corruption problems rather than imposing additional burdens on existing law enforcement agencies. As a result a Corruption and Economic Crime Act was enacted, leading to the establishment of the Directorate on Corruption and Economic Crime (DCEC) in 1994.¹⁴

With regard to the Extractive Industry Transparency Initiative (EITI), Botswana has been a supporter of the general principles but for many years it was not a formal subscriber. Botswana has generally been relatively open regarding receipts from the mining industry. The annual budget documents clearly state total revenues received from minerals. However, this is not broken down by company or by mineral (although

¹³ See www.transparency.org.

¹⁵ The impartiality of the DCEC is achieved by having it operate largely independently of government structures, with the Director reporting directly to the President and prosecution decisions being taken by the Attorney General. It has its own powers of investigation, arrest, and search and seizure, and is widely recognized as being an effective anti-corruption agency.

it is well known that the vast majority of revenues are derived from one mineral, diamonds, and one company, Debswana). Both of the major mining companies, Debswana and BCL, are private and do not publish their accounts (although due to its loss-making position, payments to government by BCL are minimal). Botswana's reluctance to subscribe formally to the EITI reflected a number of factors, including the historical secrecy of the diamond industry, the confidentiality of the revenue sharing agreements with De Beers and Debswana, and a desire not to give away confidential commercial information to competitors.¹⁵

However, in May 2007, the Government announced that it would henceforth subscribe to the EITI.

i. HIV/AIDS

Mining communities are sometimes associated with a high risk of exposure to HIV/AIDS. This is particularly the case when miners are migrant labourers, living temporarily in mining locations while their families are elsewhere. Although this pattern characterized many mining settlements in South Africa, it does not apply in Botswana, where permanent settlements have been established around most mining operations, where miners live with their families. Nevertheless, Botswana's mining towns are associated with migration, mainly because they offer more economic opportunities than surrounding rural areas, and there is some evidence that rates of HIV infection are relatively high in mining areas. Adult HIV prevalence rates in the three health districts which include significant mining settlements are shown in table 2. Two of the mining areas have HIV prevalence rates higher than the national average, and indeed Selebi-Phikwe has the highest rate in the country.

Table 2. HIV Prevalence Rates, 2005

Health District	HIV prevalence rate (%)
Selebi-Phikwe	46.5
Boteti (Orapa, Letlhakane)	35.4
Jwaneng	30.3
Botswana	33.4

Source: HIV/AIDS Sentinel Survey, Ministry of Health, 2005

¹⁶ The Government's formal position was laid out at the launching of the EITI in 2003. See <http://www.dfid.gov.uk/pubs/files/eitidraftreportbotswana.pdf>

4. Policy towards the mineral sector

a. Government structure

The Government's dealings with TNCs in extractive industries are mainly handled through the Ministry of Minerals, Energy and Water Affairs (MMEWA), which has the portfolio responsibility to coordinate development and operational activities in the energy, water and minerals sector. Specific programmes and projects to fulfil these responsibilities are carried out by Ministry's four departments Geological Survey, Mines, Energy Affairs and Water Affairs. The Ministry headquarters provides leadership and policy directions to the departments and parastatals. This Ministry formulates, directs and coordinates the overall national policies on minerals, energy and water resources, including short and long term strategies for implementing the approved national policies and programmes on minerals, energy and water resources. In addition, the inter-ministerial Minerals Policy Committee (MPC), comprising relevant Permanent Secretaries and the Attorney General, provides overall policy guidance and takes the lead in mining negotiations.

b. The policy framework¹⁶

Botswana's policy towards extractive TNCs, and indeed investment in the mining sector more generally, has been refined over many years, and has a number of components. Providing a stable macroeconomic framework is important, including low inflation and a stable real effective exchange rate. The general policy framework is market-oriented, and supportive of the private sector. Generally, the Government has been content to let private investors run the mining operations, with a government ownership stake where appropriate. The focus is on revenue sharing/appropriation of mineral rents.

The rapid growth and overall success of Botswana's minerals sector over the past thirty years has been in no small part due to the nature of the minerals policies followed by the Government. Broadly, the minerals policy framework has aimed to engage the private sector as the main driving force in exploiting the country's mineral resources, in a constructive partnership with the Government. This reflected the Government's knowledge, in the early years after independence, that it had neither the financial resources nor technical expertise to embark on major mining projects on its own. A deliberate decision was taken

¹⁶ More details on the evolution of the minerals policy framework are provided in Harvey & Lewis, 1990, chapter 6; Gaolathe, 1997; Jefferis, 1998; and Leith, 2005.

to engage with international mining companies to take the lead in prospecting, development and operation of the mines. The Government's approach was based on a commercial and developmental perspective, rather than the more political and nationalist approach often adopted elsewhere, which led to the nationalization of mining activities with, typically, adverse consequences for those countries and their mining industries. In contrast to many other countries, Botswana has never nationalized mining companies or attempted to run mining operations as state-owned enterprises.

Botswana's minerals policy framework is intended to provide a stable, investor-friendly framework to support private sector investment decisions, enabling them to earn an adequate return on capital and reward for risks taken, while ensuring that excess profits, or mineral rents, are secured for the nation through a suitable fiscal regime. In maximizing the economic and other benefits for the country, minerals policy aims to: accelerate prospecting and new mine development; encourage activities that generate real value added and linkages with the rest of the economy; create training and employment opportunities for citizens; and minimize the environmental damage caused by mining operations.

One of the important early decisions taken in the establishment of the minerals policy regime is related to the ownership of mineral rights. At independence, mineral rights were held by landowners, which included the State, private farmers and tribal authorities. If this situation had been left unchanged, mineral discoveries could have led to considerable inequalities between mineral-producing and other areas of the country, uneven growth, and quite possibly generating ethnic, social and political tensions. It would also have deprived the Government of a potentially important source of revenue. An early decision was therefore taken to seek transfer of mineral rights to the government. This was achieved through a process of negotiation and a mineral rights tax that encouraged either rapid exploration or surrender of mineral rights. Importantly, there was no expropriation of privately held mineral rights.¹⁷

A second important policy decision involved the formulation of the mineral taxation regime. Recognizing that the value of any mineral deposit was subject to considerable uncertainty, and could fluctuate

¹⁷ The transfer of mineral rights to the State was driven by Botswana's first president, Sir Seretse Khama, who was also Paramount Chief of the Bangwato, the largest tribal group, whose land also included most of the areas where minerals had been found. By pursuing the handover of tribal mineral rights to the state, Khama subordinated narrow tribal interests to the overall national interest, and provided the basis for the subsequent national stability.

over time, the Government adopted a mixture of revenue generating mechanisms. Rather than relying solely on a fixed royalty rate, which might be too high (for a marginal mining operation) or too low (for a highly profitable operation), it chose, in addition to a modest royalty rate, to require an option to acquire a small portion of the equity in the mining operation. Initially this was at no charge, although under recent revisions, the equity is now paid for on a cost-related basis.¹⁸ As a result, government has shares in most major mining operations. Mineral companies are also subjected to profits taxes, although the regime is different to that applied to other private sector companies.

Besides providing the Government with a revenue source related to the profitability of the project, equity stakes have another important function, which is to provide a mechanism for government representation on the company boards. This provided the Government with first hand information on mining operations and a direct say in the management of the nation's mineral resources. The arrangement helped ensure that Government policies were understood by mining companies, and that the Government had a good appreciation at an early stage of any problems faced by mining companies. In general, Government participation through minority equity stakes has facilitated a beneficial collaborative relationship between government and private mining companies.

c. Mining laws

Exploration and mining in Botswana is governed primarily by the Mines and Minerals Act, 1999 (Cap 66:01). The legislation governs the ownership of minerals and mineral rights, applications for prospecting licences, retention licences, mining licences and environmental obligations. The Act also provides for financial aspects such as royalties to be paid, licence fees and penalties. Other relevant legislation include: the Precious and Semi-Precious Stones (Protection) Act, which provides for the protection of the precious stones industry and regulates dealing in precious and semi-precious stones; the Petroleum (Exploration and Production) Act; the Mines, Quarries, Works and Machinery Act, which deals with mine safety; and the Atmospheric Pollution Prevention Act, which deals with environmental issues.

Three types of licence are available for mining activities:

- (i) Prospecting Licences, which are granted for a period of three years, and may be renewed twice for further periods of two years. The

¹⁸ Additional equity shares can be acquired by the Government at a price to be negotiated.

granting of a prospecting licence involves a commitment to minimum levels of expenditure over the licence period. All information gathered during prospecting must be submitted to the MMEWA; should prospecting not lead to an application for a retention or mining licence, that information can be made available to other companies, who may apply for a prospecting licence for the same ground;

- (ii) Retention Licences, which are granted where minerals have been found during prospecting, but which are not, in the short-term, economically viable to mine. The retention licence is granted for a further period of three years and may be renewed only once for a further period of three years;
- (iii) Mining Licences, which are granted for periods of up to 25 years, and may be renewed for a further 25 years. If 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. Applications for mining licences must be accompanied by an Environmental Impact Assessment.

Once a mining licence is granted, the investor is allowed to operate the mine with little or no interference from government, subject to compliance with applicable laws, environmental and health and safety regulations etc. The granting of a mining licence automatically gives the investor a lease over the land covered by the mining lease.¹⁹ The investor is expected to meet the costs of providing infrastructure (e.g. electricity and water supplies) and access roads. Skilled expatriate personnel can obtain work and residence permits, although the investor is required to have a localisation and training plan that will over time enable citizens to take over skilled positions.

d. Government investment

At the time that a mining licence is issued, the Government has the option of acquiring up to 15% working interest participation in the proposed mine, including the right to appoint up to two directors. If the option is exercised, Government pays for this shareholding by contributing its working interest percentage of all audited expenditure

²⁰ Access to land is considerably easier for an investor in mining than for investors in other industries, where it has been a perennial problem, especially for foreign investors (see e.g. FIAS, 2003).

incurred by the company to which the licence was issued that is directly attributable to the acquisition of the licence, including relevant prospecting expenditure. If the Government chooses not to exercise the option at the mine development phase, the option lapses. This provision applies to all mining operations except for diamonds, where the ownership level and the terms of ownership are a matter for negotiation.

While the Government has taken an ownership stake in most mining operations in the past, it now appears to be taking a strategic decision to invest only in major operations, and has recently waived its right to take equity stakes in the two most recently licensed mining operations (Diamonex and African Copper). While there has been no public announcement of the reasons for this, it may reflect the Government's desire not to stretch limited management resources stretched too thin, and a desire to concentrate those resources on larger projects of strategic interest. In such projects, the Government's role in decision-making or ability to access information may have broader economic merit.

e. *Royalties and taxation*

The holder of a mineral concession is liable to pay royalties to the Government on any mineral right obtained by him. The prescribed rates for such royalties are the following percentages of gross market value: precious stones (10%), precious metals (5%) and other minerals or mineral products (3%), where "gross market value" is defined as the sale value receivable at the mine gate in an arms-length transaction without discounts, commissions or deductions. Any royalties paid during the year of assessment are allowed as a deduction in the computation of the company's chargeable income.²⁰

There is an allowable deduction known as the mining capital allowance, computed in accordance with 100% of the mining capital expenditure made in the year in which such expenditure was incurred with unlimited carry forward of losses. This deduction is not transferable between distinct and non-contiguous mining operations. From 1999 a new non-negotiable mining tax formula was introduced in order to provide international investors with greater certainty. A variable rate income tax was introduced under which mining profits are taxed according to the following formula:

²¹ The gross income of any mining company includes all amounts accruing as a result of mining and prospecting operations and all amounts accruing from the processing, marketing, servicing, financial or administrative operations whether carried out in or outside of Botswana.

annual tax rate = $70 - 1500/X$.

where X is the profitability ratio, given by taxable income as a percentage of gross income, provided that the tax rate shall not be less than the company tax rate of 25%. The maximum theoretical tax rate that can arise under the formula is 55%. The actual tax rate applicable each year therefore varies, depending on the profitability of the mining operation. The taxation of diamond mining is subject to a different regime, and is subject to agreement in terms of section 51 of the Act.

In general, the tax rates applicable to mining operations (i.e. apart from diamonds) are non-negotiable, under Schedule 12 of the Income Tax Act. In contrast to other economic activities, fiscal concessions cannot be offered to investors in the mining sector, whether TNC or domestic.²¹

f. Small-scale mining permits

Separate regulations apply to small-scale mining, which refers to mining operations, other than for diamonds, processing less than 50,000 tonnes of raw ore per annum and in which the overall investment in fixed assets does not exceed P1 million.

g. The special case of the diamond industry

The diamond industry is treated as somewhat of an exception, and is more subject to negotiated agreements rather than hard and fast rules. The diamond industry has been by far the most important component of the mining industry, and its treatment has evolved as the Government has become more experienced and acquired greater understanding of the international minerals industry and of TNCs.

As it became apparent through the 1970s that diamond production was turning out to be much larger scale, and much more profitable than originally expected, the Government used the opportunity provided by De Beers' applications for further mining licences to re-open negotiations regarding the terms of the agreement between them. In particular, the Government increased its shareholding in Debswana from 15% to 50%, which enabled them to secure the bulk of the profits from diamond mining. While the exact agreement between De Beers and the Government is confidential, it is generally believed that the Government receives around 75% of the profits from diamond mining, whether in the

²¹ However, fiscal concessions can be negotiated for downstream processing, such as metals refining, diamond cutting etc.

form of mineral royalties, profits tax, dividends on its shareholding, or withholding tax on dividends paid outside of Botswana.²²

When the agreements with De Beers were renegotiated during the 1970s, the Government was criticised in some quarters for driving too hard a bargain, which would discourage further foreign investment both in the mining sector and elsewhere in the economy.²³ However, despite the less favourable agreement, De Beers nonetheless proceeded with the establishment of the Jwaneng mine in the late 1970s, and with expansions of Jwaneng and Orapa during the 1990s. More recently, the Botswana mining environment has received very favourable ratings by international standards; the Australian industry journal *ResourceStocks* rated Botswana as the lowest risk jurisdiction in the world for mining investment,²⁴ reflecting its stable policy environment, predictable and transparent regulatory regime, and low levels of corruption.

Botswana's status as the world's largest producer of diamonds gives it considerable leverage in negotiations, and the Government has used this leverage to good effect. The Minerals Policy Committee, which leads such negotiations, is well resourced, and can call upon technical inputs from both within Botswana and internationally if necessary. The principle adopted has been to ensure that the Government's negotiating team can match those of TNC mining companies in terms of expertise and depth of knowledge.

Botswana has also been fortunate in the nature of its diamond deposits. Kimberlitic diamond deposits ("pipes") occur in well-defined locations where exploitation rights can be granted to a single recipient, production can be monitored for taxation purposes and effective security enforced to minimise opportunities for theft. This contrasts with alluvial diamond deposits, where diamonds are widely scattered in riverbeds and mining tends to be carried out by a large number of small scale artisanal miners, and where production is more difficult to monitor and tax.

In recent years, the Government has again negotiated hard with De Beers when the mining licences for the De Beers mines were up for renewal (after 25 years). In return for renewing the licences for a further 25 year, it secured commitments from De Beers to undertake

²² Although, by implication, De Beers only receives some 25% of the profits, the company still makes more profit in Botswana than anywhere else in the world. This reflects the very large scale and the very high profitability of diamond mining in Botswana.

²³ See Hartland-Thunberg, 1978, p. 51.

²⁴ *ResourceStocks*, November 2005, www.resourcestocks.com.au.

downstream value added activities in Botswana. In particular, De Beers agreed to relocate some of its diamond sorting and aggregation activities from London to Botswana, and the DTC will establish an operation in Gaborone. As a result, diamonds from a variety of countries that pass through the De Beers marketing channels via DTC will be brought to Botswana for mixing and sale, and some of the regular De Beers “sights”, where diamonds are sold to selected buyers, will take place in the country. De Beers is also supporting the establishment of diamond cutting operations in Botswana by a number of its clients. The Government also used the negotiations around the renewal of mining leases to further increase its share of the profits earned by Debswana to over 80%.

Overall, Botswana’s relationship with De Beers in the diamond industry has been highly successful. The incentives of both parties have been aligned to securing the long-term future of the industry; at the same time, Botswana has secured a high proportion of mineral rents for its own benefit while allowing the investor a good return on capital invested. And unlike many lucrative relationships between governments and TNC mining companies, corruption has been avoided and the revenues have been used for the benefit of the society at large.

h. Policy towards use of mineral revenues

The Government is aware that mineral revenues are essentially derived from the sale of an asset, and that prudent public finance principles require that these revenues are reinvested in assets of some kind, rather than consumed. The basis for this is that minerals are a non-renewable resource, and that as mineral reserves are depleted, alternative assets should be built up that can be used to generate alternative sources of income. In principle, therefore, the Government requires that mineral revenues are devoted to investment spending and that recurrent (consumption) spending is financed from non-mineral revenue sources. The interpretation of investment spending is fairly broad, and includes all government spending on physical infrastructure (such as roads, water supplies, schools etc.) as well as spending on education and health care, on the basis that this represents investment in human capital. This objective has generally been achieved. Apart from three years between 2000/01 and 2003/04, non-investment spending has been completely financed from non-mineral revenues.

In most years the Government has run a budget surplus, and has accordingly accumulated significant cash balances at the Bank of Botswana. Moreover, at the end of 2005, total government debt was

approximately P3.9 billion (P2.1 bn external debt, P1.8 bn internal). Against this, Government balances at the Bank of Botswana totalled P12.8 billion, and were equivalent to approximately 50% of annual spending.

The Government's objective of devoting mineral revenues to investment in economic, social or financial assets represents a particular approach to resolving a problem that faces all mineral producing countries, that of responding to the depletion of those mineral resources. It is now widely recognized that some form of asset accumulation is a necessary response to mineral reserve depletion, and this contrasts with the approach that several developing countries have taken in the past, of borrowing against future mineral revenues and accumulating debt (Zambia and Nigeria being amongst the most prominent examples in Africa).

Botswana has not explicitly targeted the building up of a fund of financial resources, but has instead concentrated on investment in economic and social assets, which may be a more appropriate response in the context of a low-income developing country (which Botswana was when its mineral boom started). Nevertheless, Botswana has accumulated financial assets; even with an ambitious spending programme. In addition, the economy as a whole accumulated significant foreign exchange reserves, which by the end of 2006 were equivalent to around 80% of GDP. Both sets of reserves – the Government's accumulated balances at the Bank of Botswana and the nation's accumulated foreign exchange assets – provide important cushions against economic shocks. The availability of domestic and external reserves enables short-term, temporary, shocks to be ridden out, and provide a time period for adjustment should shocks turn out to be permanent. Botswana's policy of accumulating financial assets as a shock absorber has therefore been a prudent one.

i. Policy towards maximizing indirect impacts

The main channel for maximizing the indirect impact of the mining sector has been through the use of revenues from the mining sector to finance a wide range of government spending, which has led to the development of extensive social infrastructure. However, the Government has also worked through the mining companies themselves. With regard to BCL, where the Government is the largest single shareholder, government policy has been too maintain the operations of the mine even though, due to extensive accumulated losses over the

years, it would have been closed on the basis of a strict application of financial or economic criteria. The purpose of keeping BCL open has been to sustain the town of Selebi-Phikwe and its 50,000 population, which would be devastated if the mine were to close. The Government has achieved this through facilitating the exit of the original shareholders while avoiding liquidation of the company, and by the provision of emergency funding to enable the continuation of operations while the company was making losses.

The Government has also used its 50% ownership of Debswana and its resulting Board representation to promote indirect social and economic benefits. Debswana has an extensive Corporate Social Investment Programme.²⁵ There have also been specific initiatives to increase the proportion of supplies purchased locally by Debswana, including a mentoring programme for actual and potential suppliers to enable them to meet quality and related requirements. Government has also promoted the establishment of capacity within Debswana to carry out a variety of functions within the mining operation that were previously carried out on Debswana's behalf by De Beers.

j. Impact of minerals on general macroeconomic policy

Being a mineral exporter raises particular problems for macroeconomic management. The potential dangers of “Dutch Disease” are well known. Botswana has attempted to protect the tradables sector through a policy of “exchange rate protection”, whereby the maintenance of a fixed exchange rate prevents the nominal exchange rate from appreciating, thus inhibiting real appreciation. The outcomes of such exchange rate protection include the accumulation of foreign exchange reserves; keeping consumption below the levels that would otherwise result from the higher (boom-induced) real income; and a forced balance of trade surplus. Exchange rate protection needs to be accompanied by sterilization of the monetary impact of reserve accumulation, through open market operations or budget surpluses (Corden, 1984).. Whether the policy has been successful is difficult to ascertain. The real effective exchange rate, one measure of international competitiveness, has been reasonably stable over a long period of time, which would indicate that the Dutch Disease may have been avoided. Nevertheless, the process of structural change in the economy is highly consistent with Dutch Disease predictions, with the relatively slow growth of the tradeables

²⁵ See De Beers Report to Stakeholders, 2005/06

sectors (agriculture and manufacturing) relative to the non-tradables (services) sectors.²⁶ The lack of economic diversification, and the continued domination of the economy on the mining and government sectors, also provide evidence that Dutch Disease problems have not been avoided.

5. Conclusions and recommendations

Botswana's policy towards dealing with investors in extractive industries is generally considered to be amongst the best in the world. Investment has been facilitated through an open and transparent mineral licensing and taxation regime, operated by a competent and honest institutional structure. Private investment has been encouraged, and although Government has an ownership stake of 15% to 50% in major mining projects, it does not take a direct role in the operations of mining ventures. The taxation regime does not particularly aim at encouraging investors through low taxes, but does aim at an appropriate rate of tax – low for marginal mines and high for established and profitable operations – that yields a fair rate of return for investors but enables government to secure rents in excess of that rate of return for the national benefit. Minerals and foreign investment have yielded considerable macroeconomic benefits for Botswana, with rapid growth, rising living standards, extensive investment in social and economic infrastructure, and healthy fiscal and balance of payments positions.

There are three main weaknesses in the way in which the mineral sector has developed in Botswana: the relatively small direct employment impact, the lack of downstream processing and value added activities, and the lack of locally owned firms in the industry. Despite rapid growth, unemployment in Botswana remains high (18% in 2005/06).²⁷ This has many causes, and cannot be particularly blamed on the resources sector as it largely reflects the nature of the industry and its production processes, but it can be said that the mining industry has done little to resolve Botswana's employment problem.

The lack of downstream processing has long been of concern, with Botswana's minerals mainly exported in unprocessed (rough

²⁶ The combined share of agriculture and manufacturing in GDP fell from 40% in 1974/75 to 7% in 2002/03, while that of services grew from 22% to 31% of GDP over the same period. Perhaps more strikingly, while the output of the services sector was equivalent to 56% of the combined output of agriculture and manufacturing in 1974/75, by 2002/03 services output was 440% of that of agriculture and manufacturing.

²⁷ See the report of the 2005/06 *Labour Force Survey* (CSO, 2006)

diamonds) or semi-processed (copper-nickel matte) form. Processing offers some potential for employment creation, although there have been a variety of economic factors that have inhibited the establishment of commercially viable downstream activities. Of late, however, there has been more effort devoted to attracting investors in the further processing of minerals, most notably with government using its leverage in mining lease negotiations with De Beers, and allowing minerals processing to benefit from the concessionary 15% corporate tax rate applicable to manufacturing companies. Several minerals processing ventures are in the process of being established or are likely to come to fruition in the near future (including a nickel refinery, diamond cutting and polishing, and an export power station). Nevertheless, policy should focus on creating the conditions that would support the further development of value addition based on Botswana's mineral resources. Similarly, policy should also encourage the development of competitive local supply chains for the mines, rather than reliance upon imports.

The lack of locally owned firms in the mining sector, and the almost complete dependence upon foreign investment also needs to be addressed, and policy should perhaps focus on encouraging joint ventures between local and foreign investors. The Government's right to a shareholding in mining projects could be used as the basis for such participation, which would in due course support the emergence of local entrepreneurs in the mining industry.

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Annex 1. Prospective mining developments in Botswana

- Diamonex diamond mine near Martin's Drift (Tuli Block – eastern Botswana): a mining lease has been issued and production from a small mine is expected to start later in 2007. Diamonex is an Australian-listed junior mining company, whose principal project is based on the Martin's Drift kimberlites.
- African Diamonds is a diamond exploration company focused on a number of kimberlites in the Orapa area, near to the existing Debswana Orapa mine. Encouraging results have been obtained from the AK6 kimberlite pipe which is likely to lead to the establishment of a medium-sized diamond mine in 2008 or 2009. African Diamonds is listed on the London (AIM) and Botswana stock exchanges, and is mainly focused on developing the Orapa kimberlites.
- Gem Diamonds is a diamond mining and exploration company with an existing diamond mine in Lesotho. It has acquired the proven Gope deposit in the Central Kalahari Game Reserve from De Beers, and is intending to establish a medium-sized diamond mine within the next few years. Gem Diamonds is listed on the London (AIM) stock exchange.
- African Copper has received a mining lease for the Dukwe copper deposit north of Francistown, and a mine is being established during 2007 with production expected to start in 2008. The company also holds prospecting rights over adjacent copper deposits at Matsitama. African Copper is listed on the London (AIM) and Botswana stock exchanges. The Dukwe deposits were mined between the 12th and 15th centuries, and again in the early 20th century. While they were extensively prospected by major TNCs (including Anglo American and Falconbridge) during the 20th century, these companies did not consider mining worthwhile.
- Meepong Resources (MR) and Meepong Energy (ME) intend to develop the Mmamabula coal deposits and establish a 2400 – 4 800MW coal-fired power station to produce electricity for export to South Africa. MR and ME are owned by CIC Energy Corp., a mining development company listed on the Toronto and Botswana stock exchanges, and International Power plc, a major independent power producer listed on the London and New York stock exchanges. Subject to final feasibilities, the project is likely to start operations in 2011.
- Discovery Metals: the company is listed on the Australian and Botswana stock exchanges and is prospecting for nickel, copper and other metals in Botswana and Australia. Prospecting results from the company's Maun copper-silver deposits appear to support the development of a viable mining operation. While the company is a junior, Falconbridge (a Canadian major) holds a significant shareholding.

Other international companies currently prospecting for minerals in Botswana include:

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- A-Cap Resources Ltd: - listed on the Australian and Botswana stock exchanges; prospecting for uranium;
 - Albidon Ltd – listed on the Toronto and Australian stock exchanges; prospecting for gold, copper, nickel and other metals;
 - Aviva Corporation Ltd – listed on the Australian and Botswana stock exchanges; prospecting for coal;
 - Central African Gold plc – listed on the London Stock Exchange (AIM); prospecting for gold;
 - Firestone Diamonds plc – listed on the London Stock Exchange (AIM); prospecting for diamonds;
 - Motapa Diamonds Inc. – listed on the Toronto Stock Exchange ; prospecting for diamonds;
 - Mount Burgess Mining NL – listed on the Australian Stock Exchange; prospecting for lead and zinc;
 - Petra Diamonds Ltd – listed on the London Stock Exchange (AIM); prospecting for diamonds;
 - Tawana Resources NL – listed on the Australian stock exchange; prospecting for diamonds;
 - Trivalence Mining Corp. – listed on the Toronto Stock Exchange; prospecting for diamonds;
 - Tsodilo Resources Ltd– listed on the Toronto Stock Exchange; prospecting for diamonds.