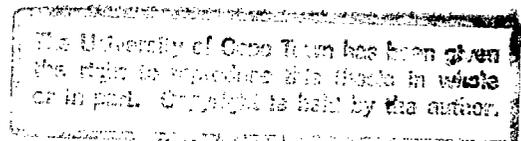


INDUSTRIALIZATION IN A SMALL OPEN MINERAL-
BASED ECONOMY: The Case of Botswana.

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ABSTRACT

After more than two decades of phenomenal economic expansion, Botswana now faces the challenge of slowing economic growth, rising unemployment and increasing poverty. The minerals sector, which dominated economic growth since the late seventies, has served the economy well in the past, but social and economic developments have reached a juncture where the broad strategic direction of the economy needs to be re-evaluated.

The need to diversify the economy to reduce its reliance on mineral commodities has long been acknowledged by government. One of the sectors of the economy earmarked for diversification was the manufacturing sector. However, in spite of government efforts to promote this industry, the sector's contribution to Gross Domestic Product (GDP) has remained small and even declined in recent years. An investigation into those structural features of the economy which are responsible for this record and impose limitations on the sectors' future development is therefore of great relevance. This study attempts such an investigation by focusing mainly on one aspect of the problem: those features related to booms in the minerals sector. More specifically, the study examines the effect of the real exchange rate and real wage rate movements. It also uses case study and survey data to gain insight into other major factors responsible for industrial development and to corroborate the conclusions reached on the basis of macro-economic data.

The data collected suggest that Botswana has managed its mineral windfalls relatively well. It shows that the major effects through which mineral windfalls corrode competitiveness of industry -- real exchange rate appreciation and real wage rate increases -- have been successfully avoided. It is argued, therefore, that the country's industrial backwardness does not necessarily arise from booms in the mining sector. This conclusion is supported by the firm survey which found that low productivity, high utility costs and the lack of skilled labour

to be the major impediments to industrial development.

The study is intended as a contribution to understanding of the impact of mineral windfalls on the industrial development process in Botswana, but it also offers some policy prescriptions. The major policy recommendations that emerge are that wage rate increases should be tied to productivity improvements, productivity should be raised to international levels through training and the exchange rate be managed in such a manner that it does not undermine the ability of industry to compete in the Southern African Customs Union market.

Chapter one provides an outline of the Botswana economy, which shows the extent of its dependence on mineral commodities, its openness, the insignificance of industry, and the past growth pattern. It also outlines the research methodology used in the study.

Chapter two briefly makes a case for industrial development before reviewing the major theoretical literature on industrialization in the presence of booms in the minerals commodity sector. It is argued that the need for industrial development in Botswana emanates not only from the important role that industry plays in development, but also from the risks associated with the current economic structure. To gain insight into the policy approaches appropriate for sustainable industrialization in the presence of mineral booms, the experiences of other mineral economies are reviewed.

Chapter three presents Botswana's experience in relation to the above. Using macroeconomic data, it is shown that Botswana's industrial development can be divided into three phases, 1966-1980; 1980-1990 and 1990-95. Growth in the first phase, although rapid, was dominated by one industry -- meat and meat processing. The second phase, which coincided with booms in the mining sector, is characterised by strong growth in employment, output and the number of enterprises registered. The 1990s show weak

growth at the start of the period, but growth rates improved slightly from 1994. However, it is concluded that while the strong growth during the boom period of the 1980s can be attributed to the windfalls, it is difficult to support the view that the slack in the early 1990s was a result of the effects of the windfall. This conclusion is further supported by the results of a case study/survey (presented in **Chapter four**) which show that the major consequences of mineral windfalls -- the strength of currency and high wage rates -- were not reported as major obstacles to the operation of the firms interviewed.

Chapter five brings together the findings in chapter three and four to make conclusions and policy recommendations. It is concluded that the boom in the minerals sector is not responsible for industrial backwardness in Botswana, at least not through the corrosive effects of the Dutch disease. The major constraints arise from lack of skills, lack of material inputs at reasonable prices, high utility and transport costs, and perhaps the countries membership in the Southern African Customs Union. However, although the latter could have contributed negatively to past industrial development, it now offers a window of opportunity for the sector's development.

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CHAPTER ONE

Objectives and Scope of the Study

1.1 Introduction

Development economics has long held that industrialization is an essential component of development and growth.¹ Despite recognizing and endorsing the need for industrialization, Botswana still lags behind in manufacturing development. For over a decade, Botswana's development has been dominated by minerals, with industry contributing as little as six percent of total Gross Domestic Product (GDP). This share has been declining since independence. However, with growth prospects for the mineral sector levelling off, industry will have to take over as the engine of sustainable economic growth will increase.

This paper examines the process of industrialization in Botswana, and investigates the structural features of the economy that account for the past industrial development record and impose limitations on its future expansion. Since evidence from international experience demonstrates that small market size and booming commodity export sectors are the main impediments to industrial development of small primary-resource oriented economies, it is reasonable to claim that these two factors have retarded the process of industrialization in Botswana. Although market size is an important factor, this paper is mainly concerned with the effects of the mineral boom. This is because the effects of market size are mitigated by Botswana's membership of the Southern African Customs Union (SACU), which has a total population size of over forty-six million people. However, the benefits of SACU membership for industrialization have been

¹. Industrialization in this study is defined as the development of the manufacturing sector. Industry and manufacturing will be used interchangeably throughout this paper.

questioned, most notably by Selwyn.² Nevertheless, the fact that goods produced in Botswana have free access to the South African market suggests that market size *per se* is a minor constraint on Botswana's industrial development.

1.2 Background

■ Botswana is a small commodity exporter whose economic growth is heavily dependent on mineral exploitation. As table 1.1 shows, Botswana has an unusually high mineral dependence index, about 62.³ Mining sector's contribution to GDP rose from almost zero in 1966 to a peak of 51% in 1983/84 before falling to 35% in 1994. This mineral growth brought with it phenomenal growth to the economy as a whole. GDP grew at an annual average of 14.5 per cent during the period 1970-1980; 10.1 per cent during 1980-1990 and 3.9 per cent during 1991-95. Although such growth was recorded off a very low base, about US\$36.8 million (1990 prices), it was sufficiently rapid to promote Botswana into a category of upper middle income countries in terms of its per capita GDP. In fact, Botswana has one of the highest per capita incomes in Sub-Saharan Africa - and it owes this distinction primarily to exploitation of diamonds.

². Selwyn (1975) in his "small country problem", has argued that the industrial backwardness of Botswana and the other three SACU members was a result of their membership in a Customs Union with a large member (South Africa). He argued that the Union led to the establishment of a growth pole (South Africa), which discouraged industrial development in the periphery (other members, including Botswana).

³ Mineral dependence index is the mean of minerals' share of merchandise exports and minerals as a percentage of GDP.

Table 1.1 Mineral Dependence Indices of Selected African Countries, 1991

Rank	Country	Minerals as % of merchandise exports	Minerals as % of GDP	Mineral dependence index
1	Nigeria	96.0	38.7	67.3
2	Botswana	83.0	41.0	62.0
3	Gabon	89.0	31.2	60.1
4	Zambia	98.0	18.5	58.3
5	Congo	92.2	23.6	57.9
6	Angola	82.1	30.8	56.5
7	Guinea	82.7	25.0	53.9
8	Namibia	76.0	29.0	52.5
9	Niger	86.0	7.6	46.8
10	Zaire	67.9	16.0	42.0
11	South Africa	53.3	9.1	31.2
12	Mauritania	50.5	11.3	30.9
13	Cameroon	51.3	9.4	30.4

Source: Adapted from Davis, 1995.

■ The economy can be described as extremely open. Approximately 52% of the GDP is exported while the same percentage is imported. The total trade/GDP ratio was 103.5 percent in 1993/94. As table 1.1 shows, about 83 percent of the exports were minerals, the bulk of which were diamonds. Botswana is a member of a number of trade organizations. It is a member of the Southern African Customs Union (SACU), the Lome Convention and has a bilateral trade agreement with Zimbabwe. Under the Customs Union, goods produced within member states can move freely across the borders, while a common tariff is placed on all goods imported from outside the union. Other members of the union are South Africa (40), Lesotho (1.9), Namibia (1.6) and Swaziland (0.9).⁴ The bilateral trade arrangement with Zimbabwe (10.6) allows for trade in manufactures which is free of quantitative import or export restrictions and customs duties. Under the Lome Convention Botswana's exports enjoy tariff free access to European Economic

⁴. Figures in brackets represent population sizes (millions) as in 1993.

Community (EEC) under a negotiated quota system. It also allows limited quantities of specified exports to enter industrialized country markets at reduced tariffs.

■ In terms of industrial development, Botswana is still lagging behind (see table 1.2). Industrial output in 1994 was a paltry P232 million. There were approximately 2,718 manufacturing firms in operation in 1994, of which only 700 had total investment of over P10000 or employed more than four people. Hence, manufacturing accounted for only 5 percent of national output. Apart from meat-processing and related products and a few other manufactures, industry is mainly concerned with minor processing of imported materials.

Table 1.2 Industry's Share in Economic Growth

	1970-1980	1981-1990	1991-1994
Share of GDP (%)	8	6	6
Share of Non-mining GDP		10	9
Share of total employment	6	10	9.8
Real Growth (Annual average)	16.8	10.9	-2.3

Source: Central Statistics Office (various issues).

1.3 Objectives of the Study

It is clear that the manufacturing sector is very small in terms of its share of total output and employment. Its growth also, has declined in recent years. Given the important role that industry has to play Botswana's development, it is essential that the causes of this situation are understood so that appropriate policies can be formulated to reverse the process. The aims of this thesis are, therefore, to:

1. summarize the record of industrial development in Botswana;
2. explain and interpret this record in terms of the impact of booms in the minerals sector; and

3. assess the constraints on manufacturing development and the policies required for sustainable industrialization.

1.4 Research Methodology: Data Collection and Analysis

1.4.1 Data Collection

Two main approaches have been used to collect data for this study. One approach was library based and provided the data to trace patterns and episodes in industrial development and interpret them within the broad macroeconomic picture. They help answer questions such as, has there been a real exchange rate appreciation or wage rate increases? However, data from these sources are aggregated in nature and thus do not say much about firm-specific problems, such as information on the common characteristics of successful exporters or why some firms are not into exports. Data on firm-specific problems was obtained by means of a survey.

1.4.1.1 Survey

The other approach is microeconomic in nature and involved the use of a questionnaire. The aim of this approach was to ascertain what firms perceive to be the most important factors affecting the pace and direction of their development and to establish if these views support the picture painted by the aggregate data mentioned above. While the sample involved was too small to lend itself to statistically significant generalizations, it nevertheless provides a deeper understanding of the nature and extent of the most common factors affecting the firms interviewed.

Sampling Design and Procedure

Sampling methods can be divided into two main categories, probability and non-probability. The former is superior in that it provides a statistical basis for saying that the sample is

representative of the target population. However, it is not always the most appropriate. The choice of sampling method depends, *inter alia*, on the aim of the study and resource availability. In this study the non-probability approach was considered to be more suitable. The main aim of the selection was to ensure that about half the sample were exporters. This is because exporters are most likely to be affected by the exchange rate appreciation or high wage rates. Further, the small domestic market also dictates that sustainable industrial development can only be achieved through exports. Since time and resources did not permit a large sample to be taken, it was probable that the sample selected using the probability approach would have included very few exporters, if any. Resource constraints also dictated that the sample be taken from one geographical area in order to minimize travelling time, transport and other costs. The probability approach would not have guaranteed this.

Sampling

The sample was based on a two stage stratification. First, a cluster of firms was conveniently selected. Then a list of all firms registered and operating within the cluster was used to select the sample.⁵ The sampling frame was divided into two. The division was based on level of labour employment or total investment, whichever was lower was used as the cut-off point. Firms with total employment of over 150 or total investment of over P5 million were categorized as exporters. Ten firms were then selected from this group using a simple random procedure. Another fifteen firms were selected from the other group using the same procedure. Thus, twenty five firms were selected for interviews.

⁵. The list was obtained from the Ministry of Commerce and Industry. The list excluded all those firms which employed less than four people or had total investment of less than P10 000.

The Questionnaire⁶

There are two possible ways by which a questionnaire based survey can be conducted.

1. Questionnaire can be mailed to firms,
2. Questionnaire can be used as a basis for a telephone or face-to-face interview.

Although the former is cheaper and more convenient, it has many problems when detailed information is required. People generally hate questionnaires, especially when they know that there are no direct benefits to be obtained from their participation. Thus, they might fill them in hurriedly or give them to their subordinates to fill in. It was, therefore, decided that face-to-face personal interviews were the most appropriate.

To ensure a high response rate, two letters, one explaining the purpose of the study and the other requesting the respondent to set a date for an interview, were attached to questionnaires and addressed personally to the managing director or general manager of the respective firms and delivered to firms. This was followed by telephone calls to ensure that the questionnaires reached the intended respondents. All the interviews were conducted by the researcher using the same questionnaire. The questionnaire was first piloted in April 1996 in Gaborone, after which a number of changes were made. Respondents were generally managing directors, general managers and in one case a financial controller.

Problems of Survey Method and Reliability of Data

As already mentioned, the selection procedure for the cluster was biased. This was due to a lack of resources. While a more geographically dispersed sample would have been more representative, it would have spread the resources too thinly and thus made it impossible to gain an indepth understanding of the

⁶. For a copy of the questionnaire used in the study, see Appendix 1.

cases studied. The selection of ten firms from an arbitrarily chosen group also introduced some bias towards large firms. However, this was to ensure that exporters and potential exporters were included in the sample.

All interviews were conducted between January 6 and February 2 1997, a time when many firms had just reopened after Christmas break. Because of this, some of the firms were still busy organizing themselves for the year and thus could not be interviewed. As a result, only eighteen firms were interviewed.

1.4.2 Data Analysis

The choice of the method for analysis depends on the aim of the study and on the nature of data collected. In this study, the main aim was to gain an understanding of the growth pattern and the structural constraints that industry faced as a result of booms in the minerals sector. The other aim was to gain an understanding of those major factors (not necessarily boom-related) which dictated the pace and direction of the development of firms.

The study adopts an interpretative approach to analyze data obtained from both the literature surveyed and the firms interviewed. Statistical data are interpreted to show the relationships between episodes in industrial development on the one side and policies and changes in variables related to booms on the other side. Data from the interviews were also analyzed to see if the problems that the firms reported could be linked to booms in the minerals sector.

CHAPTER TWO

Economic Structure and Development: Theory and Experience

2.1 The Case for Industrialization

The previous chapter has shown that the economy is highly dependent on the mining sector, with industry's role almost insignificant. It shall be argued that the current economic structure creates development problems and should, therefore, be diversified. A considerable amount has been written on the problems of mineral dependence, the importance of industry and the problems of manufacturing development in the presence of mineral commodity booms. These issues are the subject of this chapter.

2.1.1 Risks of Mineral Dependence

Many theories have been advanced to show that reliance on mineral commodity exports can be detrimental to sustained development if not correctly managed. These theories state that mineral economies need to be diversified in order to avoid the dangers associated with dependence on commodity exports.⁷

Unequal Exchange

One of the earliest arguments against reliance on primary goods export was put forward by Prebisch and the United Nations Economic Commission for Latin America (1950). They argued that, the terms of trade for countries producing primary goods will continue to fall and thus hamper their economic development. The

⁷. There have been counter arguments to the arguments presented here, the most recent came from Davis (1995). In his article, "Learning to Love the Dutch Disease: Evidence from the Mineral Economies", Davies concluded that there is not enough evidence to suggest that booming minerals sectors are a developmental curse.

theory further argues that demand for primary commodities is highly sensitive to economic conditions in the consumer countries. Thus, reliance on mineral commodities creates dependent economies which are highly vulnerable to the vagaries of international trade. This argument was supported by Gelb's cross country study(1988), which showed that mineral dependent countries were prone to wide fluctuations in export prices and revenues. In Botswana's case, where the economy depends on just one commodity, this problem will certainly be exacerbated.

Staple or Export Base Theory

One of the theories in favour of primary export-led growth, the export base or staple theory, argues that expansion of a primary export can lead to a diversified growth through economic linkages. The theory identifies four linkages through which the expansion of the export sector spreads to other sectors and these are:

- backward linkages - establishment of firms to provide inputs to the export staple;
- forward linkages - establishment of firms to process the staple product before it is exported;
- fiscal linkages - spending of government tax revenues levied on the staple and,
- final demand linkages - activities set up in response to the local spending of wages and profits by labour and owners.

However, according to the World Bank(1979), extension of the staple theory to the minerals sector has shown that mining has relatively few production and consumption linkages with the rest of the economy. As a result, the benefits of booms in the sector are not easily spread throughout the economy. This is because mining is by nature capital and skill intensive and thus requires inputs that are not abundant in developing countries. In addition, some mineral commodities do not lend themselves to processing in less developed countries. In Botswana, diamond mining is both capital and skill intensive and as such does not

impact much on employment. Further, contractual agreements between Botswana and the Central Selling Organization are that diamonds from the former should be sold to the latter in a rough form. Therefore, there are no forward linkages in the diamonds sector.

Nevertheless, the minerals sector does show strong fiscal linkages with the economy. The problem with this form of linkage is that, it depends on the ability of governments to tax the profits and how such monies are absorbed. Evidence from international experience demonstrates that many governments have had difficulties with the absorption of mineral rents (Auty, 1993; Gelb, 1988).

Resource Curse Thesis

The resource curse thesis is akin to one of the most popular theories of mineral-led development, the "Dutch disease", which is reviewed in section 2.2.1. According to this thesis, mineral economies can perform worse than they would if there were no minerals (Auty, 1993; 1995). This arises when the negative effects of boom-related spending more than offset the growth that has been brought about by the windfall.

Although researchers do not agree on whether mineral booms hinder or further economic development, arguments against excessive reliance on minerals are compelling, especially when the exhaustible nature of mineral resources is taken into consideration. Mineral deposits are limited in quantity and thus any mineral dependent economy will at some point have to contend with being without them. This situation poses a higher level of risk for an economy that depends on one mineral commodity, such as Botswana. Such a development would create tremendous problems for the economy unless remedial action is taken well in advance. This suggests that "the mineral sector should be regarded as a bonus with which to promote competitive economic diversification rather than as the backbone of the economy" (Auty, 1993: 10).

2.1.2 Significance of Manufacturing Sector

The conclusion that emerged from the previous section is that, dependence on mineral economies can be risky and thus economies should be diversified. Attention is now focused on the sector towards which the economy should be diversified - industry.

Industrialization has historically been the central feature of development. Prebisch's (1950) arguments were extremely influential in making industrialization a key concern of developing countries. Chenery et al (1986) argued that there is no alternative route to structural transformation that economic development entails. Recent literature on industrialization (Chenery et al, 1986; Lall, 1992) seems to have settled on the following points as the characteristics that make industry important to economic development:

- The income elasticity for manufactured goods is relatively high. That is, as income rises, demand for manufactures rises more than proportionately. Thus, if a country does not industrialize, it runs the risk of balance of payments problems arising from an increase in imports as its income increases;
- Manufactures are highly tradable. This suggests that industrialization permits a country to enjoy economies of scale arising from serving a large international market;
- The establishment of industries in accordance with comparative advantage permits the reallocation of capital and labour to more productive uses and exploits potential gains from specialization and economies of scale;
- Manufacturing growth is one of the main sources of technological change.

Even the World Bank's (1981) Berg Report which was critical of the excessive emphasis which some African countries placed on

industrialization argued nonetheless that:

Industrialization has a crucial role in long term development; it is one of the best training grounds for skill development; it is an important source of structural diversification and it can increase the flexibility of the economy and reduce dependence on external forces. Industrialization also provides employment, foreign exchange and domestic savings (p. 91).

Perhaps these arguments apply even more forcefully to Botswana because of its excessive reliance on a single export commodity and poor agricultural resources. Thus, if Botswana is to develop further, it needs to change the structure of the economy and diversify into manufacturing. This has been accepted by the Botswana government, which since 1982 has emphasised in each Budget Speech that the manufacturing sector should be developed to take over as the engine of growth when the mining sector loses momentum.

However, industrialization does not take place in a vacuum and as such, cannot be seen in isolation from other sectors of the economy. Developments in other sectors can promote or hinder development of industry. The next section discusses the problems of industrialization in the presence of a booming minerals sector.

2.2 Mineral Economies and Industrialization

Mineral economies, as defined by Davies (1995), are those developing economies which generate at least 40 percent of their exports and 10 percent of their GDP from minerals. Figures for Botswana were 83 and 41, respectively in 1991, and thus put the country in the category of extreme cases of mineral dependence. Although these economies provide advantages of extra foreign exchange and additional government revenue from mineral exports, together with an added industrialization option from the processing of minerals, recent studies show that mineral economies have hardly outperformed non-mineral economies (Auty,

1993; 1995 and Gelb, 1988). The problem arises mainly from the management of the booms, which has proved difficult for many governments.

2.2.1 The Dutch Disease

Mineral windfalls can give rise to an economic situation referred to as the Dutch disease. The term "Dutch disease" denotes the coexistence of booming and lagging sectors in an economy due to an increase in export earnings. This phenomenon arises when a boom in say, the minerals sector leads to real exchange rate appreciation, which in turn damages growth of output of other tradable sectors, and when resources, in anticipation of higher returns, move from the latter to the former. For one to understand how this happens, a definition of the real exchange rate is necessary. The real exchange rate is defined as;

$$RER = R_o(P_n/P_t),$$

where, RER is an index of the real exchange rate, R_o is an index of the official(nominal) exchange rate, P_n is an index of domestic prices(non-tradable goods) and P_t is an index of prices in world trade(tradable goods). Increases in mineral exports can cause the real exchange rate to appreciate either by raising R_o or (P_n/P_t) . For instance, higher export earnings cause a surplus of foreign currency, which in turn lowers its price in domestic currency. This will raise the nominal exchange rate(R_o). If (P_n/P_t) is held constant, then the real exchange rate will appreciate. Similarly, additional income from mineral windfalls boosts demand for both tradable and non-tradable goods. However, since the price for traded goods(P_t) is determined in the world market, it will remain constant, while that for non-traded goods(P_n) rises(see spending effect). If there is no intervention, the real exchange rate will appreciate and thus, undermine the ability of domestic tradable goods to compete with imports. An explanation of how this happens is provided in the next sub-section, using the Corden-Neary(1982) small open economy model.

Corden and Neary(1982) traced the corrosive impact of mineral windfalls on the economy to be a result of two effects: the spending and resource movement effect.

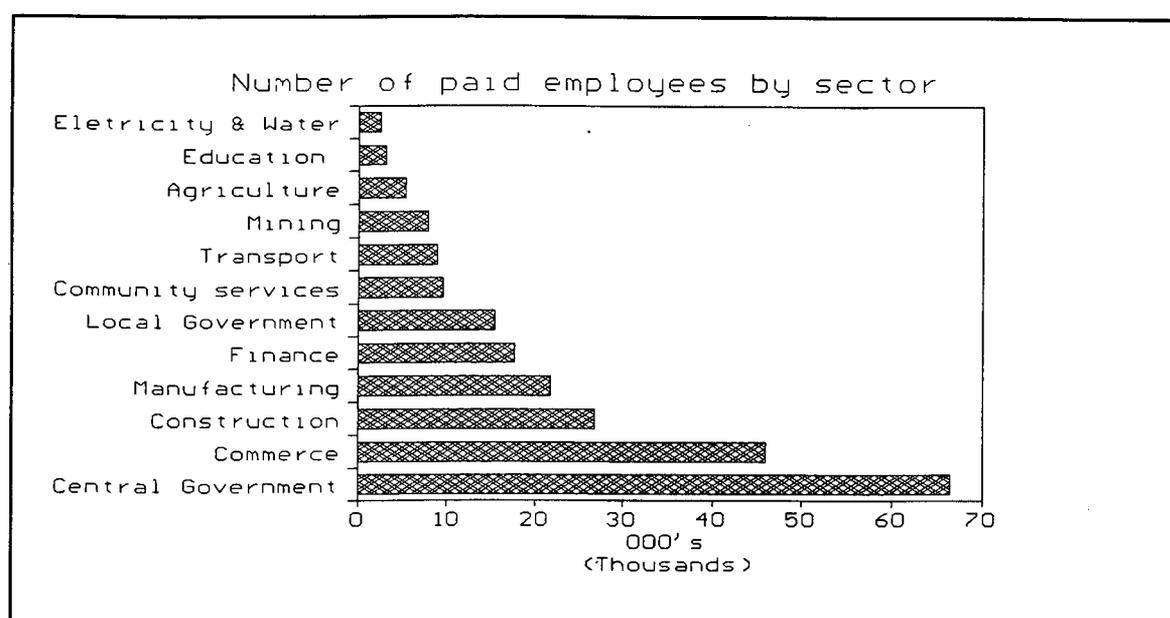
A resource movement effect occurs where a boom in the mining sector raises the marginal products of the mobile factors employed in that sector and thus attracts resources from the manufacturing sector, resulting in de-industrialization. For instance, an increase in the world price of minerals will raise returns to capital(profits) and labour(salaries and wages) in that sector. This will attract those resources away from the manufacturing sector. The movement of labour and capital from the manufacturing sector will result in a reduction in the sector's output. This effect will be large if there is perfect factor mobility. Wage and salary increases in the boom sector can also lead to wage increases in manufacturing as firms attempt to retain workers by offering wages equivalent to those in the mining sector. This, in turn increases the costs of production and thus further undermines industry's competitiveness.

However, in reality the extent to which factors can be moved from one sector to another is limited. For instance, certain skills and machines are sector-specific and will thus remain in certain sectors, irrespective of their returns elsewhere. Further, the booming sector, such as the diamond industry in Botswana, may use relatively few resources that can be drawn from other sectors.

In Botswana, most of the financing for the mining investments came from outside the country. For instance, all financing for the Orapa and Letlhakane mines and the related township were provided by South African-based De Beers Consolidated Mines. The government's major participation in the diamond investment was only in the development of the Jwaneng mine, where it took a 20 percent equity share of the total P280 million capital costs(Harvey and Lewis, 1990). The mining industry also accounts for a relatively small share of national employment(see figure 2.1). Therefore, it can be argued that the sector did not attract

significant resources from the manufacturing sector. In situations like this, the resource movement effect will be negligible and the major effect of the boom will have to come from the spending effect.

Figure 2.1 Formal Employment by sector, 1994



Source: Statistical Bulletin, 1995

A spending effect occurs where a boom in the minerals sector raises wages, salaries, profits and government tax revenue, which in turn raise domestic demand for both traded and non-traded goods. Since the price of tradable goods is determined in the world market, it will not rise, while that of non-tradable goods will rise in response (non-traded goods are assumed to be normal goods in aggregate). That is, prices of construction, transport, labour, services and other non-traded goods will rise while that for output remains constant. In this way the real exchange rate will be overvalued. This implies that producers of traded goods face rising prices for their purchases of non-traded goods and services but cannot charge higher prices for their output. This will squeeze their profits and as a result some will cut employment and output or even close down.

The increased prices in the non-traded sector can also lead to

a further contraction of the manufacturing sector through the resource movement effect. For example, if the non-traded sector is construction, an increase in the price of buildings (from increased domestic demand) will raise returns to labour and capital in that sector and attract these resources away from the already uncompetitive manufacturing sector, thus weakening it further.

The Model

The Corden-Neary (1982) models adopt a framework of a small open economy producing two traded commodities, minerals and manufactures and one non-traded good, services. This paper considers only one model: where each of the sectors uses two factors, one of which is specific to that sector and the other, labour, being perfectly mobile between sectors.

The model assumes that all goods are used for final consumption and not as inputs. There is no taxation of commodity gains and international capital is not mobile. The model also ignores monetary considerations and concentrates on real variables. Therefore, R_0 in the equation above is a constant. The prices of traded goods are assumed given while those for services are flexible. Thus, the real exchange rate varies with the price of non-traded goods such that an increase in the price of non-traded goods will lead to real exchange rate appreciation. Real exchange rate appreciation in turn undermines the ability of local manufacturers to compete with imports.

Figures 2.2 and 2.3 (adapted from Corden and Neary, 1982) are presented below to illustrate the effects of the boom on the labour and commodity markets, respectively. The pre-boom equilibria are attained at points A and a. The effects of the boom are traced separately the using resource movement effect and the spending effect.

Let 1. L represent labour demand and T, M and S represent

total traded (manufacturing and mining), manufacturing and service sectors, respectively, so that L_T , L_M and L_S will represent labour demand schedules in the three sectors.

2. TS represent the pre-boom production possibility curve (PPC).

Resource movement effect (RME)

The model assumes that the source of a boom is a Hicks-neutral technological improvement in the mining sector. The booming sector labour demand schedule shifts upwards by an amount proportional to the extent of the technological progress: This causes the composite labour demand schedule L_T , in figure 2.2, to shift to L'_T , and the new equilibrium will be obtained at B. At a constant real exchange rate, the wage rate is pushed to w_1 , and thus causes labour to move out of both manufacturing and services sectors. Manufacturing employment falls from $O_T M$ to $O_T M'$. In this way direct de-industrialization occurs. On the commodity market (figure 2.3), the boom raises maximum output of traded goods, while output of services remains the same. The production possibility curve therefore shifts to $T'S$. The resource movement effect is represented by the movement of production from point a to b. This implies that the movement of labour from services and manufacturing to mining led to a fall in output of services and an increase in production of tradable goods.

Abstracting from the spending effect, the income elasticity of demand for services is assumed to be zero. This implies that the income consumption curve is a vertical line that goes through point a and intersects $T'S$ at j. At the initial exchange rate, there will be excess demand ($OS_0 - OS_1$) for services at point j. To restore equilibrium, the real exchange rate appreciates and thus partially ameliorates the resource movement effect. Therefore, the final point lies between b and j, implying a lower output of services than at the initial equilibrium.

Figure 2.2: Effects of the Boom on the Labour Market

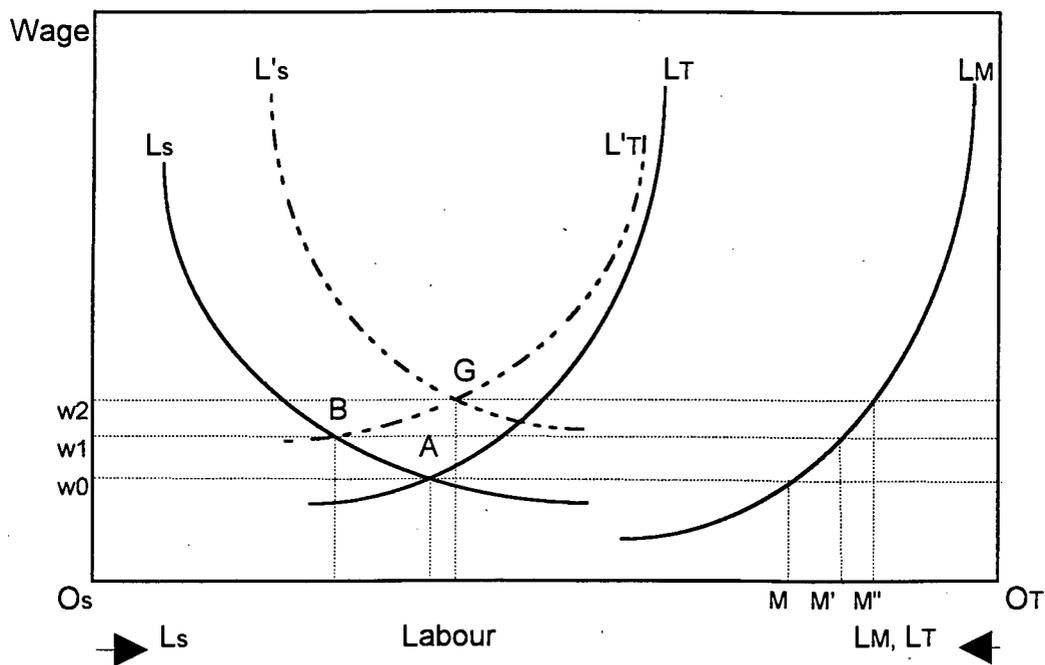
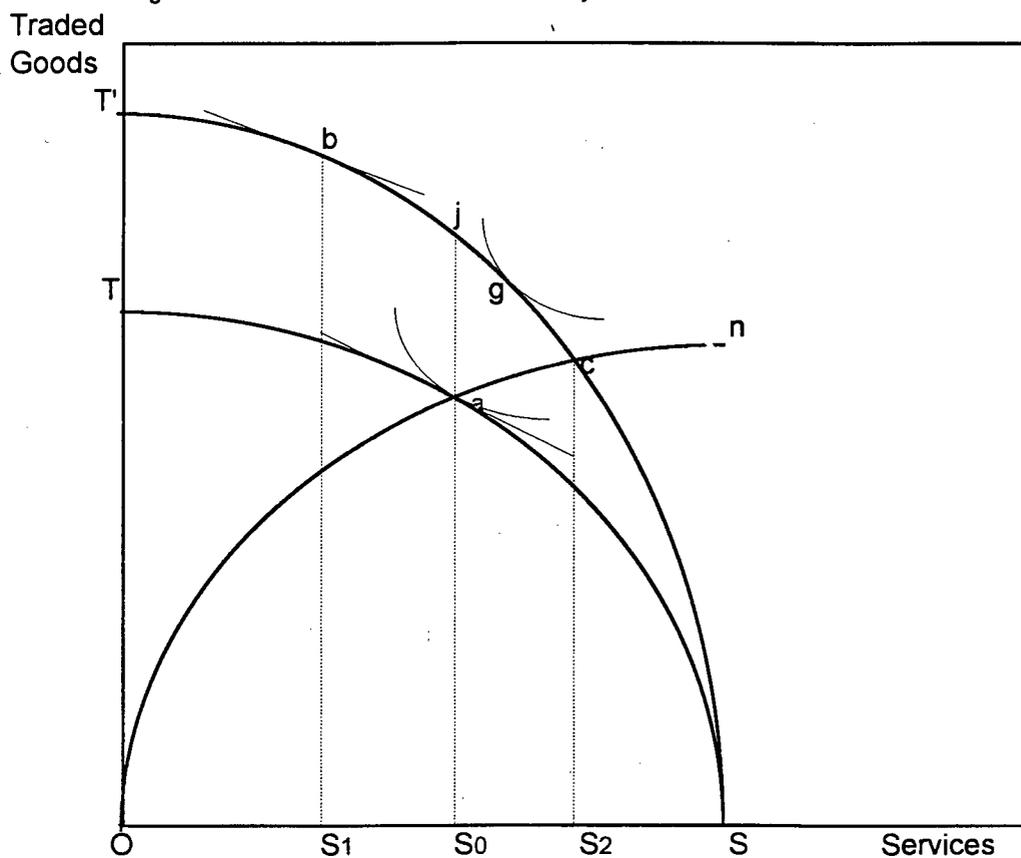


Figure 2.3: Effects of Boom on Commodity Markets



Source: Adapted from Corden and Neary, 1982. p. 825-826.

Spending Effect (SE)

Abstracting from the resource movement effect, a booming sector is assumed to be an enclave. That is, it does not use any labour. At the initial real exchange rate, the boom displaces the PPC in figure 2.3 vertically upwards so that production will be at point j . There is no effect on figure 2.2 as the booming sector does not use any labour. If services are assumed to be normal goods (in the aggregate), then the income consumption curve (ICC) will be O_n , intersecting $T'S$ at c . At the initial exchange rate, there will be excess demand for services ($OS_2 - OS_0$) at c . The real exchange rate will therefore appreciate to restore equilibrium. The new equilibrium will be obtained at a point somewhere between c and j , say g , implying that output of services definitely rises. Going back to figure 2.2, a rise in the price of services will shift the labour demand schedule for services to L'_s , and it will intersect the tradable sector demand for labour schedule at point G , which will be the final equilibrium. As a result, wages rise further to w_2 , and in turn reduce manufacturing employment from O_1M' to O_1M'' . As employment falls, so will the sector's output. Thus the boom leads to indirect de-industrialization as well.

To find the total effect of the boom, the two separate effects are combined. The following conclusions are reached:

1. Both effects induce real exchange rate appreciation; the final point is g , a higher relative price of services than at the initial equilibrium at a .
2. Direct and indirect de-industrialization occur in the lagging tradable goods sector so that output and employment unambiguously fall.

Using the above analysis, Corden and Neary (1982) show that, de-industrialization, defined as a fall in employment and output in manufacturing, unambiguously occurs as a result of a boom in the minerals sector. The inevitable implication is that for a mineral

economy to industrialize, it will have to contend with the task of mitigating the effects of the Dutch disease. The question that can be asked at this juncture is how can de-industrialization be avoided?

In reality, governments are the major recipients of mineral windfalls and thus their spending policies have profound effects on the real exchange rate. Governments can, therefore, spend the revenues in such a way that they do not cause the real exchange rate to appreciate. The nominal exchange rate (R_0) also, can be devalued to enable local products to compete with imports. Governments can also use income policies to hold down the price of labour and thus limit the resource movement effect. Another option is to subsidize industry.

The next section reviews how booms in commodity exports affected industrial development in other mineral economies.

2.3 Other Countries' Experiences

A number of recent studies have showed that mineral windfalls led to rapid and sustained industrial growth in some economies, while in others it resulted in contraction (Gelb et al, 1988; Auty 1993). The main difference in performance comes from the windfall absorption policies adopted by individual countries. Those countries that tended to spend their increased mineral revenues too fast performed badly, while prudent spenders performed exceptionally well.

2.3.1 Nigeria⁸

In the early seventies the Nigerian economy, just like that of Botswana, was dominated by agriculture, which accounted for

⁸. Based on Bienen, "Nigeria: From Windfall Gains to Welfare Losses?" in *Oil windfalls, Blessing or Curse?*, Gelb et al 1988, p. 227-260.

approximately 40 percent of non-oil GDP and 42 percent of commodity exports, and employed roughly 70 percent of the work force. This state of affairs was, however, to change after the oil embargo and the emergence of OPEC as an effective cartel, which led to large increases in the price of petroleum.

By the late seventies, the minerals share of GDP was more than 25 percent. Petroleum exports rose to well over 90 percent of total exports in 1979, and accounted for four-fifths of total government revenue. At the same time non-oil exports collapsed and the relative size of the agricultural sector declined sharply. The industrial sector did not fare any better. Economic growth slowed from 9 percent before the boom to an average of 2.5 percent during the 1974-84 period. This was due to the Nigerian government spending windfalls too quickly and resulting in real exchange rate appreciation. Nigeria is today cited as a good example of an economy suffering from Dutch disease (Auty, 1995).

This situation arose from the way the Nigerian government spent its oil windfalls. When the price of petroleum rose sharply in 1973-74, the government's oil revenues increased almost five times. The government found itself with more revenue than it had anticipated. Instead of saving part of the surplus as foreign reserves, the Nigerian government appears to have been too eager to spend all the gains. For instance, public investment rose from about 4 percent of GDP in 1970 to 30 percent 1976. Most of this spending was on primary education and roads, which necessarily meant that related recurrent expenditure had to rise rapidly as well. The average pay of civil servants also doubled in 1975. The government invested heavily in inefficient resource based manufacturing industries, which were protected from competition by tariffs and some direct controls.

These fiscal excesses were financed by drawing down on the reserves accumulated earlier and by expanding the money supply. The result was upward pressure on prices. With the nominal exchange rate fixed, the real exchange rate appreciated

considerably. By 1984, the real exchange rate had appreciated by almost three times its 1970-72 level, thus making the tradable sector (other than the oil sector) uncompetitive. The result was a fall in non-oil exports by about 90 percent during the 1974-84 period. In the non-mining sector, GDP swung more to the non-traded sector and the growth rate dropped to 60 percent of the pre-boom rate - a sign of Dutch disease.

The experience of Nigeria provides some important lessons for Botswana. Too rapid expenditure of mineral windfalls led to a real appreciation of the exchange rate which in turn made the manufacturing sector uncompetitive. Resource-based industries, which were established through government subsidies, were inefficient and their survival depended on government protection. The real exchange rate appreciation also made those industries with export potential uncompetitive internationally. Increases in salaries also increased production costs and stifled industrial development.

2.3.2 Zambia

Just like Botswana today, Zambia at independence in 1964 had one of the highest per capita incomes in Sub-Saharan Africa (SSA), and it too owed that distinction primarily to the mining sector. However, Zambia has today slipped to the bottom of the scale and this situation can be put down to the windfall absorption policies of the government, which tended to ignore effective diversification. Although the Zambian government was aware of the risks of excessive reliance on copper and consequently attempted to diversify to manufacturing, it was difficult for the sector to develop because the environment was not conducive to sustainable industrialization.

In addition to real exchange rate appreciation, which resulted from rapid windfall spending, Zambian industry faced two other problems. Firstly, government increased wages and salaries of urban workers ahead of productivity improvements. This undermined

industry's competitiveness. Secondly, the government transferred large sections of industry into the public sector (Auty, 1993). This tended to undermine the efficiency of the sector as managers were appointed on the basis of political inclinations, rather than qualifications (Galhuti, 1989). To ensure survival of these inefficient enterprises, government erected high protective walls.

Although manufacturing grew strongly in the first decade after independence, the weakness of the approach showed when the copper prices fell in the mid seventies. Foreign exchange shortages created problems for the large scale import-dependent firms that dominated the industry. Their situation was exacerbated by a depreciation in the real exchange rate in 1974-78. As a result, industrial output started to fall.

The lessons learnt from the Nigerian experience apply here as well. That is, the government should suppress the effect of the boom through prudent macroeconomic policies rather than try to protect industry through erection of trade barriers.

2.3.3 Papua New Guinea (PNG)

Auty (1993: 219) concluded that, "PNG confirms that even a well-managed mineral economy will under-perform if it neglects its non-mining tradable goods." Unlike Nigeria and Zambia, PNG has a reputation for soundly orthodox macroeconomic policy, shrewd management of its mining sector and a minimalist industrial policy. However, despite its good minerals and macroeconomic management record, PNG's GDP growth rate fell from an average of 6.5 percent during 1967-73 to 2.1 during 1973-88. The manufacturing sector also has remained extremely weak (ibid. p 203). This was because of high wages and an overvalued currency.

The experience of PNG demonstrates that getting the environment right through sound macroeconomic policy alone, is not enough to pave the way for successful industrialization. There is a need

to support the sector through other policies, especially when the domestic market is too small to offer any economies of scale.

2.3.4 Indonesia⁹

In 1974, Indonesia was the most populous and poorest of all the countries that benefitted from oil windfalls. However, unlike in Nigeria, Zambia and PNG, the windfalls led to rapid economic growth and industrial development. This was because of a combination of prudent macroeconomic management and substantial support to industry.

The 1973-74 oil boom raised oil contribution to 16 percent of non-mining GDP, while the 1979-80 boom raised it to 23 percent. As was the case in Nigeria and Zambia, the government chose to spend most of the initial windfall on public investment. The result was a real exchange rate appreciation of about 33 percent. Thus, the initial impact was similar to that experienced in Nigeria, Zambia and other mineral economies. However, the final outcome was significantly different from that of other mineral economies. Indonesia stood out as a country that maintained high non-oil growth rates during the boom.

As mentioned earlier, successful management of windfalls depends on the absorption policies adopted. Indonesia maintained macroeconomic balance throughout the boom and devalued its exchange rate to avoid real exchange rate appreciation. The exchange rate was devalued in 1978, 1983 and 1986, after which it was managed flexibly. The government also maintained foreign exchange reserves - about \$5 billion in 1980. Unlike in Nigeria, Indonesia exercised stringent management of the money supply. These restraints restricted the impact of oil windfalls on inflation. Thus the macroeconomic environment encouraged the expansion of non-oil production. The availability of a large

⁹ Based on Bruce Glassburner, "Indonesia: Windfalls in a Poor Rural Economy," in *Oil Windfalls, Blessing or Curse?*, Gelb et al 1988, p. 197-226.

labour surplus in the agricultural sector also helped to keep real wages down.

Indonesia, like Nigeria, followed a strategy of diversifying into resource-based industrial (RBI) investments as an alternative source of foreign exchange. As was the case in other mineral economies, manufacturing production was generally oriented towards the domestic market and was frequently given high levels of protection. However, unlike in Nigeria, RBI financing had significant foreign equity. They were also protected from downturns in markets by forward contracts with some countries. As a result, Indonesian RBI's were relatively successful.

Indonesian manufacturing exports also showed rapid expansion in general. For instance, in the year after the 1978 devaluation, manufactured exports (39 six-digit categories of Brussels Tariff Nomenclature) rose by 260 percent. The same happened with exports of miscellaneous manufactures after the 1983 devaluation. This contrasts with the Zambian situation, where the manufacturing sector was too weak to respond to devaluations in 1974. In Indonesia the windfall absorption policies of the government had not weakened industry, instead they had helped build industrial capacity.

The experience of Indonesia shows that rapid industrialization in mineral economies is possible. However, although Botswana can copy the approach followed by Indonesia, there are fundamental differences between the two countries that make the latter's experience not wholly applicable to Botswana. Firstly, Botswana is very small relative to Indonesia. This means that it cannot enjoy the economies of scale that apply to Indonesia. Secondly, Botswana cannot establish RBI's to process products of the booming sector because of its agreement with the Central Selling Organization (CSO) to sell all its rough diamonds to the cartel. In any event, even if it were to cancel the contract, there will not be much value added from the processing of the stones.

However, the experience of Indonesia shows that the Dutch disease can be avoided by the use of prudent macroeconomic policies.

2.3.5 Conclusion

The experiences of the countries reviewed are in line with the theory of the Dutch disease. They show that mineral booms can undermine industrial development if not well managed. Prudent macroeconomic management alone was shown to be a necessary but not sufficient condition for sustainable industrialization. Selective support was a further requirement. Subsidizing other tradable sectors protects them from the damage that the boom will otherwise have on them. But protecting state run industries has been shown to be an uneconomic way of protecting industry from the effects of the booming sector as state-owned industries tend to be inefficient.

CHAPTER THREE

Industrial Development in Botswana

3.1 Introduction

This chapter traces the patterns and episodes in industrial development and investigates their relationships with boom-related events in the economy.

Industrial development in Botswana, just like in Nigeria, Zambia and PNG, has remained limited, contributing approximately six percent to GDP. Its share of national employment was also small, just over nine percent in 1994. However, sectoral data show that there were periods of significant growth in industry (see table 3.1). The number of manufacturing enterprises increased from 6 in 1966 to 2,718 in 1994. Manufacturing output rose from approximately P2 million to over P232 million during the same period, while the number of people employed in the sector rose from 2000 in 1966 to 26,000 in 1990 before falling to 21700 in 1994.

Table 3.1: Selected Economic Indicators (at constant 1985/86 prices)

	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94
GDP Pmn	1511	1624	1884	2101	2252	2421	2636	3038	3634	3955	4255	4210	4196	4366
GDP growth (% p.a)	9.5	7.4	16	11.5	7.2	7.5	8.9	15.3	13.1	5.7	8.8	6.5	1.8	4.1
Manufacturing sector														
Output Pmn	100.6	125.6	115.4	119.9	95.5	124.2	146.4	190.1	200.4	210	223.8	238.2	235.8	232.7
Growth (% p.a)	25	25	-8	4	-20	30	18	30	5	5	6	6	-1	-1
Share of GDP (%)	8	8	6	6	4	5	6	6	6	6	6	6	6	5
Share of non-mining GDP(%)	10	13	12	12	8	10	10	11	10	10	9	9	9	8
Employment level	6000	6800	8500	9500	10100	10600	12900	15300	18100	23300	26000	25500	22100	21700
Growth: (% p.a)	8	13	25	12	6	6	22	19	18	29	12	-2	-13	-2
Productivity: output/employee (Pula)	16767	18470	13576	12621	9455	11717	11349	12425	11072	9013	8608	9341	10670	10724

Source: Statistical Bulletin (1992 & 1995)

Although this was an impressive performance, the experiences of other mineral economies studied in chapter two show that other

countries; such as Zambia, went through a period of rapid manufacturing growth as well. Therefore, this could suggest that a period of rapid growth is a normal transitional stage that industry in mineral economies has to go through before bowing down to the corrosive effects of the boom. This is why it is important to investigate the sources of this spectacular growth.

3.2 Pattern/Phases of Industrial Development

There are three phases that can be identified in the growth of the manufacturing sector in Botswana. Each of these periods has different characteristics. The first period extends from 1966 to 1980 when the manufacturing sector received low priority and was dominated by meat-processing and related industries. The second phase extends from 1980 to 1990, when subsidies and other forms of assistance were introduced. During this period, there was a fairly rapid growth in the number of enterprises registered, output and employment. The third phase began in 1991 and has been characterised by slow and negative growth rates, both in output and employment.

3.2.1 Phase I: 1966-1980

As already mentioned in chapter two, there were hardly any industries at independence. However, the number of manufacturing enterprises increased from 6 in 1966 to 19 in 1970 (Chipasula and Miti, 1989). By 1980, the number of licensed industries in operation in the country had increased to 84. Apart from the Botswana Meat Commission, which processed meat and meat products for export, most of the concerns were relatively small and served the domestic market. Decaux and Tiller (1980),¹⁰ pointed out that these enterprises were constantly beset by problems of inefficiency and poor working conditions and most of them went out of business after a few years of operation. This notwithstanding, non-BMC manufacturing grew very fast from the

¹⁰ Quoted in Chipasula and Miti 1989.

mid-1970s. For instance, in 1979/80 non-BMC manufacturing accounted for 4.1% of non-mining GDP, having increased from 1.4% in 1971/72. Textiles were the main exports and increased from R1.5 million in 1973 to over R15 million in 1980.¹¹

3.2.2 Phase II: The 1980s

The 1980s witnessed fairly rapid growth in the manufacturing sector, with an annual growth rate of around 10.9 per cent, most of which occurred between 1986 and 1990. Manufacturing employment also increased from 6000 at the beginning of the decade to 26000 in 1990 - an annual average growth rate of approximately 16 percent. The sector also underwent a major transformation over the 1980 decade, becoming more diversified in structure. Recall that, at independence in 1966, the sector was dominated by the Botswana Meat Commission, a state owned monopoly, which accounted for 95% of total manufactured value added (MVA). By 1984, BMC's dominant position had been much reduced, and meat and meat products accounted for about 33% of MVA. Thus, manufacturing production became diversified.

An analysis of the sources of growth of manufacturing value added for the period 1975 and 1985 was carried out by Lewis and Sharpley (1988). They found that about 51% of the growth came from rising domestic demand, 26% from import substitution, and 24% from exports. When meat and meat products were excluded, the shares were domestic demand 54%, import substitution 38%, and exports accounted for only 8%. Thus, apart from meat and meat products, manufacturing growth was largely led by sales in the domestic market (due to import substitution and market growth) and exports played a relatively minor role.

An intuitive explanation for this phenomenon is that the mineral booms, through increases in wages, salaries and profits, boosted aggregate demand for domestic manufactures. However, the real

¹¹. Before Botswana introduced its currency in 1976, it used South African Rand.

explanation goes beyond the automatic consumption linkage. This is partly because the mining sector is enclave in nature and as such demand arising from the returns to the factors employed in that sector would not be expected to have a great impact on industrial growth. In addition, increased demand alone, could not have led to growth in output and employment if the environment was not conducive to industrial development, as such demand could have been met by imports. Therefore, the government's macroeconomic response to the windfall, as well as its absorption policies regarding the transfer of the mineral income to the private (manufacturing) sector, played an important role (see section 3.3 and 3.4).

While acknowledging the roles played by macroeconomic and other government policies, it is argued that the rapid growth during this period was largely a result of four factors:

- The Financial Assistance Policy, which had been introduced in 1982, offering substantial investment incentives to manufacturing firms was beginning to impact. A joint report by the World Bank and the government of Botswana (1993) showed that 16,872 manufacturing jobs were directly linked to the scheme. Smith et al (1988), in their evaluation of the FAP, also commented that the scheme attracted some investments which could not have otherwise materialized.

- The economy grew very rapidly (economic growth averaged 10.1% between 1980 and 1990). Local firms benefitted from the increase in government demand through government procurement schemes (see sub-section 3.3.2). Although Kaplinsky (1993) argues that, the scheme has not been successful because it operated in conjunction with a system of open tendering, it is hard to believe that local manufacturers did not benefit from the scheme, especially between 1985 and 1990 when annual economic growth rate averaged 10.4%. This growth, led to a construction boom, especially in the government sector, which generated heavy demand for building materials and other manufactures.

- Due to Zimbabwe's economic problems, a number of firms from that country decided to relocate to Botswana and then export back to that country. As a result, exports to Zimbabwe rose from P12 million in 1980 to P23 million in 1990 (1995 prices). This was indeed spectacular growth and most of these exports were manufactures, especially textiles.

- The Botswana Development Corporation (BDC), which had biased its investments towards urban property and commercial businesses, started to invest more in manufacturing. For instance, by 1980, 32% of BDC funds were invested in manufacturing as compared to 11% in 1975 (see sub-section 3.2.1). It is argued that such developments led to some growth in the manufacturing sector.

3.2.3 Phase III: The early 1990s

In retrospect, the factors noted above which contributed to manufacturing growth in the 1980s were not sustainable. The cyclical downturn in the world economy which started in 1990 impacted heavily on diamond exports and consequently on government revenues and expenditure. The result was an end to economic growth rates in excess of 10% per annum. The slow down in economic growth inevitably dampened demand for manufactures, especially building materials.

However, even without a fall in government revenue, government demand for manufactures was bound to decline as most of the large infrastructural projects, such as construction of major roads, expansion of schools etc., which featured in NDP 6 and NDP 7 were completed by the early 1990s. Loss of incomes for those thrown out of work in other sectors of the economy also impacted on aggregate demand. This demonstrates that sustainable industrialization cannot be achieved through policies that encourage production for the domestic market.

Exports to Zimbabwe were seriously affected by the implementation of a structural adjustment programme in that country, which

removed the artificial circumstances that had encouraged imports from Botswana. The Zimbabwe Dollar (Z\$) was devalued, thus reducing the competitiveness of Botswana's exports to that country. For instance, the Pula/Z\$ exchange rate rose from 1.4071 in December 1990 to 2.4347 the next December. As a result, exports to Zimbabwe fell from P256 million in 1991 to P166 million in 1992 (1995 prices). Exports to Zimbabwe continued to fall as the exchange rate appreciated. By 1994, exports to that country were just over P130 million.

The FAP scheme was initially successful in creating jobs and increasing production, but not in a sustainable way. As table 3.1 shows, increase in output during the 1980-1990 decade lagged behind increase in employment. For instance, output grew at an annual average of 10.9 percent while the rate for employment was 15.5. This suggests that productivity fell during this period. The fall in labour productivity was not accompanied by significant fall in real wages. Instead wages increased by an annual average of 1%. This implies a marginal increase in labour costs. This must have had an impact on the profitability of firms and their decisions to produce in the 1990s.

The early 1990s coincided with the ending of FAP assistance to many firms. Some of the firms established with FAP assistance could not survive on their own and closed down. Of the over 16,000 manufacturing jobs created by FAP between 1980 and 1990, a joint report by the World Bank and the government of Botswana (1993) estimates that only 11,500 remained after the expiry of assistance. The magnitude of the fall in FAP-related employment at the end of the assistance suggest that the scheme did not address the real problems affecting the sector.

The result was that many of the firms which were established in the 1980s faced serious challenges by 1991. For the exporters, the Zimbabwean market had collapsed; for the majority which were selling domestically, economic growth had slowed, as the country was facing a recession. In all, output fell by 2.3% and

employment by 17% between 1991 and 1994. This was in spite of increases in BDC investments in the sector and continued FAP grants(see sections 3.2.1 & 3.2.3).

However, the latest statistics suggest that the manufacturing sector might be recovering. Manufacturing output rose by 4.3% between 1994 and 1995, while employment rose by 8%. "Non-traditional" exports¹² increased from around P290 million in 1992 to over P700 million in 1994(Jefferis, 1996). The recovery has been particularly strong for the textile and garment sector which had been hard hit by the collapse of the Zimbabwe market. The sector, has now diversified into new markets(regional and international). Textile and garment exports, which had collapsed from P123 million in 1991 to P46 million in 1992, had recovered to P177 million by 1994(see table 3.2). There are also a number of new export products, of which motor vehicles are the most important. By March 1995, vehicles and parts accounted for nearly 12% of total exports, making them the second largest exports after diamonds. However, there is very little value added in the automobile industry at the moment -- it is simply assembly of imported semi-knocked down(SKD) components.

There has also been a remarkable change in the direction of exports. The relative importance of Zimbabwe as a destination for textiles has declined, giving way to the South African and the US markets. South Africa is also the most important market for motor vehicles assembled in Botswana.

¹² Non-traditional exports refers to all exports apart from diamonds, copper-nickel and beef, and represent mainly manufactured goods.

Table 3.2 Major Export Commodities(P' 000, fob)

	Meat & Meat Products	Hides & Skins	Diamonds	Copper Nickel Matte	Textiles	Soda Ash	Vehicles & Parts	Live Animals	Other Goods	Total Exports
1980	28,166	3,031	235,733	80,768	15,641	-	-	126	25,554	390,437
1985	97,548	11,686	1,048,116	119,870	28,934	-	-	317	77,813	1,384,284
1986	120,091	10,176	1,202,414	121,052	43,177	-	-	319	122,037	1,619,265
1988	112,167	11,672	1,979,163	371,190	60,261	-	-	500	143,304	2,678,258
1990	105,455	19,952	2,613,618	271,120	111,742	-	-	420	196,784	3,319,091
1991	123,410	17,831	2,941,456	296,351	122,978	21,959	-	587	213,438	3,738,009
1992	129,753	19,878	2,898,922	265,832	76,490	43,362	-	1,091	239,663	3,674,991
1993	160,556	20,356	3,340,224	219,829	94,983	50,366	..	682	334,039	4,312,071
1994	172,749	28,294	3,716,694	258,787	177,351	36,779	300,806	2,302	260,726	4,954,488
1995*	12,368	6,491	909,952	91,719	29,359	4,347	148,158	977	62,046	1,265,416

Note: "-" stands for zero, ".." information not available.

* Data for first Quarter only

Source: Statistical Bulletin (1992 & 1995)

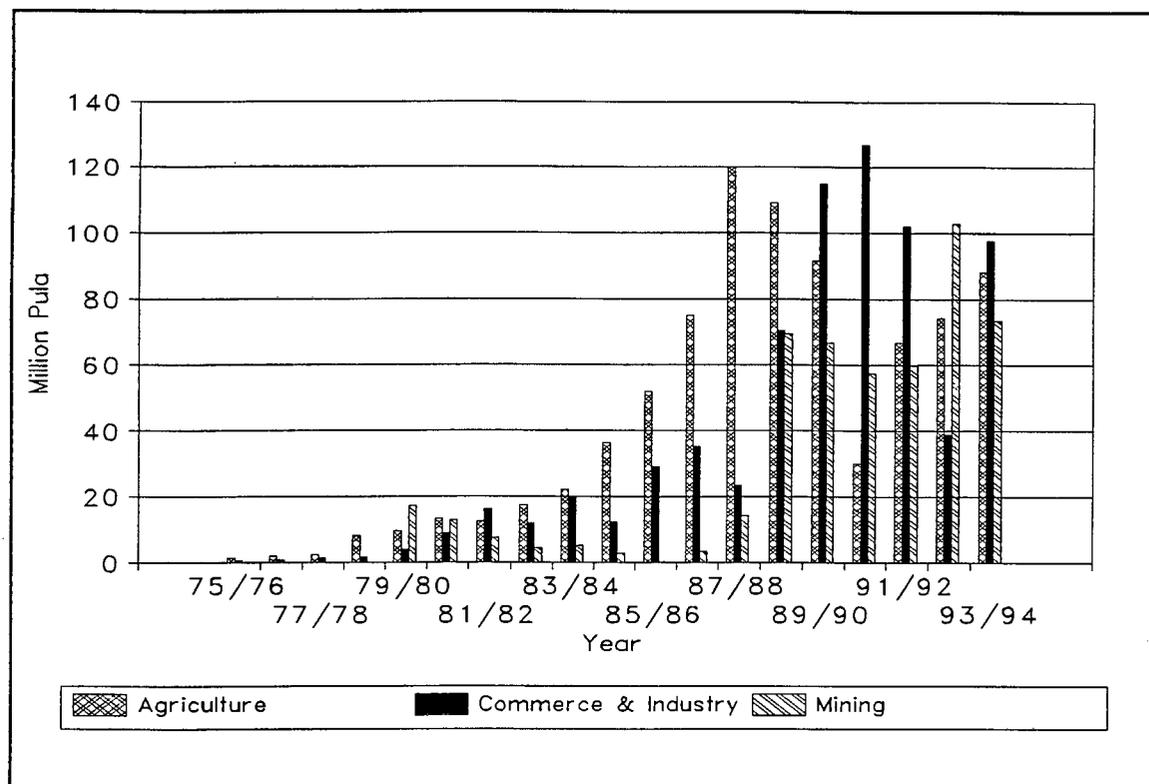
3.3. Sectoral Support for Manufacturing Sector

In Botswana, as is the case in other countries with booming mining sectors, support for industry is important to counter the negative effects of the boom.¹³ However, there are a variety of methods that can be used to promote industrialization. Gelb et al (1988), notes three options (which are non-distorting), through which mineral income can be transferred to the private sector: reducing non-mineral taxes, granting subsidies to selected activities, or subsidizing certain products.

The government of Botswana, while pursuing a prudent macroeconomic policy, opted to transfer diamond income to the manufacturing sector by granting subsidies to selected activities. As figure 3.1 shows, the government transferred a substantial amount of mineral income to the manufacturing sector.

¹³ Recall that PNG did everything right in the macro-economy, but industry remained weak due to lack of support.

Figure 3.1 Industry's Share of Development Spending.



Source: Central Statistics Office (Various issues).

However, unlike Indonesia, Nigeria and Zambia, where governments were involved hands on in resource-based public industries, Botswana opted for an indirect approach. The government of Botswana has always maintained that it will leave the private sector to identify the engines of growth. Government policy in this regard is set out in the Industrial Development Policy (IDP), Government paper No. 2 of (1984: 2):

The degree and type of direct government influence and participation is determined by Government's belief that a free enterprise, market-oriented system for this sector is both efficient in producing goods and services and economical in the use of scarce administrative capacity.

Government will influence and assist industry with general incentives and services rather than detailed directives or controls ... Government will participate directly in this sector only by exception.

Hence, the government participated mainly through the Botswana Development Corporation (BDC), government purchase schemes and the Financial Assistance Policy (FAP).

3.3.1 Botswana Development Corporation (BDC)

The BDC was established in 1970 to be the government's operational arm in promoting industry and commercial development, either in partnership with the private sector or, where private sector initiative was not forthcoming, on its own. The BDC is a link through which the government transfers mineral income to the manufacturing sector.

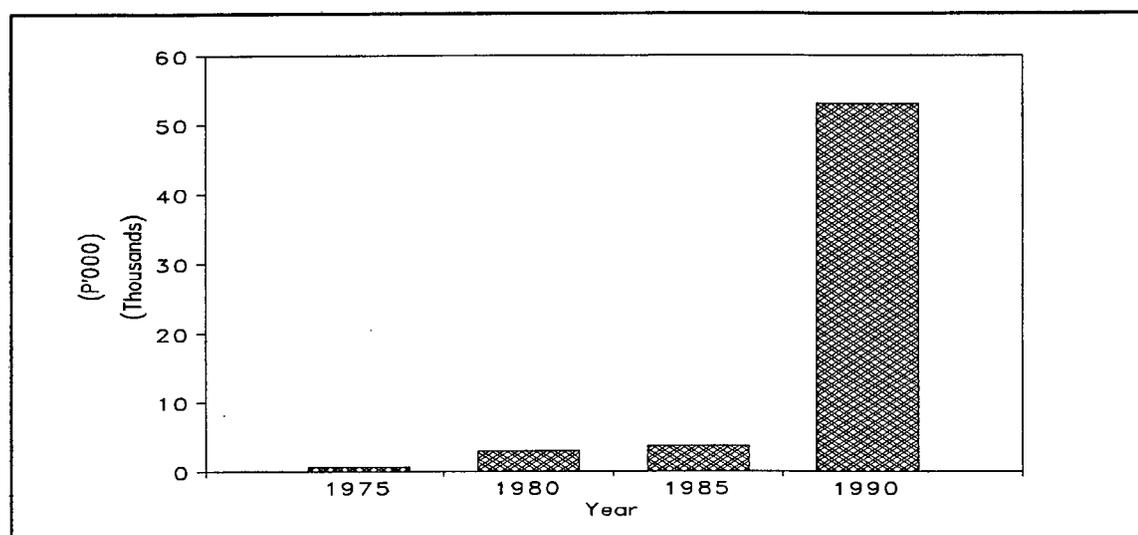
As a supplier of venture capital, the BDC is expected to provide long-term funding to industrial projects which usually cannot get funds from commercial banks because of their long gestation periods. Although the BDC tended to invest mainly in urban property and commercial businesses, instead of the manufacturing sector in its early stages, that bias changed in the 1980s (see table 3.3 and figure 3.2). By the end of 1990, BDC had P52.9 million invested in commerce and industry. In addition to loans and equity financing, the BDC also provided guarantees, factory premises, management advice and secretarial services. This helped establish industries, many of which the private sector was not willing to take up alone or could not get finance from commercial banks, to start up. In 1990, BDC had shares in 60 companies, which employed over 10,000 people. Although the data does not show the breakdown of employment in different sectors, one can conclude on the basis of the share of manufacturing in total investment, that a significant number of the jobs were in manufacturing.

Table 3.3 Sectoral Distribution of BDC Investments (%)

Industry	1975	1980	1985	1990
Commercial and Industrial property	48	32	21	36*
Commerce and Industry	11	32	14	30
Agriculture	10	6	15	4
Hotels and Tourism	14	10	25	22
Residential Property	14	16	10	-
Financial Services	2	3	2	5
Transport		1	11	4
Small Scale enterprises			2	#
Total	99‡	100	100	101‡

Notes: * Includes residential property
 # Support for SSEs was handled by Tswelelo, a subsidiary of BDC.
 ‡ Difference due to error of rounding

Source: BDC Annual Reports(1975-90)

Figure 3.2 BDC Investment in Industry

Source: BDC Annual Reports(1975-90).

3.3.2 Local Preference Scheme

This scheme was introduced in 1976 mainly to benefit domestic producers selling to the central government. It was later(1982) extended to include parastatal bodies and local government. The scheme basically provides for a maximum of 12.5% price preference on any commodity which has a minimum of 25% local content. As

already argued in the previous section, this scheme helped promote industrial development. According to Kaplinsky(1993), its major success has been in the furniture and garment industry.

3.3.3 Financial Assistance Policy(FAP)

The Financial Assistance Policy is the main plank of government's industrial promotion. Simply put, FAP is a system of grants provided by the government to help entrepreneurs to start new businesses or expand existing ones. The scheme represents a direct transfer of mineral income to the private sector because, unlike the BDC, funds obtained through the scheme are outright grants which need not be repaid. The *raison d'être* of FAP grants is derived from the fear that Botswana's small domestic market and the relatively unskilled labour force will make the initial costs of production higher than in competing countries. Thus, the grants are intended to cushion investors against these adverse effects during the early stages of operation.

The Financial Assistance Policy, was introduced in 1982, and offers substantial investment incentives to manufacturing firms. From 1982 through fiscal year 1990/91 the program had disbursed P69.6 million and had committed P238.7 million, of which more than 80 percent were in the manufacturing sector. In recent years the government has paid out approximately P35 million a year by way of FAP grants. Studies show that the scheme indeed led to significant growth in the manufacturing sector in the eighties(See Smith et al, 1988).

However, FAP has been criticized for disregarding productivity in its drive to create employment for unskilled workers(Jefferis, 1996). The scheme provides assistance in the form of capital grant, training grant and tax holidays, but its main thrust is to subsidize wages of unskilled citizen labour. According to a joint report by World Bank and the government of Botswana(1993), nearly half of the grants disbursed in 1987 were on labour subsidies. As a result of this bias, firms tend to adopt more

labour intensive production techniques than is necessary and later retrench when the assistance tapers off (Smith et al, 1988).

Conclusion

It is clear that the manufacturing sector experienced strong growth during the boom period (1980-1990) and then slowed down in the early 1990s. As was the case in other mineral economies, the source of growth came from domestic demand. However, the fact that exports played a very small role in manufacturing growth is perhaps more worrisome for Botswana than it was for large countries, such as Nigeria, because of the limit that the former's domestic market size places on further development based on import substitution and increased domestic demand.

The government transferred a significant amount of minerals revenue to support the manufacturing sector. For instance, BDC's total investments in manufacturing were approximately P250 million in 1995, while FAP handed out about P35 million a year since 1991. However, despite government's generosity to the sector, there were problems of sustainability once the subsidies expired. This demonstrates that the problem did not arise from lack of government support per se.

The next section investigates whether the problem could be found in the macroeconomic environment, for example, as a result of real exchange rate appreciation or an increase in real wages.

3.4 Macroeconomic Policy Environment¹⁴

Chapter two indicated that mineral booms can affect manufacturing development in two main ways: the resource movement effect and the spending effect. It was shown that if these effects were not addressed, then a boom in the mining sector may lead to de-

¹⁴. For a detailed analysis of macroeconomic management of mineral booms, see Harvey and Lewis, 1990; Hill, 1991; Hill and Mokgethi, 1989; Hill and Knight, 1996).

industrialization(fall in employment and output in the manufacturing sector).

There are basically two approaches by which these effects can be suppressed - prudent macroeconomic management and/or provision of subsidies to the affected sector. The previous section has shown that a significant amount of mineral income was used to subsidize the manufacturing sector. The experiences of Nigeria, Zambia, Indonesia and other countries show that prudent macroeconomic approach is also critical. This approach calls for governments, who in most cases are major recipients of the mineral windfalls, to spend the revenues prudently, so as not to cause an appreciation in the real exchange rate. Governments should also attempt to limit the demonstration effects of boom sector wages on other sectors.

However, studies show that many governments in mineral economies have had difficulties keeping their expenditure and wage rates down(Gelb, 1988; Auty, 1993). In contrast, Botswana's macroeconomic policies during the mineral booms have been prudent and cautious. The major consequences of inappropriate macroeconomic management of a commodity boom -- real exchange rate appreciation and rapid increases in real wages -- did not occur in Botswana. These developments are dealt with in sections 3.4.2 and 3.4.4.

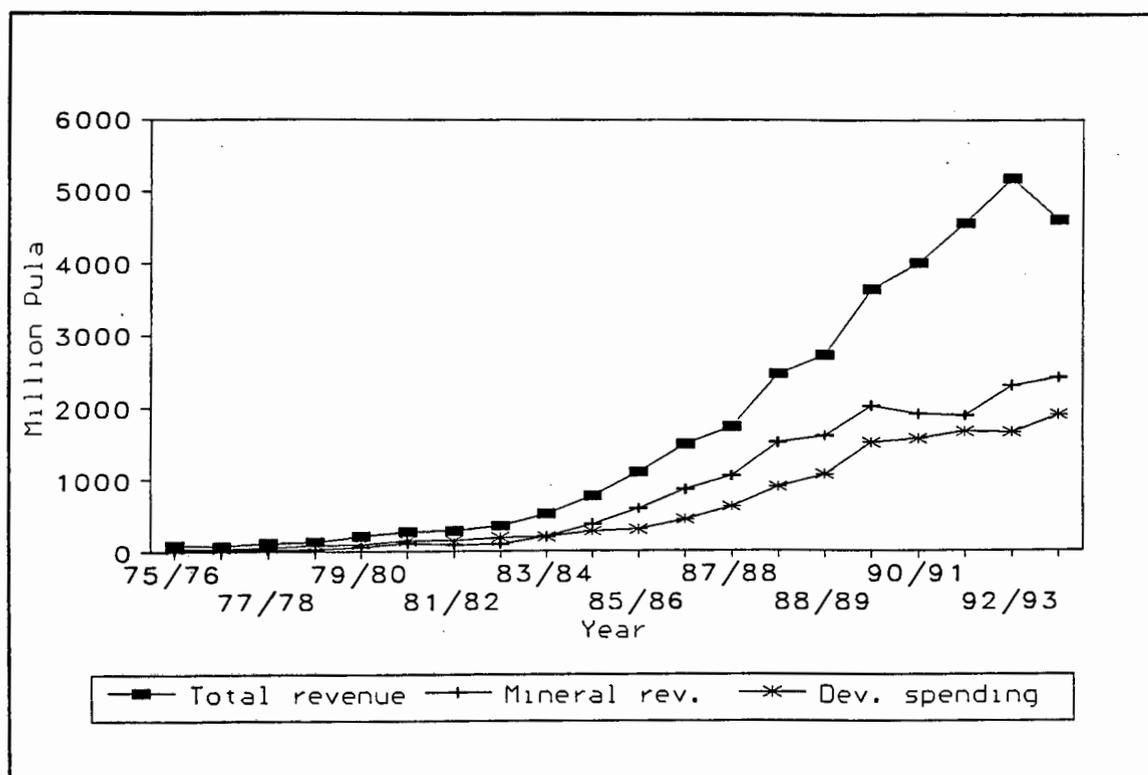
3.4.1 Government Spending Policy

Diamond windfalls in Botswana can be described as public windfalls, in that most of the gains accrued to the government. The government gained from the boom by way of taxes, dividends from partial ownership in the mining company and from mineral royalties. Thus, the spending policy of the government had profound effects on the extent to which mineral booms eroded competitiveness of industry. As argued previously, in the case of Botswana, the spending effect was important as the resource movement effect was limited by the enclave nature of the mining

sector.

As was the case in Nigeria, Zambia and other countries, government investment, as measured by development expenditure, rose in response to mineral revenues (figure 3.3).

Figure 3.3: Government Revenues and Expenditure



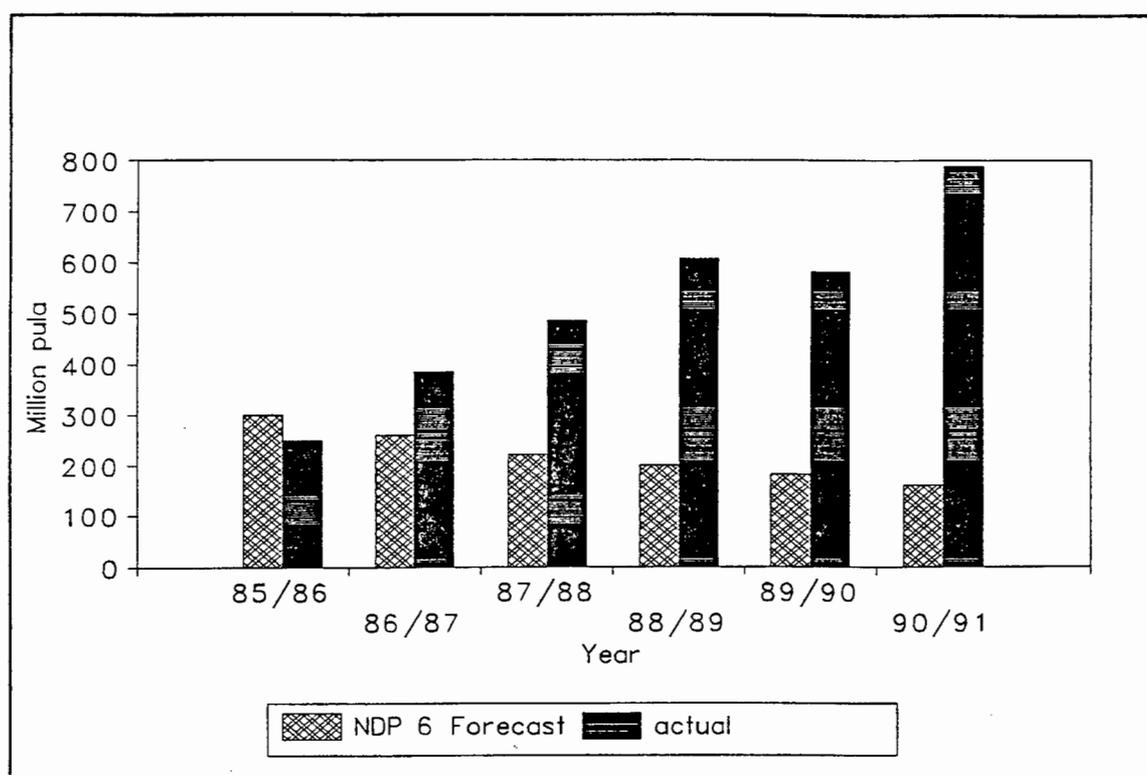
Source: Statistical Bulletin (1981-1995).

Despite the observed increase in government expenditure, there has not been any significant appreciation of the real exchange rate. Botswana maintained a stable real exchange rate throughout the boom period. The real effective exchange rate index oscillated between 115 and 97 during the period 1980 and 1993 (see figure 3.4).¹⁵ This was because of both intervention in the currency market, and the manner in which the increase in expenditure took place.

¹⁵. A decline (increase) in the index indicates real depreciation (appreciation) of the exchange rate.

According to Harvey(1992), this resulted in increases in construction costs and loss of quality of projects. However, the situation was quickly remedied by inviting construction companies from other countries, such as the Republic of China and South Korea.

Figure 3.5 Development Expenditure, Planned vs Actual (constant 1985/86 prices)



Source: Data obtained from Development Plan Seven

As a result, the prices of non-tradable goods started to increase faster than that of tradable goods in the early 1990s (see table 3.4).¹⁶ However, as shall be shown in the next section, the real exchange rate did not appreciate. This was due to the nominal exchange rate being devalued. The fact that the economy is extremely open also meant that the non-traded sector was small and as such did not have a significant impact on the real

¹⁶. Pre-1990 data does not separate prices into tradable and non-tradable.

exchange rate. For instance, Botswana could easily buy services from South Africa.

Table 3.4 Cost-of-Living Indices: Tradable Goods and non-Tradable Goods (November 1991 = 100)

	Weight	1990	1991	1992	1993	1994	1995
Non-tradable	24.69	86	97	110	131	151	161
Tradable	75.31	86	96	113	125	137	146

Note: 1995 data is for the first Quarter only.

Source: Statistical Bulletin, 1995.

3.4.2 Exchange Rate Policy

In addition to prudent spending of mineral windfalls, the exchange rate policy was also used to prevent the real exchange rate from appreciating. However, between 1976 and 1982, the exchange rate policy was aimed at containing inflationary pressures especially from South Africa and as such had little regard for industry's competitiveness. By the mid-1980s, inflation was successfully arrested and the policy aim shifted towards ensuring competitiveness of industry. Thus, when the government lost control of its spending in the late eighties, the nominal exchange rate was devalued and this limited the appreciation of the real exchange rate (see table 3.5).

Table 3.5: Chronology of Exchange Rate Events: 1976-1994

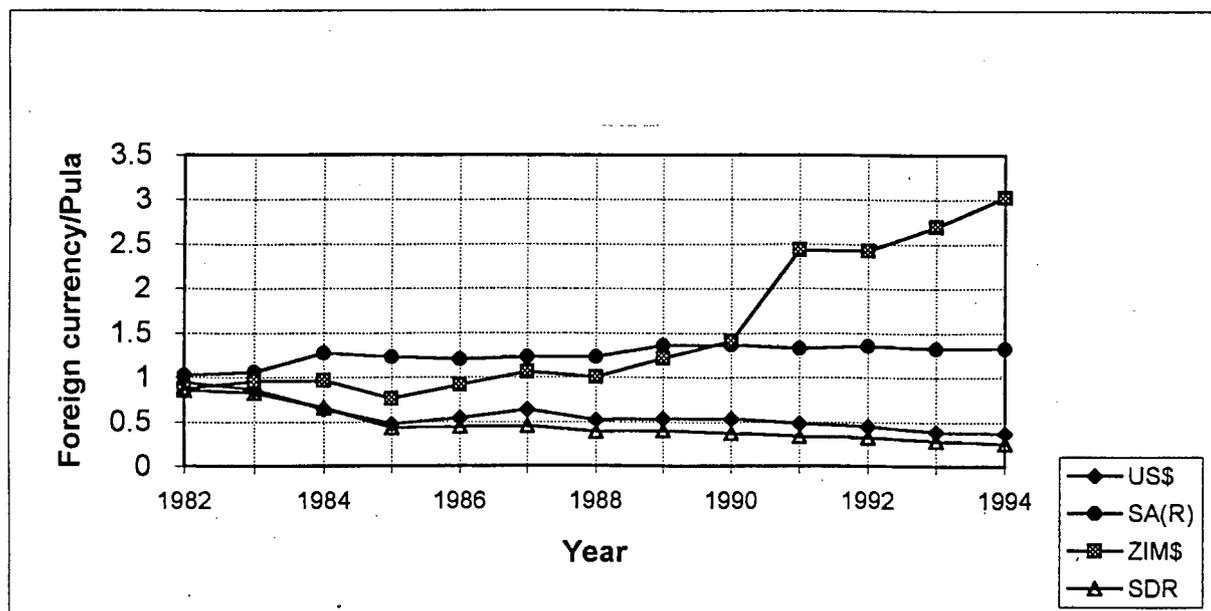
Date	Action
1976	Introduction of the Pula. Pula pegged to US Dollar at P1=US\$1.15
1977 April	5% Pula revaluation
1979	5% Pula revaluation
1980 June	Pula taken off US Dollar peg. Introduction of Pula basket consisting of SDR ¹⁷ and Rand
1980	5% Pula revaluation
1982 May	10% Pula devaluation
1984 July	5% Pula devaluation
1985 January	15% Pula devaluation
1989 June	5% Pula revaluation
1990 Aug.	5% Pula devaluation
1991 Aug.	5% Pula devaluation
1994 June	Technical adjustment

Source: Bank of Botswana Report, 1994.

As a result, the Pula did not appreciate much against currencies of major trading partners (see figure 3.6). The sharp increase in the value of the Pula against the Zimbabwe Dollar, which started in 1991, was a result of structural adjustments programme in Zimbabwe, which led to the devaluing of Dollar. Therefore, it does not suggest that mineral booms led to appreciation of the Pula.

¹⁷. Special Drawing Right is a unit of account of the International Monetary Fund. It is comprised of the US Dollar, Deutsche Mark, Japanese Yen, UK Pound and French Franc.

Figure 3.6 Pula Exchange Rate against Selected Currencies

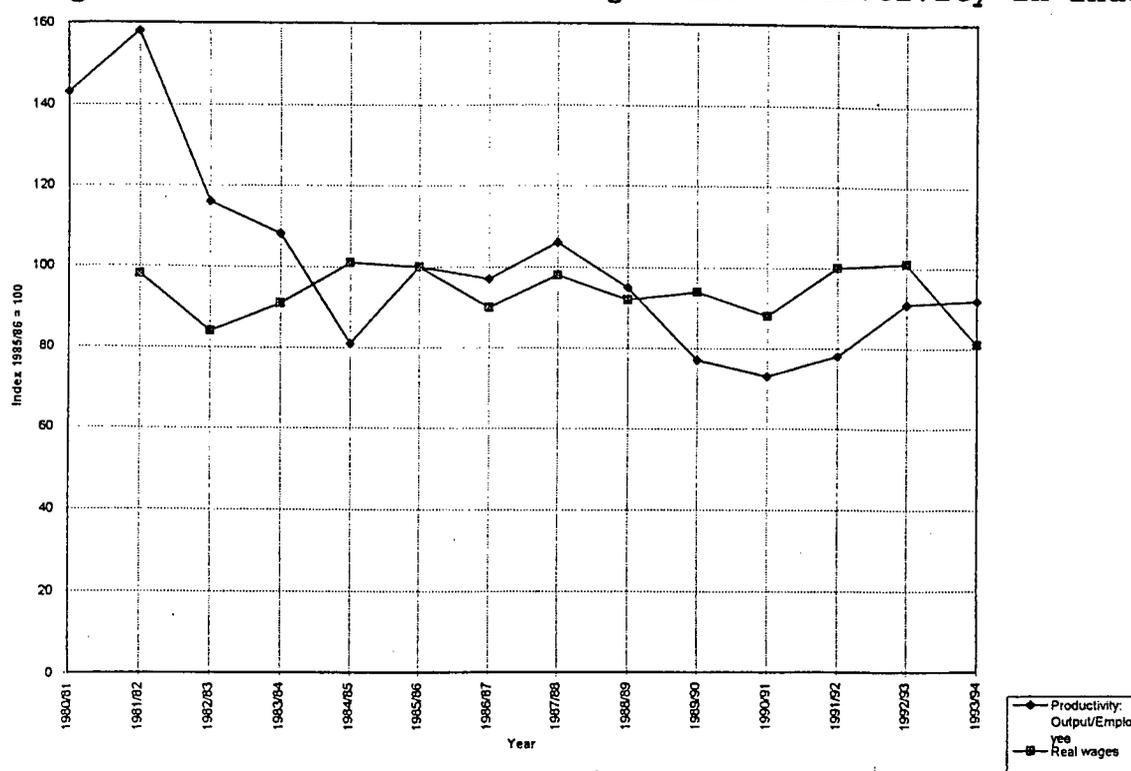


Source: Bank of Botswana Annual Report, 1995

3.4.4 Incomes Policy

In addition to cautious budgetary and sound exchange rate policies, the government also avoided the excessive real wage increases observed in Nigeria and Zambia. This was done through wages and incomes policy. The main objectives of the policy were to limit competitive bidding for scarce skilled citizen manpower by restricting private and parastatal sectors to wage and salary levels set by the government and to tie unskilled labour wages to productivity in agriculture. This helped suppress the extent of the increase in real manufacturing wages (see figure 3.7). As a result, Botswana's wage rates are regionally competitive, in spite of its booming mining sector (table 3.6).

Figure 3.7: Indices of Real Wages and Productivity in Industry.



Source: Data from Statistical Bulletin, 1995 and Bank of Botswana Annual Report, 1995.

Table 3.6: Manufacturing Wage Comparison for Selected Countries

Country	Earnings/month in \$ (1994, unless otherwise stated)
India (1989)	25.40
China	42.25
Kenya (1991)	118.40
Zimbabwe	173.60
Swaziland (1992)	199.00
Thailand	199.30
Botswana	202.80
South Africa (1993)	720.00

Source: Yearbook of Labour Statistics (ILO 1995)

Exchange rates: International Financial Statistics Yearbook (IMF 1995)

Conclusion

Unlike Nigeria, Zambia and other mineral economies, where mineral booms have hindered industrialization as a result of exchange rate appreciation and rapidly increasing wage rates, Botswana did almost everything right to cushion industry from the corrosive effects of the boom. Exchange rate appreciation and excessive real wage increases appear to have been successfully avoided. The government also transferred substantial mineral revenues to the manufacturing sector. In spite of all these efforts, industrial growth has remained limited and the contribution of the sector to national output has actually declined.

On the basis of the above analysis, it would be difficult to support a view that the cause of the country's industrial backwardness is a consequence of booms in the minerals sector. It is concluded therefore that mineral booms cannot be held responsible for the mediocre performance of the manufacturing sector in Botswana.

In the next Chapter the results of a case study which was aimed at assessing the factors responsible for Botswana's industrial development, will be presented. The results support the conclusion that booms in the mining sector did not hinder industrial development.

CHAPTER FOUR

Factors impacting on the growth of the manufacturing sector: Case Studies/Survey Results

4.1 Introduction

It was concluded in chapter three that limited industrial development in Botswana cannot be attributed to the corrosive effects of mineral booms. This chapter provides supporting evidence from a case study-cum-survey. The survey was aimed at identifying the major factors which have impacted on past and present industrial performance. Managers were interviewed on the basis of a questionnaire which sought information on ownership structure, markets, productivity, finance, government assistance and the attractions and obstacles of operating in Botswana. The study's main findings are that high wages or the strength of the currency were not major impediments to the operations of the firms interviewed.¹⁸

Due to time and resource constraints, the study was restricted to firms operating in and around Gaborone. The composition of the sample is presented in table 4.1. Although the number of firms was small (eighteen) and restricted to one geographical area, they were well spread in terms of ownership, size, products and markets. Whereas a larger and more geographically dispersed survey would have been more representative, the small sample size allowed for the collection of relatively detailed, case-study type information.

¹⁸. The detailed survey findings are set out in Appendix 2.

Table 4.1 Some Characteristics of Firms Interviewed

Company	Location	Products	Export share(%)
1	Tlokweng	Garments	Less than 5
2	Gaborone	Garments	over 95
3	Ramotswa	Dry foodstuffs	90
4	Gaborone	Garments	20
5	Gaborone	Paints	0
6	Gaborone	Pharmaceuticals	0
7	Gaborone	Soap and Edible oil	Less than 10
8	Gaborone	Concrete products	0
9	Mogoditshane	Garments	25
10	Gaborone	Cement	0
11	Ramotswa	Garments	100
12	Gaborone	Pharmaceuticals	0
13	Gaborone	Garments	20
14	Gaborone	Paper products	20
15	Tlokweng	Meat products	0
16	Ramotswa	Matches	70
17	Gaborone	Fencing Products	0
18	Gaborone	Garments	Over 99

4.2 Presentation of Results

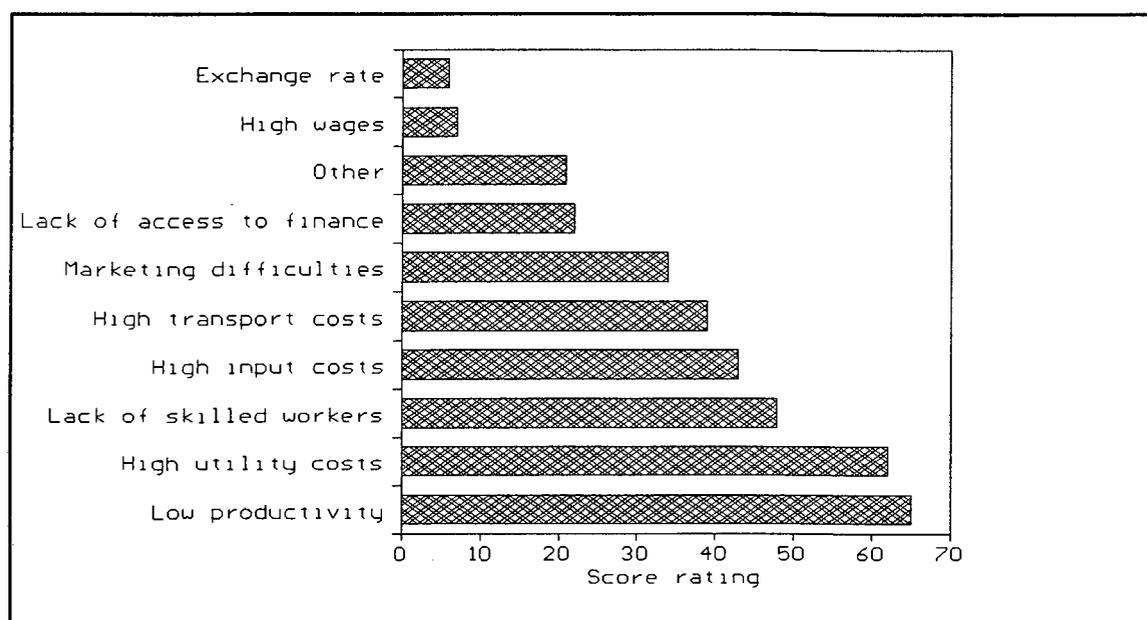
4.2.1 Major obstacles

Firms were asked to rank the six most important obstacles to their operation. A summary of the rankings is presented in figure 4.1. Low productivity was ranked as the most important obstacle. However, this needs to be qualified with the information obtained during interviews and from other sections of the questionnaire. The respondents commented that there was a shortage of skilled labour (lack of skilled labour is ranked third) in the country and this made productivity low at the start of operation and whenever new workers were recruited, but it improved with time. High utility, input and transport costs were also reported as major

obstacles. The other major obstacle was marketing difficulties. The exchange rate was regarded as only slightly important, while high wage rates were not a constraint at all.

This suggests that the effect of the boom on industry through high wages and overvalued currency has been limited. Therefore mineral windfalls cannot be blamed for the weakness of the manufacturing sector.

Figure 4.1 Major Obstacles of Operating in Botswana



Note: Scores are recorded in Appendix 2.

Source: Interviews

4.2.2 Productivity and wages

One of the ways by which mineral booms retard industrial development is through rapid increases in real wages. Real wage increases, if not accompanied by improvements in labour productivity, will raise labour costs and thus undermine the ability of industry to compete with imports.

It is interesting to report that, from the firms interviewed, wage rates were not seen as a hinderance to the viability of the

operation. Only three firms reported that high wages were a problem, but ranked it among the least important obstacles (see Appendix 2). Otherwise, wages were reported to be competitive by regional standards. One manager commented that,

"our competitiveness in the region lies with wage rates. While productivity is slightly lower by regional standards, wage rates are so low that the end result is relatively low labour costs."

Another respondent, a financial controller of a company which paid its workers at a rate 7% above the instituted minimum rate, argued that, "the minimum wage rate [P1.35 per hour] is too low to motivate people to work." Thus, there is evidence to suggest that the booms in the minerals sector did not undermine industry's competitiveness through a rapid increase in wages. These results are in line with the conclusion reached in the previous chapter, where it was shown that there has not been any significant increase in real manufacturing wages.

As already mentioned, wage rates are just one element of the factors that make a firm competitive. The other part is productivity. There are many ways by which firms measure productivity. From the interviews, the most common were actual production as a ratio of potential machine capacity; and output per worker per shift.

Nine firms reported that low productivity was the most important obstacle which they faced (see section 4.2.1). However, they commented that it was sufficient to enable them to compete in the SACU market, especially when the current wage rates were taken into consideration. All, but two firms commented that although productivity was very low at the start of the operation and when new workers were recruited, it improved with time. The two firms who reported that their labour productivity did not improve with time, explained that it was due to "high labour turn-over." Therefore, for these two, their problems can be pinned down to poor management and is thus not a reflection of a productivity trend in the industry.

Those who reported improvements in productivity explained that low productivity was a result of many factors, the most common of which were low levels of technical skills. One manager lamented that, "there are no institutions where people can learn trades such as sewing, or design." Another manager said;

"The absence of technical schools force us to send our workers to as far as Durban. This is very expensive because in addition to tuition fees, we have to pay for their accommodation as well."

This concern was expressed by many other managers, who said that the lack of technical skills was because there were no schools that offer them. Although there were 31 vocational and technical schools, which enrolled over 5000 students. these institutions offered mainly elementary bricklaying, carpentry, auto-mechanics and few other trades, and none of them offered clothing industry-related training such as fashion design.

The other contributory factor was identified as attitude towards work. Three managers reported that some workers seemed disinterested in the extra monies obtained from working overtime or on weekends. One manager commented that,

"people will tell you that they cannot work after hours because they have to prepare food for their husbands or children."

On the attitudes towards work, other managers (two) commented that productivity enhancement was not a "mechanical exercise."

"You don't just increase bonuses and expect people to improve their productivity. You need to show people that you care for them. You must listen to their complaints and try to understand their problems", One manager said.

The other said that managers should make workers feel that they are part of the company.

Two firms associated low productivity with low wages. One financial controller put it thus,

"If you pay your worker P1.35 an hour, what do you expect to get in return? You must know that this worker needs energy to work, and if you don't pay him enough to cover his energy needs, where do you expect him to get it from?"

All respondents identified training, bonus schemes and good management as the main motivations for productivity improvement. Therefore, productivity was regarded as a management problem which could be easily improved with the right policies.

Although the causes of low productivity are varied, there is an urgent need to address the issue, if firms are to compete in international markets. Society needs to be educated on the importance of productivity, so that they can change their attitudes towards work. There is also a need to improve technical skill levels in the country.

4.2.3 Material Inputs

In a competitive market the source of raw materials plays an important role in the competitiveness of an industry. A firm that obtains its materials from a cheaper source, *ceteris paribus*, will always have lower production costs, and will therefore be more competitive. However, in reality there are a number of factors that determine where firms can obtain their raw materials. The most common of these are location; trade regimes; and availability of information and finance.

In a country with a poor information base, it will be difficult for firms to locate the cheapest sources of raw materials. High tariffs on imports can shift demand from the cheapest sources to expensive local sources. Another problem arises when the cheapest source does not supply materials on credit and thus force firms to look elsewhere.

Table 4.2 shows the major sources of material inputs for the firms interviewed. Fifteen firms got 50% or more of their raw materials from South Africa. In this group of firms, there were

those who obtained materials from this source because they did not know of other cheaper sources or were linked to big groups in South Africa, who did the sourcing for materials. The other group were those who were discouraged from sourcing elsewhere by high tariff walls on imports from outside the SACU area. The former comprised mainly small citizen owned enterprises (four) and those subsidiaries (three) of large groups who opened factories in Botswana to be close to their local customers or to take advantage of a cheap local input. One manager of a cement company reported that,

"We are part of a large South African group who owns rights for large limestone deposits, which is a major input in our product. We decided to open a plant in Botswana to take advantage of the availability of fly-ash, which is the other input in our product."

An administrative officer of a small clothing manufacturer commented that "We always hear that there are cheaper sources of materials in Asia, but how do we contact them?" Those firms who reported that they were discouraged by high tariffs were mainly medium to large scale companies.

Table 4.2 Main Source of Material Inputs (50% plus)

Market	Number of firms
Domestic	3
South Africa	15
Southern African Region	6
International	3

Note: Firms obtained material inputs from more than one source.

Source: Interviews

As table 4.2 shows, only three firms reported that they obtained 50% or more of their material inputs from domestic suppliers. For one of these three, the source was a recently established cement company which obtained more than 60% of its materials from South Africa. One of the managers of the other two reported that,

"Our problem is with money. There are no foreign suppliers who can give us materials on credit. So we

are forced to buy from local suppliers, who themselves obtain these materials from South Africa."

This suggests that industry has limited linkages, especially backward linkages, with the rest of the economy. As a result, mining booms have had a limited impact on manufacturing input prices. The fact that the economy is extremely open also tends to reduce the non-traded sector, and thus further limits the extent to which mineral windfalls can affect manufacturing sector.

All the firms who obtained materials from South Africa and domestic producers complained about high prices. Two managers said that in addition to high prices, some of the materials were not of international quality standard. Most of the firms (eight) who obtained material inputs from the above-mentioned sources, served the domestic market only. Others supplied a small percentage (about 20%) of their output to South Africa and other regional markets. This was partly a result of the cost of materials which were too high for firms to be competitive in the export market.

Six firms obtained 50% or more of their materials from regional and international markets. These sources were reported to be cheaper. As a result, this group of firms were successful exporters, although their main markets were South Africa, and the Southern African region. Therefore, the source of material inputs also play a very important role in firms' ability to serve the export market.

4.2.4 Competition

South African firms were the main competitors for the firms interviewed. This was to be expected given that the two countries are in a Customs Union, where international competitors are isolated by high tariff walls. However, the support that South African firms enjoy in Botswana is interesting. Six of the fifteen firms serving the domestic market commented that local

wholesalers, chain stores and the government preferred South African products over their products even when the latter were cheaper. One managing director said,

"There is a perception among Batswana, even in the government purchasing departments that local companies cannot produce any product of quality."

This sentiment was expressed by other managers as well. One financial controller put it thus;

"If I ask you what soap you use at your house, you will say Lux, Breeze, Choice... and not Marang or Kgalagadi or... won't you?"

The former are imports while the latter are local products. This attitude can only be changed through the production of high quality products and intensive marketing.

Another observation from the study is that most local distributors were owned by South African groups. Three firms serving the domestic market commented that in order to sell to local wholesalers, they had to first obtain certificates of approval from the wholesalers' purchasing departments in South Africa. Another firm complained that,

"ever since a merger between [a major local wholesaler] and [a South African wholesaler] early last year, [the wholesaler] has cut its demand for my products."

Thus, competition from South Africa makes it difficult for certain industries in Botswana to develop.

4.2.5 Ownership and Markets

Botswana firms face four different markets for their products - domestic; South Africa; Southern Africa (excluding South Africa) and international. These markets have different characteristics regarding size, protection levels, price levels and distance. These characteristics influence the extent to which they can be served by local firms and the agents needed to penetrate them.

As table 4.3 shows, the most important markets for the firms interviewed were the local and the South African.

Table 4.3 Main Markets for Products

Market	Number of firms
Domestic	11
South Africa	5
Southern African Region	1
International	1
n=18	

Source: Interviews

Of citizen owned enterprises, the orientation to the domestic market is even more marked (see appendix 2). Only one of the four wholly citizen-owned firms had just started exporting and it exported only 20 per cent of its total production. This is not at all surprising. Exports require market intelligence (which all four citizen-owned firms lacked). They also require international connections (only one firm had recently established them). As the manager of the only exporter in this group of firms put it:

"The export market is very strict on quality and purchasing departments do not just order from any manufacturer. They need to be sure that they will get the right quality at the requested time. So for them to buy from you, you have to be recommended by someone they have been dealing with."

This firm entered the export market through doing subcontracting work for a large South African manufacturer. They first came into contact with this manufacturer through some of their workers who were sent for training at an institution which had links with the manufacturer.

The other problem is that exporting enterprises are relatively large and require relatively large initial investments, which citizens do not have. All, but one, citizen-owned firm had fixed assets of less than P2 million. This is because unlike their foreign-owned counterparts, who can get external loans from their countries of origin, citizen-owned firms have difficulties accessing finance (see section 4.2.7).

The study also revealed existence of a positive correlation between foreign ownership and exports. This has to do with international connections, marketing expertise and capital. One citizen manager of a joint venture company commented that,

"Initially this company was 100% locally owned, but when I needed to expand into exports I had to look for partners. To export needed a lot of capital and since I couldn't get it locally, I had to look for international partners."

At the time of the interview the company was 75% owned by a British group.

Only two out of six wholly foreign owned enterprises did not produce for export. Three of the exporters sold over 90% of their production in the export market (foodstuffs and garments). In the joint venture category, only three firms out of seven were not engaged in export. This was either because the ratio of transport costs to value was too high for exporting to be profitable (cement and concrete products) or the laws governing the sale of the product required long procedures to be followed and certain conditions to be met before export could take place (pharmaceuticals).

It is clear therefore that the expansion of exports may depend on the ability of local firms to attract foreign partners or the government to lure foreign investors.

4.2.6 Exporters

As table 4.1 shows, only five of the eighteen firms interviewed can be referred to as exporters. For these firms, the main market was South Africa, especially the Gauteng area, which is four hundred kilometres from Gaborone. The demand from this market, especially for textiles and garments was reported to be very high. One manager put it thus,

"The demand is so high that we are forced to operate 24 hours a day and seven days a week and yet we can't

meet all the orders."

Another manager commented that plans were "at an advanced stage to open another factory as we cannot meet all our orders from this one." All the exporters reported that their competitive edge was in price, quality and consistent timely deliveries. "Our labour is not restive and as a result we always deliver on time", One manager said. When asked to comment on quality, he said, "Our denim cloth is at the top of the quality range because of this[spinning, dying and pressing machine]." These firms combined labour intensity with modern state-of-the-art technology.

4.2.7 Finance

Finance was not seen as a major obstacle to the firms' operation. However, there were six companies who reported that finance was a problem. Of these six, three reported that interest rates were high and that commercial banks did not provide advanced products. The other three complained that the banks refused to give them loans or support to get credit from suppliers, even when they provided the surety of large government orders. One manager, lamented that,

"Banking systems here are not user friendly ... for example, this year I had a government order worth P3 million, but they couldn't give us a facility to open a letter of credit to the suppliers of raw material inputs. We provided this order as surety and you know that a government order is as good as money. But they refused."

In line with expectation, these three were (wholly or partly) owned by citizens. This could explain why there is so little citizen ownership in the medium and large scale category of industry (about 31%). This shows that for the relatively small firms, working capital is still a serious constraint to their operation.

4.2.8 Marketing

The success of any enterprise depends on its sales, which in turn depend on its ability to market its products. A firm can produce cheap, high quality products, but if not properly marketed, its sales will remain low as few buyers would know about the products. Thus, in a competitive market, marketing plays a very important role in the success of any company.

In the survey, information was sought on marketing strategies employed and the extent to which marketing was a problem to the firm's operation. The most commonly used marketing strategy was foreign expertise based in the country(thirteen firms). Independent agents working on commission were also used widely(seven firms). But the most interesting observation was that, the four major exporters had a unique combination of two of the following: foreign expertise based in the country, foreign expertise based abroad and independent marketing agents working on commission. These strategies have the advantages of ensuring that at least one of the agents was in close contact with the market. However, the costs involved in these combinations put them out of reach of many firms.

The extent to which marketing was a problem differed amongst firms. In all, twelve firms reported that it was a problem. The problems with marketing ranged from costs to availability of expertise. As one financial controller put it,

"[Name of firm] about two years ago was launching a marketing competition. We could not get advertising, marketing jingles locally... So we had to go to South Africa. As you know we still depend on South African television even to reach our local market. To go to South Africa to make an advert means more costs for local producers."

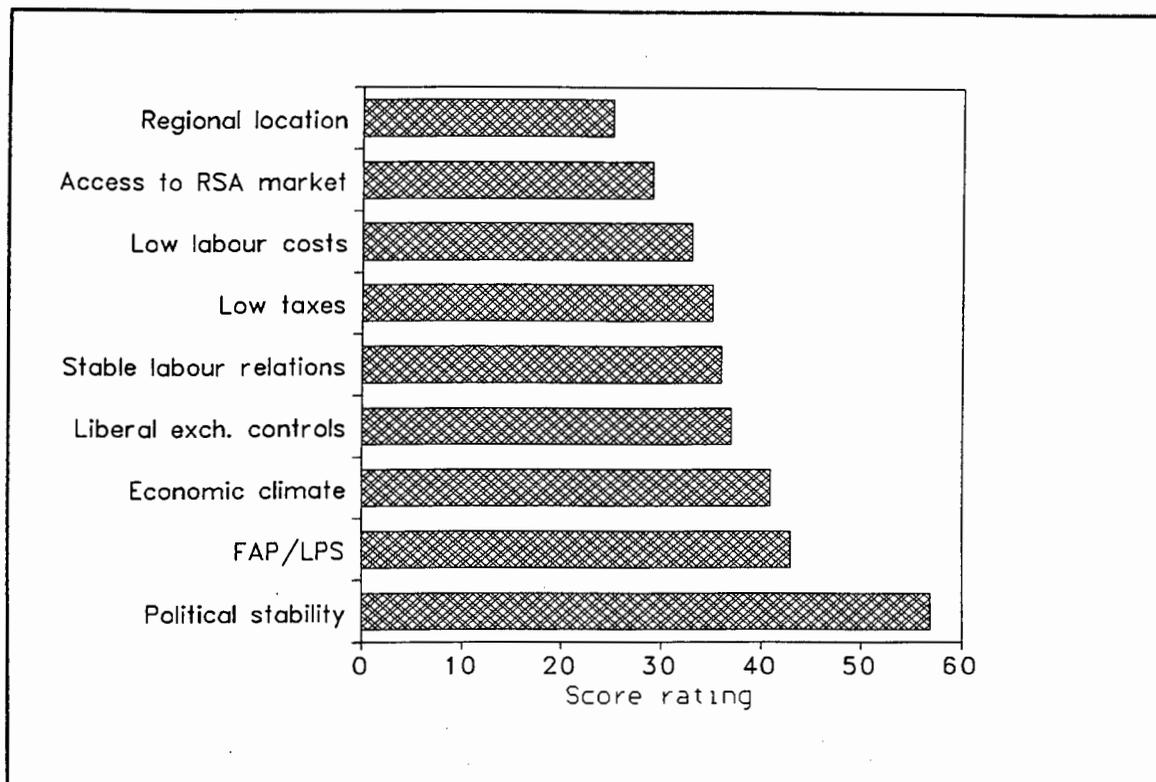
Another respondent commented that,

"The cheapest sales representative will tell you that I am prepared to work if you pay me a basic salary of P1000 and a 10% commission over and above the flat rate. Some of us cannot afford this amount."

Marketing is certainly a serious problem for many firms in

the region as whole is becoming more stable. However, all these advantages need to be retained or even improved upon.

Figure 4.2 Principal Motives for Operating in Botswana



Note: See Appendix 2 for how the scores were rated.

Source: Interviews

4.3 Summary and Conclusions

The survey has shown that, although uncompetitive by international standards, Botswana's manufacturing sector was competitive by southern African standards. It has also shown that the problems that afflict the sector were not primarily a result of the boom in the mining sector.

- ◆ Wage rates were not a hinderance to most firms, instead it was productivity which was a problem. Productivity was low by international standards owing primarily to low labour skills in the country. Wage rates were reported to be low, thus supporting the conclusion reached in the previous chapter, that a rapid increase in real wages did not occur.

- ◆ Exchange rate (appreciation) was not a major obstacle to firms. The strength of the domestic currency was not a problem to the competitiveness of the firms interviewed. Instead, it was the weakening of the currency which was a concern for some firms, as this tended to increase the Pula cost of materials obtained from outside SACU areas.
- ◆ Industry in Botswana has few backward linkages with the rest of the economy. This further limits the extent to which mineral booms impact on the sector's input prices. Similarly, Botswana's membership in SACU and its reliance on South Africa for material inputs also limit the impact of mineral booms on industry.
- ◆ In addition to being a source of material inputs, South African industry also owned major distributors in Botswana. This suggests that events in South Africa had a profound influence on manufacturing development. For instance, the recent growth in the South African economy was shown to have positive effects on industry through increased demand for Botswana's products.
- ◆ There was a negative relationship between local ownership and exports. This was primarily due to the lack of finance, international connections and marketing expertise among citizens.

It is clear, therefore, that low wages and a stable real exchange rate are necessary, but not sufficient conditions for industrial development. There are other impediments, that need to be addressed, such as lack of finance and marketing skills among citizen entrepreneurs, low labour productivity, lack of skilled workers, high utility, input and transport costs and competition from South Africa. There is a need for policy to deal with these impediments.

CHAPTER FIVE

Conclusions and Recommendations

5.1 Conclusions: An overview

This study's aim was to investigate those structural features of the economy which are responsible for the past industrial development record, and assess the limitations they impose on the sector's future development. Although the study's main focus was on those features which are related to booms in the mining sector, it also assessed other factors that impact on industrial development.

The main argument of this enquiry is that industrial backwardness or the problems that afflict industrial development in Botswana do not arise from the presence of booms in the minerals sector. Macroeconomic data show that the major effects through which the Dutch disease manifests itself -- real exchange rate appreciation and rapid increase in real wages -- have been successfully contained. This conclusion is supported by microeconomic data, which show that neither high wages nor strength of the currency was reported as a major obstacle to the operation of the firms interviewed.

The thesis also shows that the government has transferred substantial amounts of mineral income to industry. However, some industries and employment created through government subsidies were not sustainable. While the problems of industrial development in other mineral economies, such as Zambia and Nigeria, arose from poor management of the booms, Botswana did almost everything right to lessen the corrosive effects of mineral windfalls on industrial development. Insofar as the industrial sector has not performed as well as it might have, the causes have more to do with the supply side capabilities of firms and limited direct foreign investment. Lack of marketing skills

early nineties, following Zimbabwe's structural adjustments which led to devaluation of the Dollar, the Pula did not appreciate

against currencies of major trading partners. It is recommended that the current exchange rate regime be continued. Steps should be taken to ensure that the Pula does not appreciate excessively against the Rand as South Africa is the main market for exports and offers considerable potential for expansion.

5.2.3 Productivity

The study has revealed that productivity has been falling throughout the 1980s, but slowly picked up since the turn of the decade. The fall in productivity was due, mainly, to the Financial Assistance Policy of the government, which tended to bias techniques of production towards labour, with little consideration for productivity (Jefferis, 1996). However, even without the influence of the scheme, productivity in Botswana is still low by international standards, owing primarily to low skill levels. The recent reforms of the FAP, which attach more importance to training, are a step in the right direction. However, there is also a need to introduce industry related subjects in school syllabi at all levels and to have more institutions that offer technical or industry-related skills. It is therefore recommended that the government should consider building such schools.

5.2.4 Exports

Although recent trends show an expansion of non-traditional exports, manufacturing development is mainly oriented towards the domestic market. The recent development is therefore very encouraging. Successful exporters were mainly large scale enterprises which combined labour intensity with modern state-of-the-art technology. These enterprises were primarily owned by foreign groups. Since small citizen-owned enterprises had difficulties exporting, it is concluded that, large scale operation, combination of labour-intensity and modern technology, and foreign ownership are the necessary requirements for penetration of the export markets.

However, with the current level of productivity and wage rates, it will be difficult for local industries to compete in international markets. Therefore, firms should target the regional markets, especially South Africa, where competition is less severe - some local firms are already doing well there. This market has many decisive advantages over other markets (at least in the short run): it is protected from foreign competition, the economy is on the expansion path and wages are relatively higher. This makes the SACU arrangement more important than ever before. It is recommended that any SACU negotiations should ensure its continuity.

It will be an understatement to suggest that it will be easy for firms to penetrate the South African market. The market is dominated by large conglomerates which have integrated all the way down to distribution. To penetrate such a market would require resources that individual firms might not possess. It is recommended that the government, through the BDC, consider assisting firms in this regard, even if it means buying or getting into partnerships with some already established distributors in that country.

An opportunity also exists for certain South African firms to be encouraged to relocate to Botswana to serve the regional market and fill the under-utilized quota of Botswana products to industrialized countries under the Lome Convention.

5.2.5 Major Obstacles

Lack of material inputs at reasonable prices is one of the major obstacles to the operation of industries in Botswana. Most material inputs are obtained from South Africa, despite it not being the cheapest source. Firms obtain materials from this source because of the unavailability of a data base on the cheapest sources which tend to raise search costs. Tariffs on materials obtained from outside the SACU also, make it difficult for firms to get materials from cheaper sources. It is

recommended that the government should look at ways by which such a base can be made available to firms. The government should also negotiate for lifting of tariffs on imports of inputs for certain industries, even when the final products are destined for the SACU market.

Marketing, because of the costs and skills involved, is one of the main constraints on export expansion. Judging by the size of the firms, and the responses of those interviewed, it will be difficult for individual firms to effectively market their products outside Botswana. Marketing requires resources and expertise that most industries do not have. It is recommended that the government, through the BDC, help firms in this regard. BDC can target specific markets and buy shares in distributors in those countries.

5.3 Concluding Remarks

"The performance of critical sectors such as manufacturing, ..., which are key to achieving the goal of economic diversification, remained disappointing at best" (Ministry of Finance, 1996: 5).

It has been argued in the study that the problem did not arise from the corrosive effects of booms in the mining sector. Botswana appears to have done everything right to lessen the impact of mineral windfalls on the manufacturing sector.

The study has identified some of the constraints that are responsible for the past record and impose limitations on the sector's future development. It is hoped that these constraints will form a basis for a detailed investigation by those entrusted with the responsibility of reformulating the country's industrial development policy.

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APPENDIX 1

A: GENERAL INFORMATION

1. Name of firm :
2. Year of start-up:.....
3. Value of fixed assets:.....
4. Is the company;
- (i) A new business
- (ii) Relocation
- (iii) Take-over
4. What percentage of the company is; (i) Foreign owned?.....%
- (ii) Locally owned?.....%

Specify country in (i) above:.....

5. Number of employees:.....
- (i) Managerial and professional level:.....
- (ii) Skilled:.....
- (iii) Semi-skilled:.....
- (iv) Unskilled:.....
6. Company's main products:.....

7. How important have the following been on your decision to set-up business in Botswana? (Please rank the six most important)

Description	Rank
FAP/LPS	
Local raw materials	
Political stability	
Liberal exchange controls	
Regional location	
Access to RSA market	
Low taxes	
Low labour costs	
Stable labour relations	
Economic climate	
Other (specify)	

8. Please rank the six(6) most important obstacles to your operation.

	Export market	Domestic market
High wages		
Low productivity		
High utility costs		
High input costs		
Lack of skilled workers		
Lack of access to finance		
Lack of industrial land		
High transport costs		
Exchange rate		
Marketing costs		
Other (specify)		

B. MARKETS, MARKETING AND COMPETITION

1. What percentage of your total sales was in the export market in: (i) 1993.....%
 (ii) 1994%
 (iii) 1995%
 (iv) 1996.....%

2. Please rank your most important markets;

(i).....

(ii).....

(iii).....

(iv).....

3. Do you plan to increase your production in the next three years? YES NO

If yes, which market are you targeting?

(i) Export.....% (ii) Domestic.....%

4. Through which of the following channels have you sold your products in;

a. Export markets

(i) Parent company abroad

(ii) Direct marketing by firm, using

a. Foreign expertise based in Botswana

b. Foreign expertise based abroad

c. Mtswana based in Botswana

d. Mtswana based abroad

(iii) Independent marketing agent working on commission

(iv) Own retail outlet abroad

(v) Other (please specify).....

b. Domestic market?

(i) Factory outlet

YES NO

(ii) Own retail markets downstream

YES NO

(iii) Other (please specify).....

5. What percentage of your inputs come from?

(i) Domestic producers.....%

(ii) Imported.....%

6. Please rank your four major competitors(country only)

(i).....

(ii).....

(iii).....

7. What advantages do they have over you?.....

8. What advantages do you have over them?.....

C. FINANCE

1. What were the sources your start-up finance?

(i) Own finance.....%

(ii) Bank loan.....%

(iii) Government grant.....%

(iv) Other (specify).....%

2. Describe any difficulties in the operation of the financial system or banks that have hindered the operation of your business.....

D. PRODUCTIVITY

1. How do you measure productivity?.....

2. Please rank productivity of the following categories of employees.

	Very low	Low	Moderate	High
Managerial				
Skilled				
Semi-skilled				
Unskilled				

3. Which of the following measures have you used to address the situation in (2) above?

(i) Training YES NO

(ii) Bonus schemes YES NO

(iii) Other (please specify).....

4. Please comment on the productivity trend in the past three years.....

E. GOVERNMENT ASSISTANCE

1. Do you receive any of the following government assistance?

(i) FAP YES NO

(ii) Local preference scheme(LPS) YES NO

(iii) Other (please specify).....

2. How important is the assistance to your operation?

	Not important	Slightly important	Important	Very important
FAP				
LPS				
Other(specify)				

THANK YOU

FIRM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Score
MOTIVE FOR LOCATION:																			
FAP/LPS	5		1	6		4		5	6			5			3		5	4	43
Local raw materials							6			5					6				-
Political stability		6	4		6		5		5	3	6		6	4		4	6	2	57
Liberal exchange controls		5	6	2	3				4	1	4			2		6	4		37
Regional location			3				4	6		6			3					3	-
Access to RSA market		4	5				4		2		5			1			2	6	29
Low taxes				4	2	4		4	3		3	4		6		5			35
Low labour costs	4	3		3	5	3	3					3		3	5	1			33
Stable labour relations		2		5	1		3			2	3		5	5		2	3	5	36
Economic climate	3	1	2		4	5	2			4	6	6	4			3	1		41
Other	6					6		3							4				-
OBSTACLES:																			
High wages		1						3										3	7
Low productivity		6	6	4	1		6		6		5		6	6	6	1	6	6	65
High utility costs	3	4	1	5	6	4	5		5	3	3	5	5	5	5	3	5		62
High input costs		5	4	5	5			2	2	5	4	3	4					4	43
Lack of unskilled workers	4	3	5		4	5					6	6		4		2	4	5	48
Lack of access to finance	6			6							4					4	2		22
Lack of industrial land				2					4								3		-
High transport costs	5		3		3		4	6		4	2			3	4	5			39
Exchange rate		2		1		2		5+								6+	1		6
Marketing	2		2	3	2	3	3	4	3			4	3	2	3				34
Other						6				6				4	3			5	21

NOTES: ■ feature is wholly applicable to company, ◎ feature is partly applicable, ° feature is slightly applicable

FBB is foreign expertise based in Botswana

FBA is foreign expertise based abroad

MBA is Botswana based abroad

IAOC is independent agent working on commission

+ Weakening pula making raw materials expensive

A = P100,000 - P900,000

B = P900,000 - P2 million

C = P2 million+