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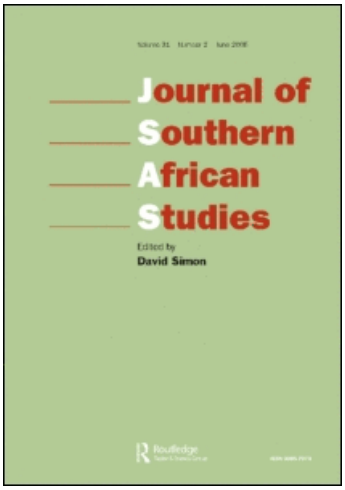

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Accounting for the African Growth Miracle: The Official Evidence - Botswana 1965-1995

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Accounting for the African Growth Miracle: The Official Evidence – Botswana 1965–1995

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Botswana has figured widely as the exceptional African growth success story and has been frequently cited in scholarship that supports the view that African and other less developed economies are capable of rapid economic growth as long as the internal institutional framework and development policies are right. A shortcoming of the literature on African economic performance to date is that it has focused on the aggregate average growth rate, and has not taken the quality of the growth evidence into consideration. This article makes use of the official growth evidence taken from the published national accounts in Botswana to establish that there is reason to doubt the accuracy of the growth evidence on Botswana. It shows how the first decade of growth in particular is seriously biased upwards. After the official evidence and the national accounting methodologies have been analysed, several revisions of the African growth miracle become necessary. The 'policy' accounts have largely been informed by observing the recorded aggregate growth rate and have attributed the rapid growth to stylised facts about policies and institutions. A consideration of disaggregated growth rates allows a discussion of the causal coherence of the dominant explanations of rapid growth in Botswana, in particular, and in the divergent fortunes in the developing world, in general. This article argues that the growth miracle can only directly be attributed to economic policy if 'good policy' is defined as the absence of very bad policies.

Botswana has received considerable attention because of its rapid economic growth in the postcolonial period. Its growth rate has by some measures surpassed that of any country in the world since the 1960s. The country has figured widely as the exceptional African growth success story, in marked contrast to what Easterly and Levine have called the 'African growth tragedy'.[1] The phrase 'an African miracle' was first attributed to Botswana by Samatar and has been much quoted since.[2] In the literature on African growth and development, Botswana has frequently been used as the 'exception that proves the rule' for different scholars who support the view that African economies are capable of rapid economic growth as long as the internal institutional framework and development policies are right.[3] Botswana has confirmed that African economies can perform well, despite the potential of being caught in various 'development traps', such as the 'natural resource trap' or being 'landlocked' and Botswana decisively escaped the what Collier called the 'bottom billion' during a few decades of rapid growth 'when it achieved the world fastest growth rate'.[4]

1 W. Easterly and R. Levine, 'Africa's Growth Tragedy: Policies and Ethnic Divisions', *Quarterly Journal of Economics*, 112, 4 (1997), pp. 1,203–50.
2 A.I. Samatar, *An African Miracle: State and Class Leadership and Colonial Legacy in Botswana* (Portsmouth, NH, Heinemann, 1999).
3 B.J. Ndulu, S.A. O'Connell, J.P. Azam, R.H. Bates, A.K. Fosu, J.W. Gunning and D. Njinkeu (eds), *The Political Economic of Growth in Africa 1960–2000* (Cambridge, Cambridge University Press, 2008).
4 P. Collier, *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It* (New York, Oxford University Press, 2007), p. 50.

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At face value, Botswana conforms well to the ideal of a country with sound macroeconomic policies and institutions. Botswana has the reputation being a democracy that is characterised by ethnic homogeneity.[5] There are, however, ethnic minorities in Botswana such as the San, Kalanga and Yei, and it has been a relatively uncontested one-party state since independence. Yet these and other factors have been suggested as plausible reasons for its success. Botswana has provided an important counter-argument to research that has suggested that African economies are incapable of development. Acemoglu *et al.* summarise this well saying: 'there is almost complete consensus that Botswana achieved rapid growth because it managed to adopt good policies'.[6]

A shortcoming of the existing literature to date is that it has focused on the aggregate averaged growth rate and paid relatively little attention to the source of growth as well as its timing. This article contributes to the literature by making use of the official growth evidence drawn from the published national accounts. The policy accounts have largely been informed by observing the recorded aggregate growth rate, and have attributed the rapid growth to stylised facts about policies and institutions. However, a consideration of disaggregated growth rates allows for discussion of the causal coherence of the dominant explanations of rapid growth in Botswana.[7]

According to the findings in this article, Botswana's rapid growth is almost entirely due to diamonds. Performance in agriculture and manufacture, where output has not increased in per capita terms, has been poor. It is therefore argued that the growth miracle can only be directly attributed to economic policy if 'good policy' is defined as the absence of very bad policies. It is an uncontestable fact that Botswana has been characterised by stability, both economically and politically. Yet when the sheer importance of diamonds and the specific timing and the institutional configuration of mineral extraction is considered, it is worth revisiting the lines of causality.

Accuracy in Growth Reporting: Botswana 1965–1995

Before using the published Botswana national accounts to attempt to disentangle annual growth rates and output growth in agriculture, mining, manufacture and other sectors of the economy, it is worth making a case for the need for such an exercise. To that purpose the annual growth rates of four different data sources are considered and compared. The most commonly used sources for growth time series analysis are the World Development Indicators (WDI), the Penn World Tables (PWT) and the data provided by Maddison (OECD) (Figure 1). The derived growth rates from these databases are compared with the national accounts data.

It is worth making one important point at the outset: the growth data reported in the databases are all, according to their references, based on national accounts data files. The key difference between the national accounts and the database evidence is that while the database evidence provides continuous real growth series for 1960 to 2000, the first national accounts for Botswana were first prepared in 1964–66, the period (1960–2000) is covered by discontinuous series (i.e. change in the base year in the constant price series) and there are

5 This aspect will be discussed in more detail later in this article.

6 D. Acemoglu, S. Johnson and J.A. Robinson, 'An African Success Story: Botswana', in D. Rodrik (ed.), *In Search of Prosperity: Analytic Narratives on Economic Growth* (Princeton NJ, Princeton University Press, 2003), p. 83.

7 Elsewhere it has been argued that while Botswana's growth was rapid, it does not constitute 'modern economic growth' and it was a case of growth without development. See E. Hillbom, 'Diamonds or Development? A Structural Assessment of Botswana's Forty Years of Success', *Journal of Modern African Studies*, 46, 2 (2008), pp. 191–214.

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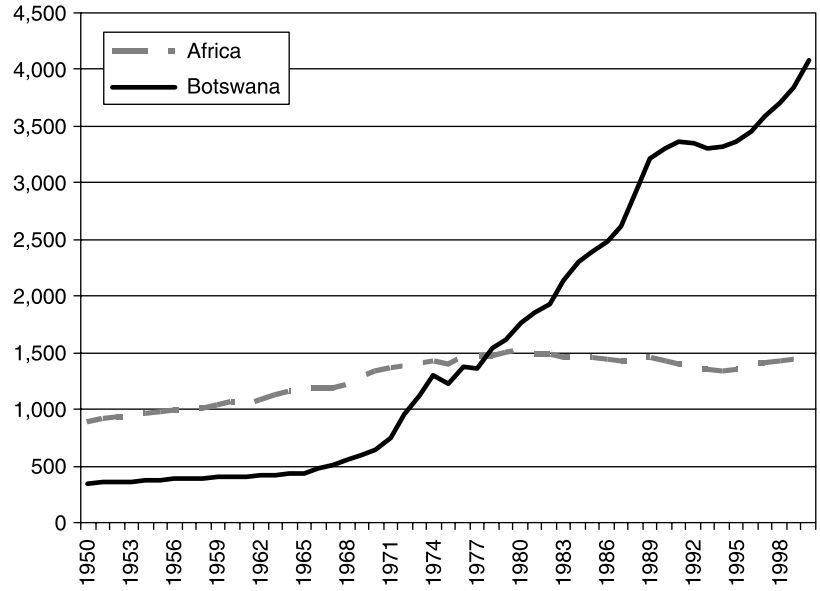

Figure 1. Botswana: African growth miracle.
Source: Maddison. GDP per Capita (1990 International Geary-Khamis dollars).

gaps in the series. Based on the official data a real growth rate cannot be derived before 1966, and there are no annual growth rates available for the period 1969/70 to 1974/75, since no national account estimates were made for the years 1969/70, 1970/71 and 1972/73.[8] In order to compare official growth rates between 1966 and 1995, growth rates between 1969/70 and 1974/75 have to be imputed. There is total GDP data available for 1971/72. For the purposes of this exercise, it is assumed that the absolute increment in total GDP between 1968/69 and 1971/72, and again between 1971/72 and 1973/74, was stable.[9]

The correlation exercise is an indication of the lack of agreement between the different sources on annual growth rates in Botswana. In terms of average growth for the whole period the agreement is better. The average growth reported for the period 1965 to 1995 varies between 11.5 per cent (Botswana), 11.2 per cent (WDI), 9.8 per cent (PWT) and 10.9 per cent (OECD) (see Table 1).[10] All sources agree that growth was rapid, but there is great uncertainty about the actual rate of growth and, in particular, its annual timing.

Another approach to resolving the disagreement on economic growth is to investigate the actual discrepancies in the data, and the timing of these discrepancies. For this purpose an annual error range is constructed for the four countries. Figure 2 displays the maximum and minimum values of GDP growth quoted in the four sources for each year from 1966 to 1995 (Figure 2). The differences between the two lines display the error range in the data. This displays the extent of disagreement, detects the period of particular uncertainty and provides a point of entry for an investigation into the causes of disagreement regarding growth rates.

8 The accounting year in Botswana starts on 1 July and ends on 30 June. The year denoted in the accounts as 1971/72 is deemed to correspond to 1971, 1972/73 corresponds to 1972 and so on.

9 Resolving the growth performance of Botswana from 1965 to 1974/5 is one of the key questions in later sections. This imputation is made here in order to make a comparison of the sources possible.

10 An error range in the average growth rates of 1.7 per cent is not inconsequential. The difference of the 30-year compound growth rate of 11.5 per cent as compared to 9.8 per cent would mean that by the first measure total GDP would have increased by a factor of 26, and by the latter growth rate by a factor of 16.5.

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Table 1. Correlation matrix of annual growth rates: Botswana 1966–95

	Botswana	WDI	PWT	OECD
Botswana	1.00	0.72	0.26	0.38
WDI	0.72	1.00	0.48	0.75
PWT	0.26	0.48	1.00	0.79
OECD	0.38	0.75	0.79	1.00

In the table 'Botswana' represents the official evidence.

The average difference between the highest and the lowest estimate of growth in a year is very high − 8.5 per cent. In no year do the four sources agree on the rate of growth. There are some lessons to be learnt from the error range. The disagreement is higher at the beginning of the period. Between 1966 and 1977 it is 5 per cent or higher in every year except 1973, when it is only 2 per cent, and only in two other years is it smaller than 10 per cent in that period (6 and 5 per cent in 1972 and 1968 respectively). In the latter half of the period, the error range narrows. Between 1978 and 1995 it reaches double digits 'only' three times, in 1982, 1987 and 1988. From 1990 onwards the series all use the same base year, and the error range average in this period is less than 3 per cent.

There are four periods in which the error range is particularly large. For the early years, 1966–71, the average error is 14 per cent. This is not that surprising given that there were no official growth estimates on which the series are based for 1969 and 1970. The period between 1974 and 1977 was characterised by economic shocks both domestically and externally (drought and rising petroleum prices) and the way the data have picked this up seems to differ. In particular, the official data reports no or negative growth in 1974 and 1977, while the other sources indicate rapid growth. In the other two periods of large discrepancy, 1981–82 and 1987–88, it is driven by relatively low estimates of growth by the Penn World Tables, while the other sources report high growth. All in all, the range between

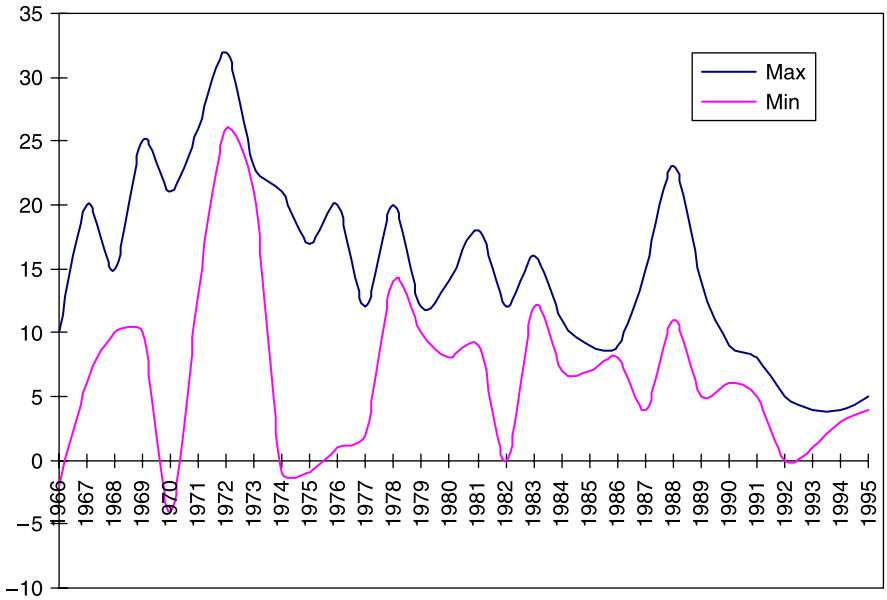

Figure 2. Botswana – annual error range in GDP growth rate 1966–95

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the lowest and highest estimates for any given year is very large in the Botswana data. The coherence of the data improves as we approach present times.

Table 2 summarises the differences in growth reporting by averages over five-year periods for the first decade, the last two decades, and the whole period. The inaccuracy measure is arrived at by calculating the error range as a percentage of the average growth rate of all the four sources. While the errors do, to some extent, even out over time, there is still an uncomfortable level of uncertainty surrounding the growth evidence. The level of disagreement might raise fundamental doubt about the validity of any of the sources, since, at face value, we have no reason to assert the superior quality of any of the growth estimates. In order to get closer to some certainty about economic growth in Botswana, it is necessary to consult the official evidence.

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The Official Growth Evidence: Botswana 1965–1995

There are good reasons for approaching the inaccuracy in the growth evidence through the national accounts. First, although some scholars treat international database evidence as a primary source of evidence, it is technically a secondary source. The international data have been passed from the hands of the respective governments and through the statistical division of the publisher. This creates some problems. It is unsatisfactory to work with data without proper sources. Sometimes the WDI and PWT have modified or added information to the data provided by the national governments and statistical bureaus, sometimes not. The problem lies in that it is not at all clear when modifications or adjustments have been made. Second, the national accounts data can be disentangled and disaggregated because they are published like accounts, and not just numbers in a database. Third, the national accounts come with guidelines and commentaries. Consequently, it can be established if the data are based on estimates, surveys or the census, or whether the data are based on an actual national account estimate at all. The growth evidence in the databases bridges several years during which no official data were available, as well as cutting across different base years. Last, reading the national account reports and handbooks is the only way to establish when and how accounting methodology changes through time. The inconvenience of the national accounts evidence is that it is neither readily downloadable nor fully available in most libraries. The evidence presented here has been compiled and collected in the respective countries' national statistical offices, archives and libraries.

The postcolonial growth record of Botswana is covered by five different constant prices series. Official knowledge about economic growth for the first decade of independent rule is sparse. There is one series that covers the early years, based in constant 1971/72 prices.

Table 2. Accuracy in growth reporting Botswana 1965–95

	WDI	BOTSWANA	PWT	MADDISON	Min	Max	Error Range	Inaccuracy
1966–70	11.0	16.8	7.0	10.0	7.0	16.8	9.8	88%
1971–75	18.2	16.2	17.2	18.6	16.2	18.6	2.4	14%
1976–80	12.2	9.0	13.2	13.2	9.0	13.2	4.2	35%
1981–85	10.0	11.2	7.6	10.0	7.6	11.2	3.6	37%
1986–90	11.8	12.2	9.2	10.4	9.2	12.2	3.0	28%
1991–95	4.0	3.4	4.6	3.4	3.4	4.6	1.2	31%
1966–75	14.6	16.5	12.1	14.3	12.1	16.5	4.4	31%
1976–95	9.5	9.0	8.7	9.3	8.7	9.5	0.9	9%
1966–95	11.2	11.5	9.8	10.9	9.8	11.5	1.7	15%

However, this only provides GDP estimates for 1967/68, 1968/69 and 1971/72. As noted previously, this sparse official reporting has led to wide variation between the different growth estimates. During the first five years after Independence (1966–70) the discrepancy between the official growth rates and PWT was particularly large. The official estimates indicates an annual average growth of more than 16 per cent, while PWT estimates a more conservative 7 per cent. If the latter estimate was correct, Botswana did not grow significantly faster than many other African economies in this period. Maddison, probably reacting to the dearth of national accounts data files for this period, reports a 10 per cent GDP growth rate for each year between 1965 and 1971.

The second official constant price growth series was based in 1974/75 prices. At this stage, the country had already moved from being a very poor agriculture-based land-locked economy, to being a rapidly growing diamond-mining-dependent economy. The new series reported total GDP in 1974/75 prices for 1965, 1966, 1967/68, 1968/69 and 1971/72, but only provided a disaggregation of GDP per sector from 1973/74 onwards. There were no GDP estimates for 1969/70, 1970/71 and 1972/73.

The preparation of the first reports was considered as 'an asset' by the Central Statistical Office (CSO) in the sense that the exercise 'revealed the weaknesses of the data and the gaps in the information available'.[11] The resulting GDP estimates should therefore be considered preliminary, with the implication that subsequent estimates were likely to have better information, and consequently more extensive coverage. In the second report, the CSO informed readers that 'a number of assumptions and estimates have been used which are based on insufficient or unreliable data, and in many cases on opinion'.[12] In the third report, the reader is reminded that '[w]e still depend on estimates and intelligent guesses due to the unavailability of certain data' indicating that the lack of basic statistical data and lack of coverage was not dealt with in the space of the first three reports.[13] With specific reference to the constant price series it was noted that 'it is debatable whether one should attempt an analysis of this sort when there are so many statistics missing'.[14]

Reported economic growth was uneven during the period and most rapid during the years for which estimates are lacking. According to the 1974/75 series, total GDP increased by almost 50 per cent from 1965 to 1968/69, as the economy grew at 9 per cent the first year, and 15 per cent in the following two years. In 1971/72, after two gap years, total GDP was measured to be 72 or 75 per cent higher according to the 1971/72 or 1974/75 series respectively. In 1973/74, after a year with a missing estimate, GDP was measured at a level that was 50 per cent higher than in 1971/72. Between 1973/74 and 1978/79, GDP was measured consistently and regularly and growth slowed considerably with GDP increasing by 64 per cent. In comparison, between 1965 and 1973/74, when the GDP estimation methodology was revised three times, total output increased fourfold. Therefore, there is good reason to believe that the statistical growth was particularly strong during between 1965 and 1973/74 and the derived growth rate for this period should not be interpreted at face value.

If GDP growth is only calculated for the years for which we have consecutive observations (8 years) we get an average growth rate of 12 per cent for the period (Tables 3 and 4). While growth is rapid throughout the period, the explosive nature of growth in Botswana is an impression based on the years between for which we do not have a consistent measure.

11 *National Accounts 1964 to 1968*, p. 1.
12 *National Accounts 1967/68*, p. 1.
13 *National Accounts 1968/69*, p. 1.
14 *National Accounts of Botswana 1971/72*, p. 4–11.

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Table 3. Botswana gross domestic product, base year: 1971/72 (Rand million)

	1967/68	1968/69	1971/72
Agriculture, Hunting, Forestry and Fishing	20.9	23.8	27.4
Mining and Quarrying	− 1.4	− 1.4	11.2
Manufacturing	1.9	2.8	7.7
Electricity and Water	0.6	0.6	1.2
Construction	3.9	3.5	10.0
Wholesale and Retail Trade and Restaurants and Hotels	2.5	3.8	6.8
Transport, Storage and Communications	2.9	4.3	4.5
Finance, Insurance, Real Estate and Business Services	5.6	5.9	9.1
Public Administration and Other Services	7.9	9.2	12.2
Imputed Bank Service Charges	0.1	0.2	0.8
Gross Domestic Product	44.9	52.7	90.9
Average GDP Growth	26%		
Average Agriculture Growth	8%		
Average Manufacturing Growth	76%		

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Agriculture grew 15 per cent from 1968/69 to 1971/72, far less than the total GDP. There was significant statistical growth in this sector during the period. The CSO considered it likely that previous agricultural surveys had slightly underestimated both the number of farmers (because of an outdated sampling frame and a bias in the sample design) and the number of cattle owned by each farmer (because of a response bias). 'The latter defect, which is still with us, is not too serious as far as the 1971/72 GDP is concerned because the value added by increase in livestock numbers is small compared with the value added from sales and personal consumption'.[15] Still, the 1968/69 estimate of 53,750 traditional farmers was thought to be too low by about 10 per cent, which meant that the value added for that year was too low. In addition, according to the report analysis of purchasers' records, cattle purchased from the traditional sectors in 1971/72 were probably about one-third more numerous than sales reported by traditional farmers. This means that the early reports may seriously have underestimated the value added in the traditional sector from cattle sales, since they relied exclusively on agricultural surveys.[16] For the purpose of creating the 1971/72 series these changes in methodology were corrected and, as a matter of judgement, the estimates for 1967/68 and 1968/69 were adjusted upwards. This backwards re-adjustment was not done with regards to 1965 and 1966, accounting for some of the reported rapid growth up to 1973/74.

The bulk of growth in GDP during this period is explained by the expanding mining sector, which accounted for 33 per cent of the increase in total value added. The Orapa diamond mine started operations in 1971, and the Shashe mining project was under development. A further 13 per cent share of the increase in GDP was accounted for by the manufacturing sector, mainly due to an increased throughput of cattle at the new abattoir of the Botswana Meat Commission. According to the 1971/72 estimates, construction activities by mining companies and by the government were transferred to the construction sector from the mining sector.[17] Holding companies and management consulting were transferred to finance and business.[18] These measures thus understate the direct effect of mining activities. Additionally, a pilot project was undertaken to survey small-scale traders; it had not been

15 *National Accounts of Botswana 1971/72*, pp. 1–2.
16 *Ibid*., pp. 1–3.
17 *Ibid*., p. 5-1.
18 *Ibid*., p. 7-1.

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Table 4. Botswana gross domestic product, base year: 1974/75 (pula million)

	1965	1966	1967/68	1968/1969	1971/72	1973/1974	1974/1975	1975/76	1976/77	1977/78	1978/79
Agriculture, Hunting, Forestry and Fishing						68.9	61.2	62.0	64.6	61.8	58.9
Mining and Quarrying						14.4	18.0	40.1	40.0	49.6	79.8
Manufacturing						11.0	15.5	19.9	21.9	19.3	28.9
Electricity and Water						2.6	6.9	10.4	8.7	9.5	11.5
Construction						24.0	20.1	14.5	9.6	10.2	10.9
Wholesale and Retail Trade and Restaurants and Hotels						31.4	34.3	39.0	43.1	48.3	65.4
Transport, Storage and Communications						6.1	5.5	5.6	2.4	6.3	7.1
Finance, Insurance, Real Estate and Business Services						15.0	14.6	15.8	17.6	19.4	29.5
Public Administration and Other Services						32.8	33.7	42.8	44.8	46.3	55
Imputed Bank Service Charges						−0.8	−3.3	−2.4	−6.2	−6.6	−11.5
Gross Domestic Product	55	59.9	68.6	79	138	205.4	206.5	247.7	246.5	264.1	335.5

covered before and therefore was measured as statistical growth. Data for both small and large traders must be considered to be of poor quality.[19]

The rapid increase in GDP between 1971/72 and 1973/74 is accounted for mainly by statistical growth and very favourable climatic conditions. Statistical growth arose when coverage in the baseline estimates was extended. The rainfall in 1973/74 was 74 per cent above the norm, and resulted in an even sharper increase in output.[20] In contrast, 1965 was a very poor year due to climatic conditions.[21] Agricultural output peaked in 1973/74 and then stagnated for the rest of the period with an average negative growth of 3 per cent. Despite a huge increase in estimated total output it was judged as 'quite certain' that the 1973/74 output level was significantly higher than in 1971/72, but perhaps by not as much as is shown in the accounts; 'the 1971/72 level of output probably still is underestimated'.[22]

This leaves the economic performance between 1965 and 1973/74 clouded in uncertainty. There is no doubt that while there were productive gains, at least one-third of the measured growth rates resulted from cumulative extension of coverage in the baseline estimates. In addition, growth is considerably overstated because there was a drought in 1965 and extraordinary good climatic conditions in 1973/74. This meant a rapid increase in output, but overstated the extent of underlying economic expansion. The real economic expansion was the development and opening of new mining complexes. The mining sector's contribution is understated in these early accounts, as activities directly related to mining were accounted for in other sectors. Apart from the mines, weather and statistics there was also a growth effect from the expansion of meat processing measured in the manufacturing sector. From virtually no manufacturing capacity, the sector grew from a very low base and yet still remained at only 5 per cent of the economy in 1973/74.

For the period 1973/74 to 1978/79, value by sector at constant 1974/75 prices was reported without any gap in the series. The average growth for this five year period is impressive at 11 per cent but the averaged growth rate hides the episodic nature of growth. The increase in output largely happened between 1974/75 and 1975/76 and between 1977/78 and 1978/79. These two years account for 87 per cent of the increase in value added, the result of increased mining output and mining-related activities. More than 90 per cent of the recorded growth took place in the mining, trading, finance and government sectors. Mining output increased by more than five times over the period whilst the doubling of value added in trade and finance was mainly driven by diamond trading, sorting, management and holding. The government was directly involved in the management and ownership of the mines, and increasingly relied on mining for revenues. Whilst in 1971/72 only 5 per cent of government revenue originated from this sector, the mining share in government revenues had increased to 36 per cent in 1979/80.[23] The construction sector, which includes mining development, decreased with the completion of the construction of mines at Orapa and Letlhakane: increased sectoral output corresponds to the doubling of the diamond extraction capacity at Orapa at 1975 and the start of production in 1977 at Letlhakane.

The agricultural sector stagnated over the period, and actually shrank due to drought conditions in 1978/79. The good climatic conditions in the peak year 1973/74 were repeated in 1974/75, but did not result in continued high output. 'As the traditional sector mainly produces crops for own consumption (i.e. prices in the market are to low to cover production and transport costs) the rich harvest in 1973/74 resulted in surplus stocks of grain in 1974/75,

19 *Ibid*., p. 6-2.
20 *National Accounts of Botswana 1973/74*, pp. 1–4.
21 *National Accounts of Botswana 1971/72*, pp. 1–3.
22 *National Accounts of Botswana 1973/74*, pp. 1–4.
23 C. Harvey and S.R. Lewis, *Policy Choice and Development Performance in Botswana* (London, Macmillan, 1989), p. 110.

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Table 5. Botswana gross domestic product, base year: 1979/80 (pula million)

	Derived Growth Rates	
	(Start–End)/Years	Average Annual Growth
GDP growth 1965–1978/79	39%	12%
GDP growth 1965–1973/74	34%	13%
GDP growth 1973/74–1978/79	13%	11%
Agriculture Growth 1973/74–1978/79	−3%	−3%
Mining Growth 1973/74–1978/79	91%	46%
Manufacturing Growth 1973/74–1978/79	33%	23%

and consequently planting was substantially reduced that year to equate to output needs'.[24] The drought in 1978/79 caused an absolute failure of crop output, while cattle owners wanted to slaughter their animals because of the lack of water. Thus, the Botswana Meat Commission saw a record output that year. BMC still dominated the manufacturing sector, although some of the growth between 1973/74 and 1975/76 is accounted for by the start-up of textile manufacturing. Later, in 1979, Kgalagadi Breweries were set up.

The importance of the mining sector is inescapable and understated in the accounts as many of the directly and indirectly related activities are included in different sectoral accounts. If Botswana had relied on manufacturing and agriculture alone, economic performance would have much less impressive. The combined value added of these two sectors grew by an average of 2 per cent per annum from 1973/74 to 1978/79. Had this have been the mainstay of the economy, GDP would not have kept pace with population growth in this period.

The 1979/80 growth series covered 13 years of growth by sector from 1974/75 to 1986/87. The accounting methodology was changed significantly during this accounting period. The GDP by sector and growth rates presented in Table 5 is based on the full series published in the 1986/87 report; the series published in the 1985/86 report, however, looks significantly different. In 1986/87 the whole series was revised backwards and a new household income and expenditure survey was incorporated. The effect of the inclusion of these new data is that the performance of the agriculture, trade and financial sectors was revised upwards. Agricultural output was revised upwards because of increased coverage and additions made for 'own consumption'. In the trade sector, informal retail trade was added and for the finance sector there was also improved data available on the renting of property, increasing the estimated value of Finance, Real Estate, and Business services. In effect, there was positive statistical growth in all these sectors, as a result of the new data added by a backward smoothing out of the series.

The exact direct statistical effect of this is hard to determine in the new series because of another concurrent change in the accounts published from the 1986/87 report onwards. Mineral trade was removed from finance and trade, and moved into the mining sector statistics instead. An increasing amount was transferred between the sectors from 1977/78, at the same time as new data were included from the Household Income and Expenditure Survey in the same sectors. Meanwhile, the level of construction output was reportedly increased in line with the demand for construction.[25] Exactly what this 'demand' refers to is hard to interpret, but it is likely that some of the increase was engineered in order to harmonise with new data on rural dwellings. In the previous series it was observed the value added in this sector fell in the late 1970s, while the rest of GDP was increasing. This made sense considering the timing of the construction of mines. In the 1986/87 report, however,

24 *National Accounts of Botswana 1975/76*: 2-1-5.
25 *National Accounts of Botswana 1986/87*: 2.

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it would seem that the adjustment in accordance with 'demand' in effect assumed that the sector grew in accordance with the rest of the GDP.

According to the series published in the 1985/86 report, total value added in agriculture halved during the period; in the new revised series, by contrast, value added decreased by 30 per cent. The sum of GDP in Table 6 is a measure of how much value was added to the baseline estimate. The increase in the baseline estimates is largest in the middle of the period. In 1981/82, the increase was 21 per cent relative to the 1985/86 baseline estimate. The effect of the revision is largest for the period between 1974/75 to 1981/82. The 1985/86 data showed an annual average growth of 13 per cent, with agricultural output declining by an annual average of 3 per cent. The revised 1986/87 data recorded an annual growth of 18 per cent, and the growth in the agricultural sector was now just 1 per cent. There is, therefore, considerable confusion between changes in statistical methods and real economic change. The effect is certain enough though: the statisticians were retrospectively adding growth to the GDP. One of the basic conditions for the comparison through time is violated by this gradual addition of new data; it is a conflict between reliability and validity. The 1986/87 revision of the data was done to make the 1986/87 estimate of total GDP more 'correct', in other words, more valid with inclusion of new statistical data. On this basis, the new estimate is preferable as a measure of the best estimate of GDP per capita. However, if we are concerned with economic change over time, the newly included data make the derived rate of growth unreliable. When compiling data for the use of databases, however, as a rule the most recent estimates are preferred, and in this case the most recent series has a significant element of statistical growth. To introduce a far-sweeping change in methodology without changing the base year is unusual, and would not have been detected without a careful consultation of each annual report.

Even with this revision, and purely judging by the aggregate growth rate, Botswana's economic performance was excellent during the period, with the aggregate growth rate of total GDP almost doubling from 1979/80 to 1986/87. The mining sector alone accounted for 70 per cent of this increase, whilst government expenditures accounted for almost 20 per cent of the increase, and more than 50 per cent of government revenues derived directly from mining in 1985/86.[26] Some of the recorded growth was purely statistical, however. In agriculture, the difference in value added in 1985/86 between the two estimates (which is the growth effect of the inclusion of new statistical data) amounts to 3 per cent of total value added for the period. The other inclusions were made in trade and finance, where simultaneously elements relating to mining were subtracted. The difference between the amounts added to the mining sector and the actual decrease in the trade and finance sector, accounts for 6 per cent of the value added in the period.

The expansion of total output over this seven year period happened in mining and government expenditure, whilst the rest of the increase can be attributed to changes in measurement. There was a negative trend in agricultural growth for the whole period. Manufacturing performed slightly better. The cumulative effect of manufacturing and agriculture on GDP growth was neutral. According to the old series, where agricultural growth was not overestimated, the total output of the two sectors declined over the period.

The introduction of a new base series in the 1987/88 figures at 1985/86 prices did not correspond with any changes in methodology. The new series covered the same period back to 1974/75 and it is specifically noted that care was taken to leave growth rates unchanged when changing the base year. Indeed, there is hardly any difference between the series either in terms of growth rates or in terms of structural distribution in any given year. This coherence will not be documented here. Instead, the investigation of Botswana's

26 Harvey and Lewis, *Policy Choice and Development Performance in Botswana*, p. 110.

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Table 6. Botswana statistical growth: differences in GDP per sector, before and after 1986/87 revision compared. Base year: 1979/80 (pula million)

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Agriculture, Hunting, Forestry and Fishing	100.2	101.5	105.8	105.3	98.3	100.3	90.5	92.3	80.8	70	68.3	75.7	70.2
Mining and Quarrying	53.2	87.5	92.1	171.4	169.1	239.7	321.4	380.9	557.4	645.8	666.5	687.2	742.8
Manufacturing	24.5	31.4	34.6	32.4	43.6	28.3	35.4	44.2	40.6	42.2	33.6	43.7	51.5
Electricity and Water	8.8	13.3	11.1	12.2	15.6	15.0	15.3	15.9	15.7	19.5	23.5	31.4	34.8
Construction	47.7	48.3	41.6	56.7	52.1	58.1	57.6	41.4	33.8	52	53.5	47.5	55.1
Wholesale and Retail Trade and Restaurants and Hotels	66.2	73.7	81.4	91.2	123.4	147.7	138.5	131.1	121.6	125	149.9	166.7	177.6
Transport, Storage and Communications	9.0	10.5	10.3	11	10.7	17.1	17.6	19.1	21.4	24.8	31.6	41.3	40.8
Finance, Insurance, Real Estate and Business Services	24.2	26.2	29.2	28.3	40.1	58.7	47.7	53.3	56.2	61.7	78.3	95.4	95.7
Public Administration and Other Services	75.5	97.2	103.3	105.6	118.7	121.5	139.8	153	171.1	185.4	215.4	235.0	256.6
Imputed Bank Service Charges	−2.8	−4.2	−7.9	−7.7	−11.2	−14.8	−16.7	−17.0	−19.9	−22.4	−22.3	−33.0	−36.4
Gross Domestic Product	406.5	485.4	501.5	606.4	660.4	771.6	847.1	914.2	1078.7	1204.0	1298.3	1390.9	1488.7

Agriculture Growth 1974/75–1986/87:	−3%
Mining Growth 1974/75–1986/87:	27%
Manufacturing Growth 1974/75–1986/87:	9%
Total GDP Growth 1974/75–1986/87:	12%
Agriculture Growth 1979/80–1986/87:	−4%

Mining Growth 1979/80–1986/87:	21%
Manufacturing Growth 1979/80–1986/87:	5%
Total GDP Growth 1979/80–1986/87:	11%

(*Continued*)

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Table 6 *(Continued)*

Agriculture, Hunting, Forestry and Fishing	12.5	12.6	13	18.5	11.7	17.0	15.5	20.5	20.7	19.1	21.5	22.5
Mining and Quarrying	0	0	0	0	0	29.0	60.8	158.8	164.1	112.4	106.3	114.0
Manufacturing	0	0	0	0	0	−0.9	−1.6	−1.6	−1.8	−1.8	−2.2	−1.7
Electricity and Water	0	0	0	0	0	0	0	0	0	0	0	0
Construction	−0.1	13.8	18.8	32.4	26.2	21.7	25.6	4.2	7.6	13.3	17.9	17.2
Wholesale and Retail Trade and Restaurants and Hotels	0	0	0	0	0	−9.3	−25.3	−19.6	−40.5	−57.2	−55.8	−70.1
Transport, Storage and Communications	0	0	0	0	0	3.5	2.8	1	−2.4	1.7	3	2
Finance, Insurance, Real Estate and Business Services	0	0	0	−4.0	−9.0	−11.8	−16.6	−25.3	−24.9	−34.9	−3.9	−1.2
Public Administration and Other Services	0	0	0	0	0	0	0	0	0	0	0	0
Imputed Bank Service Charges	0	0	0	3.9	9.0	12.9	14.6	23.8	23.5	32.8	0	0
Gross Domestic Product	12.4	26.4	31.8	50.8	37.9	62.1	75.8	161.8	146.3	85.4	86.8	82.7

Note: The table represents the 1986–87 estimates subtracted from the 1985/86 estimates. A negative sign means that the sector has decreased in value added in the new series. The sum, Gross Domestic Produce represents the total statistical value added from this revision.

economic performance will be concluded by reviewing its growth record from 1974/75 to 1994/95 at 1993/94 prices.

During this twenty-year period, total output in Botswana increased more than six-fold. This growth in output was driven overwhelmingly by the increase in mining output. Total value added in this sector contributed 12 per cent to total GDP at beginning of the period compared with 34 per cent by 1994/95 (as shown in Table 7). The mining sector value added in that year was larger than the total GDP in 1981/82. The value added in mining increased by 18 times over the period, the average growth rate being fastest during the first decade and, from 1988/89 to 1994/95, falling significantly. Average growth in the sector for the whole period was 18 per cent, but in this latter period averaged only 3 per cent. Despite this stagnation in mining, there was still some growth in the economy; 70 per cent of the total increase in value added in this latter period occurred in the trade, finance and government sectors.

During this period there was no significant increase in agricultural output and, allowing for statistical growth from increased coverage, it was probably negative.[27] This twenty-year perspective hides a clear trend of decline from 1979/80 to 1986/87. In one year, 1987/88, the agricultural sector grew 68 per cent as the 1982–87 drought came to an end, but, this apart, there was no growth in agriculture and total output was lower than the 1987/88 level for the rest of the period. Reflecting its dependency on cattle, manufacturing growth was sporadic. As noted, there was a record high output in 1978/79 when there was a very high take-off from the cattle herds but this level of output was not reached again until 1985/86. From that year on there was rapid growth in the sector, total manufacturing output increasing almost threefold. Overall, though, the total output of the manufacturing and agricultural sectors was higher in 1974/75 than in 1985/86. Had Botswana relied on manufacturing and agriculture it would not have sustained an increase in GDP for most of the period. That Botswana's economic performance is favourable relative to other African economies is the result of a substantial increase in mining activities which, in turn, are felt directly in other sectors such as construction, electricity and water, trade and finance, as well as in government revenues. Even with a late agricultural revival and the beginning of manufacturing growth in the late 1980s, which lasted through the 1990s, these two sectors still contributed less than 10 per cent to total GDP in 1994/95. On the other hand, the mining sector directly, on the other hand, accounted for 35 per cent of total output at the end of the period – a ratio that grossly underestimates its importance for the economy.

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Explaining the Growth Miracle

According to Acemoglu *et al.* 'there is almost complete consensus that Botswana achieved rapid growth because it managed to adopt good policies',[28] whilst Maipose and Matsheka assert more specifically that 'a secure political elite has pursued growth-promoting policies'.[29] Both works are remarkably silent on the specifics of the policies that would explain the exceptional performance of Botswana. The closest one gets is an implicit negative

27 As noted earlier there was an *ad hoc* addition to output following the inclusion of new statistical data. This addition was smoothed backwards, by an addition of 22.5 million pula in 1985/86 compared with 12.5 million pula in 1974/75 in 1979/80 prices. Total output in the Agricultural sector was 321.9 million pula in 1985/86 at 1993/94 prices compared with 75.7 million pula in 1979/80 prices. The price ratio between the two series in agricultural product was 4.25. The statistical increase then could roughly be estimated to be 22.5 million pula – 12.5 million pula multiplied by 4.25. This would amount to 53 million pula, while the measured increase in agricultural output was 40 million pula over the period.

28 Acemoglu *et al.*, 'An African Success Story', p. 83.

29 G.S. Maipose and T.C. Matsheka, 'The Indigenous Development State and Growth in Botswana', in Ndulu, *et al.* (eds), *The Political Economic of Growth in Africa 1960–2000*, p. 511.

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Table 7. Botswana gross domestic product, base year: 1993/94 (pula million)

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	
Agriculture, Hunting, Forestry and Fishing	426.0	431.6	449.8	447.7	417.9	426.5	384.8	392.4	343.5	297.6	
Mining and Quarrying	217.1	357.1	375.9	699.5	690.1	978.3	1,311.7	1,554.6	2,274.9	2,635.7	
Manufacturing	124.7	159.8	176.1	164.9	221.9	144.0	180.2	225	206.6	214.8	
Electricity and Water	32.0	48.4	40.4	44.4	56.7	54.5	55.6	57.8	57.1	70.9	
Construction	264.1	267.0	230.0	313.5	288.0	321.4	318.7	229.0	187.0	287.7	
Wholesale and Retail Trade and Restaurants and Hotels	163.1	188.9	189.4	186.5	249.3	272.6	207.4	216.2	143.9	105.6	
Transport, Storage and Communications	27.8	33.5	33.9	37.6	37.1	58.5	62.1	68.2	76.0	86.1	
Finance, Insurance, Real Estate and Business Services	90.0	97.4	108.5	105.2	149.1	218.2	177.3	198.1	208.9	229.3	
Public Administration and Other Services	293.9	365.4	401.5	408.9	459	472.4	544.3	591.7	657.7	715.2	
Imputed Bank Service Charges	−9.8	−14.7	−27.7	−27.0	−39.3	−51.9	−58.6	−59.7	−69.8	−78.6	
	131.5	139.1	172.8	219.4	299.8	384.0	409.0	367.2	397.2	450.7	
Gross Domestic Product	1,760.4	2,073.5	2,150.6	2,600.6	2,829.6	3,278.5	3,592.5	3,840.5	4,483	5,015	

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95
Agriculture, Hunting, Forestry and Fishing	290.4	321.9	298.5	494.1	453.9	470.1	483.0	492.5	487.9	483.6	466.7
Mining and Quarrying	2,720.2	2,804.7	3,031.6	3,116.6	3,710.0	3,587.5	3,919.2	3,900.9	3,719.9	3,921.5	3,870.9
Manufacturing	171.0	222.4	262.1	340.4	433.4	454.2	484.2	515.2	510.0	507.0	634.5
Electricity and Water	85.5	114.2	126.5	144.7	154.0	157.3	170.6	180.3	209.4	240.6	256.6
Construction	296.0	262.8	304.8	360.1	577.3	722.4	775.2	810.5	689.0	714.5	759.4
Wholesale and Retail Trade and Restaurants and Hotels	235.5	366.2	342.3	411.5	568.4	670.5	594.6	542.6	552.8	912.8	1087.5
Transport, Storage and Communications	108.2	140.0	139.9	213.0	265.8	286.2	329.1	374.9	403.0	408.2	439.8
Finance, Insurance, Real Estate and Business Services	291.0	354.6	355.6	380.3	611.5	782.2	847.9	880.9	1023.3	1106.1	1201.9
Public Administration and Other Services	814.2	886.4	1,027.8	1,266.3	1,570.8	1,651.7	1,778.4	2,028.7	2,112.6	2,177.0	2,267.7
Imputed Bank Service Charges	−78.3	−114.8	−127.8	−148.5	−230.7	−237.0	−230.4	−237.7	−249.7	−294.6	−308.5
	413.5	375.6	448.0	503.8	576.0	625.0	812.3	1077.3	1067.2	795.5	678.2
Gross Domestic Product	5,347.2	5,734	6,209.3	7,082.3	8,690.4	9,170.1	9,964.1	10,566.1	10,525.4	10,972.2	11,354.7

comparison with other countries – as in Maipose and Matsheka's assertion that 'the national fortune has not been mismanaged'.[30]

Lack of mismanagement is not normally considered a sufficient condition for achieving growth. Still, it is this lack mismanagement or kleptocracy which has been the focus of some of the literature on Botswana. Easterly and Levine have explained successful growth in Botswana resulting from a lack of corruption with reference to a combination of ethnic homogeneity and democracy.[31] Yet Leith notes that this assumed homogenous ethnicity in Botswana is open to interpretation:

> In the Protectorate as a whole, including the freehold lands and towns, Tswana living in their own territories compromised 48 per cent of the total, with some 16 per cent consisting of Tswana living outside their home territories and 36 per cent consisting of non-Tswana. Does this ethnic composition represent ethnic homogeneity? The answer depends crucially on how the Tswana living outside their home territories are classified. If all Tswana are treated as one, then the index of ethno-linguistic fractionalization (ELF) employed by Mauro (1995) and Easterly and Levine (1997) is in the low fifties. This is similar to that for Switzerland, the United States and Zimbabwe. If, however, Tswana living outside their home territory are treated as different from those living in their home territory, then the ELF index for 1946 was ninety-three, which is similar to that for Tanzania, Uganda and Zaire.[32]

In general, the ethnicity variable is further weakened by its crude formulation. There is good reason to doubt that political instability increases proportionally with linguistic fragmentation. Rather, two or three equally large groups have proved more detrimental than many small groups. In making reference to Tanzania (as Easterly and Levine do as well) the point is well illustrated. Ethnicity has not been ascribed as a growth-retarding effect by any major scholarly works on the economy of Tanzania.[33]

And although it is indisputable that Botswana has enjoyed democratic rule in the sense of a multiparty system with regular elections, the ultimate test for a democracy is whether or not power has changed peacefully following an election defeat. Botswana has not been put to that test because the Botswana Democratic Party has been dominant ever since Independence. Kenneth Good has pointed to increased trends towards authoritarianism, displacement of the San, corruption and increasing inequality.[34] Good was deported from Botswana in 2005, on an order from the Botswana president.

Acemoglu *et al.* argue that differences in contemporary income levels can be explained partly by the colonial legacy.[35] Their explanatory framework distinguishes between extractive and productive institutions, the former being considered bad for growth and the latter being seen as good for growth. In the econometric model the existence of one or other kind of institutions is explained by settler mortality.[36] The reasoning behind this argument is that, if settler mortality was high, there would be fewer settlers and therefore less effort in instituting a functioning rule of law because such institutions are costly.[37] Most African economies would, in this framework, have ended up with extractive institutions. Botswana was not included in the sample when empirically testing the model. But it was the subject of

30 *Ibid*., p. 535.
31 W. Easterly and R. Levine, 'Africa's Growth Tragedy: Policies and Ethnic Divisions', *Quarterly Journal of Economics*, 112, 4 (1997), pp. 1,203–50.
32 J.C. Leith, *Why Botswana Prospered?* (Montreal, McGill-Queen's University Press, 2005), pp. 29–30.
33 For a critique of the use of this variable, also with specific reference to Tanzania, see H. Stein, *Beyond the World Bank Agenda: An Institutional Approach to Development* (Chicago, IL, University of Chicago Press, 2008), pp. 76–81.
34 K. Good, *Diamonds, Dispossession & Democracy in Botswana* (Oxford, James Currey, 2008).
35 D. Acemoglu, S.H. Johnson, and J.A. Robinson, 'The Colonial Origins of Comparative Development: An Empirical Investigation', *American Economic Review*, 91, 5 (2001), pp. 1,369–401.
36 Settler mortality is used as an instrumental variable.
37 Therefore settler mortality can be instrumental in explaining divergence in income levels today.

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consideration in a separate paper by the same authors.[38] They conclude that Botswana provides a special case because, although it had relatively few settlers, the non-introduction of productive institutions did not cause low income levels because there was 'only a limited effect of British colonisation on . . . pre-colonial institutions because of the peripheral nature of Botswana to the British Empire'.[39] Thus, pre-colonial structures were left largely intact and, moreover, helped foster growth – an exception to the more general hypothesis about the colonial legacy.[40]

With some variations, the recurrent themes in the explanation of the Botswana growth miracle are stability and homogeneity. As we have seen, insofar as these rest on democracy and ethnic homogeneity, they have been overplayed. Peters suggests that since the Bechuanaland protectorate was ruled indirectly through the Tswana elite before independence this stability in rule therefore preceded independence: 'the pre-colonial Morafe is embedded in the modern state', an important part of the reason for Botswana's democratic character, she argues.[41] Peters further warns that Botswana democracy involves minorities being excluded through the reliance on consensual decision-making, and also that power in Botswana rests not on an unchanged tradition, but results from elites adapting to new and changing conditions. To view the Bechuanaland Protectorate as a 'totally neglected backwater of the empire', she concludes, obscures the agency of both colonialists and the Tswana elite.[42] What can be said, however, is that the Botswana elite were largely homogeneous, they were allowed to rule relatively unchallenged, and also that they were drawn from the traditional leaders whose wealth originated in land-holding and cattle ownership.

It has therefore been ventured that Botswana, together with Kenya, Côte d'Ivoire and Malawi provides an exception to the African case of 'rural neglect'.[43] Agreeing with the orthodox interpretation, Maipose and Matsheka state that this lack of urban bias underpinned their economic success.[44] There is no question that the elite had interests in cattle. However, there are important unaddressed questions before this observation can automatically be linked with economic growth. As seen in Kenya, Côte d'Ivoire and Malawi, the existence of a rural bias does not automatically transmit to rapid and sustained economic growth and cannot be assumed to do so. How important was cattle for economic growth? How important was the existence of the rural bias for growth in cattle? Did the bias benefit all producers, or just an elite? What was the role of other crop production?

First, as has been noted, agricultural growth in Botswana was slow and was not an important determinant of aggregate growth. The case of Botswana is exceptional because GDP growth remained high despite low growth in the agricultural sector. Crop production was very volatile as it depended on rainfall, and consequently there was no detectable positive trend of growth in output (the importance of rainfall in Botswana is perhaps illustrated by the name of the local currency, pula, which means 'let it rain'). As Cooke claims: 'On adequate rainfall everything else ultimately depends'.[45] Moreover, the currency had a direct effect on

38 Acemoglu *et al.*, 'An African Success Story'.
39 *Ibid*., p. 113.
40 For a general critique of the Acemoglu line of argument see, G. Austin, 'The "Reversal of Fortune" Thesis and the Compression of History: Perspectives from African and Comparative Economic History', *Journal of International Development*, 20 (2008), pp. 1–32.
41 Morafe refers to the pre-colonial nation-state or 'tribe' in the Botswana usage. See P. Peters, *Dividing the Commons: Politics, Policy and Culture in Botswana* (Charlottesville, University Press of Virginia, 1994), p. 218.
42 *Ibid*., p. 223.
43 D. Rodrik, 'Why is Trade Reform so Difficult in Africa?', *Journal of African Economies*, 7, 1 (1998), pp. 43–69, and R.H. Bates, 'Agricultural Policy and the Study of Politics in Post-Independence Africa', pp. 115–29, in D. Rimmer (ed.), *Africa 30 Years On* (London, James Currey, 1991).
44 Maipose and Matsheka, 'The Indigenous Development State', p. 518.
45 H.J. Cooke, 'The Problem of Drought in Botswana', in M.T. Hinchey (ed.), *Proceedings of the Symposium on Drought in Botswana* (Gaborone, The Botswana Society, 1979), p. 8.

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crop production; Jones notes that 'the exchange rate is unfavourable to agricultural production. For arable crop farmers, the pula is overvalued'.[46]

In 1974, an FAO mission to Botswana (at that time Botswana was one of the largest recipients of World Food Programme aid) produced a report that highlighted the problem that too many small farmers lacked access to cattle, and this in turn caused crop production to fail.[47] Jones supports this contention, suggesting that the government intervene by subsidising contract ploughing, because 'the provision of draught power... is a constant problem'.[48] The FAO report identified a trend towards unequal distribution of incomes in agriculture.[49] The 1993 report in the agricultural census observed that in 1966 agricultural activity comprised some 40 per cent of GDP. In 1993 that share had decreased to less than 5 per cent (a reflection of the monetary dominance of the mineral sector in total GDP). Meanwhile, in 1993, around 70 per cent of the population still depended on agricultural activities for their livelihood. Livestock alone accounted for 3 per cent of GDP. According to the same census there were over 100,000 traditional farms and only 500 commercial farms, yet in 1993 the commercial farms sold 50,000 cattle while the traditional farms sold 100,000 cattle and received lower prices for their cattle.[50] Peters noted a worsening in the distribution of cattle in the 1990s compared to a decade earlier.[51]

Distributional problems in agriculture had consequences for crop production and sustained livelihoods for many small-scale farmers. The aggregate cattle population was stagnant and increasingly concentrated in fewer and fewer hands. The export success of the cattle industry through the BMC (which was a state monopoly marketing board) was already secured through an external agreement; under the Lomé Conventions, Botswana gained access to the EEC export market for beef at prices above world market prices. Access to western markets was therefore not a problem for Botswana and the beef exporters.[52] According to Jones, 'The "cream" on beef exports is provided by an arrangement whereby Botswana exports 17,360 tonnes of de-boned beef a year to the EEC duty-free, and pays only 10 per cent of the levy normally charged on third country exports. Over the life of the first Lomé Convention this gave Botswana a price some 60 per cent higher than exports to alternative markets, and approximately doubles the price which the Botswana Meat Commission can pay to farmers'.[53]

The main export and engine of growth, however, was diamonds. It has been pointed out that the favourable judgement on economic management in Botswana has been made on the basis that it did not ruin this national fortune. It should be emphasised that there was no opportunity to do so. Diamond-selling was from the start handled by the Central Selling Organisation, a producer market cartel run by De Beers. De Beers made sure that diamonds were sold at high prices throughout the period. It is considered the most successful commodity buffer stock arrangement in the world.[54] It further deserves mention that while, in

46 D. Jones, 'Arable Agriculture in Botswana: A Case for Subsidies', in D. Harvey (ed.), *Papers on the Economy of Botswana* (London, Heinemann, 1981), p. 33.

47 Lack of access to draught animals by small-scale peasants created difficulties in preparing land for planting in the short window after the arrivals of rain. When rainfalls were particularly poor, this window was narrower, so the lack of access to draught animals intensified food shortages in drought years.

48 D.B. Jones, 'Drought and Arable Farming', in M.T. Hinchey (ed.), *Proceedings of the Symposium on Drought in Botswana* (Gaborone, The Botswana Society, 1979), p. 235.

49 Food and Agricultural Organisation of the United Nations, A Study of Constraints on Agricultural Development in the Republic of Botswana (including an assessment of the role of food aid), (Rome, FAO, 1974).

50 Republic of Botswana, Ministry of Agriculture, *1993 Botswana Agricultural Census* (Gaborone, Government Printer, 1995).

51 Peters, *Dividing the Commons*, p. 218.

52 M. Hubbard, *Agricultural Exports and Economic Growth: A Study of the Botswana Beef Industry* (London, KPI, 1987), pp. 158–66.

53 Jones, 'Arable Agriculture in Botswana', *Papers on the Economy of Botswana* p. 34.

54 Maipose and Matsheka, 'The Indigenous Development State', p. 530.

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other newly-independent countries, mining operations were often nationalised, there was no such option in Botswana. There was no mineral extraction activity at the time of independence, and Botswana had to rely on De Beers to develop and exploit the diamond fields from scratch. Later, revenue sharing arrangements were improved. Jefferis notes that the Botswana government has been able to reach a relatively favourable agreement, securing royalties and some ownership control. 'Full details of the new agreement have never been disclosed, but it is reputed to be one of the best mineral exploitation contracts in the world'.[55]

A useful natural counterfactual comes from the mining of other minerals. Botswana not only mined diamonds; one of its biggest operations was the Shashe Project, mines producing copper and nickel, for which prices were low through the period. Planned and undertaken by the government from 1968 it had a 'record of disaster'.[56] Development costs significantly overran the budget and there were many technical and managerial problems. How successful was Botswana when the commodity was copper and it was managing the project alone? Harvey and Lewis use Murphy's Law ('Everything that can go wrong will go wrong') and its corollary ('Murphy was an optimist') to describe Botswana's copper and nickel project.[57]

Two related, although not interchangeable concepts, that are both relevant to the evaluation of economic development in Botswana are the 'resource curse' and the 'Dutch Disease' thesis. The first predicts that countries with a rich resource base may have a perverse institutional development because the availability of mineral rents in particular may create incentives for unproductive activities (that is, rent-seeking behaviour) or extreme corruption and mismanagement. Botswana has avoided the resource curse, largely because of the nature of the resource itself. The mines were deep pipe rather than alluvial deposits, not yet developed at independence. This meant that to exploit the deposits Botswana's leadership had to rely on foreign partners, in this case De Beers, and when they were developed the mines were the fact that easier to control (as compared to mines in, say, Sierra Leone). Acemoglu *et al.* argue the fact that diamond revenues were so profitable when extraction was orderly that the high revenues increased the opportunity cost of rent-seeking thereby reducing the incentive for such activity.[58]

In a different manner the 'Dutch Disease' thesis predicts that a resource boom can have a negative effect on an economy because of its potential effects on domestic and external aspects of the economy. In the domestic economy an economic boom can increase the cost levels in the whole economy, and therefore reduce the competitiveness of other sectors. This was not relevant for the only important non-diamond exports; as mentioned, cattle exports were guaranteed in terms of both price and quantity through the Lomé agreement. When it comes to costs of other inputs it can be argued that most inputs were imported, except non-tradable and labour inputs. The demand for labour has been argued to be an insufficient, rather than a negative effect on the economy. In addition, a lot of Botswana citizens were working as migrant labour in South African mines at independence. Thus, Botswana was able to repatriate skilled and un-skilled labour to satisfy domestic demand for labour arising from the mining boom. Generally though, Botswana has suffered from high urban unemployment.

The export boom could have created an opportunity for the Botswana government to engage in excessive spending, but the consensus is that this has not occurred, although there were some increases in transfers over the budget in the late 1990s when government expenditure was 'growing at a considerably faster rate than revenues'.[59] The third channel

55 K. Jefferis, 'Botswana and Diamond-Dependent Development', in W.A. Edge and M.H. Lekorwe (eds), *Botswana: Politics and Society* (Pretoria, J.L. van Schaik, 2008), p. 304.
56 C. Harvey and S.R. Lewis, *Policy Choice and Development Performance in Botswana* (London, Macmillan, 1989), p. 138.
57 *Ibid*., p. 138.
58 Acemoglu *et al.*, 'An African Success Story', p. 113.
59 Maipose and Matsheka, 'The Indigenous Development State', p. 536.

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through which an export boom could have hurt the economy is through an overvaluation of the currency. Botswana's pula, introduced in 1976 (before the South African Rand was used) was tied to the Rand until 1980, and so did not figure in a significant way in exports apart from cattle and diamonds for which export markets were guaranteed. During the 1980s, the foreign exchange rate was managed relatively successfully in order to avoid revaluation.[60] It is therefore not likely that diamond mining growth had significant negative effects on agriculture and manufacture while it certainly stimulated growth in other sectors. Manufacturing growth (in activities other than the cattle abattoirs) first picks up in the 1980s when Botswana actively supports manufacturing growth.[61]

Membership in the Southern African Rand Monetary Area is another of the voluntarily imposed agents of self-restraint that are often quoted as important for growth performance,[62] although exactly how is not clear. Beef and diamond exports were catered for in separate agreements and therefore the external competitiveness of these commodities was not dependent on the exchange rate. Monetary independence took place with the introduction of the pula in 1976. Maipose and Matsheka speculate 'retrospectively' whether its limited independence during the first decade might have 'limited the temptation to adopt the growth retarding import substitution industrialisation policies' that were so prevalent in other countries.[63] The lack of an expansive strategy for industrialisation meant that until 1975 manufacturing growth was mainly limited to the cattle industry (the Botswana Meat Company accounted for almost 80 per cent of manufacturing value added in 1971/72). After 1975 there was growth in other sectors, and 'import substitution was significant as a source for quite a wide range of sub-sectors of manufacturing'.[64] In the 1980s, while import substitution industrialisation policies were dismantled in most other African countries, industrial policy was designed to encourage domestic manufacturing in Botswana.

The timing of these policies makes Botswana exceptional. The Botswana Development Corporation, a parastatal founded in 1970, 'neglected industrial investment' in the 1970s but increased its activities during the 1980s.[65] In 1982, a Financial Assistance Policy was introduced to secure subsidised financing, automatic tax holidays and development grants. There was a willingness to implement trade protection provided the firms met some employment and foreign exchange saving requirements,[66] and post-1980 Botswana 'witnessed and even more rapid growth of BDC' with an increasing share of investment going 'into directly productive manufacturing activities'.[67]

Conclusion

The economy of Botswana underwent a major structural transformation during this period, aptly summarised as rapid growth in mining. At independence there was no mining extraction and therefore the initial contribution to GDP from this sector was nil. Agriculture, consisting mainly of cattle rearing, accounted for almost 73 per cent of total value added in 1964. Three decades later, agriculture accounted for just 4 per cent of GDP, while mining constituted more than one-third of the economy. This structural shift had implications in

60 Harvey and Lewis, *Policy Choice and Development Performance*, p. 221.
61 *Ibid.*
62 Maipose and Matsheka, 'The Indigenous Development State', p. 518 and D. Rodrik, 'Why is Trade Reform so Difficult in Africa?', *Journal of African Economies*, 7, 1 (1998), pp. 43–69.
63 Maipose and Matsheka, 'The Indigenous Development State', p. 535.
64 Harvey and Lewis, *Policy Choice and Development Performance*, pp. 166–8.
65 B. Tsie, *The Political Economy of Botswana in SADCC* (Harare, SAPES, 1995), p. 127.
66 Harvey and Lewis, *Policy Choice and Development Performance*, p. 176–7.
67 Tsie, *The Political Economy of Botswana*, p. 124.

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national accounting terms. The share of the economy that could be appropriately accounted for statistically has increased over time. In the latter part of the period, a relatively larger share of the growth data has a firm basis in actual statistical data, compared with the situation at independence when most of the economy, in production and consumption, was subject to estimation using a rudimentary statistical basis. It has been shown how statistical shortcomings and revisions mean that GDP growth, in particular in agriculture during the first half of the period, has been seriously overstated.

This article has argued that, to some extent, the consensus explanation of the African growth miracle is beside the point. It has been shown here that the exceptional growth in Botswana was due to diamonds rather than to any other factors. Policies aimed at manufacturing and agriculture were not particularly beneficial and, crucially, the growth in these sectors was not rapid. Relying on manufacturing and agriculture alone, Botswana would not have experienced a sustained increase in GDP per capita over the period.

Botswana has indeed been a stable economy and polity. Would this have been the case if it were not for the dependable flow of revenue from diamond earnings? Judging by the instability in manufacturing and agricultural performance, or in copper and nickel mining for that matter, probably not. It is plausible to argue that destructive rent seeking and corruption among elites in other African countries took place in the 1980s and 1990s because government revenues and resources became very scarce in this period. Botswana did not run into this problem. Hence its political and economic stability. The ruling elite in Botswana have been given considerable praise because the revenue from diamonds was not squandered (thereby departing from the normal development path in Africa, avoiding the 'growth tragedy' and escaping 'the bottom billion').

This praise is partly deserved, but we have seen that it should be qualified. Diamond mining in Botswana was exceptional because the deposits were very rich relative to Botswana's very small population. It is also a special case because the deposits were not explored or developed before independence, and that these deposits were not alluvial. This meant that newly independent Botswana needed to make a long-term commitment with De Beers, forming Debswana, a company in which both parties were stakeholders and shareholders. This partnership formed the basis for rapid economic growth in Botswana and underpinned political stability. The Botswana elite were instrumental in negotiating a revenue sharing agreement, but it should be noted that Botswana, because of the size of the deposits, was in a particularly good bargaining position. The counterfactual of copper mining is telling in this respect. A recent World Bank study of royalties in mining shows that Botswana has similar conditions to other countries in the case of copper; it is only in diamond extraction that it is in a special position in terms of both royalties and taxation.[68]

If Botswana, the 'African miracle', is to serve as an instructive case for other African economies, it can be deduced that macroeconomic and political stability is helpful to development. It would be naïve, however, to believe that economic growth will occur in this spectacular fashion whenever the local political elite is unchallenged and committed to avoiding a radical revaluation of the currency. An arguably more instructive and plausible thesis is that macroeconomic and political stability is secured by a steady and secure stream of revenues, and that one of the main reasons that there are very few 'growth miracles', and very many 'growth tragedies' is that most African economies have been undermined by economic instability when sources of revenues have fallen short.

The contribution of this paper has been to disaggregate and disentangle the actual growth record in Botswana. It has been shown that diamonds had a larger direct effect than

68 J. Otto *et al., Mining Royalties: A Global Study of their Impact on Investors, Government, and Civil Society* (Washington, DC, World Bank, 2006), pp. 82–4 and A1–4.

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is commonly assumed. It has been further shown that agricultural and manufacturing performance was much slower than is normally thought. At times the literature has drawn a direct causal link between social cohesion and 'good policy' to explain good economic performance. This paper has shown that this assumption is not supported with regard to agricultural economic performance. This should lead the reader to have strong reservations about the temptation to assert any direct line of causation between 'good' policies or institutions, on the one hand, and economic growth, on the other.

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