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Bolt, Jutta; Hillbom, Ellen

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POTENTIAL FOR DIVERSIFICATION? THE ROLE OF THE FORMAL SECTOR IN BECHUANALAND PROTECTORATE'S ECONOMY, 1900–65

Jutta Bolt & Ellen Hillbom¹

Abstract

While Botswana since independence has experienced impressive economic growth and development this progress has not been accompanied by economic diversification and endogenous growth. In this article we focus on the colonial period and investigate to what extent the formal sector of Bechuanaland Protectorate (colonial Botswana) had the potential to constitute the basis for a diversification of the dominating cattle economy away from its dependency on exporting a single natural resource good – beef. We base our study on colonial archive sources and anthropological evidence which we use to: examine labour market structures; estimate welfare ratios and surplus; and discuss government spending. We find that the demand for skilled labour and human capital development was low throughout the colonial period and that the private sector generally lacked the economic strength and dynamics to develop alternative and/or complementary sectors. Further, we find no evidence of demand driven diversification, neither stemming from private sector consumption and investments, nor from government spending on economic activities outside the cattle sector, infrastructure and human capital development.

Keywords: Botswana, colonial era, formal economy, economic diversification, endogenous growth

JEL Code: N1 N57 O1

- 1 Ellen Hillbom is an associate professor in the Department of Economic History at Lund University, in Sweden. Email: ellen.hillbom@ekh.lu.se
Jutta Bolt is an assistant professor in the Department of Economics and Business at the University of Groningen, the Netherlands. Email: j.bolt@rug.nl
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Introduction

Due to diamond-led economic growth and significant social development, Botswana has, over the last couple of decades, been hailed as both a growth miracle (Leith 2005; Samatar 1999) and an African developmental state (Mbabazi & Taylor 2005; Mkandawire 2001). Explanations for its success have been found primarily in favourable pre-colonial political institutions, limited colonial influence, wise leaders since independence, and prudent economic management of diamond incomes (Samatar 1999; Acemoglu et al. 2003, 2010; Leith 2005; Robinson & Parsons 2006; Jerven 2010). The dominating strand of literature, however, pays limited attention to explaining why progress has not been accompanied by economic diversification and endogenous growth (Hillbom 2008, 2014).

Botswana's long-term growth has depended on exporting two primary goods: beef during the colonial period and diamonds after independence. In this article we focus on the colonial period and study the potential for colonial Botswana (henceforth Bechuanaland Protectorate) to diversify its economy and reduce its dependence on a single good, namely beef. Examples from Latin America inform us that the beef sector in principle has the potential to support diversification. During the late 19th century, the cattle sectors in Argentina and Uruguay were linked to technological and structural changes via investments in transportation and information infrastructure, slaughter houses, trucks, and a leather industry (Salvucci 2006). Our overall aim is to investigate whether there was potential for Bechuanaland to diversify its cattle economy, increase productivity and instigate a transformation process.

Using primary data collected from colonial records as well as historical and anthropological sources, we study the potential for diversification of the Bechuanaland economy from three angles. First, by mapping skill premium and public-private wage differences we analyse the demand for various types of formal employment. The assumption is that increasing wages for skilled labour indicate a growing demand for productive human capital, and that a growing private sector, also indicated by higher wages, is positive for diversification and economic development. Second, by calculating welfare ratios and surplus left after paying for costs of living and taxes we study the demand-side potential for diversification. Higher levels of consumption are understood as not simply the outcome of a dynamic economy, but also a potentially important contributor as incomes feed back into the economy through spending. We also seek to identify private investments and initial industrial activity, e.g., indicated by imports of intermediate goods. Third, we compute government revenues from taxes and colonial grants to see whether they were invested to instigate diversification and/or provided a base for endogenous growth, e.g., through human capital formation.

We present three main findings. First, relative wages indicate that the demand for skilled labour and human capital development was low throughout the colonial

period. Additionally, public officials experienced a rapid increase in enumerations relative to private sector employees. These results point to an economically weak private sector, characterized by low technological development and modest demand for human capital formation. Second, income surpluses required for subsistence and taxes were low for the large majority of the population, and increased only marginally during the colonial period. This generated very limited possibilities for demand driven diversification. Further, we find no evidence of a demand stimulus towards diversification from those who did experience substantial increases in welfare, namely the government officials and large scale cattle holders. This last group was mostly interested in investing surpluses in the cattle herds and did not invest in activities outside the sector. Import statistics give no evidence of increased spending on intermediate goods necessary to develop processing or alternative productive sectors. Finally, we find that even though the colonial government received increasing funds from the development of the beef sector and British government grants, no significant public investments were made into either economic activities outside cattle, or in infrastructure and human capital development. In sum, neither the private sector nor the government made investments that constituted the basis for diversifying the economy.

The paper proceeds as follows. In the next section, we discuss the principle assumptions underlying our approach. Section three discusses the organization of the formal labour market and wage structures. Section four analyses the demand side potential for diversification and section five studies the role of the government in stimulating structural transformation. Section six presents the conclusions. By placing Bechuanaland in a broader comparative context we systematically relate our findings to literature on real wage structures and welfare standards in colonial Africa, teasing out both specific and general characteristics of the colonial experience.

Drivers of diversification

As mentioned above we have studied the formal sector developments from three angles: wage structures, private sector consumption, and government spending. This approach to investigate the role of potential drivers of diversification within the Bechuanaland context is guided by some principle assumptions found in previous research.

When information about an economy is scarce and national accounts are lacking, relative prices and wages are a crucial source of information about the structure of the economy (Zanden 2009). The importance of wage levels and structures in the process of structural transformation has, for example, been clearly shown in Allen's (2009) seminal study of the British economy prior to and during the industrial revolution. Allen's principle argument is that Britain represents a special case in the way that it combined two pre-conditions; high wages and cheap energy. Together they created both demand and opportunity for developing

new labour saving technologies operated by growing numbers of skilled labourers. Thereby the changing characteristics of the formal labour market, e.g., wage levels and skill premiums, were interlinked with processes of diversification and increasing productivity. While Britain and Bechuanaland, of course, are very different cases, our approach to investigating the relationship between wages structures and structural change applies across both.

The wage gap between skilled and unskilled workers is typically interpreted as the reward for the workers who possess more human capital, and are therefore more productive. As new growth theory argues that human capital formation is one of the most important determinants for long-term growth, the skill premium is often understood as a predictor of its emergence (Zanden 2003). Changes in the ratio indicate the relative supply and demand for skilled versus unskilled labour, which in turn depend on demographic change, education and accelerating skill-biased technological change (Katz & Murphy 1992). Additionally, comparing wages paid in the private sector to wages paid in the public sector, informs us about the relative demand and supply for different types of labour, but also about underlying productivity. When technology advances, productivity in the private sector increases, leading to higher wages relative to the public sector as an indication of the economic strength of the private sector (Psacharopoulos 1984). Consequently, by capturing the public-private divide in Bechuanaland we can draw conclusions about the relative success or failure of the two sectors.

We next address arguments for a demand driven diversification stemming from private consumption and government spending. Allen (2009: ch 2) claims that the relatively high living standards of English workers compared with other European countries meant a growing market for food stuffs, consumption goods and education. The core of the argument is that surplus incomes can stimulate increased and diversified domestic production. We calculate surplus incomes in the private sector and discuss consumption and investment incentives. In addition, the 'developmental state' literature indicates that governments can play an important role in stimulating broad based economic development for instance by actively stimulating and investing in certain sectors deemed important for economic progress (Granovetter 1985; Evans 1995; Kohli 2004; Sindzingre 2004). While Bechuanaland was not a developmental state, the Latin American experience show that government investments in e.g., infrastructure, transportation and processing cattle economies have the potential to stimulate economic development and certain industrialization (Salvucci 2006).

Based on the theoretical arguments and empirical evidence from studies on pre-industrial societies generally and cattle economies specifically, we suggest that in principle there should have been opportunities for a dynamic cumulative process of change to be established in Bechuanaland. Our hypothetical assumption requires the existence of two interrelated processes: first, that initial economic growth and high wages resulted in technological change; and, second, that increasing levels of private consumption and government investments could instigate diversification of production leading to continued economic growth and structural change.

Labour force structures

We start our analysis by looking at the demand for labour and wage structures. During most of the colonial period roughly 15% of the population was formally employed and captured in the colonial statistics. In this section we discuss the developments of formal employment, how many people were engaged in various sectors as well as the demand and supply for various types of labour indicated by wage levels and relative wage developments.

Defining formal employment

For the domestic economy, we make a distinction between unskilled and skilled labourers, and government officials. The unskilled labourers are employed in agriculture and as domestic help, or work in domestic mines (Parsons 1993; Schapera 1994; Ramsey et al. 1996). During the 1930s, around 2,000 people were recorded as working in agriculture, but this more than doubled to around 4,500 at independence (Blue Books 1930; Annual Report 1963–65). Total employment in domestic services grew from about 1,500 halfway through the colonial period to around 10,000 in 1965. Official statistics about the number of domestic miners are scattered, but show that it never rose above 600 (Blue Books 1946/47).

More significant than the domestic mining sector were the opportunities for wage employment in South African mines from the 1860s onwards (Parsons 1993). Initially, labour migration was motivated by a need for cash to access the gun trade. After the establishment of colonial rule, paying taxes, sending remittances to family members living under or at the subsistence level, and saving up to buy cattle upon return became the main incentives. From the 1930s labour migration increased (Murray & Parsons 1990; Schapera 1994), but figures are inconsistent when it comes to defining the size of the group of migrants, probably because it shifted. Data from a 1943 survey show that around 28% of all adult men could have been working away from home for wage incomes at the same time and this magnitude is supported by various studies (Salkin 1987; Schapera & Comaroff 1991). The bulk, 89%, went to the Union of South Africa and of those 60% worked in the mines. Official figures (labour passes issued) indicate a much smaller group going to South Africa to work in the mines, although officials also note that there was much unregistered labour migration (Annual Report 1931: 24).

The category of skilled labour includes various groups, such as shopkeepers and owners of eating houses, commercial butchers and bakers, construction workers and builders, bricklayers, mechanics, clerks and drivers as well as exporters of ostrich feathers, ivory, skins, agricultural products and cattle (Schapera & Comaroff 1991: 23; Bechuanaland Protectorate Government Census 1946). They make up the closest thing we have to an entrepreneurial class, although their success varied and for a long time the size of the group was limited. For example, in 1910, only 15 individuals, all Europeans, were recorded to work as

skilled labourers. All European skilled labour has, however, been left out of our sample due to insufficient primary data. The number of Africans employed in skilled jobs started to rise during the 1920s. Within the skilled labour category, over 800 Africans were employed in 1946. This number increased to over 4,000 in 1963 (Blue Books 1910/11, 1920–28, 1946/47; Annual Reports 1946, 1947, 1963).

Finally, African government employment was limited throughout the first half of the colonial period, only to increase from the 1930s onwards. This coincided with the expansion of British colonial ambitions to put more emphasis on investments and policies aimed at generating some socio-economic development in its African colonies (Cooper 2002). The number of lower ranking Tswana government officials, working, e.g., as clerks and police officers, increased to 1,050 in 1946 and 4,000 in 1963 (Blue Books 1946/47; Annual Reports 1946, 1947, 1963, 1965). This group is likely to have been well connected to the agricultural sector via extended family, receiving some incomes in kind complementing their salaries. The number of European government officials remained so small and the wage information so scattered that we have excluded them from the study.

Nominal wages and premiums

To capture the level and structure of wages we have obtained daily wage rates for Africans working in agriculture and domestic services from 1904 until 1965, with a few missing years, especially in the earlier part of the colonial period. For Africans working in the domestic mining sector we have wage observations for the 1930s and 1940s, and for our wage series for the South African mines we have observations once every five years throughout the colonial period. Our annual wage series for skilled labour start in 1923 and, for African government employees we have yearly observations from 1945 onwards.

Not all payments to employees were made in cash. This is an important aspect when we later discuss opportunities for a demand driven diversification. Bechuana-land was not a fully monetized economy, even in the formal sector, and this influenced wage earners' ability and incentives to use the market to meet their consumption needs. In particular, employees in agriculture and domestic services received part of their income in kind and for most years this is indicated by notes on free food and housing. In other sectors, workers received additional in-kind payments on an ad hoc basis. When free food was supplied, we increase recorded wages by the costs of food in a subsistence consumption basket (see subsequent section for more details on how we calculated the consumption basket) and we increase the recorded wages by the costs for a whole consumption basket when both food and housing were provided. Finally, government employees sometimes received a 'cost of living allowance'. As no further details are given it has not, however, been possible to take these allowances into account when calculating wages.

Frequently, the records provide a minimum and a maximum wage rate. To convert these into an average wage, we calculate a lognormal distribution which

places more weight on lower estimates, thereby correcting for over-estimations. To convert daily wages into yearly wages, we follow Frankema and van Waijenburg (2012) and assume 26 working days a month and 312 days a year. Annual reports generally state that the average working week was 45 hours, but that these hours tended to vary, especially for people working in agriculture and domestic services. This suggests a six-day working week, making the assumption of 26 working days per month a reasonable one. Whenever the records also state yearly or monthly wages, we compare them with daily wages, assuming 312 days of work. Typically, yearly and monthly wages imply more than 312 working days per year, making the 312 days a lower bound estimate.

Nominal wages

In Figure 1, we plot nominal wages for the various sectors through the colonial period using a log scale. All wages show a stable trend until the end of the 1930s, after which we see a clear increase in all sectors. Table 1 summarizes the numbers that form the basis for Figure 1. The last two rows of the table clearly indicate the more rapid increase in wages in the second half of the colonial period, when compared with the first half. The general increase in nominal wages, from roughly 1940 onwards, coincides with the emergence of new colonial strategies to develop Bechuanaland's economy. The most important decision was identifying beef exports as the Protectorate's comparative advantage in the 1930s; something that resulted in a rapidly expanding beef export sector. The new policy meant setting up new export opportunities, primarily for live animals, investments in veterinary services and in 1954 the building of an abattoir (Parsons & Crowder 1988; Hillbom 2014).

Figure 1: Nominal wage developments for African workers, pence per day.

Table 1: Level and increase in yearly nominal wages during the colonial period.^a

	Agriculture	Skilled Labour	Domestic Services	Domestic Mining	South African Mining	Government
1900s	5262		6198		6840	
1910s	4130		6002		6840	
1920s	4946	6219	5284		7980	
1930s	4249	7893	4764	6068	8040	
1940s	8044	12385	8439	8966	9420	15252
1950s	14826	21801	14826		14460	51075
1960s	17499	22562	17499	18720	21960	75220
increase in wages 1900–30	0.808		0.769		1.175	
increase in wages 1940–65	2.175	1.822	2.074	2.088	2.331	4.932

^aLevel of nominal wages in pence per annum.

In a regional comparison, agricultural workers earned about the same as coloured farm servants in South Africa: 6.86 grams of silver on average over the period 1835–1910 in South Africa (Zwart 2011), compared to an average of 6.3 grams of silver per day in Bechuanaland up to 1910. Further, Bowden et al. (2008) estimate rural wages for a set of settler economies as well as for a set of peasant export economies. Their study shows that nominal wages paid to agricultural workers in Bechuanaland were, more or less, on a par with nominal rural wages paid in Kenya and Zimbabwe, and a little higher when compared with Uganda and Ghana. However, wages in all countries except Ghana rose faster and ended up higher than those in Bechuanaland in the years prior to independence.

Moving on to unskilled urban labour, we can compare our domestic servant wages from Bechuanaland 1900–65 with de Zwart's (2011) findings for coloured domestic servants in neighbouring South Africa 1835–1910. This shows that, while wages in South Africa were, on average 9.3 grams of silver, domestic servants in Bechuanaland earned, on average, 8 grams of silver up to 1910. Nominal wages were generally higher in South Africa, not only when compared to Bechuanaland, but also to other regions in colonial Africa (Frankema & van Waijenburg 2012). Opportunities to earn well as a domestic servant and when working in the mines encouraged labour migration to South Africa throughout the colonial period. Continuing the comparison with urban unskilled wages for other regions in British Africa, we infer that wage levels in Bechuanaland were relatively high, compared to both East and West Africa, at least until the 1950s (Frankema & van Waijenburg 2012: see Appendix Figure 1A for a comparison).

However, we also conclude that wage levels in Bechuanaland were not high enough to stimulate new labour saving technologies analogous to Allen's (2009) analysis of the British economy. Instead, low-cost agricultural labour remained available throughout the colonial period and although domestic servants earned a little more than unskilled urban workers in other African regions this was not a sector where the increased use of technology could reduce labour costs. The fact that there are no records of people employed in unskilled work outside of domestic services may indicate the stagnation of the private sector. Finally, there is probably a regional effect caused by the higher wage (and price) levels in South Africa explaining domestic servants' wages.

The skill premium

Figure 1 shows that although domestic wage levels remained close to one another prior to 1940, wages for skilled labour were somewhat higher than wages in other sectors. When we compare the enumerations of skilled relative to unskilled (domestic servants) labour to capture the skill premium we find limited changes over time until the 1940s. Then the difference in payment increases at the end of the decade, after which it slowly decreases in the independence period (see Figure 2 and Table 2). On average, skilled workers earned 50% more between

Figure 2: Skill premium.

Table 2: Skill premium.

	Skilled Wages ^a	Unskilled Wages ^a	Ratio
1920s	6219	4851	1.28
1930s	7893	4764	1.66
1940s	12385	8439	1.48
1950s	21228	12355	1.79
1960s	22562	17499	1.29

^aAnnual wages, pence.

1923 and 1965 compared with their unskilled counterparts, but this premium varied substantially over time. This is similar to the premium found in Mauritius, but substantially below those found for most other British colonies (Frankema & van Waijenburg 2012: 903). It is also significantly lower than the 150% found for the Cape Colony between 1835 and 1910, and the 170% in Natal between 1852 and 1910 (Zwart 2011). Looking at the number of labourers over time, we see an increase that coincides with the modest increase in skill premiums. Hence the modest increase in premiums does not seem to stem from a lack of supply, instead it reasonably reflects the low demand for skilled workers. Whereas colonial reports for other countries consistently complain about the lack of skilled African workers, we have not come across a single grievance about skilled labour shortages in the Bechuanaland colonial blue books.

The limited demand for skilled workers and the consequent modest growth in the skill premium must be understood in relation to Bechuanaland’s economic structures. In the 1930s when the colonial administration identified beef exports as the Protectorate’s primary comparative advantage, the development of the

beef sector resonated well with the interests of the Tswana elite and there was a lack of interest on both sides in diversifying the economy (Colough & McCarthy 1980; Parsons & Crowder 1988; Hillbom 2014). Throughout the colonial era the economy continued to be dependent on beef, but it remained a low value added agricultural product demanding only basic processing technology in the form of an abattoir. With no diversification of the economy, there were few incentives to invest in technological advancement. Hence, the demand for skilled labour stayed modest and the skill premium never took off. Our results showing a persistently low skill premium are then in line with previous studies of the colonial economy, which have concluded that there were no indications of initial stages of economic transformation. With the export sector dominated by the sale of live animals and the lack of investments in productivity increasing technology, there was no rising demand for human capital (Hillbom 2014).

The public-private divide

Unlike wage-earners in other sectors, African government administrators experienced a continuous and rapid increase in nominal wages during the colonial era (see Figure 1 and Table 1 above). If we compare wages paid to skilled labourers to those paid to government employees, their earnings were on a par in the mid-1940s, but then the public sector forged ahead and reached a ratio of 4.5 before independence (see Figure 3). Although there was an increase in the percentage of the total population being employed by the government during the colonial era, this group only represented 1% of the population at the time of independence.

Figure 3: Public-private sector wage ratio.

Note: Public sector wages are government employee wages. Private sector wages are the wages paid to skilled urban labourers.

The growing public-private divide was made possible by the shift in British colonial policies, which included a growing state apparatus in the African colonies expected to promote socioeconomic development. For Bechuanaland there was an increase in government revenues from two new sources: first, British grants and loans were offered, starting in the 1930s and increasing throughout the 1940s and second, the establishment of the beef industry provided new export revenues (Makgala 2006). As the state had more money to spend, it could employ more government officials as well as increase their salaries. The growth of public administration and the incentives for individuals to participate in the public rather than the private sector is a phenomenon known from both colonial and independence Africa. From a long-term perspective, this has created obstacles for economic development as the public sector commonly has become too large in relation to its capacity, controlling essential resources and attracting individuals with high levels of education. Meanwhile, the private sector has stayed economically weak, generally lacking political influence and support as well as finding it difficult to attract sufficient human capital (Cooper 2002; Moss 2007; Freund 2010).

Surplus for consumption

The next step in our analysis is to explore whether surplus used for consumption and investments could fuel demand-driven diversification and the transformation of the economy. There are two groups who could potentially be involved in this process: wage earners in the formal sector discussed above, and, from the 1930s onwards, cattle owners taking advantage of increasing opportunities for cash incomes from animal sales. We calculate costs of subsistence, determine welfare ratios, deduct taxes and discuss consumption and investment opportunities for the two groups.

Constructing costs of living

To see how much income was left after paying for food, shelter and taxes, we start by estimating the costs for living at subsistence. Following the seminal paper by Allen (2001) we calculate a subsistence basket of goods, including food, fuel for cooking and heating, candles for lighting, cotton or linen and soap. Dividing the nominal wages and cattle incomes by these costs will give us subsistence or welfare ratios, i.e., what a nominal wage could buy in terms of subsistence costs.

Allen (2001, 2009) constructed two consumption baskets: one ‘respectability basket’ inspired by a budget reported for ‘respectable labour’ in Britain and the Low Countries, which includes higher nutritional intake (2,500 calories and 112 grams of protein per day) and higher expenditure on lighting and fuel, and one cheaper ‘bare bones basket’. The bare bones basket is considered to represent the

absolute minimum someone needs to consume to stay alive. It offers a little over 1,900 calories and 44 grams of protein per person per day, and includes minimal amounts of fuel, lighting, soap and cotton/linen. It is worth noting that, as 1,900 calories is too little for a man performing physical labour, Allen (2015) recently increased the food consumption included in the bare bones basket, raising daily nutritional intake to 2,100 calories per day, thereby making it sufficient for an adult to do the work of a labourer. Most Africans were employed in sectors such as agriculture, domestic services and mining and, for this type of physical labour, Allen's revised bare bones basket would probably be more in line with actual nutritional needs. However, for the sake of making our results comparable to previous studies on welfare ratios for various African countries, we construct the 'old' basket with 1,900 calories. As this 'old' basket is smaller and thus cheaper, using this to calculate the share of income left for consumption leads to conservative estimates, i.e., prevents us from underestimating the share of incomes left for consumption.

To calculate the cost of the bare bones basket we collect retail prices for the chief staple articles of use or consumption from the colonial blue books and annual reports for Bechuanaland between early 1900 and 1965 (see Table 3). We include the cheapest food products that still offered the minimum required level of calories and protein. We know from Schapera and Comaroff (1991: 15, 19) that the staple crop mostly grown and consumed was (termed Kafir-corn in the records), though the cheapest cereal in the market was often maize. In order to calculate the minimum costs for people to stay alive if not growing any food themselves, we include maize whenever that is cheaper than sorghum. The cheapest meat was often beef, replaced with pork or mutton if that was sold for a lower price. Although the Tswana were agro-pastoralists and a majority of the population held cattle, anthropological sources clearly state that meat was rarely seen for sale in

Table 3: Subsistence consumption basket.

	Quantities per person per year	Nutrients per day	
		Calories	Protein
Maize	187 kg	1839	41
Meat	3 kg	21	3
Butter	3 kg	60	
Sugar	2 kg	21	
Soap	1.3 kg		
Cotton	3 m		
Candles	1.3 kg		
Kerosene	1.3 MBTU		
Total		1940	44

the villages. Instead, access to meat primarily came from hunting (Schapera & Comaroff 1991: 18).

Important items of the daily diet for large areas in Sub-Saharan Africa were beans and peas. These are cheap sources of protein and, in combination with high caloric cereal intake, are important components of a balanced diet. Including peas and beans in the basket increases the protein intake, which means that the amount of other products in the basket can be reduced while still arriving at the minimum required level of calories and protein. However, beans and peas were never grown and consumed in great quantities in Bechuanaland (Schapera & Comaroff 1991: 15) and price data was scarce leaving us to work primarily with proxies and extrapolations influencing the reliability of our estimates. Consequently, we decided to leave them out of the subsistence basket and instead compensated with a higher staple crop consumption.

Sugar and butter complete the list of food items. For fuel, we include kerosene, for light, some candles and finally we add some soap and cotton. The two commodities that we have no price information for are candles and cotton. For candles, we follow Frankema and van Waijenburg (2012) and add 2.5% to the total budget. For cotton, we raised our total expenditure by the share of the budget spent on cotton given by Allen (2009: 37).

Finally, we include housing expenses by calculating a general increase of the costs for the consumption basket. Various colonial blue books explicitly state that it was nearly impossible to rent a house in Bechuanaland and that this practice was uncommon for Africans. It would therefore make sense to exclude rental payments from the subsistence basket. However, housing cannot have been completely free. Anthropological records indicate that the traditional type of hut consisted of a circular mud wall plastered over a framework of canes, with no windows and only a door entrance. The floor was of beaten dirt and the thatched roof was supported by a wooden post. These were all locally available and cheap building materials. On top of the costs for materials, there were obligations to offer beer and meat to relatives in exchange for their labour when helping out with constructions and repairs (Schapera & Comaroff 1991: 19–22). Meanwhile, residential plots were not sold as land was abundant in the villages and allocated without costs by the chiefs and their representatives. Taking all of this information into account, we increased the basket by 5% to include housing expenditure, similar to the estimates of Allen (2001, 2009) and Frankema and van Waijenburg (2012).

The basket in Table 3 provides daily nutrition for a single adult male. To analyse subsistence expenditure for a family, we need to take into account the family size. For the sake of comparability with other studies, e.g., Allen (2009) and Frankema and van Waijenburg (2012), we multiply the basket by three to account for a man, a wife and some (three) children. Again it is worth noting that Allen (2015: 5–6) has since updated his calculations, arguing that in order for each person to receive 2,100 calories per day, the annual subsistence cost for a family should instead be four times the annual basket.

Although the basket is only a construct, we find it interesting to reflect on how closely it follows what we know about actual household composition in Bechuanaland. Household size was variable. It could be an extended family consisting of a man and his wife, or wives if he was polygamous, together with dependent children, biological and adopted, as well as other relatives, such as unmarried siblings or parents, and unrelated dependants such as servants. Or it could be just a couple and their biological children. One or several of the household members could be earning income. We know that during the colonial era household structures became more similar to a nuclear family as polygamy became increasingly rare and extended families shrunk somewhat in size (Schapera 1994: 12–13). The most extensive population census in Bechuanaland, held in 1946, gives information on number of surviving children beyond infancy per married female. This indicates that the majority of families had between two and four children. Although we know that the quality of population censuses can be questioned, it is worth noting that this census is closely in line with Schapera and Comaroff's (1991: 33) report that families usually consisted of five to seven individuals.

Welfare ratios

The inhabitants of Bechuanaland were agro-pastoralists whose agricultural system was based on a combination of crop-farming and cattle-rearing. Wealth, social status and ability to build patron-client relations were all depending on ownership of cattle and Murray and Parsons (1990) even define the society as 'cattle-feudalism'. While it was considered a good cattle country, Bechuanaland experienced both plagues of infectious diseases and severe droughts. A herd of 50 animals was considered the optimal size that was minimally robust to diseases and droughts (Roe 1980). Only a relatively limited segment of society, about 5%, managed to build up herds of 50 animals or more during the colonial era. Cattle owners owning less than 50 heads were mainly concerned with enlarging their herd towards the 'optimal' size of 50 heads to be able to withstand droughts and plagues. Hence, they sold as few heads of cattle as possible (generally a little over one per year on average), primarily to pay annual taxes (Schapera 1994). Meanwhile, with the establishment of the beef export sector cattle holders owning more than 50 heads of cattle, from here on termed large-scale cattle holders, were given increasing opportunities to acquire cash incomes by selling off their animals. We deem that this group represented the only category of traditional agro-pastoralists who in any substantial way participated in the formal economy and therefore they alone are included in the study. We award incomes from cattle sales by multiplying the average number of cattle exported by the large-scale cattle holders with prevailing retail prices.

Table 4 and Figure 4 show welfare ratios, or how many family subsistence baskets nominal incomes can buy, for our wage earners and large-scale cattle holders together making up 20% of the population. This provides an indication

Table 4: Welfare ratios for all sectors, 1900–65.

	Agriculture	Skilled labour	Domestic Services	Domestic Mining	Government	South African Mining	Large-scale cattle owners
1900–05	1.6		2.3				
1905–10	2.1		2.4				
1910–15	1.8		2.7			3.1	
1915–20	1.8		2.7				
1920–25	2.2	2.9	2.4			3.2	4.7
1925–30	1.8	2.3	1.9			3.5	
1930–35	1.6	3.0	1.8			2.9	
1935–40	1.8	3.3	2.0	2.4		3.1	5.4
1940–45	2.3	3.8	2.5	2.2		3.6	
1945–50	2.3	3.5	2.4	2.6	3.5	2.6	14
1950–55	2.5	4.3	2.1		7.8	2.7	
1955–60	2.7	4.1	2.7		9.4	3.5	16
1960–65	2.5	3.0	2.5		10.0	2.8	28

Figure 4: Welfare ratios for all wage earning sectors.

of changing purchasing power over time for the wage earning sectors and the large-scale cattle holders between the early 1900s and 1965. If the ratio is one, it means that people live at subsistence. A ratio below one indicates that the nominal wage and income is not sufficient for a family and thus that they need other sources of income to make ends meet.

Welfare ratios for unskilled wage earners in agriculture and domestic services were stable throughout most of the colonial period. Welfare of agricultural employees increased from 1.6 in early 1900 to 2.5 in 1965. Hence, only during the final years did Africans employed in agriculture experience an increase in their standards of living, albeit a very modest one. For domestic services the welfare ratio hovered between 2.3 and 2.5 during the same period. These modest welfare ratios are in line with the findings of Schapera and Comaroff (1991: 19–20), who record general poverty in the rural areas and even claim that malnutrition was common among people who were not living at their own fields or cattle posts.

Frankema and van Waijenburg (2012) have focused on wages for unskilled urban labour in the major urban areas in British Africa. Comparing their results to our real wage series for unskilled domestic servants, we find that real wages in Bechuanaland were relatively high in the early part of the colonial period, from 1900–20. After that, they fluctuated around a constant trend and remained a little higher than real wages estimated for East Africa throughout the colonial period (with the exception of Mauritius). Meanwhile, welfare in Bechuanaland was lower than that in most West African countries after the 1920s and the difference becomes more pronounced towards the end of the colonial period. (See Figure A2 in the Appendix for a graphical comparison.) The comparison indicates that Bechuanaland's formal sector lacked the type of dynamic developments that are found in the urban sector, especially in West Africa but also East Africa during the latter part of the colonial era. Further, Bowden et al. (2008) construct rural real wage series for five African countries during the 20th century and although

these series are not internationally comparable we can compare trends over time. We infer that the trend in real wages for agricultural workers in Bechuanaland resembles the trends that Bowden et al. (2008) found for peasant export economies. Also in Bechuanaland real wages rose above subsistence after 1920 and, despite fluctuations and a dip in the first half of the 1930s which coincided with severe droughts, continued to increase slightly over time. Finally, de Zwart (2011) produces real wages for South Africa between 1835 and 1910 and the welfare ratios for both agricultural and domestic servants in Bechuanaland are roughly comparable to real wages for agricultural and domestic servants in South Africa.

We know that the purchasing power of Africans in Bechuanaland did not depend only on wages and cattle incomes received. Other irregular factors also influenced a family's welfare. The most important of these might have been incomes from female and child labour and the family's own subsistence food production. For the former, we have only very limited and scattered information on the incomes of children (mainly herd boys), and thus we leave it out. At the same time, we know that women were often employed as domestic servants. However, as we have no separate recorded wages for men and women, we use the recorded nominal wage and cattle incomes as the family income, be it earned by the man or woman.

According to Morapedi (1999), the most common source of extra income for the rural population was remittances from migrant labourers engaged in wage employment inside, but more often outside, Bechuanaland. This was of significant importance for keeping people at or above subsistence. Table 4 shows that wages received in South African mines were higher compared with domestic wages for unskilled labour, especially in the earlier years. Given the importance of the mining incomes to the survival of parts of the rural population, it is a weakness not to have more reliable data. Was it around 17%² of all Bechuanaland adult males who worked in the mines in South Africa as indicated by surveys and anthropological sources (Salkin 1987; Schapera & Comaroff 1991) or only the 9,300 people who held an official labour pass? For this group welfare ratios did not increase substantially over time, i.e., these households controlled very limited surplus assets. As the bare bones basket included only the very minimum needed to survive we assume that their surplus was primarily spent on increasing the quantity and perhaps the quality of food. Additionally, there were taxes to be paid (see the following section). Finally, anthropological sources inform us that the most common investments for these labourers, after paying for food and taxes, was to purchase cattle (Schapera 1994). Taken all of this information into account, we deem that the economic activities of these households with limited incomes would not have had a significant impact on the diversification of the economy at large. Consequently, the exact size of this group is fortunately not decisive for our arguments.

2 Data from a 1943 survey show that around 28% of all adult males were working away from home, of which 60% worked in the South Africa mines (Schapera & Comaroff 1991). This is around 17% of all adult males, i.e., around 30,000 persons.

Meanwhile, a group that enjoyed substantial improvements in real incomes were government employees, with a welfare ratio rising from 3.5 in 1945 to 10 in 1965. Moreover, skilled labourers were doing better than most during the period under investigation, although their welfare decreased after 1960. Finally, the large-scale cattle holders were the economic elite already in the earlier part of the colonial period, which is indicated by them having the highest welfare ratio in 1921. As they were active in the agricultural sector we can safely assume that they engaged in subsistence food production and on top of that the incomes they received from sales of cattle increased as the beef export sector took off. Their welfare ratios increased six times between 1921 and 1965, ending up at 28 times the subsistence level.

We are aware that, for these more well-off groups, it is not likely that they settled on consuming a bare bones basket at subsistence level and therefore the welfare ratio overstates their surplus. Allen (2009) has, for example, shown how much food consumption varied compared with income in 19th-century England. Further, it has been indicated for Sub-Saharan Africa that, in areas where the welfare ratios were well above subsistence, the cheapest staple crop no longer dominated the budget. Instead, a fair amount of fruits and vegetables appeared on the menu, as well as a larger amount of meat (Frankema & van Waijenburg 2012). We come back to this when discussing demand developments for these two groups.

The effect of taxes

The income earned was not only needed to pay for subsistence, but also and importantly, to pay colonial taxes (Schapera 1994). The hut-tax introduced by the colonial administration 1899 was initially 10 shillings per annum, but it was raised to £1 in 1909. For most years after 1910, the level of taxation was around 25 to 28 shillings. The exception was the mid-1930s when food and mouth diseases restricted cattle exports and, according to the colonial authorities, also the native's capacity to pay tax, the rate of which was subsequently reduced (Blue Books 1933–37). Although tax levels fluctuated throughout the colonial era, as a general rule they were kept low compared with other regions in the British Empire. Still, they were significantly higher than those in neighbouring Southern African colonial territories (Frankema 2010: Appendix 2).

We can only speculate as to the reasons for taxing the Tswana higher than their neighbours. One explanation could be that, until the development of the beef export sector in the 1930s, there were limited opportunities for significant domestic revenue (Salkin 1987), making hut/poll taxes an important source of income. Additionally, until 1920 wages were relatively high compared to other African countries (see Appendix). It is important to remember though, that a substantial part of wages was paid in kind, which could not be used to pay taxes. We come back to this point below. Another argument could be that the colonial administration saw an opportunity to benefit from labour migration by directing wage earnings into their own chests. It has been documented that remittances from migrant labour

Table 5: Days worked^a to pay native hut and head tax.¹

	Agriculture	Skilled Labour	Domestic Services	Government Service	South African Mining
1900s	20		13		
1910s	38		19		11
1920s	31	22	28		11
1930s	35	13	27		9
1940s	20	10	20	6	10
1950s	15	7	18	3	7
1960s	15	9	15	2	7

^anominal wages, excluding in kind payments. Source: Colonial blue books and annual reports

¹Frankema (2010: Appendix 2) examines the number of days an urban worker had to work to pay gross public revenue, which was 23 in 1925 and 15 in 1937. The year 1937 may not be fully representative, as between 1933 and 1937, head and hut taxes were substantially lowered because of the reduced capacity of natives to pay taxes as a result of the embargo on the exports of animals due to foot and mouth disease.

were one of the most important sources of funds for paying taxes (Morapedi 1999). Finally, and potentially most importantly, the majority of Tswana held cattle and high taxes provided the administration with an opportunity to profit from the existing cattle wealth. On average, the sale of one animal could pay seven times the annual tax and we know that large- and medium-scale cattle holders often sold cattle to pay taxes (Schapera & Comaroff 1991).

To see how taxes influenced the surplus left for the labouring population, we start by estimating the tax burden, i.e., how many days the various wage-earning groups had to work to pay the annual sum of hut/head taxes (see Table 5). As taxes were typically paid in cash³ we did not adjust wages for in kind payments. The tax burden was relatively high in the first half of the period before the rise in nominal wages sets in. People employed in agriculture had to work on average 36 days to be able to pay taxes until the 1930s, compared with around 25 days for domestic servants. Assuming that people work 26 days a month, this means domestic servants worked for a whole month to pay their annual taxes, and agricultural workers for one-and-a-half months.

Given that agricultural workers and domestic servants received a substantial part of their income in kind, the effect on the surplus left after paying for both subsistence costs and taxes was relatively limited compared to the surplus left after only paying for subsistence. The welfare ratio for unskilled workers (both agricultural and domestic services) was on average 0.1 point lower (for example from 1.8 to 1.7) after paying for taxes. For skilled workers, government employees and large-

3 Only for the years up to 1910 do some of the colonial blue books make note of some in kind payments of taxes (Blue Books of Statistics, 1904–1925; 1926–1947; Annual Report of the Bechuanaland Protectorate, 1921–1938).

scale cattle owners the decline in welfare ratios was even smaller. However, we suggest that tax payments were much more incremental to the amount of surplus unskilled wage earners could feed back into the economy through the market because it took a significant cash toll from people who were already cash poor.

Surplus, consumption and investments

The money left after paying for subsistence and taxes for the two largest groups of wage labourers (domestic servants and agricultural workers), was reduced to on average 4 pence per day in the initial years and around 22 pence per day at independence. It is most likely that the small surplus was first of all spent on more (and perhaps better) food. This is especially likely given the low nutritional value that we assumed for the bare bones basket in combination with the hard physical labour in which these wage earners were engaged. Allen (2009) also argues for England that any surplus above subsistence was first of all spent on more food. However, given that a pound of maize cost a little over 3.5 pence and a pound of beef around 19 pence in the years prior to independence, the above subsistence surplus could only buy a limited amount of extra food. In perspective, to buy an imported vehicle around that time was around 160 pounds. Moreover, this surplus hardly increased over time, as the welfare ratios (nominal income over subsistence costs) remained stable over the colonial period for most labourers. We conclude that any wage income they earned allowed them to stay alive, but not much more than that. The formal wage employment then generated little surplus cash incomes that could feed back into the economy thereby contributing to it becoming more dynamic.

The inference from the above discussion is that the only groups whose incomes were substantial enough to feed back into the economy, thereby increasing demand for domestically produced goods, were the skilled labourers, the government officials and the large-scale cattle holders. Yet, the skilled labourers and the government officials represent at the most 1.5% of the population and their impact must have been limited. However, the cattle holding elite represented 5% of the population and amassed substantial incomes and wealth as the export sector developed. So, where did the surplus go?

First, we have to deduct money spent on more and better food, because it is not likely that the most well-off groups settled on consuming a bare bones basket at subsistence level. Therefore the welfare ratio discussed above overstates their surplus. Yet as it is difficult to precisely estimate the additional food consumption, we take the welfare ratios as discussed as our point of departure. If the surplus was spent on locally produced consumption goods opportunities would have opened up for increasing agricultural specialization and/or more non-farm production. However, anthropological sources indicate that access to more varied food was consistently poor in the rural areas, and also that there was limited spending on consumption goods or improved housing and transportation (Schapera & Comaroff 1991). In the colonial blue books and annual reports there are no signs of the establishment of a domestic

industry producing building material, and the only building material imported into the country had, according to trade statistics in 1964, a value of 200,000 pounds which was 4% of total value imported that year. Additionally, between 1923 and 1952 (when the authorities stopped recording number of imported vehicles) a total of 1752 vehicles for transportation were imported. The import of vehicles and spares increased gradually and between 1955 and 1964 it amounted to about 13% of total value imported. There are, however, still no signs of a significant development of a transport system serving various productive sectors in the economy. When we analyse various categories of imports, we see that general merchandise (small consumption goods other than food) is by far the biggest category, although it decreases over time. The decrease in merchandise imports is fully compensated by an increase in imports of especially live-stock (for re-stocking and breeding), but also of food. (We've charted all imports into the colony from when they were first recorded in 1923 until 1964.)

Meanwhile, the general expectation was that larger investments for developing the cattle sector such as the erection of veterinary fences, construction of roads and building of slaughter houses was the responsibility of the colonial administration. Nevertheless, to open up new grazing areas, protect animals from seasonal droughts and increase herd sizes both native authorities and large-scale cattle holders made investments into borehole drilling (Hillbom 2010; Peters 1994). With the constantly increasing profitability in the cattle sector and an otherwise stagnant economy there were, however, few incentives for the cattle holding elite to branch out into alternative economic activities. Instead, all sources indicate that surplus from cattle sales were routinely re-invested back into the herds (Schapera 1994). The elite also invested in education, but for secondary school and up they had to send their children abroad as higher education was not available in Bechuanaland (Schapera 1994). Still, human capital formation did not take place at any larger scale which is indicated by the fact that at the time of independence only two dozen Batswana had received university education while 100 had completed secondary school (Acemoglu et al. 2003: 80–83).

In conclusion, the large majority of the Bechuanaland population involved in the formal economy was too poor to consume domestically produced goods to the extent that it could stimulate a diversification. The groups who earned enough income to have substantial surpluses left after paying for subsistence and taxes represented only a small section of the population and did not make any significant investments outside of the cattle sector. Thus, the private sector failed to instigate a demand driven diversification of the economy. Our final probe is dedicated to investigating if the public sector was aiming to instigate diversification and we do that by analyse opportunities and strategies for government spending.

Government revenues and investments

Government recurrent domestic revenues originated from miscellaneous sources, but the four most important ones were: native taxes, income taxes, export duties,

Figure 5: Largest sources domestic revenues (£,000).

Source: Hermans 1974 Table 1.

and customs and excise duties (see Figure 5). The native or hut tax was an important source of revenue; however, it was also unpredictable as it was affected by droughts and outbreaks of livestock diseases. Still, it averaged as much as 40% of the total domestic revenue 1900–30, dropping to 20% by the 1940s, 12% by the 1950s, and down to only 5% in 1965/66, which was the last year the African tax was collected. Income tax was introduced in 1922 and was in practice only paid by Europeans and companies. Despite its limitations, revenues from this tax quickly rose to become on par with, and in the last few years of colonial rule drastically surpassed, those from the native taxes.

Meanwhile, export duties were levied on live cattle and carcasses during two time periods: 1916–25 and 1942 onwards. These duties initially targeted European large-scale cattle holders who were not yet paying income tax and it constituted an attempt by the administration to take advantage of the Protectorate's primary sector. However, as the cattle economy had been threatened by droughts and disease during the last years of the 19th century and the first decades of the 20th century the administration tended to be lenient. Still, revenues grew significantly during the second period as the beef export sector continued to develop.

Finally, in 1893 Bechuanaland joined the Southern African Customs Union and from there the Protectorate received a share of the common pool of customs and excise duty collections, which enabled it to some degree to benefit from the economic development and increased exports and imports of the whole region (Hermans 1974). While all revenues initially were modest, customs and excise duties and export duties picked up, especially in the 1940s after the establishment and development of the beef export sector. These incomes, directly or indirectly, depended on the state of the livestock sector and therefore reflected Bechuanaland's export dependency.

Figure 6: Domestic and British contributions to total government income in Bechuanaland Protectorate 1930–65.

Source: Makgala 2006 Tables 1 & 2; Hermans 1974: Table 1.

Limited government revenues meant that the administration was unable both to balance its budget and initiate development projects without significant curtailment of government services. A solution appeared as Bechuanaland started receiving external financial support from Britain in 1932 in the form of grants for development projects (Hermans 1974). This colonial policy was in line with a general ambition to promote socioeconomic development in the African colonies (Cooper 2002). Figure 6 shows the Parliamentary Grant-in-Aid and Extraordinary Revenue that the Protectorate received for its Colonial Development Fund. In comparison to domestic revenues, the British grants were substantial, especially after the 1950s when they sometimes nearly doubled the budget available.

Considering total government revenues, there were then financial opportunities to make some investments in development projects that could have initiated demand driven diversification and structural change. To analyse the role of government expenditures in stimulating economic diversification further we therefore turn our attention to government spending (see Table 6).

Throughout the colonial period, the largest item in the governmental budget was that of general administration (including the costs for keeping law and order). Meanwhile, investments in human capital formation (health and education) were modest. The administration generally relied on the missionary societies and Native Authorities to cater for healthcare and education, the latter mostly in the form of building primary schools. Investments in public works, such as infrastructure, were also limited and primarily aimed at supporting the administration with public buildings and other facilities. As a consequence, the Protectorate, e.g., only had in total 12 kilometres of paved roads at the time of independence (Hermans 1974; Acemoglu et al. 2003: 81–83).

Table 6. Colonial administrative expenditure in Bechuanaland Protectorate 1900–66(%).

	1900–25	1926–35	1936–45	1946–55	1956–66
General administration	54.4	51.8	41.4	35.3	41.0
Police	37.1	20.0	11.5	10.8	6.6
Medical	1.7	7.5	9.4	9.9	5.9
Education	1.2	3.4	4.1	4.8	6.3
Veterinary & agriculture	3.4	10.9	12.8	12.6	10.0
Public works	2.2	5.8	9.5	12.9	4.9
Development expenditures	–	0.6	11.3	13.7	25.3
Total	100	100	100	100	100

Source: Colcough & McCarthy 1980: Table 1.1.

Meanwhile, some investments were made into the cattle and agricultural sectors. As long as the budget was limited, a key focus was on preventing the spread of livestock diseases. The Veterinary Department, established in 1905, was the first professional service department and veterinary and agricultural investments were part of recurrent expenditures (Hermans 1974). Eventually, with the new-found interest in developing natural resources into revenue-earning exports and the grant-aided development programs, additional investments were made into the cattle sector, e. g., the construction of veterinary fences and the first modern abattoir in Lobatse in 1954 (Colcough and McCarthy 1980; Parsons & Crowder 1988; Makgala 2006). It is clear that the colonial administration continued to rely on existing products; some mining, but primarily beef. This leads us to conclude that government spending catered for neither a diversification of the economy nor a structural change away from natural-resource-based export dependency.

Concluding remarks

In our study of the formal sector in Bechuanaland during the period 1900–65, we have come up with three main findings that are of relevance for understanding challenges to diversification and transformation. First, while there was a degree of skill premium, it was low in comparison to, e.g., South Africa, and it only showed a modest increase. This indicates a stagnating, low-technology economy with a modest demand for human capital formation. Nominal wages also show a growing public-private divide from the 1940s indicating an expanding public sector and a failing private sector. These findings coincide well with statistics showing that the manufacturing sector only representing 5% of GDP at the time of independence (Leith 2005: 100). Taken together, these results suggest that private sector entrepreneurship and technologically advanced production did not take off during the colonial era.

Second, looking at the period as a whole and comparing Bechuanaland to East and West Africa, real wage development in the formal sector was modest, especially in the second half of the colonial period. For most of the wage earners in the formal economy there was a limited cash surplus and they could neither provide a substantial market for domestic production nor stimulate a diversification of production. Three groups experienced more substantial improvements in welfare ratios: skilled labourers, government officials, and large-scale cattle holders. Large-scale cattle holders and government officials forged ahead of the rest of society; however, the first group was negligible and the cattle owners were primarily interested in investing in their herds. In sum, there was limited room for demand-driven diversification coming from the private sector.

Finally, despite colonial grants being added to the limited domestic government revenues from the 1930s onwards, no significant investments were made in diversifying the cattle economy by developing, e.g., a leather industry, abattoirs, or infrastructure. This was something that was accomplished in various Latin American countries, but not in Bechuanaland. Investments in developing alternative sectors or encouraging human capital formation were also very limited. Consequently, initiatives for government driven diversification were virtually non-existent.

We started off posing the question of whether colonial Bechuanaland ever demonstrated having the potential to diversify its economy and adopt development paths away from beef and natural-resource-based export dependency. Based on our main findings, the answer must be no. What our study reveals is a stagnant formal economy dominated by the public sector. With the establishment and development of the beef export sector a dependency on a natural-resource-based export-led growth was founded. This development trajectory provided opportunities for the large-scale cattle holders to transform their cattle wealth into incomes and for the colonial administration to expand. However, neither the private sector nor the administration made investments that could constitute the basis for instigating diversification of production and structural change.

References

- Acemoglu, D, Johnson, S & Robinson, J, 2003. An African success story: Botswana. In Rodrik, D (Ed), *In Search of Prosperity: Analytic Narratives on Economic Growth*. Princeton University Press, Princeton & Oxford, 80–119.
- Acemoglu, D, Johnson, S & Robinson, J, 2010. Why is Africa poor? *Economic History of Developing Regions* 25, 21–50.
- Allen, R, 2001. The great divergence in European wages and prices from the Middle Ages to the First World War. *Explorations in Economic History* 38, 411–447.
- Allen, R, 2009. *The British Industrial Revolution in global perspective*. Cambridge University Press, Cambridge.
- Allen, R, 2015. The high wage economy and the industrial revolution: a restatement. *The Economic History Review* 68, 1–22.

- Annual Report of the Bechuanaland Protectorate*. Issues 1921–1938; 1946–1965, London School of Economics Library.
- Bechuanaland Protectorate Government Census 1946*, London School of Economics Library.
- Blue Books of statistics*. Issues 1904–1925. UK National Archives, CO/567
- Blue Books of statistics*. Issues 1926–1947. UK National Archives, DO/26
- Bowden, S, Chiripanhura, B & Mosely, P, 2008. Measuring and explaining poverty in six African countries: A long-period approach. *Journal of International Development* 30, 1049–1079.
- Colcough, C & McCarthy, S, 1980. *The political economy of Botswana: A study of growth and distribution*. Oxford University Press, Oxford.
- Cooper, F, 2002. *Africa since 1940: The past and the present*. Cambridge University Press, Cambridge.
- Evans, PB, 1995. *Embedded autonomy: States and industrial transformation*. Princeton University Press, Princeton.
- Frankema, E, 2010. Raising revenue in the British Empire, 1870–1940: How ‘extractive’ were colonial taxes? *Journal of Global History* 5, 447–477.
- Frankema, E & van Waijenburg, M, 2012. Structural impediments to African growth? New evidence from real wages in British Africa, 1880–1965. *Journal of Economic History* 72, 895–926.
- Freund, B, 2010. The social context of African economic growth 1960–2008. In Padayachee, V (Ed), *The political economy of Africa*. Routledge, London & New York, 39–59.
- Granovetter, M, 1985. Economic action and social structure: The problem of embeddedness. *American Journal of Sociology* 91: 481–510.
- Hermans, Q, 1974. Towards budgetary independence: A review of Botswana’s financial history, 1900 to 1973. *Botswana Notes and Records* 6, 98–115.
- Hillbom, E, 2008. Diamonds or development? A structural assessment of Botswana’s forty years of success. *Journal of Modern African Studies* 46, 191–214.
- Hillbom, E, 2010. Institutions, equity and distribution of resources in Kgatleng District, Botswana. *Development Southern Africa* 27, 413–427.
- Hillbom, E, 2014. Cattle, diamonds and institutions: Main drivers of Botswana’s economic development, 1850–present. *Journal of International Development* 26, 155–177.
- Jerven, M, 2010. Accounting for the African growth miracle: The official evidence – Botswana 1965–1995. *Journal of Southern African Studies* 36, 73–94.
- Katz, LF & Murphy, KM, 1992. Changes in relative wages, 1963–1987: Supply and demand factors. *The Quarterly Journal of Economics* 107, 35–78
- Kohli, A, 2004. *State-directed development: Political power and industrialization in the global periphery*. Cambridge University Press, Cambridge.
- Leith, C, 2005. *Why Botswana prospered*. McGill-Queen’s University Press, Montreal & Kingston.
- Makgala, CJ, 2006. *Elite conflict in Botswana: A history*. African Institute of South Africa, Pretoria.
- Mbabazi, P & Taylor, I (Eds), 2005. *The potentiality of ‘developmental states’ in Africa: Botswana and Uganda compared*. CODESRIA, Dakar.
- Mkandawire, T, 2001. Thinking about developmental states in Africa. *Cambridge Journal of Economics* 25, 289–313.
- Morapedi, WG, 1999. Migrant labour and the peasantry in the Bechuanaland Protectorate, 1930–1965. *Journal of Southern African Studies* 25, 197–214.
- Moss, TJ, 2007. *African development: Making sense of the issues and actors*. Lynne Rienner, Boulder & London.
- Murray, A & Parsons, N, 1990. The modern economic history of Botswana. In Konczacki, ZA, Parpart, JL & Shaw, TM (Eds), *Studies in the economic history of Southern Africa: Volume 1 The front-line states*. Frank Cass, London, 159–199.
- Parsons, N, 1993. *A new history of Southern Africa*, 2nd ed. Macmillan Education, London.

- Parsons, N & Crowder, M (Eds), 1988. *Monarch of all I survey: Bechuanaland diaries 1929–37*. The Botswana Society, Gaborone.
- Peters, P. 1994. *Dividing the Commons: Politics, policy, and culture in Botswana*. University Press of Virginia, Charlottesville & London.
- Psacharopoulos, G, 1984. The contribution of education to economic growth: International comparisons. In Ballinger, JK (Ed), *International productivity: Comparisons and the causes of the slowdown*. American Enterprise Institute, Washington DC, 335–360
- Ramsey, J, Morton, B & Mgadla, T, 1996. *Building a nation: A history of Botswana from 1800 to 1910*. Longman Botswana, Gaborone.
- Robinson, J & Parsons, N, 2006. State formation and governance in Botswana. *Journal of African Economies* 15 (AERC Supplement 1), 100–140.
- Roe, E, 1980. *Development of livestock, agriculture and water supplies in Eastern Botswana before independence: A short history and policy analysis*. Ministry of Agriculture: Gaborone, Botswana.
- Salkin, J, 1987. Research on employment and unemployment in Botswana. In Hitchcock, R, Parsons, N & Taylor, J (Eds), *Research for development in Botswana*. The Botswana Society, Gaborone, 142–171.
- Salvucci, R, 2006. Export-led industrialization, in Bulmer-Thomas, V, Coatsworth, J & Cortes-Conde, R (Eds), *The Cambridge economic history of Latin America*. Cambridge University Press, Cambridge, 249–292
- Samatar, AI, 1999. *An African miracle: State and class leadership and colonial legacy in Botswana development*. Heinemann, Portsmouth, NH.
- Schapera, I, 1994 [reissued]. *A handbook of Tswana law and custom*. International African Institute & Münster-Hamburg: LIT Verlag, London.
- Schapera, I & Comaroff, J, 1991. *The Tswana*, revised ed. Kegan Paul International, London.
- Sindzingre, AN, 2004. Bringing the developmental state back in: Contrasting development trajectories in Sub-Saharan Africa and East Asia. Paper presented at the Society for the Advancement of Socio-Economics 16th Annual Meeting, 9–11 July, Georges Washington University, Washington D. C.
- Zanden, JL van, 2003. Rich and poor before the Industrial Revolution: A comparison between Java and the Netherlands at the beginning of the 19th century. *Explorations in Economic History* 40, 1–23.
- Zanden, JL van, 2009. The skill premium and the ‘Great Divergence’. *European Review of Economic History* 13, 121–153.
- Zwart, P de, 2011. South African living standards in global perspective, 1835–1910. *Economic History of Developing Regions* 26, 49–74.

Appendix 1

Figure A1: Nominal wages of domestic servants in the Bechuanaland Protectorate from an African perspective.

Sources: Nominal wages in the former British Colonies from Frankema & van Waijenburg 2012. The light grey small dotted lines are for West African countries. The darker grey striped lines are for East African countries.

Figure A2: Real wages of domestic servants in the Bechuanaland Protectorate from an African perspective.
Sources: Real wages in the former British Colonies from Frankema & van Waijenburg 2012. The light grey small dotted lines are for West African countries. The darker grey striped lines are for East African countries.