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AN ECONOMIC RATIONALE FOR THE AFRICAN SCRAMBLE:
THE COMMERCIAL TRANSITION AND THE COMMODITY PRICE BOOM OF 1845-1885

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An Economic Rationale for the African Scramble: The Commercial Transition and the Commodity Price Boom of 1845-1885

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ABSTRACT

This is the first study to present a unified quantitative account of African commodity trade in the long 19th century from the zenith of the Atlantic slave trade (1790s) to the eve of World War II (1939). Drawing evidence from a new dataset on export and import prices, volumes, composition and net barter terms of trade for five African regions, we show that Sub-Saharan Africa experienced a terms of trade boom that was comparable to other parts of the ‘global periphery’ from the late 18th century up to the mid-1880s, with an exceptionally sharp price boom in the four decades before the Berlin conference (1845-1885). We argue that this commodity price boom changed the economic context in favor of a European scramble for Africa. We also show that the accelerated export growth after the establishment of colonial rule deepened Africa’s specialization in primary commodities, even though the terms of trade turned into a prolonged decline after 1885.

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1. Introduction

The export of slaves across the Atlantic Ocean from Sub-Saharan Africa to the American plantation economies reached its zenith in the late 18th century. In the wake of the 18th century slave trade boom, non-human commodity exports were increasing as well. In the first half of the 19th century slave exports were first overtaken and eventually fully replaced by commodity exports. This shift occurred first in West Africa, then in West-Central Africa and later also in East Africa, where slaves were sold into the wider Indian Ocean area, including the Persian Gulf and the Red Sea, until the close of the 19th century (Austen 1987, Klein 1990, Law 1993, 2002). The so-called ‘commercial transition’ from slave exports to commodity exports was a true game-changer in the long-term economic development of Sub-Saharan Africa: it put a halt to the continuous drain of scarce labor resources and paved the way for the expansion of land-extensive forms of tropical agriculture, engaging both smallholder farmers as well as indigenous slaves working on family farms, communal farms or estates. In fact, without the commercial transition, it is questionable whether the European scramble for Africa would have ever taken place.

The establishment of colonial rule over the African interior during the late 19th century (c. 1880-1900) re-enforced the patterns of commodity trade specialization that had emerged in the 18th century and had expanded and transformed in the 19th century. Colonial rule facilitated the construction of railways, induced larger inflows of foreign (i.e. European) investment, and led to profound changes in the governance of labor and land markets. The colonial regimes set out to abolish the institution of slavery, though replacing it by other forms of labor coercion. The effect of the scramble would soon become obvious to all: between 1897 and 1913 the total value of sub-Saharan African commodity exports rose by more than 150%, from about 71 million to about 184 million £ (Forbes-Munro 1976: 86). Colonial occupation thus accelerated the trend of 19th century commodity export growth.

In this paper we aim to offer the first unified quantitative account of African commodity trade in the long 19th century from the peak of the Atlantic slave trade in the 1790s to the eve of World War II, focusing on those parts of the continent that were largely unaffected by European rule before 1880. We show that Sub-Saharan Africa experienced a terms of trade boom that was comparable to other parts of the ‘global periphery’ from the late 18th century up to the mid-1880s, with an exceptionally sharp price boom in the four decades before the Berlin conference (1884-5). We review Hopkins’ thesis regarding the economic basis of imperialism (1973, Chapter 4:

124-166, see also Dike 1956), which maintains that the commercial transition enhanced the perceived economic benefits of investing in West Africa's export sector, thus raising the stakes of imperial control and creating a context in which the partition of Africa could be politically defended.

In the 1970s and 1980s, a series of pioneering studies has documented the transition from slave to commodity exports, but these studies focused only on parts of the region, parts of the 19th century and did not connect all sources available (Hopkins 1973; Forbes Munro 1976; Liesegang, Pasch and Jones 1986; Eltis and Jennings 1988; Gemery, Hogendorn and Johnson 1990, Law 1993). In the 'pre-spreadsheet' era the ability to construct and analyze large datasets was constrained. Moreover, none of these previous studies engaged in comparisons with other parts of the 'poor' commodity-exporting world, as similar studies on Asia and Latin America only emerged in the 1990s and 2000s (O'Rourke and Williamson 1999; Bértola and Williamson 2006; Williamson 2011, 2012).

We have gathered trade data from primary sources and have merged these with several existing series to produce annual time-series of export volumes, export values, commodity export prices, import prices, and net barter terms of trade series for Western Africa, Eastern Africa, South Africa, North Africa and the African islands, a spatial categorization which we will motivate further below. Our series were built up from spatially disaggregated sources, weighted up to aggregate trade and price series. Although we also gathered data for Portuguese Africa and the Congo Free State (later Belgian Congo), we focus our analysis on the areas that came under British and French control, which we will for convenience refer to as 'colonies', even though its use is partly anachronistic and some areas never attained that formal status at all. These British and French 'colonies' constituted over 90% of total continental commodity trade throughout the 19th century. All the data are available as part of the *Wageningen African Commodity Trade Database, 1500-present*.¹

The comprehensive and comparative perspectives we develop in this study invoke six conclusions. First, we document an impressive boom in the net barter terms of trade for Sub-Saharan Africa from the 1790s to the 1880s, a boom that was especially pronounced in the four decades after 1845. That secular boom peaked exactly, albeit coincidentally, at the date of the Berlin conference (1884-5). We use this finding to refine the arguments of Hopkins (1973) and of

¹ The data will be available online at www.aehnetwork.org. Launch of first version envisaged in October 2015.

Eltis and Jennings (1988) that West Africa's terms of trade rose mainly between the 1820s and 1860s. We show that the decline in palm oil prices in the 1870s, that informed Hopkins' periodization, was offset by favorable price developments of other commodities such as gum Arabic and groundnuts up to the mid-1880s. We also show that the net barter terms of trade approach we adopt here revises the timing of the boom that Eltis and Jennings observed using a gross barter terms of trade approach.

Second, we show that the share of West African exports in French imperial trade was much larger than in British imperial trade, which was dominated by British India. This is consistent with the chronology of the scramble for Africa. The French were the first to move into the West African interior to survey the possibilities of connecting the Middle Niger delta to their trading enclaves at the Senegalese coast. The data thus speak against Anglo-centered accounts of the scramble and place its economic rationale in a more balanced perspective. Third, we show that the secular terms of trade boom turned into a prolonged and equally impressive bust after 1885, continuing up to 1940. To be sure, there were local and temporal variations in this pattern depending on each location's export mix, but the aggregate trends for British and French Africa were largely the same.

Fourth, exploring our results in a global comparative perspective reveals that the periodization of the boom and the bust in Sub-Saharan Africa is consistent with the broader patterns observed in other parts of the 'global periphery', and especially those regions specialized in tropical commodities. Fifth, this comparison also shows that Africa's commodity price boom of 1845-1885 was exceptionally sharp in comparison to the 19th century trade booms elsewhere. And finally, sixth, we find that the different composition of South African exports generated a markedly less pronounced rise in terms of trade, while the terms of trade in North Africa (i.e. Egypt) peaked already in the 1860s, some 20 years before the peaks recorded south of the Sahara.

These six attributes of African trade all lend support to the argument that the long-term rise of African commodity export prices fuelled an optimistic ex-ante assessment of the profitability of colonization by contending European powers, and by the French in particular, while the scramble itself reduced the opportunity for African economies to escape a primary commodity specialization trap during the prolonged terms of trade decline from 1885 to 1940.

The remainder of the paper is organized as follows. Section 2 discusses the commercial transition in the context of 19th century global trade developments. Section 3 introduces the

debate on the economic causes of the African scramble. Section 4 presents our dataset, method and the analysis of Africa's net barter terms of trade. In section 5 we explore our results in a comparative perspective. Section 6 concludes with a brief reflection on the possible implications of the scramble for the development of African trade up to 1940.

2. 19th century commodity export booms around the 'poor periphery',²

The 19th century world trade boom - often called the first global century - was driven by three fundamental forces: a transport revolution, a liberal trade policy move in industrial Europe and an acceleration in world GDP growth associated with the industrial revolution. These three forces affected the commercial transition in Sub-Saharan Africa as well as the European partition of Africa in various ways, some of which we will highlight in this section.

The transport revolution was driven by technological events along sea lanes and by railroads connecting ports to interiors. New transport technologies helped integrate world commodity markets, lowered price gaps between exporters and importers, and fostered trade between the industrial core and the commodity-exporting periphery. Since falling trade costs from all sources accounted for more than half of the trade boom between 1870 and 1914 (Jacks *et al.* 2011: 529), they must have accounted for even more than that before 1870 when transport costs declined even more rapidly and the move to free trade was in full swing (North 1958; Harley 1988). By raising every country's export prices and lowering every country's import prices, it also contributed to a rise in every country's external terms of trade, especially, as it turned out, in the commodity-exporting 'periphery'. The move by the European industrial core towards a more liberal commercial policy (Estevadeordal *et al.* 2003), a commitment to the gold standard (Meissner 2005) and perhaps even imperialism itself (Ferguson 2004; Mitchener and Weidenmier 2008) all made additional contributions to the 19th century world trade boom.

Rapid manufacturing productivity growth in the industrial core lowered supply costs and output prices, adding to the demand for inexpensive factory-made manufactures, and by doing so generated a soaring derived demand for raw materials, or what we now call 'commodities'. The derived demand for industrial intermediates - like fuels, fibers, dyes, rubber, oils, fine woods and metals - soared as well. In the industrializing core, manufacturing growth raced ahead of GDP growth, and was reinforced by a high income elasticity of demand for luxury consumption goods,

² This section draws in part on Williamson (2011: Chapter 1).

like meat, dairy products, dried fruit, sugar, tobacco, tea, and coffee. All of these forces produced a powerful, century-long terms of trade³ boom in the ‘peripheral’ commodity exporters, as the prices of their imported manufactures fell and those of their commodity exports rose.⁴

Sub-Saharan Africa became part of this world trade boom as it shifted from slave exports to the export of groundnuts, copra, palm oil, palm kernels, beeswax, gum, dyewoods, sugar, minerals, precious stones and a range of ‘new’ commodities after the establishment of colonial rule such as rubber, cocoa, cotton, tea, tobacco and coffee. Elastic factor supplies partly facilitated the periphery’s response to these external demand shocks, helped by South-South migrations from labor abundant regions (especially China and India) to labor scarce regions within the periphery (Southeast Asia), and by financial capital flows from the industrial core (especially Britain) to those same regions. The perverse role that Sub-Saharan Africa had played in global labor markets, by supplying its scarce labor resources to relieve demand pressure in another labor scarce region, ended as abolition efforts took effect and an increasing number of African societies, voluntarily or involuntarily, engaged in the transition towards ‘legitimate commerce’. In fact, East Africa became a net recipient of labor immigrants in the early 20th century, especially from British India.

Even though trade made it possible for the ‘periphery’ to share some of the fruits of the industrial revolution taking place in the core, globalization also fostered de-industrialization in the periphery (as in Mexico: Dobado *et al.* 2008; India: Clingingsmith and Williamson 2008; Turkey: Pamuk and Williamson 2011; and Egypt: Panza and Williamson 2015) so that income per capita growth rates in the periphery fell further behind those in the core. In addition, globalization-induced specialization in primary products meant greater price volatility facing the commodity exporters, compounding the divergence in growth rates.⁵ The transport and communication revolutions associated with the industrial revolution also lowered the costs of military conquest and permanent territorial occupation. New industrial technologies translated into superior military power (gun boats, maxim gun) and logistics (steamships, telegraph).

³ Unless otherwise noted, the terms of trade phrase in the text always refers to the *net barter* terms of trade, that is, the ratio of the average price of exports to that of imports. We define exports as trade flowing from Africa to Europe, while imports depict trade flows from Europe to Africa.

⁴ Only China and Cuba were exceptions.

⁵ That is, commodity prices have always had greater volatility than manufactures (Jacks *et al.* 2011; Williamson 2012), and development economists have long known that volatility is bad for growth in poor countries (Blattman *et al.* 2007; Poelhekke and van der Ploeg. 2009), including Sub-Saharan Africa (Deaton and Miller 1996; Deaton 1999).

Advances in medical knowledge (quinine) reduced the risks of European overseas expeditions. This drop in the costs of colonization greatly enhanced the feasibility of the European invasion of tropical Africa.

The commercial transition was first initiated in ‘Western Africa’, which we define here as the entire area south of the Sahara oriented to Atlantic markets, including West and West-Central Africa. As Table 1 shows, commodity exports to Britain expanded by more than five times over the 18th century, along with a doubling of Atlantic slave exports (Johnson *et al.* 1990). These commodities were not only carried as by-products on slave ships, trading companies also operated direct lines for commodity trade between Europe, the Americas and Western Africa (Eltis 2013: 31-32). While part of the fast growth in commodity exports may be explained by very low initial levels in 1700, growth rates in the second half of the 18th century retained similar rates. Exports to Britain dropped between the 1760s and 1770s, but then recovered to the 1790s. During the early 19th century the Atlantic slave trade moved its center of gravity south to the West-Central coast (present-day Angola) and the South East (present-day Mozambique), where Brazilian and Cuban slavers took an increasing share of total trade from areas under Portuguese control (Klein 2010). In the 1850s the Atlantic slave trade dwindled to a trickle and by 1865 it had ended.⁶

[Table 1 about here]

Although the substitution of commodities for slaves may have been a relatively smooth process in terms of overall export revenues, Hopkins (1973) has argued that it provoked a ‘crisis of adaptation’ in several parts of Western Africa because some slave trading areas had much better environmental conditions to shift towards tropical cash-crop exports than others. Moreover, the production of agricultural cash-crops for export markets involved different business models

⁶ In the 1780s about 90% of the value of African exports to the New World consisted of slave exports, and about two-thirds of the slaves destined for the Americas were embarked in West Africa. In the 1820s about two-thirds of the total embarked slaves came from either the West-Central coast (c. 440,000) or Southeast Africa (c. 120,000), whereas the remaining third from West Africa (c. 290,000) were a considerably lower number than in the 1780s (c. 505,000). Despite a temporary recovery of the West African share in the early 1830s due to the effectuation of Anglo-Brazilian treaty to ban the slave trade, the number of slaves embarked in West Africa continued to decrease (Klein 2010: 193-4). British naval force and diplomatic pressure could not prevent the resurgence of the southern Atlantic trade in the late 1830s to late 1840s, when Brazil deliberately relaxed enforcement measures. In the 1850s, when slave exports shrunk to a trickle, the West African share was down to 16%. For the data, see Eltis *et al.* (2008) Trans-Atlantic Slave Trade Database: <http://www.slavevoyages.org/>.

and different groups of producers than the production of slaves. Whereas slave raiding demanded a certain military hierarchy in order to secure violence monopolies and distribute slave trade revenues, the production of agricultural commodities could be conducted as efficiently by large numbers of small farmers, as by large-scale producers employing slave labor. The shift of the Asante to the kola nut trade with the Hausa states and the development of the palm oil trade must, therefore, have involved a specific adaptation to new economic power relations (Austin 2005: 46-7; Lovejoy 2005).

The commercial transition in 'Eastern Africa', which we define as the area south of the Sahara trading into the wider Indian Ocean area, occurred considerably later. During most of the 19th century the Eastbound slave trades expanded and remained sizeable until the 1890s. Austen's work on the Red Sea trade (mainly from the Horn of Africa and the Nilotic Sudan) and the Swahili coast (Kenya and Tanzania; Zanzibar the major hub) suggests a steady outflow of about 100,000 slaves per decade (Austin 1979: tables, 31-33). The hinterland of Mozambique was entrenched in the Atlantic trade up to the 1850s, but also supplied slaves to Madagascar, the Comoros, the Mascarenes and further destinations in the Indian Ocean (Campbell 2004; 2008).⁷

The scramble led to a relatively abrupt decline of the Eastbound slave trades in the 1890s and 1900s, a trade that was not complemented by vibrant commodity exports, with the exception of ivory and a short-lived cloves mania during the middle of the 19th century (Clarence-Smith 1986; Sheriff 1986, 1987). Ivory and slave exports had been complementary, because slaves carrying teeth to the coast offered an efficient solution to high overland transportation costs. However, the 'cash-crop revolution' in Eastern Africa (tobacco, coffee, cotton, tea) did not start until after 1900, when railways removed the transportation bottlenecks of perishable and/or low value bulk commodities (Tosh 1980; Jedwab *et al.* 2014). In Western Africa, the 'commercial transition' was enhanced by increasing use of indigenous slaves in expanding cash-crop sectors, such as the palm oil industry in the Sokoto caliphate (Law 2002; Lovejoy 2005). Slave-trade-induced Dutch Disease effects thus appeared to have been more modest in Western Africa than in Eastern Africa. Consequently, around 1900, when the scramble was more or less completed, the estimated per capita value of commodity exports in the West and the East exceeded a ratio of 10 to 1 (Frankema and van Waijenburg 2012: 916).

⁷ The trans-Saharan slave trade also rose to unprecedented levels. According to Austen, the number of slaves exported across the Sahara doubled from about 70,000 per decade in the 18th century to about 140,000 per decade between 1800 and 1880.

Whereas Western and Eastern Africa were major slave source regions, North Africa, South Africa and the African islands were net recipient regions. North African trade had always differed from Sub-Saharan African trade because of its proximity to Mediterranean markets. South African trade developed differently as a result of early European settlement, its temperate climate and its unique location for the provisioning of ships on Indian-Atlantic shipping routes. The African islands off the coast, such as Cape Verde, Mauritius, Reunion and the Comoros, were small in size, but they accounted for a large share of African export values up to the late 19th century, dominated by sugar. These differences between trade developments of the Sub-Saharan African mainland on the one hand, and the outer edges of the continent on the other (North, South, islands) were also reflected by the fact that the latter areas had already come under some form of European control (long) before 1880.

When Western and Eastern Africa were eventually drawn more firmly into the realms of the British, French and Portuguese empires, their export growth accelerated. Table 2 shows that trade increased dramatically in all areas, and especially in Eastern Africa where commodity exports had remained very small up to 1900. The areas that were under British control sustained a process of export growth that had set in during the mid-19th century. In French Africa growth was less pronounced, because trade relations had already been more developed around 1850, especially with the Senegambia area. Indeed, in the 1850s and 1860s the value of Senegalese exports exceeded the total sum of exports of the major British West African areas, including the Gambia, Sierra Leone, the Gold Coast and the Niger delta. Although British trade with the Niger delta expanded rapidly after the British annexation of Lagos in 1861, and the total value of Nigerian exports overtook Senegalese exports in the 1870s, in per capita terms the gap remained huge, c. 10-15 to 1.⁸

[Table 2 about here]

Table 3a and 3b present the share of African ‘colonies’ in total exports from British and French colonial possessions to the metropole. Table 3a shows that Sub-Saharan African commodity trade to Britain had been dominated by South Africa and Mauritius up to the 1880s,

⁸ For these calculations we used the official exchange rates of the gold standard regime, in which one British Pound equalled 26 French Francs. We took population estimates for Nigeria and Senegal from Frankema and Jerven (2014).

but that the relative shares of Western and Eastern Africa caught up after 1880 and 1900, respectively. Table 3b shows that exports from Africa dominated French colonial trade in a similar way as Indian exports dominated British colonial trade (note that exports from the British dominions, Australia and Canada, are excluded from this account). North Africa, and Algeria in particular, made up the bulk of this trade, but the share of West African exports to France was nevertheless substantial (over 10%), and much larger than in British colonial trade. Following the decline of the French Caribbean trade during the late 19th century, the share of Western African exports to France was only matched by the exports originating from Indochina.

[Table 3a about here]

[Table 3b about here]

Table 4 presents the top five commodities exported from Sub-Saharan Africa during the long 19th century according to overall export value. Palm oil was the key commodity in the first half of the 19th century, along with important ‘18th century’ commodities such as ivory and beeswax. After 1850 groundnuts and gum kicked in, two major export items from the Senegambia area. Palm oil was used as a lubricant in the machinery industry (incl. the railways), as an ingredient in soap production, and as an edible oil in food processing industries. Groundnuts were especially valued as a protein-rich source of vegetable oils. Gum Arabic was used for all sorts of industrial purposes, being especially valued for its adhesive qualities. After 1880 a number of ‘new’ commodities gained ground, most notably rubber, cocoa, cotton and oil seeds.

A final remark needs to be made. Sub-Saharan Africa remained a minor player on the broader stage of North-South trade during the 19th century, although its overall weight expanded in the century between 1850 and 1950. Since Sub-Saharan Africa supplied small shares of total world supplies of most of its commodity exports, its growth had little direct effect on world market prices and thus reflects an effective supply response to, as we will show below, a very powerful price boom.⁹ This may have been different for some commodities such as rubber,

⁹ Possible exceptions to this general rule might have been ivory, and after 1890 perhaps also Ghanaian cocoa and Congolese rubber for a brief period (before Asian rubber took off).

cocoa, copper or diamonds, in which Africa did become a leading supplier at some point after 1880, but that is an issue for a follow-up study.

[Table 4 about here]

3. An economic rationale for the African scramble?

To appreciate our contribution to the debate on the economic rationale for the scramble, we need to introduce the key arguments. The most common counter-argument to the view that the scramble for Africa was driven by economic motives is precisely that its share in total (imperial) trade was too small to be worth fighting for. Hence, many scholars have argued that the scramble is best understood as an economically irrational, but politically important demonstration of military power and strategic considerations, national prestige and moral self-confidence, in an age of increasing intra-European tensions (Chamberlain 2009, Hyam 1976, Pakenham 1992). In this game, the French seemed more eager than the British to expand their territory in West Africa from existing strongholds in the North (Algeria) and the West (the Senegambia coast), since they considered the region as their natural ‘backyard’ and the British did not. Yet, the British, along with the Germans and Portuguese, found it too important to leave unclaimed territories to European contenders, once the French launched an attempt to extend control over the Western Soudan in 1879, when Joseph Gallieni led an expedition to survey the possibilities of constructing a railway connecting the Niger river, and the major inland trans-Saharan trade cities (Djenne, Timbuktu, Gao), to Dakar.

Scholars who have emphasized economic motives for the scramble do not deny that the commercial interests were comparatively modest, but point out that these interests were growing and thus contained rising promises of profitable exploitation, and that whether these promises were realistic ex-ante perceptions or not, doesn’t matter for an assessment of motives (Hopkins 1968, 1973). Surely, the high costs of colonization of tropical Africa goes a long way in explaining why it was the last major area that came under direct European control, long after the Americas had gained independence, but the timing of the scramble around 1880 fits the logic of 19th century technological progress, industrial demand and changing patterns of global trade. This debate is unlikely to ever be resolved, if only because the political motives for invasion are so difficult to disentangle from the economic motives.

According to the Hobson-Lenin thesis ‘Capitalism’ and ‘Imperialism’ are inextricably connected, since ongoing accumulation of capital eventually had to find its way out of Europe in search for attractive investment opportunities. According to Moon (1926), the Hobson-Lenin thesis fits the timing of the extension of ‘formal empire’ in Sub-Saharan Africa quite well. Moon argued that the replacement of informal control of seaborne trade flows by direct territorial control around 1880 marked the ‘high age’ of capitalism. Whereas the mid-Victorian era of ‘indifference’ regarding empire was rooted in the pursuit of a radical free trade ideology, the late-Victorian era saw a renewed ‘enthusiasm’ for empire and wider support for imperial expansion.

Gallagher and Robinson (1953) responded that the supposed mid-Victorian ‘indifference’ to imperial expansion was just a matter of words, but that it did not square with political practice. They argued that British warships in Canton and the establishment of formal control over major parts of India (the Raj) did not point to much ‘reluctance’ during the 1840s and 1850s. With respect to Africa they stated that “the West Africa Committee of 1865 made a strong and much quoted case for giving up all but one of the West African settlements, but even as they sat these settlements were being extended.” (1953: 4). Dike (1956) also noted how the plea of the West Africa Committee for retreat, was inconsistent with increasing British encroachment in the Niger delta in the 1860s. According to Gallagher and Robinson, the scramble should be seen in the context of a long Victorian age of continuous imperial expansion, but that the British only opted for the expansion of ‘formal empire’ when their options of informal control (via voluntary or enforced free trade treaties) were constrained, either due to the lack of reliable local partners or by European contenders. The timing of the scramble, they argued, was dictated by the “Egyptian question” of 1881-82, when British commercial, financial and strategic interests (Suez canal; access to India) were threatened by a revolt against their ally, the Khedive regime.¹⁰ We note that this older strand of literature is mistakenly Anglo-centered, because the timing of the scramble was provoked by French actions, followed by British re-actions.

Hopkins’ view on what he called the ‘economic basis of imperialism’, which built upon Dike’s (1956) *Trade and Politics in the Niger Delta 1830-1885*, contributed three points to the debate (Hopkins 1968, 1973). First, Hopkins explicitly linked the commercial transition to the scramble by arguing that the British and French sought to secure those places where they had

¹⁰ See Platt (1973) for a critique on Gallagher and Robinson and a defence of the distinction between mid- and late-Victorian imperial policies.

built up the strongest commercial relations (the French in the Senegambia area, the British around the Volta and Niger basins in respectively the Gold Coast and Nigeria). Second, he argued that European demand for industrial inputs had driven up the price of key West African export commodities, which he illustrated with a palm-oil price series. Third, he noted that the price of palm-oil, and indeed many agricultural commodities, had started to fall after the 1860s as a result of the great depression of 1873-1895, so that the timing of the price boom did not align with the timing of the scramble. Hopkins reasoned that falling African commodity prices provoked intra-African conflicts over shrinking export revenues, which provoked African elites to secure rents by raising tolls and tariffs, and that this undermining of free trade by Africans motivated European intervention.

Hopkins' thesis was subsequently criticized by Ajayi and Austen (1972) who pointed out that the Yoruba wars in Nigeria, that Hopkins had mainly been referring to, were not primarily motivated by considerations of declining external trade, since it accounted only for a small portion of the economic surpluses that were generated in the domestic agricultural economy. Moreover, Ajayi and Austen contended that the palm-oil trade in the Niger delta wasn't the main prize of the scramble. Even though the British secured territorial control over Lagos as a key commercial hub in the early 1860s, the British and French were primarily concerned about capturing the external and internal trade flows of the major Savannah empires in the middle Niger delta. Indeed, although Hopkins tackled the Euro-centric conception of the scramble by pointing to the African side of the process, his view did contain traces of Anglo-centrism in his account of the scramble's chronology.

In the 1980s the debate gradually disappeared from the economic history literature, along with a general decline of interest in African economic history.¹¹ Perhaps the hypercritical study of Ratcliffe (1981) dealt a first major blow, while heralding the upcoming 'cultural turn' in history. In a biting methodological critique Ratcliffe argued that economic historians had failed to make clear how "economic causes are articulated into political action" (1981: 10) and that for a proper causal analysis of the scramble one would have to look into the psyches of the leading political actors of the time. He underlined his point by citing Hyam (1976) who stated that: "There used to be a theory that territories came under the British flag as a result of the export of surplus capital. It would be much truer to say that the driving force behind empire-building was rather the export

¹¹ A literature that has received new impetus in recent years (Hopkins 2009, Austin and Broadberry 2014).

of surplus emotional, or sexual energy" (1981: 11). Hyam claimed that the unimaginative sex lives of the likes as Cecil Rhodes and Leopold II were the ultimate driving force of imperial expansion, while adding that the British were not only "the world's greatest empire-builders", but also "the world's worst lovers." (1976: 375).

Although Ratcliffe made it very clear that the causality of the scramble is extremely hard to pin down, not in the least place because it constituted a multi-layered process of actions and reactions in European and African politics, his argument foregoes the key point that the changing economic context of the 19th century that Hopkins referred to, may have been a necessary condition, while certainly not a sufficient condition for the scramble. In fact, the 'economic rationale' had strong moral connotations. The lobby for colonial intervention by European merchants, venture capitalists and captains of (manufacturing) industry received support from African explorers, missionaries and anti-slavery campaigners, that is, influential people such as David Livingstone (Jeal 2001). According to the abolitionists the spread of "Christianity" and "Commerce" formed two sides of the same coin. The idea was that slavery within Africa could only be abolished by developing viable economic alternatives. The famous Niger expedition of 1841, which ended in a complete failure, was motivated by precisely these two objectives: to conclude treaties with local African chiefs to end slavery, and to explore the possibilities for plantation agriculture along the Niger river (Temperley 1991). The anti-slavery lobbyists, including a growing group of Protestant missionaries active in the region, were generally in favor of imperial control and their lobbies played a major part in British parliamentary decisions to extend colonial rule into East Africa (Frankema 2012). The 19th century expansion of African commodity trade did not only strengthen the case of traders and prospective investors, it also squared with those who advocated for the export of 'civilization'.

4. The commodity price boom of 1845-1885

Back to the changing economic context of the 19th century. This section brings the 'commercial transition' in sharper focus and calls for a revision of some accepted 'facts' regarding the *timing* as well as the *comparative magnitude* of Africa's 19th century commodity price boom. We calculate the net barter terms of trade (NBBT) as the ratio of the weighted average of all major export commodities to commodity import prices (consumption and investment goods), and then

use this information to calculate annual average growth rates of the purchasing power of exports. Our dataset covers the period 1784-1939.

The 1850-1939 data cover nineteen distinct Sub-Saharan African areas: *Western Africa* (6) – Gold Coast, Gambia, Nigeria, Sierra Leone, the French West African Coast (Côte Occidentale d’Afrique), and Senegal; *Eastern Africa* (6) – Northern Rhodesia, Nyasaland, Kenya plus Uganda Protectorate, Somaliland, Tanganyika, and Zanzibar; *African Islands* (3) - Madagascar, Mauritius and Reunion; *South Africa* (4) Cape of Good Hope, Natal, merged into the Union of South Africa in 1910, and Southern Rhodesia. Our figures for *North Africa* are based solely on Egypt and draw upon the work of Panza and Williamson (2015). The 1784-1849 data for Western Africa and South Africa only covers British trade with British, French, Portuguese and Dutch possessions in Africa. Our pre-1850 series for the African islands is exclusively based on sugar, which covered over 80 percent of the islands’ export value. The terms of trade for Eastern Africa prior to 1890 are exclusively based on ivory prices.

The export price indices rely on a mix of African and world market prices weighted by area or colony-specific export compositions.¹² Our data cover over fifty products and include foodstuffs, metal ores, woods, rubber and gum. First, we estimate annual price indices for the main African export commodities. For 1850-1939, we rely almost exclusively on annual prices quoted at African ports. These capture fully the impact on the local market, as it excludes international transport costs, insurance and retail margins, and import duties. The data is taken from British and French trade statistics, primarily the British *Statistical Abstracts* and the *Blue Books* and the French *Tableau General du Commerce*. In case several commodity prices were available from different colonies/areas, we weighted each by its share of total African quantities exported of the given commodity. French prices were converted to British pounds using quoted exchange rates (Mitchell 1988: 700-3). If African data were missing for the 1850-1939 period, we interpolated the commodity price indices based on the British wholesale prices trends using Sauerbeck (1886, 1893, 1905, 1917, 1932, 1951).

For the 1784-1849 period, the British and French sources do not list the *nominal prices* for exported commodities except for the Cape of Good Hope. We extrapolated the commodity

¹² We are well aware of the downward bias imparted to NBTT trends when commodity prices are quoted in European or North American markets. As transportation costs fell, the commodity price at the source rose, and it fell at the import point. While it is relevant to note that we are probably *understating* the African export price boom and thus the NBTT boom, the same is true of other commodity exporters with which we will be making comparisons in section 5.

price indices based on American wholesale prices (Bezanson *et al.* 1937; *Historical Statistics of the United States* 1975). American prices were converted to British pounds using official exchange rates (Officer 2015: *Measuring Worth*). For ivory we relied on the work of Sheriff (1986), who lists detailed wholesale prices in East Africa, India and England. South African prices were taken from the British *Blue Books*.

To obtain an aggregate export price index for each area/colony, the country's commodity prices were weighted using its export mix. These export weights were changed at approximately twenty-year intervals to capture long-run shifts in export composition. The commodity specific quantity information for 1850-1939 is based on the same sources as the export price data described above. The 1784-1850 years rely on the trade data listed in the handwritten *British Customs Records*. Lastly, the country-specific export price indices were aggregated to obtain series for the five sub-regions as well as an aggregate that includes the two Sub-Saharan African regions, but excludes the islands and South Africa. The aggregate indices were constructed using area/colony nominal export shares. Once again, these weights were changed at 20 year intervals to capture the shift in each area's contribution to the value of total African exports.

Location specific terms of trade were derived by dividing the export price indices by a common import price index. We took the import price index from *British Historical Statistics* (Mitchell 1988: 526-8). This index captures the change in the prices for the primary British manufactures shipped abroad. The use of a common African import price index implies that we do not take differences in the import mix of African colonies into account. The data that is available on the composition of goods imported into Africa suggests that these differences were minor, validating our choice for a common import index.

Figure 1 reports the trend in the Sub-Saharan Africa terms of trade (1900=100) estimated over the century and a half from 1784 to 1939. Note that this trend excludes South Africa, North Africa and the African islands, which we analyze below. We will be more precise in the next section, but here we stress two findings. First, while the terms of trade rose only modestly over the half century up to the mid-1840s, they exploded from then to the mid-1880s. The secular commodity price and terms of trade boom in pre-1880s Sub-Saharan Africa was part of general globalization forces at work in all poor commodity exporters. The terms of trade boom was huge in the poor periphery: between the half-decades 1796-1800 and 1856-1860, it increased by almost two and a half times, or at an annual rate of 1.5 percent, a rate which was vastly greater than per

capita income growth in the poor periphery, and even greater than per capita income growth in the United Kingdom (1.2 percent per annum, 1820-1870, Maddison 1995: 23). Second, the fall from the peak in the mid-1880s to 1939 destroyed all the gains which had been achieved by Africa from the 1780s onwards. This terms of trade bust has received far more attention than the huge boom that preceded it (Prebisch 1950; Singer 1950; Lewis 1978), but our account puts this bust in a longer perspective: in 1940 the terms of trade of Sub-Saharan Africa had returned to its 1800 level.

[Figure 1 about here]

Table 5 compares our NBBT estimates with the GBBT estimates of Eltis and Jennings (1988). Although both indices confirm that the African terms of trade improved over the course of the early 19th century, the rate of growth in the gross barter terms of trade (GBTT) vastly exceeds that of our NBTT estimate. We observe an extended, yet modest rise in the NBTT from about 1791 to the 1820s, followed by a brief decline and a subsequent take-off in the 1840s peaking in the mid-1880s. Eltis and Jennings failed to cover the first 15 years of the 19th century, but their figures suggest that the African terms of trade more than doubled, which translates into an annual rate of growth of 2.1 percent between the second half of the 1810s and the early 1850s. We estimate the terms of trade to have grown by a little over 0.9 percent per annum between 1791 and 1853, less than half of their estimate.

Although Eltis and Jennings were unable to link their early 19th century estimates to the post-1853 period, they contended that the terms of trade rise “probably continued until the last third of the 19th century, when a sharp reversal occurred” (1988: 942). Here they resonate Hopkins' claim, based on his analysis of nominal palm oil prices that “the barter terms of trade moved decisively against primary producers” (1973: 133) in the third quarter of the 19th century. Our estimates show that the aggregate terms of trade peaked later, in the middle of the fourth quarter of the 19th century, because the terms of trade of other African export commodities such as gum Arabic and groundnuts continued to rise up to the mid-1880s.

[Table 5 about here]

We consider our new estimates to be a marked improvement over those of Eltis and Jennings for four reasons. First, the primary assumption behind the GBTT measure is that the countries under comparison faced a consistent equilibrium in their balance-of-trade, meaning that nominal imports always equaled nominal exports and that capital flows were negligible. This is a strong assumption, and it was clearly violated in the second half of the 19th century when there were frequent and persistent gaps between import and export values, accompanied by sizable flows of gold and capital. The NBTT measure does not require that the balance-of-trade be in equilibrium. Second, the GBTT requires a set of prices for a given base-year to convert the nominal value of all goods and services traded to real values to allow them to be aggregated. Eltis and Jennings relied on the *official values* used in the British customs ledgers which are based on late 17th century prices. These prices are not representative for the trade flows observed in the 19th century and tend to allocate a greater weight to new export products that had seen sizable increases in their traded volume accompanied by falling prices.

Third, lumping together *quantities* of all goods imported and exported does not allow one to detect the impact of the change in volume of a single commodity on the terms of trade. Indeed, any remnant of the slave trade – especially if left outside the official customs ledgers – would lead to an undervaluation of the volume of African exports and a subsequent overestimation of the terms of trade boom. NBTT estimates allow us to focus strictly on commodities, to single out the effect of individual goods on the overall terms-of-trade trend and to reweigh the index at 20-year intervals to adequately reflect the changing export mix of African countries over time. Finally, Eltis and Jennings were unable to link their index to the terms of trade estimates reported by Gemery *et al.* (1990) for the 18th century, nor to extend it beyond 1850. They thus missed a vital part of the commercial transition in West Africa and, indeed, they missed the full extent of the African terms of trade boom of 1845-1885.

The use of the NBTT measure allows us to disentangle the effects of both changes in the import and export prices as well as the growth in the volume of exports on the purchasing power of African exports. Table 6 illustrates this for West Africa, linking the evidence from Table 2 and Figure 1 to reveal the actual impact of globalization on this region. In the period leading up to 1885, during the height of the terms-of-trade boom, the growth in export prices was fuelling the rise in the purchasing power of exports. Whereas, between 1850 and 1885, the export volume rose at an annual rate of 1.42 and 2.05 percent for the French and British possessions

respectively, the purchasing power of export (i.e. the real value of imports received in exchange for African exports) rose at nearly double those rates: 4.98 and 3.79 respectively. Hopkins' thesis that falling trade revenues provoked intra-African conflicts is completely at odds with our results: during the third quarter of the 19th century the real revenues from Sub-Saharan African exports did not contract, they rose at an impressive rate.

After 1885, the terms-of-trade went into sharp decline; this reflected the fact that export prices rose much slower than the prices for imported goods. The terms-of-trade bust notwithstanding, the purchasing power of export still rose between 1885 and 1929. This was driven exclusively by a pronounced increase in the export volume for both British and French West Africa. In section 6 we will discuss why the export boom continued during the colonial era, despite the sharp decline in the African terms-of-trade, but for now it is sufficient to conclude that the period before the scramble was distinctly different from the period after.

[Table 6 about here]

5. The African commodity price boom in comparative perspective¹³

While Figure 1 makes it clear that Sub-Saharan Africa enjoyed a commodity export price boom from the late 18th century to the mid-1880s, we now ask how dramatic that boom was compared with other commodity exporting regions. Figure 2 offers that comparison with the *European Periphery* (2.1: Italy, Portugal, Russia, Spain), the *Middle East* (2.2: Egypt, Ottoman Turkey, Levant), *Latin America* (2.3: Argentina, Brazil, Chile, Cuba, Mexico, Venezuela), *South Asia* (2.4: Ceylon, India), and *Southeast Asia* (2.5: Indonesia, Malaya, the Philippines, Siam).

South Asia – dominated by India – had a shorter and a much weaker 19th century terms of trade boom. South Asian terms of trade peaked in 1861, which is almost fully in line with the peak year of the 'average' poor commodity-exporter (1860), but a full quarter of a century before the African peak. The growth rate to peak was also much less steep. This was even truer over the full 19th century up to 1885-1890. South Asia recorded no growth, whereas we find an annual average growth of 1.48 for Sub-Saharan Africa (Table 7a). Indeed, all of that early growth in

¹³ This section draws on Williamson (2011: Chapter 3).

India's terms of trade took place up to the 1820s; after that decade, India exhibited great volatility but no secular growth in its terms of trade whatsoever.¹⁴

The European Periphery and the Middle East both had a steeper boom to peak than Sub-Saharan Africa, but, like South Asia, they were much shorter, peaking in 1855 and 1857. While the magnitude of their booms to peak were greater than Sub-Saharan Africa, they were considerably less than Africa for the full century up to 1885-90. The terms of trade for Latin America and Southeast Asia were more like Sub-Saharan Africa, which is mainly explained by the large similarities in the export packages of these three regions.

In section 3, we pointed out that the West African experience is most relevant for assessing the economic rationale of the scramble, because trade connections with Europeans were much further developed there than in East Africa. Table 7a converts this visual accounting with actual per annum growth rates. From the late 18th century to peak year (1860 for all regions combined), the terms of trade for the average poor commodity exporter (excluding Africa) was 1.43 percent per annum, probably one of the biggest terms of trade booms history has ever witnessed. The figure for Sub-Saharan Africa was actually a little higher, 1.48 percent per annum. However, Sub-Saharan Africa enjoyed its boom for 25-30 years longer than the average poor commodity exporter. The average per annum growth rate for all poor commodity exporters was 0.72 percent from the late 18th century to the mid-1880s, about half the rate of Sub-Saharan Africa. Consider the run up to the scramble and the Berlin conference, that is the four decades from 1845-1849 to 1885-1889, arguably the most relevant period for establishing an economic rationale for the European scramble. Over those four decades, the growth rates of the Sub-Saharan terms of trade was a spectacular 2.42 percent per annum, while it was only 0.2 percent per annum for the average poor commodity exporter.

A global comparative perspective thus shows that the terms of trade boom in Sub-Saharan Africa in the four decades before the Berlin conference was much bigger than that which occurred in the rest of the poor commodity exporting periphery. If we are looking for an economic rationale for the African scramble, we need not look much farther. Hopkins (1973) was right in pointing to the rising terms of trade in West Africa, but it was stronger, more widespread and more prolonged (into the 1880s) than he and others have envisaged.

¹⁴ This is an especially ironic finding given that the literature on 19th century de-industrialization in British India has been the most copious and contentious by far (Roy 2000, 2002; Clingingsmith and Williamson 2008).

[Figure 2 about here]

[Table 7a about here]

[Table 7b about here]

6. From tailwind to headwind, 1885-1940

While a more in-depth analysis of trade during the colonial era warrants a separate study, we conclude this paper by making three general observations regarding the development of African trade after 1885, as it evolved from, but also partly contrasted with, trade developments during the commercial transition of the pre-scramble era.

First, although African commodity exports increased throughout the 19th century, the *price boom* was the defining feature of the 1845-1885 era, with export volumes rising as a supply response. What followed was different. The export boom continued, but it did so *in spite of* a prolonged fall in commodity prices. That is, commodity exports now grew for reasons other than a supply response to favorable world price trends. As Table 5 has shown, the post-scramble acceleration of export growth was entirely caused by volume growth. This growth in export quantities was facilitated by railroads. European territorial control paved the way for railway investments unlocking the export potential of the African interior. Most of these railways were constructed and completed in the four decades following 1890. Although this export boom involved some diversification into a wider range of tropical commodities and minerals, the overall composition of African exports remained overwhelmingly based on primary commodities.

This deepening of specialization in primary commodities during an era of almost continuously worsening terms of trade raises another question: Why didn't Africa escape this commodity export trap after world markets soured? We will not try to offer a comprehensive answer to this question here, except to note that the explanation will come from two sources: first, the African endowment of abundant land with scarce capital, labor and skills, an endowment that heavily favored land-extensive agriculture and mining; and second, colonial policies which were designed to support specialization in primary commodities (Austin, Frankema and Jerven forthcoming 2016). Any attempt to sort out these two forces will have to deal with the evidence in Figure 3 and Table 6, where it is shown that export growth was slower before the 1880s, when prices boomed, and faster after the 1880s, when prices slumped, not only to the detriment of

African producers, but also to European investors and plantation-owners. And it is worth noting that the price slump was larger in French Africa than in British Africa, as a result of the declining value of the French Franc after abandoning the gold standard (it lost much of its value vis-à-vis the British Pound during 1915-1920 and 1922-1926).

[Figure 3 about here]

Second, the move towards trade liberalization that occurred in Europe during the mid-19th century was transposed to colonial Africa right at the time that it was starting to reverse in Europe. Colonial governments implemented modest tariff policies, mainly motivated by the need to raise government revenues, not by the desire to protect local producers. Colonial governments promoted the free flow of goods into and out of their territories, and relied on large-scale programs of forced labor to build the necessary infrastructure (Frankema and van Waijenburg 2014). Colonial governments imposed *ad valorem* import duties around 5 to 10% and left exports largely untaxed. Liberal trade policies came under pressure in the 1930s, when soaring budget deficits forced colonial governments to rethink their models of colonial economic development (Frankema 2011; Gardner 2012).

So-called marketing boards were established to strengthen the control of colonial governments on the main export sectors via price controls. The marketing boards were initially intended to stabilize volatile commodity prices and African farm incomes, but the revenues derived from the increasing margins between domestic purchasing prices and world market prices after the depression were kept in metropolitan funds and were not channeled back directly into the development of local agriculture (Meredith 1986, Havinden and Meredith 1993). In the settler colonies, where government interventions in markets for labor and land had been more pervasive and biased against African smallholders, colonial policy reforms removed some of the restrictions in the hope to revive commodity exports (Frankema, Green and Hillbom 2014).

Third, thanks to the commodity export boom Africa's share of world trade kept rising to about 5% in 1950. This share was maintained during the late colonial era up to the early 1970s. This rise itself is not surprising. Africa was the last major world region to be unlocked by railways. Moreover, if indeed the external slave trades had crowded out the development of commodity exports, the slave trades must also have retarded the integration of Africa into world

commodity markets. African export prices collapsed again during the 1970s and only started recovering around 1995-2000. How long Africa's commodity boom will last this time is difficult to say, but one thing seems clear: the recent rise in African terms of trade is far more modest than the 1845-1885 boom. In fact, it is unlikely that this commodity price boom will ever be replicated.

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Tables and Figures

Table 1: English commodity imports from Africa and slave exports to the New World, 1701-1800 (1701-1710 = 100)

<i>Years</i>	<i>English imports from Africa</i>	<i>Slaves exported from Africa to New World</i>
1701-1710	100	100
1711-1720	147.8	115.0
1721-1730	258.5	139.1
1731-1740	340.5	151.7
1741-1750	160.5	143.7
1751-1760	221.5	163.1
1761-1770	265.4	207.7
1771-1780	126.3	191.7
1781-1790	410.7	220.2
1791-1800	527.8	215.2

Sources: Commodity imports from Johnson et al. (1990, p. 164).

Slave exports from Eltis (2008).

Table 2: Volume of exports Sub-Saharan Africa, 1850-1939 (1900-1909=100)

	<i>British West Africa</i>	<i>French West Africa</i>	<i>British East Africa</i>	<i>Mauritius</i>	<i>Madagascar and Reunion</i>
1850-1859	8	42		75	
1860-1869	7	36		91	
1870-1879	15	58		96	
1880-1889	21	64		98	32
1890-1899	50	57		93	59
1900-1909	100	100	100	100	100
1910-1919	208	188	435	174	185
1920-1929	327	337	899	166	297
1930-1939	459	581	2,573	176	349

Sources: British trade from Statistical Abstracts (various issues); Blue Books (various issues).

French trade from Tableau General du Commerce (various issues).

Table 3a: Share of exports of British colonial possessions, 1860-1939 (%)

<i>Region</i>	<i>1860s</i>	<i>1870s</i>	<i>1880s</i>	<i>1890s</i>	<i>1900s</i>	<i>1910s</i>	<i>1920s</i>	<i>1930s</i>
India and Ceylon	72	69	70	60	60	55	59	53
South-East Asia	11	12	12	15	15	16	20	22
Caribbean	10	9	7	6	4	4	3	4
Sub-Saharan Africa	7	10	11	18	21	25	18	21
<i>Western Africa</i>	<i>0.8</i>	<i>1.5</i>	<i>1.1</i>	<i>2.0</i>	<i>2.7</i>	<i>4.2</i>	<i>5.0</i>	<i>6.4</i>
<i>Eastern Africa</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.4</i>	<i>1.2</i>	<i>1.6</i>	<i>4.2</i>
<i>Mauritius</i>	<i>3.2</i>	<i>3.4</i>	<i>2.7</i>	<i>1.9</i>	<i>1.2</i>	<i>1.2</i>	<i>1.0</i>	<i>0.7</i>
<i>South Africa</i>	<i>3.3</i>	<i>4.8</i>	<i>6.9</i>	<i>13.9</i>	<i>16.3</i>	<i>18.8</i>	<i>10.3</i>	<i>10.1</i>

Note: May not sum to total due to rounding.

Source: Statistical Abstracts (various issues).

Table 3b: Share of exports of French colonial possessions, 1860-1939 (%)

<i>Region</i>	<i>1860s</i>	<i>1870s</i>	<i>1880s</i>	<i>1890s</i>	<i>1900s</i>	<i>1910s</i>	<i>1920s</i>	<i>1930s</i>
French India	3	2	5	2	3	2	0	0
Indochina	0	1	1	5	10	12	11	10
Caribbean	21	17	15	9	6	8	8	6
Other possessions	11	11	11	10	9	5	5	1
Africa	65	70	68	74	72	73	76	82
<i>Western Africa</i>	<i>13.0</i>	<i>9.4</i>	<i>15.4</i>	<i>7.6</i>	<i>10.3</i>	<i>11.7</i>	<i>15.1</i>	<i>11.6</i>
<i>Eastern Africa</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.5</i>	<i>0.2</i>	<i>0.0</i>
<i>Madagascar and Reunion</i>	<i>18.5</i>	<i>10.2</i>	<i>6.1</i>	<i>4.6</i>	<i>4.2</i>	<i>6.7</i>	<i>8.3</i>	<i>7.0</i>
<i>North Africa</i>	<i>33.2</i>	<i>50.0</i>	<i>46.4</i>	<i>62.1</i>	<i>57.4</i>	<i>54.5</i>	<i>52.9</i>	<i>63.7</i>

Notes: ‘Other possessions’ include St-Pierre-et-Miquelon, New Caledonia and other French possessions in Oceania. ‘Madagascar and Reunion’ also include Mayotte, Nossi-Be and Ste-Marie-de-Madagascar. ‘Caribbean’ also includes French Guiana. May not sum to total due to rounding.

Sources: Tableau General du Commerce (1860-67); Annuaire Statistique de la France (1878-1939).

Table 4: Top 5 exported commodities Sub-Saharan Africa, 1820-1929

<i>Rank</i>	<i>1820</i>	<i>1850</i>	<i>1870</i>	<i>1890</i>	<i>1913</i>	<i>1929</i>
1	Palm oil	Palm oil	Groundnuts	Palm oil	Palm kernels	Cocoa
2	Ivory	Wood, tropical	Gum	Groundnuts	Cocoa	Palm kernels
3	Hides and skins	Ivory	Palm oil	Palm kernels	Oil seeds	Oil seeds
4	Beeswax	Hides and skins	Palm kernels	Gum	Palm oil	Palm oil
5	Groundnuts	Beeswax	Oil seeds	Rubber	Rubber	Cotton

Notes: '1820-1850' covers British trade with West Africa only. '1870-1929' covers French and British trade with Sub-Saharan Africa, excluding South Africa, Mauritius, Madagascar and Reunion.

Sources: British Customs Ledgers (various issues); Statistical Abstracts (various issues); Blue Books (various issues); Tableau General du Commerce (various issues).

Table 5: African Terms of Trade Compared, 1791-1853 (1850-53=100)

	<i>Eltis & Jennings (GBTT)</i>	<i>This study (NBTT)</i>
1791-95		58.7
1796-1800		82.0
1801-05		74.8
1806-11		72.2
1811-15		70.9
1816-20	48.8	91.5
1821-25	64.8	104.2
1826-30	49.9	78.1
1831-35	49.4	81.3
1836-40	59.1	77.9
1841-45	64.5	74.4
1846-49	67.9	70.0
1850-53	100.0	100.0

Note: Gross and Net Barter Terms of Trade for Africa with England.

Sources: Eltis and Jennings (1988, p. 943); see text.

Table 6: Decomposition of export growth in British and French West Africa, 1850-1929

		<i>Annual average growth (%)</i>			<i>Contribution (%)</i>	
	Purchasing power of export (1)	Import price (2)	Export price (3)	Export volume (4)	Price (5)	Volume (6)
<i>British West Africa (£)</i>						
1850-1885	3.79	-0.37	1.38	2.05	46	54
1885-1929	5.53	1.29	-0.04	6.85	-24	124
<i>French West Africa (Fr.)</i>						
1850-1885	4.98	-0.31	2.50	1.42	72	28
1885-1929	1.98	4.43	1.99	4.41	-123	223

Notes: Growth rate in natural logs. The purchasing power of export in column (1) is the sum of columns (3) and (4) minus (2). The price contribution is the difference between columns (3) and (2) divided by (1). The volume contribution is the ratio of (4) and (1). May not sum to total due to rounding.

Sources: See table 2.

Table 7a: Terms of trade in the periphery, African growth rates in perspective (%)

<i>Region</i>	<i>Starting year</i>	<i>Peak year</i>	<i>Annual growth start to peak (%)</i>
All periphery (ex. East Asia and Africa)	1796	1860	1.43
European periphery	1782	1855	2.43
Latin America	1782	1895	0.87
Middle East	1796	1857	1.68
South Asia	1782	1861	0.90
South-East Asia	1782	1896	1.42
Sub-Saharan Africa (ex. South Africa)	1791	1885	1.48
Western Africa	1784	1885	1.65
Eastern Africa	1804	1887	2.88
Mauritius, Madagascar and Reunion	1785	1883	1.63
South Africa	1816	1878	1.39
Egypt	1803	1865	4.30

Note: growth rate in natural logs.

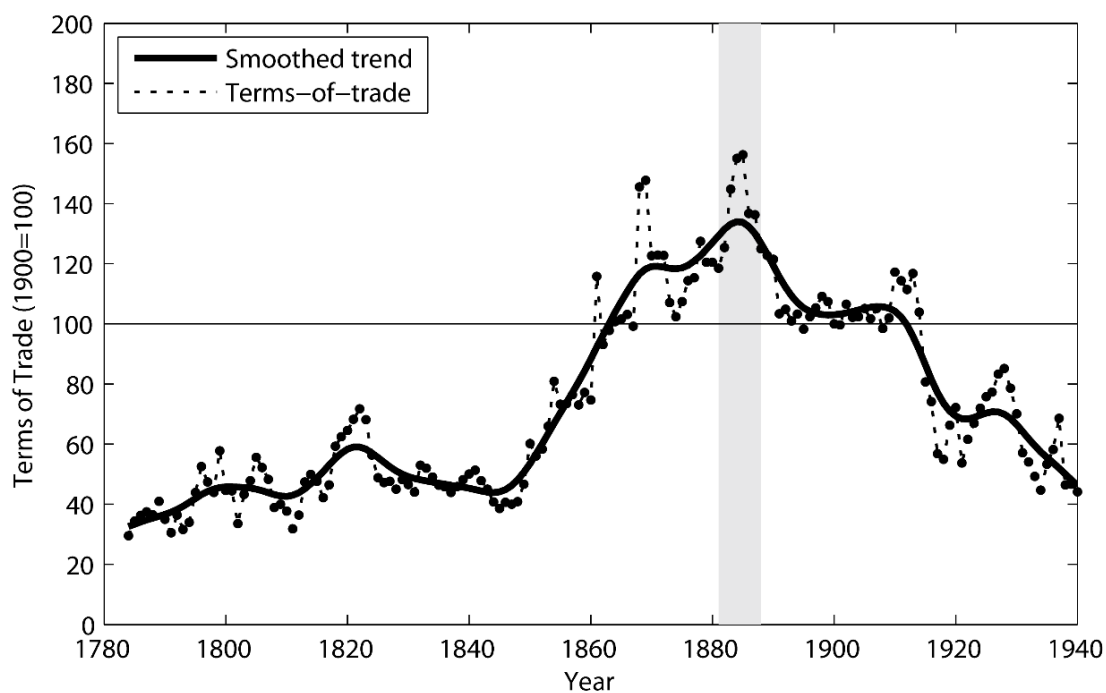
Sources: ‘Other periphery’ from Williamson (2011). ‘Africa’ see text.

Table 7b: Terms of trade in the periphery, 1845-1889 (%)

<i>Region</i>	<i>Start period</i>	<i>End period</i>	<i>Annual growth start to peak (%)</i>
All periphery (ex. East Asia and Africa)	1845-9	1885-9	0.20
Sub-Saharan Africa (ex. South Africa)	1845-9	1885-9	2.42
Western Africa	1845-9	1885-9	2.96
Eastern Africa	1845-9	1885-9	2.19
Mauritius, Madagascar and Reunion	1845-9	1885-9	1.31
South Africa	1845-9	1885-9	0.09
Egypt	1845-9	1885-9	3.01

Notes and sources: See table 7a.

Figure 1: Terms of trade Sub-Saharan Africa, 1784-1939 (1900=100)

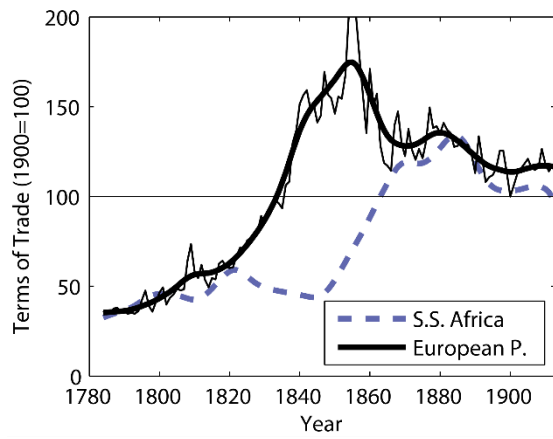


Notes: Excluding South Africa, Mauritius, Madagascar and Reunion. Smoothed trend derived using Hodrick-Prescott filter, with a smoothing factor set to 100.

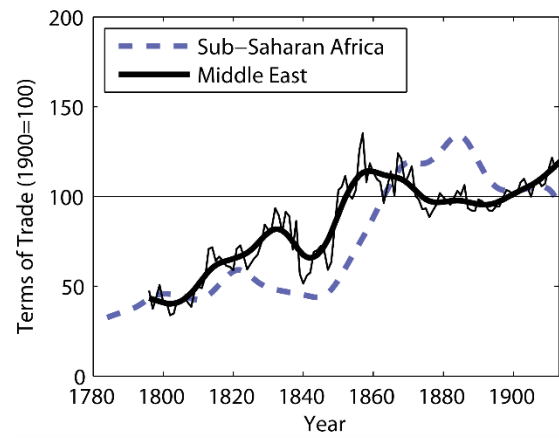
Sources: See text.

Figure 2: Terms of trade in Sub-Saharan Africa and the rest of the poor commodity-exporting periphery, 1784-1913

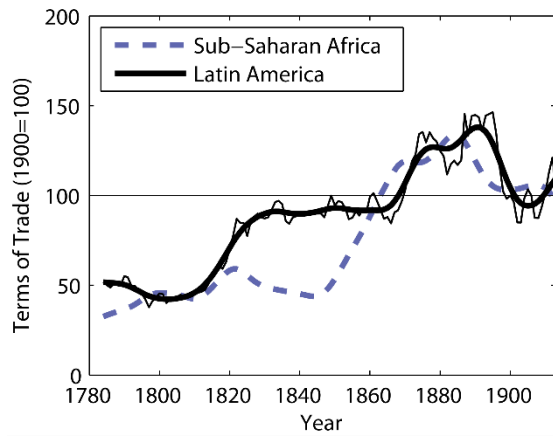
2.1: European Periphery



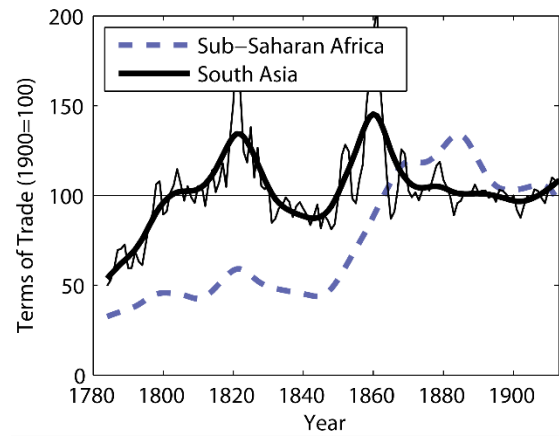
2.2: Middle East



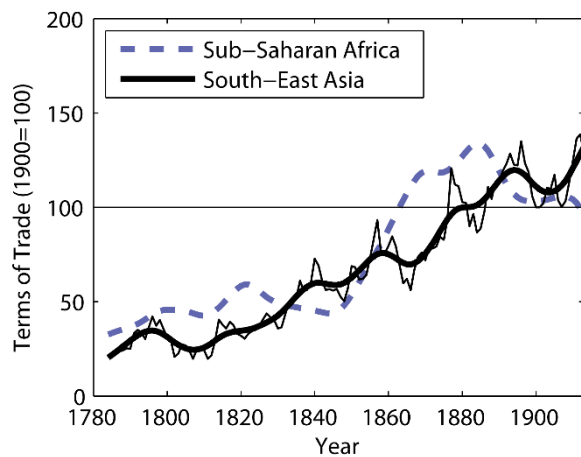
2.3: Latin America



2.4: South Asia

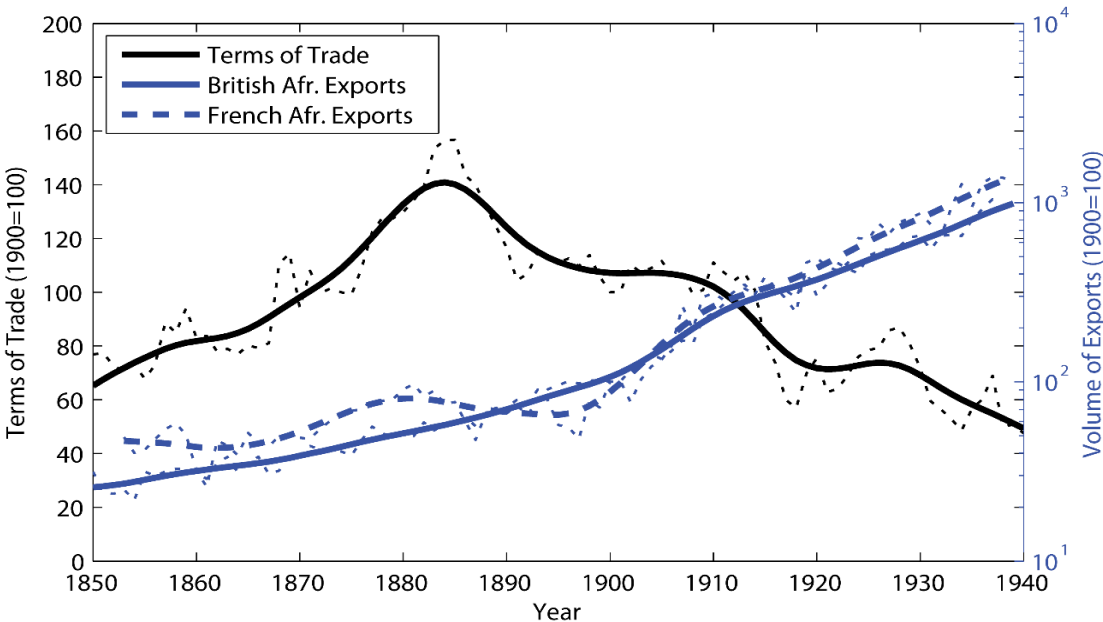


2.5: South-East Asia



Sources: ‘Other periphery’ from Williamson (2011). ‘Africa’ see text.

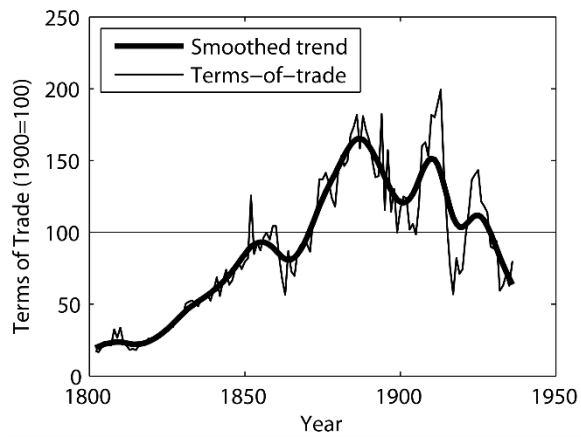
Figure 3: Volume of exports and terms of trade Sub-Saharan Africa, 1850-1939 (1900=100)



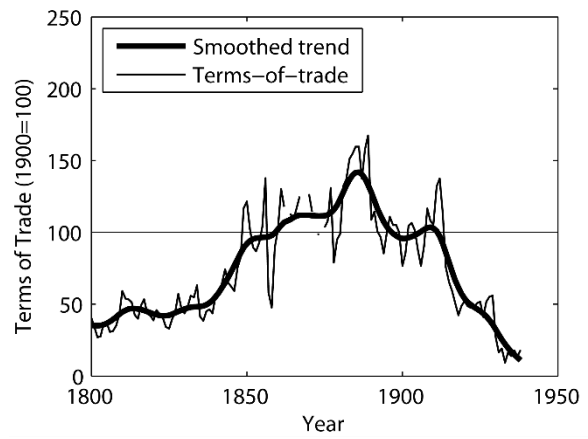
Notes: excluding South Africa. Smoothed trend derived using Hodrick-Prescott filter, with a smoothing factor set to 100.
Sources: ‘Terms of Trade’ see text. British exports from Statistical Abstracts for the Several Colonial and Other Possessions (various issues); Blue Books (various issues). French exports from Tableau General du Commerce (various issues).

Appendix A: Terms of trade for individual products, 1800-1939 (1900=100)

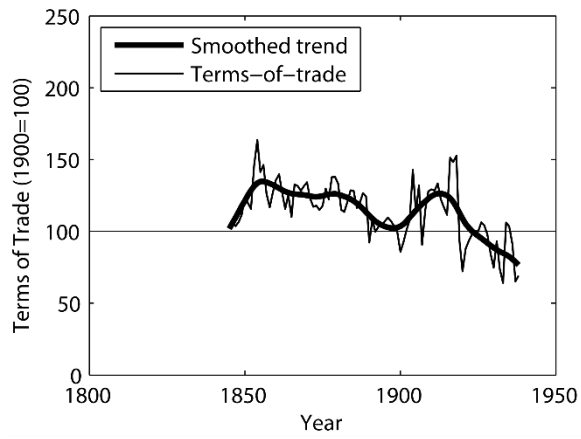
A.1: Ivory



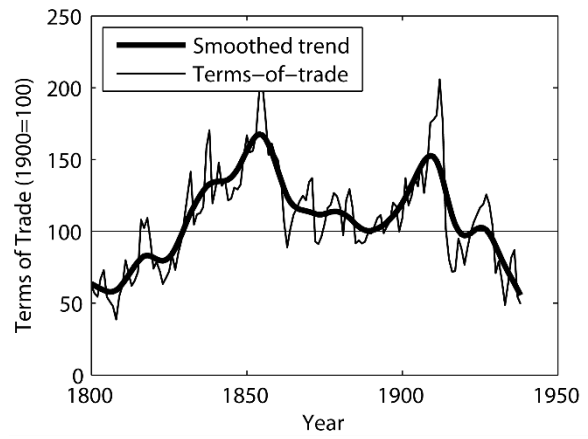
A.2: Groundnuts



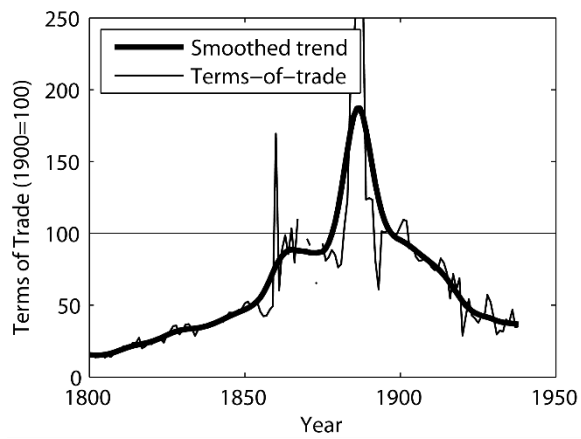
A.3: Oil seeds



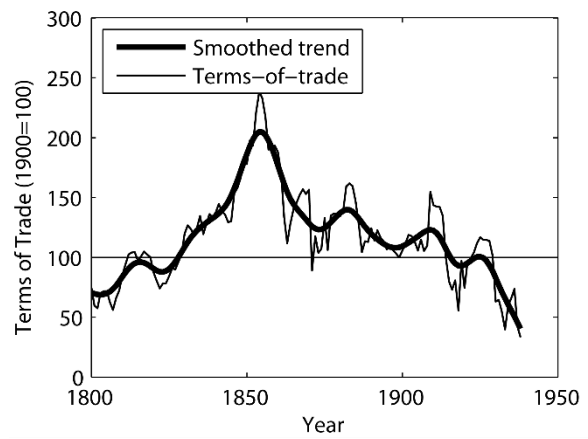
A.4: Palm kernels



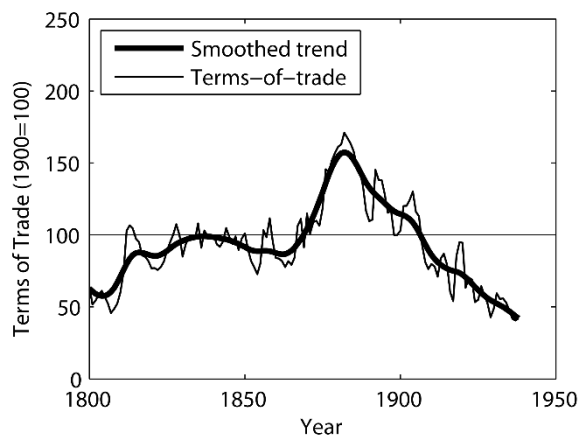
A.5: Gum



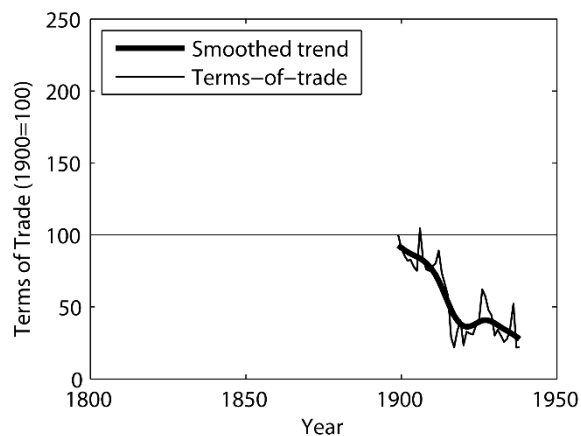
A.6: Palm oil



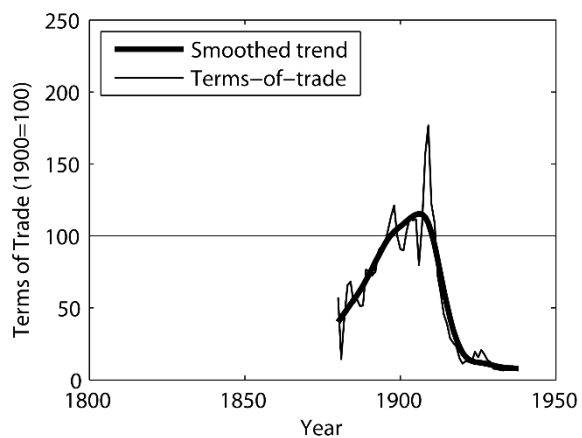
A.7: Sugar



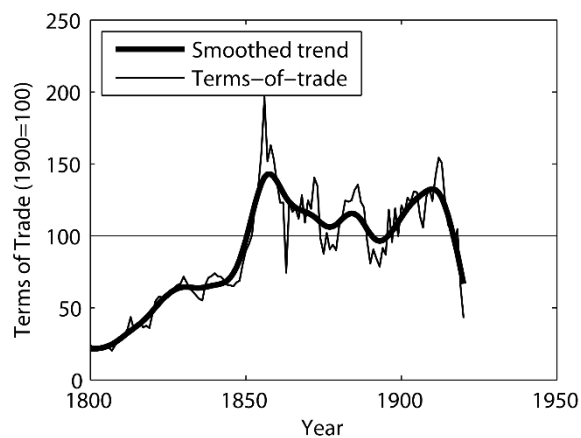
A.8: Cocoa



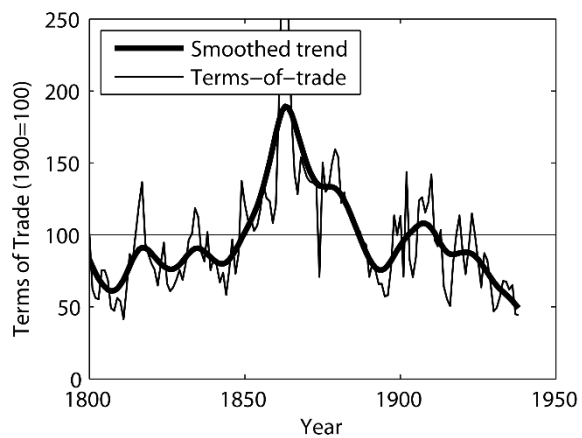
A.9: Rubber



A.10: Hides and skins



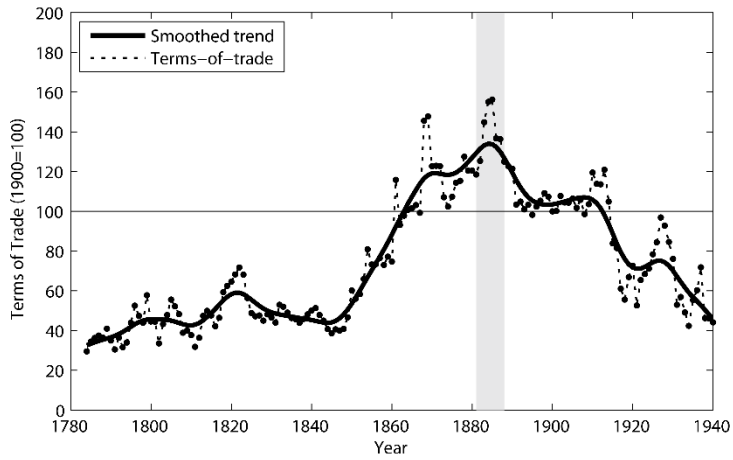
A.11: Cotton



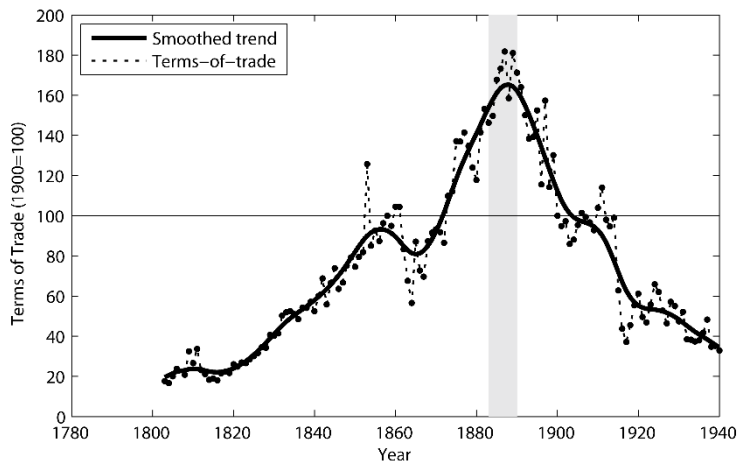
Sources: see text.

Appendix B: Regional terms of trade Sub-Saharan Africa, 1784-1939 (1900=100)

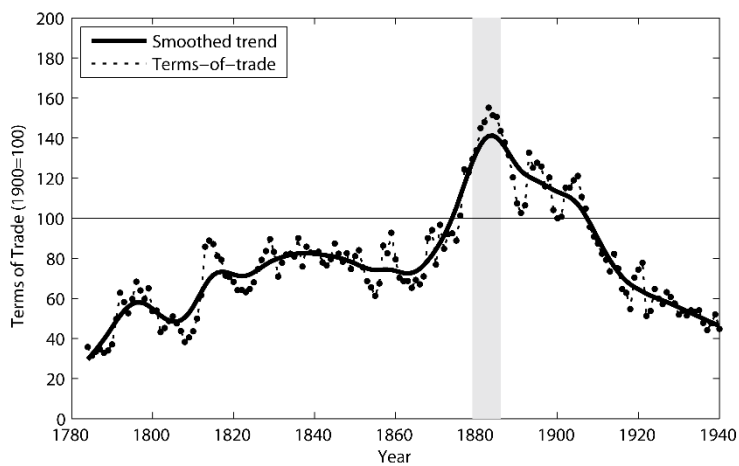
B.1: Western Africa



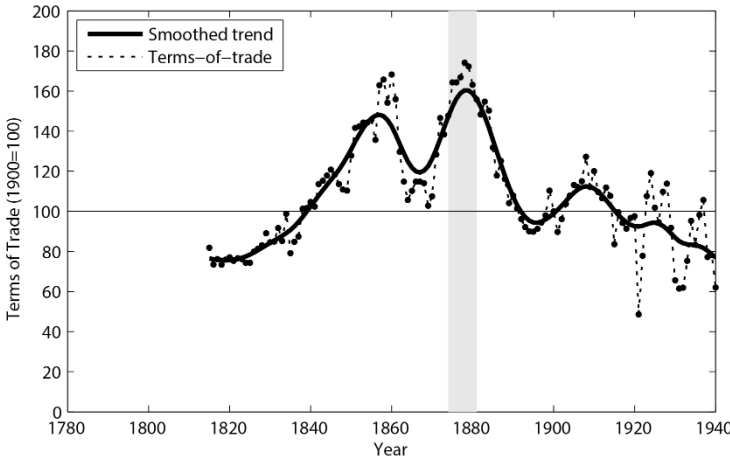
B.2: Eastern Africa



B.3: Mauritius, Madagascar and Reunion



B.4: South-Africa and Southern Rhodesia



B.5: Egypt

