Colonizer Identity and Trade in Africa:

Were the British More Favourable to Free Trade? †

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It has often been claimed that the structure of export trade between Africa and Europe during the colonial period depended on the colonizer's identity, with the British relying on free trade and the French, in contrast, employing monopsonistic policies. However, due to the lack of systematic data on colonial trade, this claim has remained untested. In this paper, I use recently available data on export prices from African colonies to estimate monopsonistic profit margins for British and French trading companies. The results challenge the view of the British colonizers as champions of free trade. The level of profit margins was determined much more by the local conditions in Africa (history of trade and the presence of European producers) than by the identity of the colonial power. The British did not necessarily rely on free trade more than the French and did so only when implementing monopsonies was not a viable option.

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I

It has been claimed that the extent of the market power of colonial trading companies in Africa was strongly influenced by the identity of the colonial power under which they operated. According to this view, the British, at least until the early 1930s, were more favourable to free trade, while the French made greater use of their political power to establish tariffs and trade monopolies. As argued by Duignan and Gann,

> 'European powers differed in their attitudes towards trade … British Africa was a free-trade area for most of the colonial period … In general, the British did not control the colonial exchange for the exclusive benefit of the metropole; neither did they enforce a monopoly on the purchase of colonial products ... France, on the other hand, was a protectionist country that tried to integrate its colonies into the metropolitan economy and to make the colonies serve the metropole'.[1]

Similarly, Ferguson and Lal emphasize the British Empire's role in promoting free trade and reducing discriminatory tariffs globally in the period between the repeal of the Corn Laws in 1846 and the reintroduction of protectionist measures with the Great Depression.[2] Overall, it appears that, between the mid-nineteenth century and the early 1930s, the British colonies in Africa should have enjoyed the benefits of free trade far more than the French colonies.

However, the extent to which a colony can benefit from free export trade does not only depend on the absence of *official monopsonies*, i.e., those that the colonial governments

[1] Duignan and Gann, *Colonialism*, pp. 8-9.

[2] Ferguson, *Empire*; Lal, *In praise*.

formally established by allowing only some companies to trade and by enforcing discriminatory tariffs. Even without explicit government support, in fact, when the market power of trading companies is strong enough, *de facto monopsonies* may exist, distorting competition and affecting production and trade. Indeed, even in the British colonies, trading companies with de facto market power had operated since the nineteenth century, even though discriminatory tariffs and official monopolies were introduced only after 1931.[3] Whether the British colonies enjoyed the benefits of free trade more than French ones is thus an empirical question. Were the British colonies effectively relying more on free trade? Was the market power of trading firms operating under the two colonial powers different? Did producers in Africa who lived under British rule benefit from higher competition among trading companies by receiving higher prices than those living under the French?

To answer these questions, in this paper, I measure the degree of competitiveness of trade under the two colonial powers by computing profit margins for trading companies operating in British and French colonies. The intuition behind this approach is simple. With free trade, the African ports' prices should be equal to the difference between world market prices and trade costs, implying zero profit margins.

Despite its clear theoretical appeal, applying this methodology requires information on African export prices that were not available until recently. Fortunately, in the last few years, new research on African trade has provided us with the necessary data to systematically test the claim that the British colonies in Africa were a free trade area. Frankema, Woltjer and Williamson built a database of export prices from British colonies taken from blue books. Similarly, Tadei collected French export prices from the statistical reports of the Ministry of the

[3] Rönnbäck and Broberg, *Capital*, pp. 179-80; Austin, 'Colonial legacies', p. 15.

Colonies and several *Bulletins Economiques* and *Annuaires Statistiques*.[4] Together, these sources allow us to reconstruct African prices for a sample of representative colonies and commodities. In particular, I use data on African port prices for five main agricultural commodities exported from twenty-one British and French colonies between 1898 and 1939. Focusing on the period before the Second World War provides the opportunity to examine the differences between the British and the French after the establishment of colonial systems and before the changes brought about by the coming of independence. Moreover, I also collected data on world market prices for these same commodities and estimated trade costs from Africa to Europe, including shipping, insurance costs and customs duties.

Having constructed estimates of profit margins, I can test whether the extent of the market power of trading companies was determined by the identity of the colonizer, with the British relying on free trade more than the French, or whether it was rather affected mostly by other factors, such as local conditions in the colonies, which facilitated or prevented the establishment of de facto monopsonies.

The results suggest that the market power of trading companies, and thus the extent of free trade, depended far more on the local conditions in Africa than on the identity of the colonial power.[5] While profit margins were low in British East Africa, they were much higher and similar

[4] Frankema, Williamson and Woltjer, 'Economic rationale'; Tadei, 'Measuring extractive institutions'.

[5] The fact that colonial policies were determined more by the characteristics of the colonies than by the identity of the colonial power echoes similar findings in the literature. Frankema and Van Waijenburg, 'Metropolitan Blueprints' show that, under comparable local conditions, policies and fiscal capacity were similar under the British and under the French. Similarly, Cogneau, Dupraz and Mesplé-Somps, 'African States' find that differences between the two colonial powers in terms of public finances were very limited.

in French and British colonies in West Africa, indicating that West African territories experienced substantial monopsonies under both the French and the British.

To interpret these findings, I explore how the implementation of monopsonies was affected by the history of trade relationships between Africa and Europe and the presence of European settlers and plantation companies. In West Africa, the long history of trade and the higher level of commercialization reduced the operational costs of monopsonistic trading companies. At the same time, most agricultural production came from small African farmers, with little political power and ability to oppose the establishment of monopsonies. In contrast, in East Africa, the modes of production were more heterogeneous, with European settlers playing a larger role than in the Western colonies.[6] When production was in the hands of settlers, who had much greater political influence before the colonial and metropolitan government, the cost of enforcing monopsonistic practices increased. Overall, the evidence suggests that the British colonizers did not necessarily rely on free trade more than other colonial powers and that they did so only when implementing monopsonies was not a viable option.

The rest of the paper is structured as follows: Section II outlines the historical context of colonial trade in British and French Africa; Section III describes the data and the methodology used to compute profit margins; Section IV compares British and French profits; Section V interprets the results; and finally, Section VI sets out some concluding remarks.

II

Historians of colonial Africa have argued that the identity of the colonial power affected trade relationships between Europe and Africa. According to this view, the British were more open

[6] For an overview of settlers' initiative in Africa, see Frankema, Green and Hillbom, 'Endogenous processes'.

to free trade and did not control African prices with monopsonies or coercive institutions. Indeed, it has been claimed that Britain's longer history as a colonial power taught it the ineffectiveness of excessive colonial exploitation.[7] The French, on the other hand, made greater use of their political power to establish trade monopsonies and acquire African goods at prices lower than in the world markets, employing compulsory cultivation and forced labour more often than the British and implementing discriminatory tariffs.[8]

After the Customs Act of 1892, the French colonial government did not commit to free trade and used protectionist policies that favoured French exporting firms. Exports to France from French colonies were favoured against those coming from other territories, benefitting from lower charges and a quota-system. Tariffs on non-French imports were levied in Gabon, Senegal, French Sudan and Guinea. A policy of non-discriminatory tariffs was instead applied in the Congo Basin (Berlin Act of 1885 and the Brussels Act of 1895), in Ivory Coast and Dahomey (Anglo-French Convention of 1898), and in the territories under the League of Nations mandate, Togo and Cameroon. In 1936, tariffs were finally introduced also in Ivory Coast and Dahomey.[9]

In general, the British relied less on protectionist measures. No tariffs were implemented until after 1931, except during the First World War.[10] De facto monopsonies were instead more common. In 1879, the British United African Company (National African Company after 1882)

[7] Brett, *Colonialism,* p. 78.

[8] Duignan and Gann, *Colonialism*, pp. 8-9; Suret-Canale, *French colonialism*, p. 223; Tadei, 'Measuring extractive institutions', p. 21.

[9] Duignan and Gann, *Colonialism,* p. 9; Hopkins, *West Africa*, p. 318; Suret-Canale, *French colonialism*, pp. 9, 284.

[10] Austin, 'Colonial legacies', p. 15; Duignan and Gann, *Colonialism*, pp. 8-9.

began its operations in West Africa along the Niger River, enjoying de facto monopsony power. The royal charter obtained in 1886, after which the company's name changed to the Royal Niger Company, did not transform its power into a formal monopsony. However, it allowed the company to strengthen its de facto monopsony by stipulating treaties with local African communities. When the African Association entered the market in 1889, the challenge to the Niger company's monopsonistic position was short-lived. In 1893, the two companies agreed to divide the territories into two regions of influence. In 1899, a new cartel agreement was established between the Royal Niger Company, the African Association and two other smaller trading companies to establish trading areas. This agreement lasted until the First World War. After the war, a series of mergers and acquisitions consolidated the monopoly power of these trading firms. In 1919, the African Association and other companies merged to form the African & Eastern Trade Corporation. In 1920, the Niger Company (ex-Royal Niger Company after the royal charter was withdrawn in 1900) was acquired by Lever Brothers. Finally, in 1929, the Niger Company merged with the African & Eastern Trade Corporation to create the United Africa Company.[11]

Similarly, over time, also in French Africa, smaller business interests lost market share and concentration increased. Some monopsonies were formally established, such as in Equatorial Africa (e.g., rubber concessionary companies in Congo and Gabon at the beginning of the twentieth century or the cotton monopsonistic trading companies of Ubangi-Shari and Chad from 1924).[12] In West Africa, in contrast, monopsonies developed on a de facto basis as

[11] Rönnbäck and Broberg, *Capital,* pp. 179-80 and pp.185-6. See Online Appendix D and Figure D1 for more details of the economic importance of these two major British trading companies.

[12] Coquery-Vidrovitch, *Congo*, p. 1; De Dampierre, 'Coton', pp. 128-130.

economic crises eliminated smaller firms, the First World War led to the disappearance of German business interests, and protectionist policies against foreign trade were implemented.[13]

By 1930, three companies (the French *Compagnie Française de l'Afrique Occidentale* and *Société Commerciale de l'Ouest Africain* and the British United Africa Company –owned by Unilever) controlled between two-thirds and three-quarters of all West African trade.[14] In the 1930s, the concentration of trade into the hands of a few trading firms continued. By the beginning of the Second World War, their share of total trade had increased further, reaching up to 90 per cent for some commodities.[15] Together with the consolidation of de facto monopsonies, the late colonial period also saw the rise of government-sponsored monopsonistic institutions, such as marketing boards in both British and French colonies. Although their formal objective was to stabilize African producers' prices against fluctuations of world market prices, marketing boards were often used to tax farmers to benefit the colonial government and trading companies.[16]

In the same way, also in British East Africa, the trading companies attempted to establish monopsonies. In Uganda, for example, large companies, worried about excessive prices paid to African cotton farmers, were able to lobby the colonial government and establish a controlled marketing system based on an oligopoly of firms. Similar economic structures were also implemented with other commodities (coffee, groundnuts) and in other colonies such as

[13] Suret-Canale, *French colonialism,* pp. 7-11.

[14] Hopkins, *West Africa*, p. 251.

[15] Rönnbäck and Broberg, *Capital,* p. 190; Suret-Canale, *French colonialism,* p. 167.

[16] Hopkins, *West Africa*, p. 37; Rodney, *How Europe*, pp. 168-9. For more details on the activity on marketing boards in British West Africa, see Meredith, 'State controlled marketing'.

Tanganyika.[17] However, trading firms tended to be smaller in East Africa, and their monopsonistic power was more limited than in the Western colonies. Several factors have been emphasized to explain this difference, including economies of scale and the more substantial presence of Indian traders and European settlers in East Africa. Differences in financial resources, in contrast, have a limited explanatory power. For example, in the 1950s, the United Africa Company handled more than one-third of West African imports, while Gailey and Roberts, its subsidiary in East Africa, controlled only 4 per cent.[18]

The difference between West and East Africa is also visible in production modes. In West Africa, most agricultural production was in the hands of African farmers and the British government generally discouraged the establishment of European plantations.[19] Developing an economy based on settlers required enormous administrative and economic support, while African peasant agriculture could generate exports with minimal investments.[20] Moreover, the high involvement of African farmers in the market economy since the early colonial period made it a better choice favouring local farmers instead of new settlers.[21] Also in French West Africa, exports were mostly based on production by small African farmers, and the role of European settlers was limited.[22] These forces played a minor role in East Africa and production modes were therefore more heterogeneous. Agricultural production was based on both African

[17] Brett, *Colonialism,* pp. 247, 253, 260.

[18] Kilby, 'Manufacturing', p. 490-1; Rodney, *How Europe,* p. 156.

[19] Aromolaran and Aromolaran, *Economics of West Africa, p. 48;* Owolabi, *Textbook*, pp. 77, 194; Rodney, *How Europe*, p. 154.

[20] Brett, *Colonialism,* p. 217.

[21] Austin, 'Colonial legacies', p. 22.

[22] Suret-Canale, *French colonialism,* p. 218.

farmers and large plantations in Tanganyika, on African farmers in Uganda, and European settlers in Kenya and the Rhodesias.[23]

In terms of producers, there were also differences among commodities. Not suitable for plantations, groundnuts were a crop generally produced by Africans in both British and French Africa.[24] Palm oil production was also mostly in the hands of African farmers.[25] In contrast, European settlers and plantation companies had a larger role in cocoa and cotton production and, to a greater extent, coffee (in particular, in West Africa, Kenya, and, in the late colonial period, Ubangi-Shari).[26] Cocoa plantations were established in French Equatorial Africa in the early twentieth century and in Ivory Coast in the 1920s.[27] Cotton plantations were created in French Sudan during the 1920s and in Nyasaland.[28] Coffee plantations were also attempted in the early twentieth century in French Equatorial and West Africa and Nyasaland.[29] In all these

[23] Brett, *Colonialism,* pp. 217-8, 221; Thompson and Woodruff, *Economic development,* pp. 11, 21.

[24] Hopkins, *West Africa,* pp. 266, 273*;* Suret-Canale, *French colonialism*, p. 234.

[25] For French Africa, see Suret-Canale, *French colonialism,* p. 226 and Coquery-Vidrovitch, *Congo*, p. 133. For British Africa, see Austin, 'Colonial legacies', p. 18, Hopkins, *West Africa,* p. 264, Munro, *Britain,* p. 40.

[26] De Dampierre, 'Coton noir', p. 140; Frankema, Green and Hillbom, 'Endogenous processes', p. 250; Hopkins, *West Africa,* pp. 266, 271; Suret-Canale, *French colonialism,* pp. 224-5.

[27] Coquery-Vidrovitch, *Congo,* p. 141-143; Frankema, Green and Hillbom, 'Endogenous processes', pp. 257-8; Hopkins, *West Africa*, p. 271.

[28] Suret-Canale, *French colonialism,* p. 222; Thompson and Woodruff, *Economic development,* p. 21.

[29] Coquery-Vidrovitch, *Congo*, pp. 138-141; Pike, *Malawi*, pp. 173, 176–8, 183.

instances, however, the Europeans' importance quickly diminished over time as these crops became increasingly cultivated by Africans.[30]

In most cases, agricultural commodities required very little processing. African farmers dried cocoa beans, groundnuts and coffee, and extracted palm oil. In cotton, ginning was required and the raw material needed to be transported to ginning stations. Crops were usually bought from local farmers by middlemen, who transported the goods to a marketing place. Several middlemen could work for the same trading company, competing with each other to obtain produce from African farmers. Their compensation was based on commission and on any difference between the price received by the company and the one paid to the producers, which was likely to be small because of the competitive structure of the internal market. In West Africa, most middlemen were African. Even in the groundnut trade, where the larger middlemen were Levantine, they still obtained produce from smaller African middlemen.[31] After having acquired the goods, the trading company shipped them to Europe.[32] The difference between the price in Africa and Europe constituted the trading companies' profits, of which only a small part was used for investments and infrastructure in Africa, while the majority was instead transferred to Europe.[33]

When not officially established by the colonial government, monopsonies were implemented via private agreements between companies. Confidential market-sharing

[30] Coquery-Vidrovitch, *Congo*, pp. 138-143; Pike, *Malawi*, pp. 173, 176–8, 183; Suret-Canale, *French colonialism*, pp. 222, 224; Thompson and Woodruff, *Economic development*, p. 21.

[31] Bauer, *West African trade*, pp. 202-3.

[32] Pedler, *Economic geography*, p. 59.

[33] Hopkins, *West Africa*, p. 203; Owolabi, *Textbook*, pp. 75.

agreements (called syndicates or pools) were established to regulate the purchase of the main West African crops (cocoa, palm oil, and groundnuts). Companies agreed upon producer prices and quotas. If a company bought more than its share, it had to compensate the other ones with penalty payments, calculated in such a way to eliminate the benefit of defection completely. The high degree of standardization of African commodities also increased concentration, making market-sharing agreements more effective.[34]

In some circumstances, African producers tried to circumvent monopsonies. Protests against the cocoa market-sharing agreement in the Gold Coast resulted in the production hold-up of 1937-8.[35] These attempts, however, were usually more successful when organized by settlers. In Kenya, for example, they were able to get the colonial government to approve policies that favoured the internal rather than the export markets, against the interests of British firms and trading companies.[36] Moreover, the trading firms knew that they could obtain lower prices if the production came primarily from African farmers and did not back up the settlers when they lobbied for policies that transformed African peasants into wage labourers. More often than not, the commercial firms sided with African farmers against the interests of settlers and plantation companies.[37] For example, in French West Africa, the trading companies, worried about the potential loss of profit, opposed the creation of European plantations and lobbied to maintain agricultural production in the hands of African farmers.[38] Indeed, European

[34] Bauer, *West African trade*, p. 224, 226.

[35] Ibid., p. 224.; Aromolan and Aromolan, *Textbook,* p. 59*;* Austin, *Labour,* p. 360.

[36] Brett, *Colonialism,* pp. 77-8.

[37] Ibid., p. 171.

[38] Hopkins, *West Africa,* p. 266.

planters were able to demand higher prices than African farmers; for example, in 1942-3, in the case of cocoa in Ivory Coast, African producers were paid 2.6 francs per kg, while it was bought from European planters at 4.5 francs per kg.[39]

The ability of African producers to circumvent monopsonies was further limited by specific institutional arrangements. The colonial administration interfered with labour markets and implemented coercive institutions,[40] which reduced African farmers' outside options. The relative poverty of the French territories made coercion a more attractive option than in the British colonies.[41] Compulsory gathering and cultivation of crops were used by the French in both Equatorial (e.g., rubber at the time of large concessionary companies and cotton since the 1920s) and West Africa (e.g., cocoa in the early colonial period). Forced labour practices were widespread.[42] The British did not use compulsory crops to the same extent as the French but, in East Africa, farmers were required to cultivate part of their land with cotton and groundnuts.[43] In these cases, the line between administrative pressure and open coercion was blurred. Moreover, both colonizers also used indirect methods such as poll taxes. In addition to raising the revenue of colonial governments or creating a market for wage labour, they were also used to stimulate African cash crop production. It is interesting to note how direct taxes were more common in East Africa than in the Western British colonies, where both commodity trade and wage labour markets were more developed.[44]

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[39] Suret-Canale, *French colonialism*, p. 471.

[40] Hopkins, *West Africa*, p. 240.

[41] Austin, 'Colonial legacies', p. 16.

[42] Fall, *Travail forcé;* Van Waijenburg, 'Financing'.

[43] Rodney, *How Europe*, p. 166.

[44] Frankema and Van Waijenburg, 'Structural impediments', p. 917; Rodney, *How Europe*, p. 165.

Together, monopsonies and labour coercion allowed the colonial trading companies to pay African producers lower prices than in the world markets. Hopkins notes how, for some commodities, the profit of trading companies was larger than what we would expect in a competitive market and that, whenever competition between exporters increased (such as, for example, in the case of Nigerian groundnuts during the 1930s), African producers saw a price rise.[45] In addition, research on French trade shows that there was a gap between prices in Africa and in the world market that cannot be explained by trade costs, suggesting the firm presence of monopsonies in the French African colonies.[46]

III

Overall, at least until the early 1930s, the French relied on tariffs and formal trade monopsonies more than the British. At the same time, both colonial powers facilitated the activity and development of de facto monopsonies. To test whether the British colonies enjoyed free trade more than the French ones, I calculate the profit margins for trading companies operating under the two colonial powers. Profit margin π is defined as

$$\pi = \frac{p - t - pA}{p} \quad (1)$$

where *p* is the price that the company receives in Europe, *t* are trade costs (including shipping, insurance, port charges and customs duties), and *pA* is the African port price.

[45] Hopkins, *West Africa,* p. 255.

[46] Tadei, 'Measuring extractive institutions.'

I estimate profit margins for a panel of colonies and commodities from 1898 to 1939. The dataset includes five main agricultural goods (groundnuts, palm oil, cotton, cocoa, and coffee) exported from both British and French colonies. Despite the limited number of products, given the strong degree of specialization, these five commodities are representative of African trade flows. In the period under analysis, these crops accounted for almost half of the value of exports from British East Africa and about 60 per cent of exports from both British and French West Africa. Moreover, they represent the top two agricultural exports in terms of value during the period of analysis for each of the main African regions: groundnuts and palm oil for French West Africa, cocoa and palm oil for British West Africa, and cotton and coffee for British East Africa.[47]

The sample of colonies consists of twenty-one African territories: twelve French colonies in West and Central Africa (Dahomey, Guinea, Haut-Senegal, Ivory Coast, Niger, Senegal, Togo, Cameroon, Congo, Gabon, Ubangi-Shari, and Chad), four British colonies in West Africa (Gambia, Gold Coast, Nigeria, and Sierra Leone), and five British colonies in East Africa (British Somaliland, Kenya, Nyasaland, Tanganyika, and Uganda). Northern and Southern Rhodesia are excluded because they did not export any of the five commodities analysed. French colonies in Eastern Africa (Madagascar and Reunion) are excluded because the analysis of their profit margins would be based on just one commodity, coffee. As shown in Online Appendix B, however, the inclusion of French East Africa does not affect the results.

[47] Calculations based on data from the African Commodity Trade Database by Frankema, Woltjer and Williamson, 'Economic rationale'.

Data on African port prices for the British colonies were gathered by Frankema, Woltjer and Williamson, while data for the French colonies were collected by Tadei.[48] The original sources are annual colonial customs statistics, which reported the total value and the total quantity of exports by commodity. These statistics were registered at the local customs offices and then aggregated at a colony level. Statements of quantities and values were based on the declaration of exporters, checked by custom offices. British statistics almost always reported information at a colony level (the only exception being Kenya and Uganda, whose customs offices were pooled together). For the French colonies, in some cases (about 10 per cent of the sample), statistics were reported for larger territories, including several colonies. In such instances, I reconstruct the smallest possible territorial unit by excluding all colonies that did not produce that specific commodity (e.g., the commodity was never recorded as an export when the colony appears as a single unit). In some cases, this allows the production of the larger territorial unit to be assigned to a single colony; in the other cases, the smallest possible territorial aggregate is used as an observation. As shown in Online Appendix B, however, such assumptions do not affect the main result. I compute prices at the African ports as unit values, including only exports of goods produced within each colony, excluding re-exports. To ensure comparability, I convert all prices into British pounds per ton.[49]

[48] Frankema, Williamson and Woltjer, 'Economic rationale'; Tadei, 'Measuring extractive institutions'.

[49] This involves dealing with a number of different measurement units. British quantities were reported in long tons, bushels, centals/imperial hundredweights, gallons, or pounds, while values in pounds, shillings and pence. French quantities were reported in tons, kg or litres, while values in French francs. Exchange rates between franc and pound are taken from Officer, 'Exchange rates'.

European prices are measured in the UK for the British colonies and in France for the French colonies because each colony sent most of its exports to its respective colonial power (see Table D1 in Online Appendix D). One might think that, to measure the difference in profit margins between the two colonial powers, it would be more appropriate to use common world prices, given that prices in France and Great Britain might be different. Nevertheless, trading companies with market power would set producer prices depending on what they could receive in their main destination market (the UK for the British and France for the French), so using prices in England or France as a benchmark is justified. Port prices in France come from the *Statistiques Mensuelles du Commerce Extérieur de la France*, a statistical publication reporting total value and quantity of French imports and were collected by Tadei.[50] British prices for cotton, coffee and palm oil come from Jacks, O'Rourke and Williamson, while the cocoa prices are taken from Federico and Tena.[51] Missing values are estimated by multiplying unit values in 1961 from the FAOSTAT database by Jacks' price index.[52] This procedure is applied to British prices of groundnuts and some missing years in the series of French prices of groundnuts and palm oil (about 18 per cent of observations). However, the results still hold when we exclude observations for which the European prices were estimated (see Online Appendix B).

Trade costs include shipping, insurance, port charges, and customs duties. I construct estimates by combining direct information from colonial statistical publications with evidence

[50] Tadei, 'Measuring extractive institutions'.

[51] Federico and Tena, 'World trade'; Jacks, O'Rourke and Williamson, 'Commodity price volatility'.

[52] FAO, *Faostat;* Jacks, 'From boom to bust'. The FAOSTAT database includes country-level annual data on production and trade since 1961. I compute the unit value in 1961 (the earliest available year) as the ratio between total value of imports and total imported quantity.

from secondary literature. To estimate shipping rates from the African to the European port, unit costs per km for the different commodities in 1938 and 1949 are first multiplied by the distance from each colony's port to Marseille (for the French colonies) or Liverpool (for the British colonies). Then, to estimate their variation over time, they are multiplied by the index of freight costs from Shah Mohammed and Williamson.[53] Insurance costs are based on Persson's work on transatlantic trade and estimated at 2 per cent of the port price in Europe before 1920 and 1 per cent afterwards. Similarly, port charges are estimated as 1 per cent of the value of goods at the African port.[54] Customs duties in British Africa are calculated by using information from colonial blue books. They were only levied on certain commodities and in some years, more often in West Africa than in East Africa. They could be fixed or ad valorem and ranged from 1 to 38 per cent of the value of the exported goods at the African port. However, since in most colonies and years, commodities were not subject to export taxes, the average impact of export duties on British prices is less than 2 per cent in the sample.[55] In French Africa, customs duties on exports were not included before the Second World War and thus do not enter the analysis.

Table 1 shows summary statistics for prices and trade costs. As the estimates may be subject to measurement errors, a small proportion of observations (about 3 per cent of the sample) have implausibly highly negative profits. Since the maximum profit margin observed in the sample

[53] Shah Mohammed and Williamson, 'Freight rates', p. 188. For a more detailed discussion, see the Online Appendix of Tadei, 'Measuring extractive institutions'.

[54] Persson, 'Mind the gap', p. 138.

[55] See also Aslanidis, Martinez and Tadei, 'Integration', p. 15; Frankema, Williamson and Woltjer, 'Economic rationale', p. 259.

is 83 per cent, I treat all observations with profit margins below -83 per cent as outliers and exclude them from the primary analysis (see Figure D2 in Online Appendix D). Nevertheless, as I show in Online Appendix B, the paper's results are not driven by this assumption. On average, the African port price was about 72 per cent of the European price, and trade costs were about 14 per cent, implying an average profit margin of 14 per cent. This relatively high average profit does not mean that trading in Africa was profitable for all companies. Many of them were unsuccessful: the median British company returned only 1.2 per cent in nominal terms,[56] and the sizeable average margin was determined by a small group of highly profitable companies.

Table 1
Summary Statistics

	Mean	Std. Dev.	Min	Max	average % price in Europe
price in Europe	48.2	35.7	6.6	249.9	100.0%
customs duties	0.18	1.02	0.00	18.40	0.4%
insurance	0.46	0.40	0.02	3.84	0.9%
port charges	0.35	0.28	0.02	2.91	0.7%
shipping	4.46	6.75	0.92	73.06	11.5%
price in Africa	34.8	28.4	1.5	290.6	72.1%
profit margin	14%	26%	-80%	83%	14.4%

Notes: Prices and trade costs are in GBP/ton. N=1258.
Sources: See Section III.

[56] Rönnbäck and Broberg, *Capital*, p. 107.

IV

To compare the market power of trading companies operating under the two colonizers, I run the following regression:

$$\pi_{cit} = a + b\ British_i + c\ East_i + d\ X_{cit} + u_{cit} \qquad (2)$$

where π_{cit} is the profit margin for commodity *c* and territory *i* in year *t*, *British* is a colonial identity dummy which takes the value of one if the territory was under British rule, *East* is a location dummy which takes the value of one if the territory is located in East Africa, *X* is a vector of various combinations of commodity and year fixed effects, and *u* is the error term.[57] To take into account the correlation of profit margins over time and across commodities within each colony, I cluster standard errors at the colony/territory level.

If trading companies' market power depended on the identity of the colonizer, with the British being more favourable to free trade, we would expect the British colony dummy to be negative and statistically significant. Conversely, if it were the local conditions in the colonies which determined the extent of monopsonies, then the colonial identity dummy should be insignificant and the East location dummy should be significant and negative. In fact, as trading companies tended to be smaller in East Africa than in the Western colonies, we would expect their profit margins to be lower. Table 2 shows the results.

[57] An alternative specification could be to regress the simple relative price gap between Africa and Europe on British dummy and trade costs, but this would not take into account the non-linear relationship between trade costs and the relative price gap.

Table 2

Colonizer Identity and Profit Margins

	(1)	(2)	(3)	(4)	(5)
British	-.100***	-.078**	-.095***	-.072**	-.028
	(.030)	(.032)	(.028)	(.030)	(.040)
East					-.133***
					(.045)
Year fixed effects		Yes		Yes	Yes
Commodity fixed effects			Yes	Yes	Yes
R^2	.04	.15	.05	.17	.19
N	1258	1258	1258	1258	1258

Notes: The dependent variable is the profit margin. Robust standard errors clustered at the territory level are shown in parentheses. *** p<10%, **p<5%, *p<10.
Sources: See Section III.

Column (1) reports a regression including the simple British dummy. The colony dummy is negative and statistically significant. Profit margins in the British colonies were on average 10 percentage points lower than in the French colonies. In column (2), I include year fixed effects to control for differences in samples between years. In column (3), I add commodity fixed effects to take into account the different composition of exports between the two colonial powers. Finally, in column (4), I include commodity and year fixed effects together. The results are virtually unaffected. The coefficient of the British colony dummy slightly decreases in magnitude but is always negative and statistically significant.

In column (5), together with commodity and year fixed effects, I include the East Africa dummy to control for the colonies' location. By doing so, the British dummy substantially drops in magnitude and is no more statistically significant. The East Africa dummy, on the other hand, is negative and significant. Profit margins in East Africa were about 13 percentage points lower

than in West Africa. Since the average profit was about 16 per cent in West and Central Africa, this implies that the profit margins in the Eastern colonies were much closer to what we would expect in a competitive market. The result suggests that the entire difference in average profits between the British and French colonies was driven by their different location. The colonizer's identity did not matter as much since British and French colonies in West Africa had similar profit margins.

In Online Appendix A, I verify the results' robustness by checking the reliability of price data (at the African and the European port), trade costs and profit margin estimates. Moreover, in Online Appendix B, I show that they are not driven by specific colonies or commodities and that they are robust to the inclusion of additional control variables (inland trade costs, productivity differences, commodity by year fixed effects, Central Africa dummy) and to alternative specifications (including outliers, including French East Africa, excluding territorial aggregate larger than a colony, and excluding observations with estimated European prices).

V

The results highlight that monopsonistic profit margins depended more on the colonies' location than on the identity of the colonial power. While profit margins were small in East Africa, West African colonies were subject to substantial monopsonies both under the British and under the French, as indicated by the larger profit margins. Explanations of colonial trade that emphasize the colonizer's identity thus cannot take into account the observed patterns in the data.

To explain these findings, we should instead consider the costs of enforcing trade monopsonies from the trading companies' perspective. Monopsonies were easier to establish if the trading firms had a long history of activity in the region. There are several reasons why a longer trade history might matter. Companies with a lengthier experience of trade might have a

better knowledge of the colonies, a more efficient marketing system, and a stronger control of the territory via more established trading posts networks. This would reduce operational costs of the trading firms, increasing the relative cost barrier for newcomers. A long trade history might also be associated with higher levels of commercialization of African societies, which would make African farmers more dependent on trade, reducing their outside options and capacity to circumvent monopsonies. Finally, over time trading firms tended to increase their ability to establish effective cartel agreements and mergers.[58] Indeed, both in British and French West Africa, smaller firms lost market share and trade was increasingly controlled by a few companies.[59]

Because West Africa had a much longer history of trade with Europe and a higher level of commercialization, monopsony costs were lower there than in the Eastern colonies. Both qualitative and quantitative evidence confirm this view. Market forces steered African production towards export markets much earlier in West Africa than in East Africa.[60] Besides, the volume of trade from East Africa was relatively small until the Second World War.[61] In the sample, the average yearly quantity exported for each colony/commodity was about 10 thousand tons in East African colonies, compared to over 30 thousand tons in West Africa.[62]

Opposition from producers in Africa may also have increased the enforcement cost of monopsonies. This opposition's effectiveness closely depended on the producers' political

[58] Rönnbäck and Broberg, *Capital*, pp. 179-80 and pp.185-6.

[59] Hopkins, *West Africa*, p. 251; Rönnbäck and Broberg, *Capital*, p. 190; Suret-Canale, *French colonialism*, p. 167.

[60] Frankema and Van Waijenburg, 'Structural impediments', p. 914.

[61] Rodney, *How Europe*, p. 156.

[62] Calculations based on Frankema, Woltjer and Williamson, 'Economic rationale'.

influence before the colonial and metropolitan government. Given that African farmers' political power was much more limited than that of European settlers or plantation companies, the costs of enforcing trade monopsonies were higher when production was in the hands of European producers and lower when it was primarily from African farmers (see section II).

The historical evidence suggests that, due to the shorter history of trade and the greater presence of European producers, establishing trade monopsonies was more costly in East Africa. Indeed, trading firms operating in the Eastern colonies tended to be smaller and their market share was lower than in West Africa,[63] explaining the different profit margins that we observe in the data.

To check this claim formally, in equation (3), I regress profit margins on the British colony dummy, the East Africa dummy, commodity and year fixed effects, and measures of "history of trade" and the presence of "European producers". If trade history and producers are the reasons for the low profit margins in East Africa, then the East Africa dummy should become insignificant when we control these factors.

$$\pi_{cit} = a + b\,British_i + c\,East_i + d\,X_{cit} + e\,History_{it} + f\,European_{cit} + w_{cit} \quad (3)$$

I measure "history of trade" as the number of years since the first export of any commodity recorded from each colony in the African Commodity Trade Database.[64] For territories in French Equatorial Africa, I use the number of years since the establishment of the first concession to European companies in 1899. On average, in the sample, East African colonies

[63] Duignan and Gann, *Colonialism*, p. 491; Rodney, *How Europe*, p. 156.

[64] Frankema, Woltjer and Williamson, 'Economic rationale'.

have an average history of trade of 20 years, while the history of trade in West African colonies dates back more than 70 years.

For the type of producers, I use the secondary literature to identify, on the basis of a qualitative assessment, for each colony, commodity and decade, whether production was (mostly) in the hands of African farmers or (mostly) controlled by European settlers or plantation companies. In particular, I attribute the production of the following crops to European producers: cocoa from Gabon and Congo in the 1910s and Ivory Coast in the 1920s, cotton from Haut-Senegal, Niger, and Senegal in the 1920s and from Nyasaland until 1930, and coffee from Congo, Gabon, and Nyasaland in the 1910s, Ubangi-Shari in the 1930s, and from Kenya-Uganda and West Africa for the entire period.[65] A simple check suggests that the producer data seem reasonable. In the sample, European settlers or plantation companies are responsible for about 1 per cent of the value of production of West Africa (evaluated at European prices) and for almost 25 per cent of the production of East Africa, as we would expect.

A final challenge in running this test is that the East Africa dummy is correlated with the "history of trade" variable and the European producer dummy.[66] If we were to run a regression

[65] Coquery-Vidrovitch, *Congo*, p. 141-3; De Dampierre, 'Coton noir', p. 140; Frankema, Green and Hillbom, 'Endogenous Processes', p. 250, 257-8 Hopkins, *West Africa*, p. 266, 271; Suret-Canale, *French colonialism*, p. 222, 224-5; Thompson and Woodruff, *Economic Development*, p. 21. In Uganda, coffee was produced by Africans (see De Haas, 'Measuring rural welfare'). However, I assign coffee exports from Kenya-Uganda to Europeans as the largest majority of exports came from Kenya, where settlers played a major role (compare coffee exports recorded in the African Commodity Trade Database by Frankema, Woltjer and Williamson, 'Economic rationale' to Ugandan production in Figure 1 on page 37 of De Haas, 'Rural livelihoods').

[66] Correlation coefficients: East-history of trade: -0.49; East - European producer: 0.26; history of trade - European producer: -0.12.

of profit margin on East dummy, history of trade, and European producers, it would be hard to measure their separate effects precisely and the coefficients might end up not being statistically significant. To solve this problem, I first compute the residuals of the regression of the East dummy on history of trade and the European producer dummy, i.e., the effect of being in East Africa that is not explained by European-controlled production or by the shorter history of trade. Then, I regress the profit margin on the British colony dummy, the residuals from the previous regression, and the two independent variables of interest, together with commodity and year fixed effects. Table 3 shows the results.

Table 3
Explaining the East Africa Dummy: History of Trade and European Producers

Panel A
The dependent variable is the profit margin

	(1)	(2)	(3)
British	-.028	-.044	-.044
	(.040)	(.040)	(.040)
East	-.133***	-.087	
	(.045)	(.059)	
European producer		-.101*	-.119**
		(.050)	(.048)
History of trade (10 years)		.006	.010**
		(.005)	(.004)
East – residuals			-.087
			(.059)
Year fixed effects	Yes	Yes	Yes
Commodity fixed effects	Yes	Yes	Yes
R^2	0.19	0.20	0.20
N	1258	1258	1258

Panel B
The dependent variable is the East dummy

European settlers or plantation	.207
	(.136)
History of trade (10 years)	-.045**
	(.018)
R^2	0.28

Notes: Robust standard errors clustered at the territory level are shown in parentheses.
*** p<10%, **p<5%, *p<10%.
Sources: See Sections III and V.

In column (1) of panel A, I report the simple regression of profit margins on the British colony and the East Africa dummy for comparison. In column (2), I include the European producer dummy and the length of trade history as regressors. The coefficient of the East Africa dummy drops in magnitude, indicating that the history of trade and production by European settlers or plantations can, at least partly, explain away the East Africa effect. The coefficient of the European producer dummy is negative: agricultural productions controlled by Europeans are associated with lower profit margins for the colonial trading companies. The coefficient of trade history is positive: more extended commercial relationships with the African colonies are correlated with larger profit margins. As expected though, being highly correlated, neither history of trade nor the East dummy are statistically significant (the European producer dummy, less correlated with the other variables, is significant at the 10 per cent level).

To address this issue, in column (3), I use the residuals-approach discussed above. Panel B below shows the regressions of the East dummy on European producer dummy and history of trade. Now, the East Africa dummy is not statistically significant but both the European producer dummy and history of trade are. Thus, we can reject the hypothesis that being located in East Africa has an impact on profit margins that goes beyond trade history and the type of producer. This suggests that trading companies in East Africa had lower profit margins because of the shorter trade history and the more substantial control of production by settlers compared to West Africa.[67] A standard deviation increase in the European producer dummy is correlated

[67] If the shorter history of trade in East Africa were correlated with larger production or inland transportation costs, then these inefficiencies, and not the lack of monopsonies, would be the reason for the higher African port prices (and lower profit margins) in the region. However, this does not seem to be the case as the West-East Africa profit gaps persist even when we control for productivity differences (exported quantity, together

with a decrease in profit margins of about 4.2 percentage points, while a standard deviation increase in trade history is correlated with a 3.6 percentage points increase in profit margins. Considering that the average profit margin in the sample is 14 per cent, these are substantial variations. Moreover, a change from African to European production implies a 12 percentage-point reduction in profits, suggesting that, with European producers, the profit margin is similar to what we would observe in a situation of perfect competition among trading firms.

In Online Appendix C, I further check the robustness of the findings by analysing the impact of the producer type for each commodity and for East and West Africa separately. The fact that the relationship between producer type and profit margins also holds within each region allows us to confirm further that the results are not driven by errors in trade costs or price estimates, or by other unobservable differences between the two regions.

VI

The British colonizers have often been considered champions of free trade. In contrast, the French have been taken as an example of a colonial power relying on more substantial control of trade via tariffs and monopolies. In Africa specifically, it has been suggested that, at least until the 1930s, the British relied on free trade, encouraging competition between trading firms, while the French made great use of their political power to establish formal trade monopsonies and acquire African goods at prices lower than in the world markets. Nevertheless, the situation

with commodity/year fixed effects) and inland costs (distance to the coast). See Online Appendix B and Table B3. These results are also confirmed if we measure productivity differences as exports per capita (calculated based on population data from Frankema and Jerven, 'Writing History') and if we estimate inland transport costs as the size of each colony's railways network (data from Jedwab and Moradi, 'Permanents Effects').

on the ground might have been quite different from what formal policies envisaged, as de facto monopsonies also existed in the British colonies.

The extent of free trade in British Africa is thus an empirical question. To investigate this issue, I measured the degree of trade competitiveness under the two colonial powers by computing profit margins for British and French trading companies. To do so, I used data on African export prices, trade costs and European import prices for a representative sample of agricultural commodities exported from British and French colonies between 1898 and 1939.

On average, profit margins in the British colonies were lower than in the French colonies, suggesting a higher reliance on free trade in the British Empire. However, by comparing the two colonial powers within one same region, it appears that the actual extent of free trade depended more on the conditions in the colonies than on the colonial powers' formal policies. On average, profit margins were low in British East Africa but equally large in both British and French West Africa, suggesting that West African colonies experienced substantial monopsonies both under the British and under the French.

These results highlight that, besides formal policies, other factors were at play in determining the actual extent of free trade in the African colonies. In West Africa, the longer history of trade and the higher commercialization level reduced trading companies' operational costs. At the same time, most agricultural production was based on small African farmers, with little political power and ability to oppose de facto trade monopsonies. Conversely, in East Africa, the history of trading was shorter and production was often controlled by European settlers who had much greater political influence over the metropolitan and colonial government, increasing the cost of establishing trade monopsonies.

Despite formal policies, the ability of trading firms in West Africa to eliminate competition was likely to be costly in terms of economic growth.[68] African producers received lower prices than they would have in a competitive market, while local firms and consumers paid more for imported goods.[69] Overall, the results suggest that a formal commitment to free trade policies, such as removing tariffs and protectionism, might not be enough to implement free trade fully.

Footnote References

Aromolaran, G. A. and Aromolaran, A., *Economics of West Africa* (1966).

Aslanidis, N., Martinez, O. and Tadei, F., 'The integration of West Africa in the global economy, 1842-1938', *SSNR*, nº. 3603942 (2020).

Austin, G., 'African economic development and colonial legacies', *International Development Policy*, 1 (2010), pp. 11-32.

Austin, G., *Labour, land, and capital in Ghana: from slavery to free labour in Asante, 1807–1956* (Rochester, NY, 2005).

Bates, R., *Markets and states in tropical Africa: the political basis of agricultural policies* (Los Angeles, 1981).

[68] Bates, *Markets;* idem, *Essays;* Tadei, 'The long-term effects'.

[69] Yeats, 'Do African countries'.

Bates, R., *Essays on the political economy of rural Africa* (Los Angeles, 1983).

Bauer, P. T., *West African trade: a study of competition, oligopoly and monopoly in a changing economy* (Cambridge, 1954).

Brett, E. A., *Colonialism and underdevelopment in East Africa: the politics of economic change, 1919 – 1939* (1973).

Cogneau D., Dupraz, Y. and Mesplé-Somps, S., 'African states and development in historical perspective: colonial public finances in British and French West Africa', *PSE Working Paper*, 29 (2018).

Coquery-Vidrovitch, C., *Le Congo au temps des grandes compagnies concessionnaires, 1898-1930* (Berlin, 1972).

De Dampierre, E., 'Coton noir, café blanc. Deux cultures du Haut-Oubangui à la veille de la loi-cadre', *Cahiers d'études africaines,* 1 (1960), pp. 128-47.

De Haas, M., 'Measuring rural welfare in colonial Africa: did Uganda's smallholders thrive?', *Economic History Review*, 70 (2017), pp. 605-631.

De Haas, M., 'Rural livelihoods and agricultural commercialization in colonial Uganda: conjunctures of external influences and local realities (unpub. PhD thesis, Wageningen University, 2017).

Duignan, P. and Gann, L. H., 'Introduction', in Duignan, P. and Gann, L. H., ed., *Colonialism in Africa, 1870-1960*, vol 4 'The Economics of colonialism', pp. 1-32 (Boston, 1975).

Fall, B., *Le travail forcé en AOF, 1900–1946* (Paris, 1993).

Federico, G. and Tena-Junguito, A., 'World trade, 1800-1938: a new dataset', *IFCS Working Papers in Economic History*, 16-01 (2016).

Ferguson, N., *Empire: How Britain made the modern world* (2003).

Frankema, E. Green, E. and Hillbom, E., 'Endogenous processes of colonial settlement. The success and failure of European settler farming in Sub-Saharan Africa', *Revista de Historia Económica,* 34 (2016), pp. 237-65.

Frankema, E. and Jerven, M. 'Writing History Backwards or Sideways: Towards a Consensus on African Population, 1850-present', *Economic History Review*, 67 (2014), pp. 907-931.

Frankema, E. and Van Waijenburg, M., 'Structural impediments to African Growth? New evidence from real wages in British Africa, 1880-1965', *Journal of Economic History*, 72 (2012), pp. 895-926.

Frankema, E. and Van Waijenburg, M., 'Metropolitan blueprints of colonial taxation? Lessons from fiscal capacity building in British and French Africa, c. 1880–1940', *Journal of African Histor*y, 55 (2014), pp. 371-400.

Frankema, E., Woltjer, P. and Williamson, J., 'An economic rationale for the West African scramble? The commercial transition and the commodity price boom of 1835–1885', *Journal of Economic History*, 78 (2018), pp. 231-267.

Hopkins, A., *An economic history of West Africa* (2nd ed. 2020).

Jacks, D., O' Rourke, K. and Williamson, J., 'Commodity price volatility and world market integration since 1700', *Review of Economics and Statistics,* 93 (2011), pp. 800-13.

Jacks, D., 'From boom to bust: a typology of real commodity prices in the long run', *Cliometrica,* 13 (2019), pp. 201-20.

Jedwab, R. and Moradi, A., 'The Permanent Effects of Transportation Revolutions in Poor Countries: Evidence from Africa', *Review of Economics and Statistics,* 98 (2016); pp. 268-284.

Kilby, P., 'Manufacturing in colonial Africa', in Duignan, P. and Gann, L. H., ed., *Colonialism in Africa, 1870-1960*, vol 4, pp. 470-522, (Boston, 1975).

Lal, D., *In praise of empires: globalization and order* (New York, 2004).

Meredith, D., 'State-controlled marketing and economic development: the case of West African produce during the Second World War', *Economic History Review,* 2nd Ser, XXXIX (1986), pp. 77-91.

Munro J. F., *Britain in tropical Africa, 1880–1960* (1984).

Officer, L. H., 'Exchange rates between the United States dollar and forty-one currencies' (2020) http://www.measuringworth.com/exchangeglobal.

Owolabi, E. O., *A textbook economic history of West Africa* (Ibadan, 1971).

Pascali, L. (2017), 'The wind of change: maritime technology, trade, and economic development', *American Economic Review,* 107 (2017), pp. 2821-54.

Pedler, F. J., *Economic geography of West Africa* (1956).

Persson, K. G., 'Mind the gap! Transport costs and price convergence in the nineteenth-century Atlantic economy', *European Review of Economic History*, 8 (2004), pp. 125-147.

Pike, J. G., *Malawi: a political and economic history* (1969).

Rodney, W., *How Europe underdeveloped Africa* (1972).

Rönnbäck K. and Broberg O., *Capital and colonialism: the return on British investments in Africa 1869–1969* (Cham, 2019).

Shah Mohammed, S. and Williamson, J., 'Freight rates and productivity gains in British tramp shipping 1869-1950', *Explorations in Economic History*, 41 (2004), pp. 172-203.

Suret-Canale, J., *French colonialism in tropical Africa, 1900-1945* (New York, 1971).

Tadei, F., 'The long-term effects of extractive institutions: evidence from trade policies in colonial French Africa', *Economic History of Developing Regions*, 33 (2018), pp. 183-208.

Tadei, F., 'Measuring extractive institutions: colonial trade and price gaps in French Africa', *European Review of Economic History* 24 (2020), pp. 1-23.

Thompson, H. V. and Woodruff, C. H., *Economic development in Rhodesia and Nyasaland* (1954)

Van Waijenburg, M., 'Financing the African colonial state: the revenue imperative and forced labor', *Journal of Economic History* 78 (2018), pp. 40-80.

Yeats, J., 'Do African countries pay more for imports? Yes', *World Bank Economic Review,* 4 (1990), pp. 1-20.

ONLINE APPENDIX

A. Reliability of Prices, Trade Costs and Profit Margin Estimates

In Appendix A, I check the reliability of price data, trade costs, and profit margin estimates.

Prices

We should ensure that the results are not driven by errors in the reported prices, either in Africa or in Europe. Note that, with classic random measurement errors in African or European prices, the coefficients would still be unbiased. The only consequence would be larger standard errors, meaning a larger probability of accepting the null hypothesis of no difference between East and West Africa. However, the situation would be different if the measurement errors were correlated with the regressor, e.g., if East African colonies tended to overestimate prices at the African port or underestimate prices in Europe (or vice versa, for the colonies in West Africa).

Errors in prices, however, seem unlikely. British and French foreign trade statistics are considered quite accurate. According to Pascali, 'economic historians rank British and French trade statistics as the best data available', and Lampe describes British statistics as 'best practice'.[70] In fact, British prices have been employed as a benchmark to evaluate the accuracy of other countries' export prices.[71] Moreover, trade statistics in Africa and Europe have been used in other works whose conclusions rely on the accuracy of price data, such as, for example, the computation of African terms of trade by Frankema, Williamson and Woltjer, the study of

[70] Lampe, 'Bilateral Trade Flows', p. 7; Pascali, 'Wind of change', p. 2833.

[71] See, for example, Tena and Willebald, 'On the accuracy'.

monopsonies in French Africa by Tadei, the analysis of commodity price volatility by Jacks, O'Rourke and Williamson, and the construction of the world trade database by Federico and Tena.[72]

Federico and Tena[73] evaluate the accuracy of foreign trade statistics by comparing, for a sample of countries, the value of their imports and exports to the total value of corresponding trade flows registered by the partner countries. Their overall conclusion is that trade statistics are reasonably accurate, at least for aggregate data. As this paper's main results are based on comparing aggregated trade statistics in West and East Africa, this suggests that the results are likely to be robust. It is encouraging to note that trade statistics are accurate even in the case of developing regions, whose accuracy should be similar to that of African figures. For Latin America and the Caribbean, trade statistics are considered of sufficiently high quality.[74] For British India, discrepancies between the reported trade statistics and those registered by the partner countries can be explained by transport costs.[75] In the cases in which official statistics do not match those reported by the partner countries, this can often be attributed to mistakes in the geographical assignment of trade flows rather than under- or over-valuation of official figures.[76]

To see whether the reported values are official evaluations instead of actual prices, we can look at their variation over time. Due to statistical offices' failure to update evaluation yearly,

[72] Frankema, Williamson and Woltjer, 'Economic rationale'; Tadei, 'Measuring'; Jacks, O'Rourke and Williamson, 'Commodity price volatility'. Federico and Tena, 'World trade'.

[73] Federico and Tena, 'On the accuracy'.

[74] Carreras-Marín and Badia-Miró, 'La fiabilidad'.

[75] Federico and Tena, 'On the accuracy', p. 264 and 271.

[76] Peres-Caijas and Carreras-Marin, 'Official Bolivian'; Carreras-Marín and Badia-Miró, 'La fiabilidad'.

official evaluations tend to be 'sticky', not changing for several years. This would lead to underestimating prices when they rise and overestimating them when they fall.[77] This issue plagued early African export statistics[78] but is not a problem for twentieth-century data. In the dataset, in no cases are prices in Africa the same as those reported in the previous year and only about 1 per cent of European prices are the same. This suggests that the data are more likely to reflect actual market prices rather than being officially assumed values.

We can further check the accuracy of prices in Europe and Africa by verifying their correlation with world and producer prices. Such correlations will not be perfect because of changes in trade costs and profit margins over time, but they should be sufficiently large. Moreover, they should not be very different between East and West Africa. Note that similar correlations with world prices in the two regions would also be observed even if East African prices were systematically overestimated. However, if that were the case, then the difference in profit margins between the two regions should be constant over time, which is not what we observe in the data (see Figure B1 in Appendix B).

Table A1 reports correlation coefficients between the reported prices and the world price indexes from Jacks.[79] The correlation between African and world prices is 0.84 and the correlation between European and world prices is 0.93, suggesting good reliability of the price data. Moreover, the correlations are very similar in East and West Africa, confirming that biases in prices favouring one region or another are unlikely. African port prices are also highly correlated with producer prices. At the bottom of Table A1, I compute correlation coefficients

[77] Federico and Tena, 'On the accuracy', p. 262.

[78] Dalrymple-Smith, 'A Comparative History', p. 87.

[79] Jacks, 'From boom to bust'.

between producer and port prices for the period of analysis. I analyse three cases in which producer prices are available, two in West Africa and one in East Africa: cocoa in the Gold Coast, cotton in Ubangi-Shari, and cotton in Uganda.[80] The correlations are large, ranging from 0.79 to 0.97, further confirming the correctness of price data.

Table A1
Price Correlations

Between European port price and world price	
Full Sample	0.93
Only East Africa	0.90
Only West Africa	0.94
Between African port price and world price	
Full Sample	0.84
Only East Africa	0.84
Only West Africa	0.83
Between African port price and producer price	
Uganda, cotton, 1915-1939	0.79
Gold Coast, cocoa, 1933-1939	0.95
Ubangi-Shari, cotton, 1927-1939	0.97

Sources: For European and African port prices, see Section III. World prices are from Jacks, 'From boom to bust'. Real Gold Coast cocoa producer prices are taken from table 17.1 in Austin, *Labour*, p. 331. They are transformed in nominal prices using the Gold Coast consumer price index from Frankema and Van Waijenburg, 'Structural impediments' (average of rice and maize family baskets). Ugandan cotton producer prices are from De Haas, 'Measuring rural welfare', Online Appendix S1. Cotton producer prices in Ubangi-Shari come from the *Annuaire Statistique de l'Oubangui-Chari*, vol 1, table I, p. 84. All prices are converted into British pounds per kg.

Trade Costs

Having excluded the possibility of errors in prices as a source of bias, we should also check that the results are not driven by errors in trade costs. In general, trade costs are a smaller proportion

[80] See table notes for the sources.

of the gap between African and European prices (on average, less than 50 per cent, see Table 1), so the results are driven mostly by differences in prices. Moreover, since the main conclusion is based on a comparison, systematic upward or downward biases in trade costs in both East and West Africa would not affect the results. However, if I overestimated trade costs for East Africa (or underestimated them in West Africa), I could observe lower profit margins that are not due to differences in the market power of trading companies.

To verify the robustness of trade cost estimates, I use several strategies. Firstly, I evaluate how large the potential error should be to overturn the results. Given the magnitude of the price gaps, it seems highly unlikely that errors in trade costs could explain the differences between the two regions. To have the same profit margins as in West Africa, real East African trade costs should be less than 70 per cent of the estimates (or, symmetrically, West African costs should more than 135 per cent).

Secondly, I compare my estimates to other available measures of freight costs. Lynn reports shipping costs for palm oil from West Africa as 2 pounds per ton at the beginning of the twentieth century, which, considering the quantity-weighted average distance, corresponds to 0.32 pounds per ton per 1,000 km.[81] The estimate of palm oil shipping costs obtained with the paper's methodology is very close: in 1900, it was 0.29 pounds per ton per 1,000 km. Federico and Tena[82] report freight rates for several different routes. Even though no freight rates from Africa are available for the commodities under analysis, I can still check the correlation between my estimates and Federico and Tena's freight rates either for different commodities in African routes or for the same commodities in my sample in different routes. Table A2 shows the results.

[81] Lynn, *Commerce*, p. 109.

[82] Federico and Tena, 'World trade'.

The correlation coefficients are large, suggesting that the estimates correctly capture the change in freight rates over time.

Table A2
Correlation of freight rates per ton/km, 1898-1938

	all	excluding First World War
Only African trade routes		
Coal, from UK to Alexandria	0.88	0.82
Coal, from UK to Cape Verde	0.71	0.71
Coal, from UK to Cape Town	0.70	0.70
Cottonseed, from Alexandria to UK	0.61	0.83
Only the same commodities		
Coffee, from Rio to UK	0.87	0.91
Cotton, from US to UK	0.57	0.71
Average	0.72	0.78

Notes: Correlations between my freight estimates and Federico and Tena's freight rates for different commodities and routes.
Sources: See Section III and Federico and Tena 'World Trade'.

Thirdly, I add the interaction between trade costs and a regional dummy to the regression of profit margins on British and East dummy and fixed effects (equation 2 in the paper). The idea is that, if trade costs are mismeasured in one of the two regions, the magnitude of the error is likely to be proportional to the actual trade costs and thus should be captured by the variable trade costs*regional dummy. The results are shown in Table A3. Column (1) reports the same regression of column (5) of Table 2 of the paper for comparison. Column (2) shows that the interaction term trade costs*East is not statistically significant, suggesting the absence of systematic measurement errors in East African trade costs. Column (3) includes the interaction between trade costs and the West Africa dummy. Here, the interaction is significant, but the East Africa coefficient is even more negative than in the baseline estimates. This suggests that

the potential measurement errors in West African costs are likely to bias the results away from the hypothesis of lower profit margins in East Africa (i.e., West African costs might be, if anything, an overestimate of actual trade costs).

Table A3
Colonizer Identity and Profit Margins: Allowing for Measurement Errors in Trade Costs

	(1)	(2)	(3)
British	-.028	-.026	-0.01
	(.040)	(.040)	(.038)
East	-.133***	-.145***	-.251***
	(.045)	(.045)	(.058)
East*trade costs		1.01	
		(.861)	
West*trade costs			-17.10***
			(5.78)
Year fixed effects	Yes	Yes	Yes
Commodity fixed effects	Yes	Yes	Yes
R^2	0.19	0.19	0.21
N	1258	1258	1258

Notes: The dependent variable is the profit margin. Robust standard errors clustered at the territory level are shown in parentheses. *** p<10%, **p<5%, *p<10.
Sources: See Section III.

Fourthly, I check whether there were systematic differences in shipping rates between East and West Africa that could explain the difference in profit margins. I calculate shipping costs per km for several routes from the UK to ports in West and East Africa using Pascali's freight

rates between 1870 (after the opening of the Suez Canal) and 1900.[83] In Table A4 column (1), I check for systematic differences between the two regions by regressing shipping rates on a West Africa dummy. In column (2), I include commodity and year fixed effects. In both specifications, the West African dummy is not statistically significant, suggesting that, after taking into account the distance, there are no systematic differences in shipping costs between East and West African trade routes. Thus, as trade costs are estimated with a similar methodology for the two regions, errors cannot explain the difference in profit margins that we observe.

Table A4
Comparing Freight Rates in West and East Africa

	(1)	(2)
West	-.89	-.85
	(1.07)	(1.08)
Commodity fixed effects		Yes
Year fixed effects		Yes
R^2	0.08	0.32
N	758	758

Notes: West African destinations include Angola, Cape Verde, Cape of Good Hope, Sierra Leone, Saint Helena and Tenerife. East African destinations include Mauritius, Aden and Oman. Data are relative to the period 1870-1900. The last two destinations are not in Africa, but they follow similar trade routes. Excluding them does not change the results. The dependent variable is freight rates in shilling per ton per 1,000 km. Robust standard errors clustered at the territory level are shown in parentheses. *** p<10%, **p<5%, *p<10%.
Sources: Pascali, 'Wind of Change'.

[83] Pascali, 'Wind of change'.

Similarly, it is unlikely that differences in insurance rates could explain the difference between East and West Africa. During the first half of the nineteenth century, for example, palm oil insurance rates were relatively high at about 5-7 per cent of the value of goods.[84] As new transportation technologies were introduced, the risk declined and insurance rates dropped. At the end of colonial rule, in 1958-9, for example, the rate for cocoa from Ivory Coast was 0.6 per cent,[85] which shows that the 1 per cent estimate for insurance rates post-1920 is reasonable. Moreover, even assuming that insurance rates in East Africa were as high as in West Africa about one century earlier, profit margins in East Africa would still be significantly lower than in West Africa.

Finally, it is unlikely that errors in customs duties can explain the lower profit margins in East Africa. Firstly, customs duties values are estimated directly from the values reported in the blue books. Secondly, they were not often applied and account, on average, for only 3-5 per cent of total trade costs.[86]

Profit Margins

Overall, the reliability of profit margin estimates is also suggested by the high correlation between profit margin growth rates and stock returns, and by the similarity of profit margin estimates to direct measures of companies' profitability.

[84] Lynn, *Commerce*, p. 97.

[85] Ministère de la France d' Outremer, 'Documents'.

[86] Aslanidis, Martinez and Tadei, 'Integration', p. 15; Frankema, Williamson and Woltjer, 'Economic rationale', p. 259.

Given that stock returns can be decomposed in the sum of dividend-yield, change in price-to-earnings multiple, and earnings growth, the growth rate of profits should be (imperfectly) correlated with stock returns. To verify this, for every year, I first calculate total profits in British West Africa by applying the unit profit margin to the total value of exports measured at European prices for each colony/commodity and summing across colonies/commodities. To calculate real profit growth, I apply the British inflation rate.[87] I then compute stock returns as the market capitalization-weighted real returns of the two leading trading companies in British West Africa (the African Association/African and Eastern Trade Corp. and the Niger Company). Data on stock returns and market capitalization come from the African Equity Database constructed by Rönnbäck and Broberg.[88] Table A5 shows the results. The correlation between stock returns and profit growth is considerable (0.29-0.37 in the full sample and 0.57-0.58 if we exclude the First World War), suggesting good reliability of British profit margin estimates.

Table A5
Correlation between Annual Profit Growth and Stock Returns, British West Africa

	Years	Profit Growth (year t)	Profit Growth (year t-1)
(1)	1899-1932	0.29	0.37
(2)	1899-1913, 1919-1932	0.58	0.57

Notes: The table reports correlation coefficients between stock returns in year t and the growth of profit margins in year t and year t-1. In row (2), the years of the First World War are excluded. After 1919, stock returns are just based on the African and Eastern Trade Corp. In 1919, the Niger Company was acquired by Unilever and stopped being reported on the London Stock Exchange.
Sources: See Section IV; Rönnbäck and Broberg, *Capital.*

[87] Williamson, 'Annual inflation'.

[88] Rönnbäck and Broberg, *Capital.*

It is encouraging to note how the magnitude of the estimates is similar to available direct measures of companies' profitability also in the case of French colonies. For example, in 1939-40, both the *Compagnie Française de l'Afrique Occidentale* and the *Société Commerciale de l'Ouest Africain* reported profits of 25-30 per cent over invested capital.[89] The average colony/commodity profit in 1939 in French West Africa, computed using the methodology described in this paper, is about 25 per cent.

Finally, as I show in Appendix C, the relationship between producers and profit margins also holds within each region (East and West Africa) separately. This suggests that the results are not driven by errors in trade costs or prices or other unobservable differences between the two regions (see Table C3).

[89] Suret-Canale, *French colonialism*, p. 166.

B. Robustness Check: Difference between East and West African Profit Margins

In Appendix B, I further check the robustness of the finding of lower profit margins in East Africa. Firstly, it is important to ascertain whether any particular colony drove the highlighted East-West difference or whether the patterns were similar for all West and East Africa colonies. To check this, for each colony, I regress the profit margin on a colony dummy, together with commodity and year fixed effects. Each colony dummy can thus be interpreted as the average difference in profit margins between that colony and the rest of the territories for the same commodity and year. Table B1 shows that the patterns are remarkably consistent. All East African colony dummies are negative and statistically significant (profits lower than average). In contrast, all the West African colony dummies are either positive and significant or not significant (profits either average or higher than average).

Table B1
Differences in Profit Margins Among Colonies

	West			East	
	coeff.	st. err.		coeff.	st. err.
Benin	-.008	.018	Kenya-Uganda	-.090***	.027
Cameroon	-.003	.019	Malawi	-.124***	.033
Central Africa	.073	.068	Somalia	-.227***	.069
Chad	-.025	.052	Tanzania	-.105***	.035
Congo	-.037	.068			
Gabon	-.039	.073			
Gambia	.003	.053			
Ghana	.079**	.032			
Guinea	.086***	.021			
Ivory Coast	-.012	.013			
Mali	.186***	.063			
Niger	.176	.085			
Nigeria	-.034	.025			
Senegal	.104	.034			
Sierra Leone	-.044	.025			
Togo	.067	.019			

Notes: The table reports the colony-dummy coefficients of the profit margin regressions on colony dummy, and commodity and year fixed effects. Profit margins from larger territories are assigned to all colonies which belong to the territory. Robust standard errors clustered at the territory level are reported. *** p<10%, **p<5%, *p<10%. N=1258, R2=0.25.
Sources: See Section III

Similarly, we should evaluate whether the results would be different if we included minor exports in the sample. To see if this is the case, I check whether there are systematic differences in the profit margins among the main products by regressing, for each of the five commodities, the profit margin on the commodity dummy and colony and year fixed effects. Table B2 shows the results. The commodity dummy is not statistically significant in any regression, meaning that differences among commodities do not systematically drive profit margins. This suggests that the results are likely to be robust to the inclusion of other minor commodities into the analysis.

Table B2
Differences in Profit Margins Among Commodities

	coeff.	st. err
cocoa	.044	.038
coffee	.081	.063
cotton	-.040	.045
groundnuts	-.037	.059
palm oil	-.030	.045

Notes: The table reports the commodity-dummy coefficients of the profit margin regressions on commodity dummy and territory and year fixed effects. Profit margins from larger territories are assigned to all colonies which belong to the territory. Robust standard errors clustered at the territory level are reported. *** p<10%, **p<5%, *p<10%. N=1258, R2=0.25.
Sources: See Section III.

In Table B3, I check the robustness of the results to the inclusion of additional control variables and alternative specifications. Column (1) reports the same specification as column (5) of Table 2 of the paper for comparison. In column (2), I control for inland trade costs by including the (log) distance of each colony's centroid to the coast from Gallup, Mellinger and Sachs.[90] In column (3), I assume the possibility of errors in the world market price data by controlling for year by commodity fixed effects. As long as both French and British European prices are subject to the same systematic errors (but potentially different over time and by commodity), the commodity/year fixed effects would eliminate the bias. In column (4), I control for productivity differences by including the (log) exported quantity, together with commodity/year fixed effects. The idea here is that facing a common global demand captured by commodity/year fixed effects, differences in the exported quantity should reflect productivity differences between colonies for the various commodities. In column (5), I control for potential differences between West and Central Africa by including a Central Africa dummy. However,

[90] Gallup, Mellinger and Sachs, 'physfact_rev.tab'.

this variable is not significant, suggesting that it is more appropriate to consider West and Central Africa as a homogenous group when analysing profit margins, as done in the main analysis. Overall, in all specifications, the results are unaffected. The East Africa dummy is always negative and statistically significant, with minimal variations in magnitude, while the British colony dummy is never significant.

Table B3
Colonizer Identity and Profit Margins: Robustness Checks

	(1)	(2)	(3)	(4)	(5)
British	-.028	-.027	-.030	-.046	-.048
	(.040)	(.044)	(.043)	(.045)	(.043)
East	-.133***	-.135**	-.124**	-.130**	-.134***
	(.045)	(.052)	(.050)	(.055)	(.044)
Central					-.059
					(.045)
Log (exported quantity)				.007	
				(.005)	
Log (distance to coast)		.011			
		(.014)			
Year fixed effects	Yes	Yes			Yes
Commodity fixed effects	Yes	Yes			Yes
Year/Comm. fixed effects			Yes	Yes	
Sample	Main	Main	Main	Main	Main
R^2	.19	.19	.35	.36	.19
N	1258	1258	1258	1258	1258

Notes: The dependent variable is the profit margin. Robust standard errors clustered at the territory level are shown in parentheses. *** p<10%, **p<5%, *p<10%.
Sources: See Section III.

In Table B4, I check whether the results are robust to changes in the sample. Column (1) reports the main specification (column 5 of Table 2) for comparison. In column (2), I include outliers, i.e., observations with highly negative profits. In column (3), I add colonies from French East Africa. In column (4), I include both French East African colonies and observations with very negative profits. In column (5), I exclude profit margins for territorial aggregates larger than a colony, such as French West or Equatorial Africa in specific years and Kenya-Uganda (about 13 per cent of the sample). In column (6), the analysis is performed by excluding observations with estimated European prices (about 18 per cent of the sample). Across all specifications, the results are virtually unaffected.

Table B4
Colonizer's Identity and Profit Margins: Different Samples

	(1)	(2)	(3)	(4)	(5)	(6)
British	-.028	-.028	.009	.016	-.051	-.012
	(.040)	(.044)	(.044)	(.051)	(.042)	(.037)
East	-.133***	-.102*	-.197***	-.191**	-.112**	-.111**
	(.045)	(.055)	(.051)	(.072)	(.04)	(.047)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Commodity fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Main	Include outliers	Include French East	Include both	Only single territories	Exclude estimated European prices
R^2	.19	.17	.21	.16	.18	.22
N	1258	1286	1314	1344	1097	1033

Notes: The dependent variable is the profit margin. Robust standard errors clustered at the territory level are shown in parentheses. *** p<10%, **p<5%, *p<10.
Sources: See Section III

Additional evidence comes from observing the coefficients of the British colony and East Africa dummies over time. To do so, I first run a regression of profit margins on the two dummies each interacted with year fixed effects, including commodity fixed effects. Then, I compute the estimated coefficients from 1898 to 1939. Figure B1 shows the results. The coefficient of the British colony dummy is positive at the beginning of the period and declines over time. Initially, trading companies operating in British colonies tended to have higher profit margins than those operating in the French colonies, but the situation reversed after the First World War. The coefficient of the East Africa dummy follows the opposite path, negative at the beginning of the period and increasing over time. Before the First World War, the difference between East and West Africa was the largest. Trade relationships were well-established in the West, facilitating the activity of monopsonistic trading companies, while they were just beginning in East Africa. Over time, however, as trade consolidated in East Africa, the difference between the two regions declined.

Figure B1
East and British Dummies over Time

Notes: The figure reports the coefficients of the British colony dummy and the East Africa dummy from the regression of profit margins on the two dummies each interacted with year fixed effects, including commodity fixed effects.
Sources: see Section III.

C. Robustness Checks: The Role of Producers

In the paper, I analysed the producer type's role by aggregating commodities to take advantage of the larger sample size while considering differences between commodities with fixed effects. However, interesting insights can be obtained by analysing profit margins for each commodity separately. The results are reported in Table C1. Differences between British West, French West, and British East Africa are shown at the bottom of the table, together with F-tests of statistical significance.

Table C1
Colonizer Identity, Region and Profit Margins: Analysis by Commodity

	cocoa	palm oil	coffee	cotton	groundnuts
British	-.010	.142***	.339***	-.190***	-.226***
	(.049)	(.041)	(.085)	(.051)	(.075)
East	-	-	-.266***	-.085***	-.219***
			(.055)	(.019)	(.071)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
R^2	.29	0.30	.43	.53	0.51
N	214	294	215	246	289
			Differences		
British West - French West	-.010	.142***	.339***	-.190***	-.226***
British East - British West	-	-	-.266***	-.085***	-.219***
British East - French West	-	-	.073	-.275***	-.445***

Notes: Robust standard errors clustered at the territory level are shown in parentheses. *** p<10%, **p<5%, *p<10%.
Sources: See Section III.

Cocoa and palm oil were only produced in West Africa. For cocoa, there is no statistically significant difference between British and French profit margins. Indeed, cocoa was produced mostly by African farmers both in French and British colonies,[91] and the average in-sample trade history was similar between British and French cocoa-exporting colonies (61 vs. 67 years). In the case of palm oil, profit margins were larger in the British colonies. Like cocoa, palm oil was also produced by Africans in both British and French colonies,[92] but exports started much earlier in the British colonies. On average, in the sample, exports in British West Africa began in the 1830s, while they started almost 30 years later in French West Africa.

Coffee, cotton and groundnuts were produced in both West and East Africa. In the case of coffee, profit margins were low and similar in French West and British East Africa.[93] Coffee was, in fact, produced mostly by settlers in both French[94] and British Africa.[95] For cotton and groundnuts, profit margins were the lowest in East Africa, and they were lower in British than in French West Africa. Both commodities were mostly produced by African farmers both in East[96] and in West Africa. Still, the average in-sample history of trade for cotton or groundnuts-exporting colonies was the shortest in East Africa (22-24 years) and shorter in British West Africa (63-89 years) than in French West Africa (75-83 years).

More explicitly, we can further test the theory by analysing the impact of producer type by commodity. This is possible for cocoa, and particularly for cotton and coffee, which were

[91] Austin, *Labour;* Frankema and van Waijenburg, 'Structural impediments', p. 915.

[92] Frankema and van Waijenburg, 'Structural impediments', p. 915; Suret-Canale, *French colonialism*, p. 226.

[93] Profit margins in British West Africa rely on 11 observations from Ghana during the early twentieth century.

[94] Suret-Canale, *French colonialism*, pp. 24, 228.

[95] Wolff, *Economics*, pp. 68-82.

[96] De Haas 'Measuring rural welfare'; Thompson and Woodruff, *Economic Development*, pp. 68-82.

produced by both Africans and Europeans. Cotton, for example, was a plantation crop in the 1920s in French Sudan and Niger, shifted from settlers to African production in Nyasaland, and was cultivated by African farmers in the rest of Africa. To do so, separately for each commodity, I regress profit margins on the producer dummy and year and territory fixed effects.[97] Adding territory and year fixed effects allows us to control for errors in trade costs and differences in the internal marketing structure across colonies.[98] Table C2 shows the results. For all the three commodities considered, the producer variable is either statistically zero or negative and significant, suggesting lower profit margins when production was in the hands of European settlers or plantation companies.

Table C2
Profit Margins and Producer Type, by Commodity

	Cotton	Coffee	Cocoa
European producer	-.194***	-.220	.018
	(.052)	(.201)	(.052)
Year fixed effects	Yes	Yes	Yes
Territory fixed effects	Yes	Yes	Yes
R^2	.67	.66	.48
N	246	271	214

Notes: The dependent variable is the profit margin. Robust standard errors clustered at the territory level are shown in parentheses. *** p<10%, **p<5%, *p<10.
Sources: See Section III for profit margins and Section V for producer data.

[97] History of commerce, East dummy and British dummy are perfectly collinear with year and territory fixed effects and cannot be added to the regression.

[98] For a detailed description of colonial cotton marketing structures, in particular for Uganda, see De Haas, 'Rural livelihoods', pp. 185-195.

Finally, analysing profit margins within East Africa allows us to verify further that the results are not driven by errors in trade costs estimates, prices or other unobservable differences between East and West Africa. This is possible by taking advantage of the heterogeneity of production modes in East Africa: cotton in Uganda and coffee, cotton and groundnuts in Tanganyika were produced by African farmers, coffee in Kenya was controlled by European settlers, while coffee and cotton in Nyasaland shifted over time from European plantations to African farmers. To do so, I run a simple regression of profit margins on the producer dummy, including commodity and year fixed effects, but limiting the sample to Kenya, Uganda, Nyasaland and Tanganyika. The results, reported in column (1) of Table C3, show that, even within the same region, profit margins were lower when production was in the hands of Europeans. Interestingly, the magnitude of the coefficient identified within East Africa is quite similar to the one estimated within West Africa (column 2), suggesting the estimates are robust.

Table C3
Profit Margins and Producer Type, by Region

	East	West
European producer	-.094**	-.088***
	(.046)	(.027)
Year fixed effects	Yes	Yes
Territory fixed effects	Yes	Yes
R^2	.59	.16
N	173	1071

Notes: "East" includes Kenya, Uganda, Nyasaland, and Tanganyika. "West" includes non-Eastern colonies. Robust standard errors are shown in parentheses. *** p<10%, **p<5%, *p<10%. I use robust standard errors instead of clustering errors by territory because of the low number of clusters when we limit the analysis to East Africa.
Sources: See Section III for profit margins and Section V for producer data.

D. Extensions

The economic importance of the two major British trading companies in West Africa can be observed in Figure D1, which reports the market capitalization of the African Association/African & Eastern Trade Corporation and the Niger Company as a share of all companies, trading and not trading, operating in West Africa and quoted on the London Stock Exchange. At the end of the nineteenth century, the two companies accounted for more than two-thirds of total market capitalization. In the subsequent decades, market concentration declined, with their share bottoming out at about 20 per cent around 1910. The reason behind this contraction can be found in the entry of new companies into the West African market at the beginning of the twentieth century (between 1897 and 1911, total West Africa capitalization increased 23-fold), which reduced the market share of the two leading trading companies. Since the 1910s, however, as their monopoly power consolidated, the trend inverted, and their market share increased, reaching 40 per cent in the 1920s.[99]

[99] See also Rönnbäck and Broberg, *Capital*, figure 6.2, p. 105.

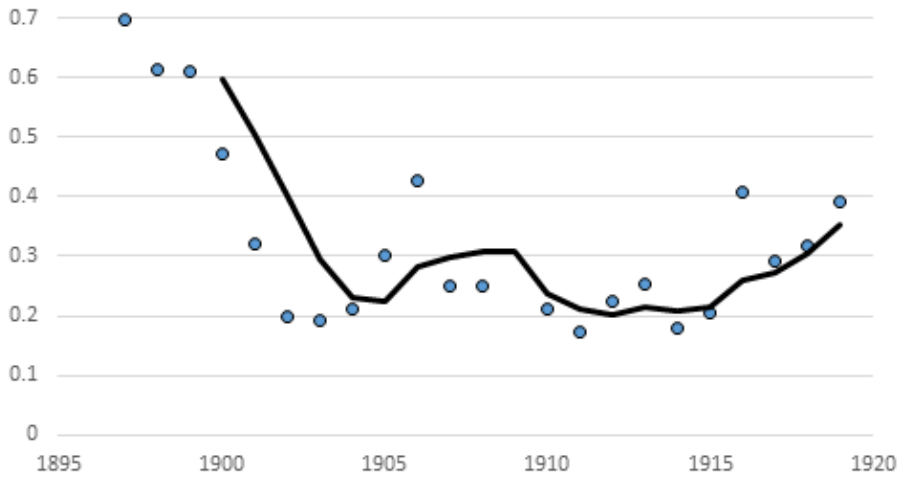
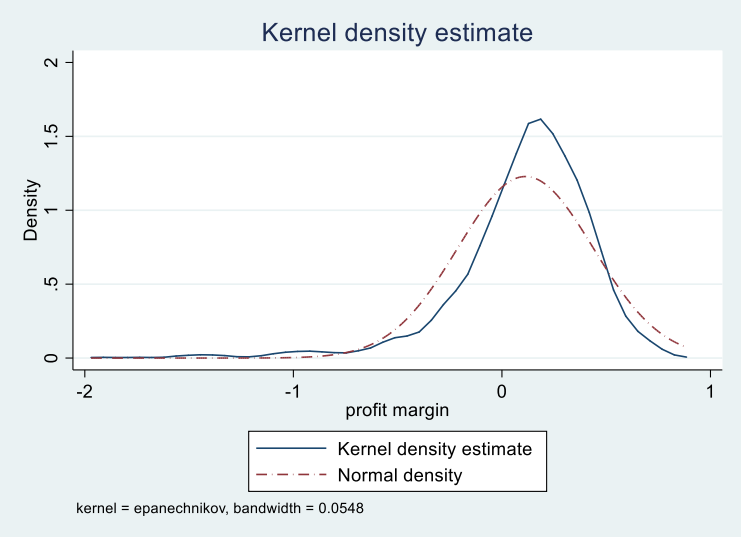


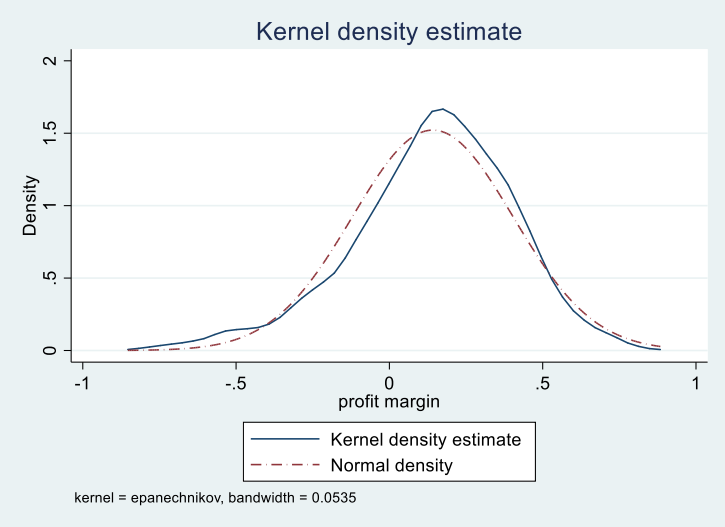
Figure D1

The market capitalization of African Association/African & Eastern Trade Corporation and Niger Company as a share of London Stock Exchange companies, 1897-1919

Notes: The period between 1897 and 1919 is chosen as it is the only period in which both companies are recorded on the London Stock Exchange. A four-year moving average is shown.
Sources: African Colonial Equity Database by Rönnbäck and Broberg, *Capital.*



(a) Full Sample



(b) Excluding Observations with Measurement Errors

Figure D2
Profit Margin Distribution

Notes: Kernel density distribution of profit margin. Panel B excludes observations with profit margins lower than -83%.
Sources: See Section III.

Table D1
Share of Exports to Colonizer

Colony	Colonizer/ Region	Share of Exports to Colonizer	Average
Gambia	Great Britain / West	43%	
Sierra Leone	Great Britain / West	56%	53%
Ghana	Great Britain / West	57%	
Nigeria	Great Britain / West	57%	
Tanzania	Great Britain /East	27%	
Kenya-Uganda	Great Britain /East	40%	47%
Malawi	Great Britain /East	73%	
Togo	France	40%	
Cameroon	France	43%	49%
French Equatorial Africa	France	51%	
French West Africa	France	60%	

Notes: Shares in terms of value. Average of all available years from 1898 to 1939.
Sources: RICardo Project database, available at http://ricardo.medialab.sciences-po.fr/#/.

Appendix References

Aslanidis, N., Martinez, O. and Tadei, F., 'The integration of West Africa in the global economy, 1842-1938', *SSNR*, nº. 3603942 (2020).

Austin, G., *Labour, land, and capital in Ghana: from slavery to free labour in Asante, 1807–1956* (Rochester, NY, 2005).

Carreras-Marín, A. and Badia-Miró, M., 'La fiabilidad de la asignación geográfica en las estadísticas de comercio exterior: América Latina y el Caribe (1908–1930)', *Revista de Historia Economica - Journal of Iberian and Latin American Economic History*, 26 (2008), pp. 355-73.

Dalrymple-Smith, A., 'A comparative history of commercial transition in three West African slave trading economies, 1630 to 1860' (unpub. PhD thesis, Wageningen University, 2017).

De Haas, M., 'Measuring rural welfare in colonial Africa: did Uganda's smallholders thrive?', *Economic History Review*, 70 (2017), pp. 605-631.

De Haas, M., 'Rural livelihoods and agricultural commercialization in colonial Uganda: conjunctures of external influences and local realities (unpub. PhD thesis, Wageningen University, 2017).

Federico, G. and Tena-Junguito, A., 'On the accuracy of foreign trade statistics (1909-1935): Morgenstern revisited', *Explorations in Economic History*, 28 (1991), pp. 259-73.

Federico, G. and Tena-Junguito, A., 'World trade, 1800-1938: a new dataset', *IFCS Working Papers in Economic History*, 16-01 (2016).

Frankema, E. and Van Waijenburg, M., 'Structural impediments to African Growth? New evidence from real wages in British Africa, 1880-1965', *Journal of Economic History*, 72 (2012), pp. 895-926.

Frankema, E., Woltjer, P. and Williamson, J., 'An economic rationale for the West African scramble? The commercial transition and the commodity price boom of 1835–1885', *Journal of Economic History*, 78 (2018), pp. 231-267.

Gallup, J. L, Mellinger A. D. and J. Sachs (2010), 'physfact_rev.tab', Geography Datasets, Harvard Dataverse, V1.

Jacks, D., O' Rourke, K. and Williamson, J., 'Commodity price volatility and world market integration since 1700', *Review of Economics and Statistics,* 93 (2011), pp. 800-13.

Jacks, D., 'From boom to bust: a typology of real commodity prices in the long run', *Cliometrica*, 13 (2019), pp. 201-20.

Lampe, M., 'Bilateral trade flows in Europe, 1857–1875: a new dataset.' *Research in Economic History*, 26 (2008).

Lynn, M., *Commerce and economic change in West Africa: the palm oil trade in the nineteenth century* (Cambridge, 1997).

Ministère de la France d'Outremer, 'Documents et Statistiques 1949-1967' (Paris, 1967).

Pascali, L., 'The wind of change: maritime technology, trade, and economic development', *American Economic Review*, 107 (2017), pp. 2821-54.

Peres-Cajías, J. and Carreras-Marín, A., 'Official Bolivian trade statistics (1910-1949): landlockness and the limits of a standard accuracy approach', *Revista de Historia Económica / Journal of Iberian and Latin American Economic History*, 36 (2018), pp. 1-34.

Rönnbäck K. and Broberg O., *Capital and colonialism: the return on British investments in Africa 1869–1969* (Cham, 2019).

Suret-Canale, J., *French colonialism in tropical Africa, 1900-1945* (New York, 1971).

Tadei, F., 'Measuring extractive institutions: colonial trade and price gaps in French Africa', *European Review of Economic History* 24 (2020), pp. 1-23.

Tena-Junguito, A. and Willebald, H., 'On the accuracy of export growth in Argentina 1870-1913', *Economic History of Developing Regions* 28 (2013), pp. 28-68

Thompson, H. V. and Woodruff, C. H., *Economic development in Rhodesia and Nyasaland* (1954).

Williamson, S. H., 'Annual inflation rates in the United States, 1775 - 2019, and United Kingdom, 1265 – 2019' (2020) https://www.measuringworth.com/calculators/inflation/.

Wolff, R. D., *Economics of colonialism: Britain and Kenya, 1870-1930* (New Haven, 1974).

Official Publications

Ministère de la France d'Outremer, 'Documents et Statistiques 1949-1967' (Paris, 1967).

Société d'études coloniales de Belgique, 'Les sociétés coloniales françaises (et autres) à la Cote Occidentale d'Afrique', in *Recueil des sociétés coloniales et maritimes* (Brussels, 1902).

Union Coloniale Francaise, *Annuaire des entreprises coloniales*, (Paris, 1922).