A Thesis Submitted for the Degree of PhD at the University of Warwick

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Essays on the Royal African Company
and the Slave Trade

by

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Thesis

submitted to the University of Warwick

for the degree of

Doctor of Philosophy

Department of Economics

May 2019

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Acknowledgments

Declarations

I submit this thesis to the University of Warwick for the degree of Doctor of Philosophy in Economics. All three chapters are my original work and have not been submitted for any other degrees. All errors are my own.

Abstract

The Royal African Company of England traded European commodities, such as alcohol, cloth, and firearms, for African goods and slaves. The Company sold stock to finance its business activities and paid local chiefs in West Africa for exclusive access to trade. Chapter 1 of the thesis studies rent-seeking associated with the slave trade in West Africa. Chapter 2 examines trade and ownership of stock by elites and non-elites. Chapter 3 analyses turning points in the number of slaves exported from Africa and its individual regions.

In Chapter 1, I measure rent-seeking in the slave trade using new data from archival sources. In seventeenth-century Ghana, the Royal African Company paid African chiefs for exclusive access to trade along the caravan routes. The total value of these payments was 18 times a Company agent's salary and 145 times the annual cost of living. The Glorious Revolution in 1688 facilitated competition from other English merchants, and payments increased after this. Using an event study, I find that payments increased the most to chiefs in locations where they could stop or redirect trade coming from inland to the coast. The Company made larger payments to chiefs whose cooperation was most important in deterring other English merchants from competing with the Company. The highest-ranking chiefs received the highest value of payments per capita. European cloth was the most sought after type of payment – head chiefs used European cloth for prestige and received most of the European cloth.

In Chapter 2, I examine Royal African Company stock transfers from 1672 to 1712. I highlight three new stylized facts. Firstly, neither elites nor non-elites dominated stock transfers before the book value of stock quadrupled in 1691, suggesting that the experience of the capital market was widespread among elites and non-elites. Secondly, the decreased share in stock transferred by some types of elites between 1685 and 1690 occurred against the background of political events that reduced the Company's future prospects. Thirdly, non-elites dominated the buying and selling of stock after the stock was quadrupled in 1691, suggesting that Company decisions played a major role in explaining its capital market experience.

In the final chapter, Chapter 3, I determine to what extent turning points in slave exports were unique to specific regions, and to what extent they were common across all of Africa. I use the Bai and Perron (2003) structural break test to show that slave exports from all of Africa began falling in 1815. This is earlier than the traditional view in the literature that the slave trade effectively ended in the 1850s. Demand shocks, particularly the British abolition of the slave trade in 1807, are relatively important in explaining the end of the slave trade at the regional level. The downward-sloping trend of slave exports began in 1784 for the Bight of Biafra, 1808 for the Windward and Gold Coasts, and 1815 for the Bight of Benin, West Central Africa, and Southeast Africa. Supply shocks, such as wars and conflicts, are relatively important in explaining the dynamics of the slave trade in specific regions.

Chapter 1

Competition and Rent-Seeking During the Slave Trade

1.1 Introduction

Slaves, according to one view, were a common property resource and competition might dissipate any rents associated with the slave trade.[1] But according to other views competition for the slave trade was restricted by barriers to entry, enabling rents. Were slaves "the business of kings, rich men, and prime merchants?"[2] In this paper, I measure rent-seeking during the slave trade using a new dataset of more than 20,000 payments made by the Royal African Company (the Company) to African chiefs in the seventeenth-century Gold Coast (present-day Ghana).

The Company maintained forts and factories[3] on the West African coast, where it exchanged European commodities for African commodities and slaves. Chiefs[4] granted use-rights to the Company in exchange for, *inter alia*, ground and

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[1]Thomas and Bean (1974) summarize this view. "In sum, the tragic irony of the trans-Atlantic slave trade was that nobody connected with it gained very much, and even the Africans who were not enslaved may as a group have lost more than they gained. The African slavers behaved much like modern fishermen, only they were fishers of men" (Thomas & Bean, 1974, p. 887). See also Darity (1985).

[2]See Rodney (1969), Hopkins (1973, Chapter 2), Evans and Richardson (1995), Iliffe (2017, Chapter 7). Evans and Richardson (1995) challenge Thomas and Bean (1974). "We shall argue that, contrary to the claims of Thomas and Bean, the export trade in slaves from Africa was characterised not by perfect competition but by market imperfections and product differentiation. The latter permitted the generation of economic surpluses or rents" (Evans & Richardson, 1995, p. 668).

[3]Forts were fortified buildings, while factories were lodges or small trade-posts (Van Dantzig, 1980).

[4]The term "chiefs" is used in the widest sense to include head chiefs (e.g. kings, queens, princes), officeholders (e.g. chancellors, chiefs of the army, state treasurers), and chieftains (i.e. chiefs of local towns or villages).

customary payments.[5] Merchants from inland had to pass along caravan routes to reach the forts and factories on the coast. The Company paid chiefs for exclusive access to trade with caravan merchants from inland, in order to keep the trade flowing to the Company.[6]

Using manuscript records, I construct data on the Company's payments to chiefs in the Gold Coast (present day Ghana) from 1679 to 1704. The available records allow for an event study before and after the Glorious Revolution in 1688 facilitated competition from other English merchants. I hand-entered a new database of 24,529 payments made by the Company to chiefs in the seventeenth-century Gold Coast. I use the data to answer three questions.

What was the distribution of payments across chiefs? State chiefs received 75 per cent of the total value of payments. Of the state chiefs, head chiefs (king, queen, prince) received 62 per cent and officeholders (African chancellor, treasurer, chief of army) received 13 per cent.[7] Chieftains, or settlement chiefs, received 19 per cent of the total value of payments. Of the chieftains, individuals received 15 per cent while groups of chieftains received four per cent. In the manuscript records there are 20 head chiefs, 44 officeholders, and more than 29 chieftains. Head chiefs, the highest-ranking chiefs in the seventeenth-century Gold Coast, received the highest payments per capita. The value of payments was quantitatively important from the perspectives of both the Company and the chiefs. Payments were 18 times higher than the salary of a European agent employed by the Company in Africa during the period[8] and were 145 times the cost of subsistence in the seventeenth-century Gold

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[5]Ground payments are similar to land rent since the land was controlled by chiefs and there was no transfer of land ownership from chiefs to the Company (Daaku, 1970, p. 50). Customary payments are payments made in relation to customary occassions, such as planting, harvesting, and other special occasions like Christmas.

[6]See Davies (1957, Chapter 6), Daaku (1970, Chapter 3), Hopkins (1973, Chapter 3), Curtin (1975a, Chapter 7), Arhin (1979, Chapter 2), Kea (1982, Chapter 8), Northrup (2002, Chapter 3), Austin (2005, Chapter 5), Law (1997, 2001, 2006, Volumes 1 to 3), Rönnbäck (2015a, Chapter 2). These payments were recorded in the Account Journals as: (1) *customary payments*, or payments made in relation to customary occassions, such as planting, harvesting, and "dancing;" (2) *dasheys*, or gifts; (3) *ground payments*, or payments in exchange for rights to build and maintain forts or factories; (4) *palavara*, or payments associated with settling differences with chiefs; (5) *promise gifts*, or payments made after taking an oath of allegiance to the Company; (6) *service payments*, or payments made for services rendered by dependants (e.g. men and soldiers) of chiefs; (7) *ship customs*, or payments made for anchored ships of the Company; (8) *trade gifts*, or payments made to promote trade with the Company; (9) *trusted*, or advanced payments made in relation to any payments, particularly ground payments and ship customs, or loans; and (10) *war or conflict aids*, or payments made to allies of the Company during war or conflict.

[7]Head chiefs were *ahenfo kese*, or royals, and *ahenfo*, or nobles by birth. Officeholders were *afahene*, or rulers of an administrative unit; *okyeame*, or the chancellor called *fetere* or *fitiro*; *day*, or the state treasurer, governor of the capital, and chief of the army; and *brafo*, a high-ranking officer (Kea, 1982, Chapter 3).

[8]From 1683 to 1704, the Company had six to ten forts or factories in West Africa (Davies, 1957,

Coast.[9] Head chiefs' share in payments increased when the Company faced more competition from other English merchants. The findings are related to the literature arguing that the slave trade was the "business of kings, rich men, and prime merchants."[10] In this paper, I provide quantitative evidence that the distribution of payments across chiefs was unequal. Head chiefs benefited the most from these payments.

What commodities were included and how did this change over time? 95 per cent of the total value of payments were commodities. European cloth was 44 per cent, firearms 12 per cent, and alcohol 11 per cent of the total value of payments. Gold was only five per cent. After 1688, European cloth's share in the total value of payments increased, while firearms' share remained almost the same, and alcohol's share declined. European cloth was used to signal authority and demonstrate prestige.[11] Head chiefs received 69 per cent of the total value of European cloth, which was 50 percentage points greater than other chiefs (officeholders, individual chieftains, and groups of chieftains) received in the same period. The findings are related to the literature arguing that Europeans did not solely influence the goods they supplied.[12] Instead Europeans supplied goods in response to African demand.[13] In this paper, I highlight the importance of payments as a channel through which head chiefs obtained luxury goods, particularly European cloth, to signal prestige.

Did payments rise after the Glorious Revolution in 1688 reduced company privileges, facilitating competition from other English merchants? In 1672, King Charles II granted rights and other privileges to the Royal African Company to monopolise English trade in West Africa. The privileges consisted of power to seize the ships and cargoes of interlopers, access to a royal-sponsored court that determined cases against interlopers, and power to detain captured interlopers in the Company's forts on the African coasts for indefinite periods. "Interloper" was the name given by the Company to an English merchant who traded without permission from the Company. These privileges were withdrawn in the Glorious Revolution in 1688, lowering the risks and cost for interlopers, which in turn facilitated competition between the Company and interlopers.[14] The Company made payments to chiefs

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pp. 247-248).

[9] For details, see footnote 70.

[10] See, for examples, Hopkins (1973), Evans and Richardson (1995), Rönnbäck (2015b).

[11] See for example Thornton (1998, Chapter 2). In Section 5, I present qualitative evidence from Company correspondence.

[12] See Rodney (1988)'s *How Europe Underdeveloped Africa*.

[13] See, for examples, Thornton (1998) and Whatley (2018). I thank Professor Ann Carlos for pointing out my findings are similar with what Carlos and Lewis (2010) found in the case of native Americans.

[14] The interlopers were a problem for the Company from its establishment in 1672, but the

who had territorial jurisdiction over the caravan routes and who had power to direct caravan merchants to their forts and factories. After 1688, the Company increased the payments, as the chiefs' threat to stop trade flowing to the Company became more credible.

The Company knew the chiefs controlled the flow of trade to the forts and factories on the coast. The Akani-Twifo routes were the main caravan routes.[15] After 1688, the Company faced the threat of competition from other English merchants. Using a difference-in-differences estimation strategy, I find that payments made to chiefs on the Akani-Twifo caravan routes that were not final destinations (henceforth "non-coast caravan routes") rose significantly relative to payments made to chiefs in other locations after the Glorious Revolution in 1688. On average, the increased share in total surplus of chiefs on non-coast caravan routes was more than six times as much as the increased share in total surplus of chiefs in other locations after 1688.

I argue that the increase in payments can be explained by the chiefs' increased bargaining power. The Company paid chiefs for exclusive access to trade. Chiefs on the non-coast caravan routes had the greatest power to extract payments because they could stop or redirect trade. After 1688, the Company made greater payments to the chiefs whose compliance was most important in deterring competition from other English merchants. I show that the increased bargaining share of chiefs on the non-coast caravan routes was greater than the increased bargaining share of chiefs in other locations.

I perform three main robustness checks of the estimation results. Firstly, I show that the results are robust when the value of payments is calculated using the average price.[16] Secondly, I show that the results are robust when payments are measured in terms of volume rather than value. Thirdly, I show that the results are robust when "business-related" payments[17] are included or excluded from the total value of payments.

I contribute to the literature on rent-seeking in Africa during the slave

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Company's position vis-à-vis interlopers weakened after the Glorious Revolution in 1688. See Davies (1957, Chapter 3), Carlos and Brown-Kruse (1996), Zahedieh (2010), Pettigrew (2013, Chapter 1).

[15]The map of the Akani-Twifo caravan routes was drawn from Kea (1982, Chapter 7). The map was adopted from *The National and Private Advantages of the African Trade Considered* by Malachy Postlethwayt, Second Edition, London, 1722. A printed copy of the map is found in Donnan (1965). I compared the map to Wilks (1975, Chapter 1).

[16]The baseline results are calculated using the minimum price observed in the whole period of the sample from 1679 to 1704, as this will stop results from being driven by inflation. I also show that the results are robust to the value of payments being calculated using current prices.

[17]Business-related payments are payments made as agreed between the chiefs and the Company when the forts and factories were built. These are customary payments, ground payments, ship customs, and service payments.

trade.[18] Descriptive evidence demonstrates the existence of rent-seeking in Africa during the slave trade. In this paper, I show that the trade in commodities and slaves in Africa was "the business of kings, rich men and prime merchants," especially those who found themselves in the right place and at the right time and took advantage of the situation. The quantitative evidence supports a dynamic "hunters-of-rent" view of rent-seeking in the African slave trade. African chiefs who could stop or redirect trade from inland could extract payments from the Company, particularly when competition from other English merchants increased.

I also contribute to the literature on European dependence on African collaborators. In particular, I contribute to the literature on the collaboration between the European merchants and African chiefs in the pre-colonial period[19] In this paper, I document the distribution, composition, and dynamics of payments made to chiefs in seventeenth-century Ghana by the Royal African Company, who did not control local trade like the chiefs did, and had to bargain with chiefs for access to trade with local merchants. This paper is part of a broader literature showing how Europeans depended on African collaborators for their pre-colonial or colonial goals.[20]

Finally, I contribute to the literature on strategies adopted by multinational chartered companies at home and abroad to compete with individual traders.[21] In this paper, I use quantitative analysis to understand the competition strategies adopted by the Company in its Gold Coast operations.[22] The Company increased its payments to chiefs whose compliance was most important in deterring other

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[18]See, for examples, Hopkins (1973), Evans and Richardson (1995), Law (1997, 2001, 2006), Behrendt, Latham, and Northrup (2010), Ipsen (2015), Rönnbäck (2015b), Whatley (2018). For rent-seeking in general, see Olken and Barron (2009).

[19]See, for examples, Gemery and Hogendorn (1974), Hubbell (2001), M. A. Klein (2001), Lovejoy and Richardson (2001), Northrup (2002), Lovejoy and Richardson (2004), Nunn and Wantchekon (2011), Sparks (2013), Lovejoy (2014), Rönnbäck (2015a).

[20]For recent works on European and African collaboration during colonial period, see Acemoglu, Reed, and Robinson (2014), Lowes and Montero (2018), Lechler and McNamee (2018). Michalopoulos and Papaioannou (in press) review its consequences on present-day Africa.

[21]Carlos and Brown-Kruse (1996), Law (1997, 2001, 2006), Pettigrew (2013).

[22]On strategies adopted by the Company in its Gold Coast operations, see Law (1997, 2001, 2006) who digitized into three volumes of more than 3,000 letters sent by company agents to their officers at the Cape Coast Castle, the Company's headquarters in West Africa. "The RAC's factories also regularly reported on the operations of other traders operating with the Company. In particular, they offer considerable detailed information on the operations of English 'interlopers', trading in competition with the Company and in defiance of its monopoly rights" (Law, 1997, p. x). The Company distributed a lion's share of its British exports to the Gold Coast. The distribution of exports to West Africa from 1680 to 1704 was £143,204 (16 per cent of total exports) to Gambia, Sierra Leone, and Sherbro, £162,207 (18 per cent) to Windward Coast, £325,389 (36 per cent) to Gold Coast, £131,288 (15 per cent) to Ardra and Whydah, £35,741 (four per cent) to Benin, New Calabar, and Old Calabar, £69,485 (eight per cent) to Angola, and £34,371 (four per cent) to miscellaneous and unnamed destinations (Davies, 1957, p. 233).

English merchants from competing with the Company.

In Section 1.2, I provide historical background. In Section 1.3, I present the methodology and data. In Section 1.4, I discuss the distribution of payments to chiefs. In Section 1.5, I discuss the composition of payments. In Section 1.6, I discuss the results of the difference-in-differences estimation strategy, mechanisms, and main robustness checks of the results. The conclusion is in Section 1.7.

1.2 Historical Background

1.2.1 Payments by the Company to Chiefs

Chiefs exercised control of land and allocated use-rights to local and foreign individuals. The Company paid chiefs for rights to build and maintain forts and factories on the coast. The payments included customary payments, dasheys or gifts, and ground payments.[23] The Company understood that the payments to chiefs kept trade flowing to the Company's forts and factories. This is shown in the correspondence between the Company agent at Egya and the Council[24] at Cape Coast Castle on 9 June 1687:

> "Since my arrivall here have understood that the Braffo[25] and Quarranteers[26] have debarred any traders from coming hither, on account that they are not paid their monthly customes for ground rent" (Correspondence 2/663).[27]

Indeed, chiefs could stop the flow of trade, and the Company was aware of this. Correspondence between the Company agent at Komenda and the Council at Cape Coast Castle on 1 July 1698 states:

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[23]See footnote 6 for a comprehensive list of payments. Chiefs did not always participate directly in trade. They found it more advantageous to encourage traders and then tax. See, for example, (Hopkins, 1973). "Indeed, in some cases, as among the Akan states of the southern Gold Coast, public authorities deliberately refrained from engaging in trade directly, not because they were insensitive to commercial opportunities, but because they judged it more advantageous to encourage private traders and then to tax them" (Hopkins, 1973, p. 62). Karl Polanyi views that there were only "commercial diplomats" in Dahomey. "No private merchants, only swarms of dependent porters and distinguished officials briefed as military guards and commercial diplomats form the personnel of the typical caravan" (Polanyi, 1966, p. 94). Law (1977b, pp. 555-556) dismisses Polanyi's view as "essentially mythological."

[24]The Council of the Company in West Africa consisted of the Agent-General, the Chief Merchant, Second Merchant, and Third Merchant (Davies, 1957, p. 243).

[25]Braffo was a high-military officer.

[26]Quarrenteers were chieftains or settlement chiefs.

[27]This excerpt is from Letter 663 in Volume 2 of Law (1997, 2001, 2006).

"Therefore hope your Worshipps would be pleased to order me to give
some dashes, or else it will be a mighty hinderance of trade to this place,
severall Cabbosheers[28] stopping the traders coming to the Castle and
sending them to the Dutch, saying they have had noe dashes from the
English to send traders" (Correspondence 3/440).

The Company paid chiefs to direct inland traders to their forts and
factories, and not to other merchants. There are many examples of such payments
in the Company's correspondence. Appendix A.1 shows a directory of such
correspondence. In one letter, a Company agent reminded the Agent-General in
Cape Coast Castle about the Queen of Agona, who wanted to know how much
ground payment the Company would offer her, in exchange for prohibiting trade
with interlopers or smugglers:

"I have little to add but that the Queen is urgent to know what you'l
allow &ca for ground rent, which she says when it is agreed on no canoes
shall be suffered to go off to interlopers" (Correspondence 3/1113).

In another letter, an agent told the Agent-General that gifts should be presented to
the King of Akwamu to procure trade and to stop trade from going to competitors:

"Pray do not faile to give Ahenesa[29] a gift, to be understood firelocks
and spirrits, alsoe send some good powder and bright musketts. Ahenesa
desires, the same, in soe doing wee may procure a traid and to hinder
our neighbours" (Correspondence 1/409).

The Gold Coast was a major exporter of gold in the seventeenth century. It
also exported slaves, but only became a major exporter of slaves in the middle of
the eighteenth century.[30] During this period, the Akani-Twifo caravan routes were
the main caravan routes. Figure 1.5 depicts the Akani-Twifo caravan routes and the
African settlements in the seventeenth-century Gold Coast. Slaves and the Akani
gold, regarded by English merchants as high-quality gold, were transported from
inland to coastal settlements along these caravan routes.[31]

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[28]Caboceers were chieftains or settlement chiefs.

[29]Ahenesa was the King of Akwamu.

[30]See, for examples, Daaku (1970, Chapter 2), Hopkins (1973, Chapter 3), Bean (1974), Kea
(1982, Chapter 7), Inikori (2007).

[31]An English ship's captain remarked that the Akani "are the best traders to our ships and
castles, and have the purest gold," as quoted in Kea (1982, p. 248). See also Daaku (1970, Chapter
2).

1.2.2 The Glorious Revolution in 1688 and Payments by the Company to Chiefs

In 1672, King Charles II granted the Company rights to monopolise English trade in West Africa, from the Cape Blanco (Western Sahara) to the Cape of Good Hope (South Africa). His brother James, Duke of York and later King James II, served as the governor of the Company from its creation in 1672 until the Glorious Revolution in 1688. A "sub-governor office" was created because the governorship was reserved for a member of the royal family. This was a privilege that the East India Company of England, for example, never had.[32]

The Company received privileges from the English government during the Stuart monarchy before 1688. Firstly, King James II received shares from the Company and became its largest shareholder. Secondly, the Company was granted the power to seize ships and cargoes of interlopers. The Royal Navy provided support by sending its warships to the African and Caribbean coasts to aid the Company in intercepting interlopers. Thirdly, the Company was given access to a royal-sponsored court situated on the African coast that acted on cases filed by the Company against interlopers. The Company itself elected the members of the court. Fourthly, the Company was permitted to detain interlopers in its African forts indefinitely. Finally, the Company had access to government officials in the English West Indies through its connection to the Lords of Trade, whose members were privy councillors. The Lords instructed government officials in the English West Indies to prosecute interlopers caught in their territories, and to confiscate slaves belonging to interlopers and turn them over to the Company. In exchange, the Company paid tax to the government and maintained the English forts and factories on the African coast.[33]

Such privileges increased the risks faced by interlopers. Firstly, they risked having their ships and cargoes seized by the Company. Secondly, they faced the risk of trial at the royal-sponsored court without a jury. Thirdly, they risked being detained in the Company forts. Fourthly, they risked being intercepted by English port authorities or by government officials in the English West Indies.[34]

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[32]See, for examples, Scott (1903) and Scott (1910). "The stock-holders were to elect annually one governor, one sub-governor, one deputy-governor and twenty-four assistants. This part of the constitution is similar to that of the English India Company at this date, except that the twenty-four officials are here called assistants instead of committees, and that a new office – that of sub-governor – is created. The latter difference is accounted for by the fact that the governorship of the African Company was an honorary appointment filled by members of the royal family" (Scott, 1910, p. 20). See also (Scott, 1903, p. 245).

[33]See, for examples, Root (1917), Davies (1957, Chapter 3), Carlos and Brown-Kruse (1996), Pettigrew (2013, Prologue).

[34]The literature supports this view. "Because these firms did not have the overheads associated

The Glorious Revolution in 1688 affected the privileged position of the Company. Before 1688, it was costly for other English merchants to infringe on the monopoly rights of the Company. After 1688, the risks of getting caught and prosecuted decreased, which decreased the average cost faced by other English merchants. The withdrawal of privileges after 1688 exposed the Company to more attacks and criticism from its competitors.[35] Figure 1.1 shows the Company's share of the total number of slaves taken from Africa.[36] In the pre-1688 period the Company's share was 39 per cent. The share fell to 28 per cent in the post-1688 period.[37] From the point of view of the Company, the threat of competition from other English merchants increased after 1688. During this period, the Company had more reasons to make payments to chiefs, especially to chiefs on non-coast caravan routes who could stop or redirect trade flowing to the Company.

1.3 Methodology and Data

1.3.1 Distribution of Payments

What was the distribution of payments across chiefs? To address this question, I construct data on share in the total value of payments by rank of recipient, including head chiefs, officeholders, and chieftains. Appendix A.2 shows the classification used for the ranks of recipient. There are three steps to constructing the data. Firstly, I construct data on the different types of payment to various chiefs. For each type of commodity (e.g. alcohol, cloth, firearms), I take the lowest price from 1679 to 1704 as my baseline measure of its price.[38] Secondly, I multiply quantity by price

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with the chartered companies, it has long been argued that they had a cost advantage, but it must be borne in mind that they did face the cost of their illegal activity: acquiring the necessary cargoes with caution, buying slaves illegally, and being threatened with capture and prosecution by the Company and the Royal Navy. These were not necessarily insignificant costs because any probability of being caught raised the average cost per slave delivered. Thus a 17 per cent probability would raise the average cost per slave delivered in the West Indies by over 20 per cent" (Carlos & Brown-Kruse, 1996, p. 297). See also Davies (1957, Chapter 3).

[35]In fact, the withdrawal of privileges can be viewed as a shock to the Company. "But the shock of the Revolution, the sudden withdrawal of the royal support, so long and generously given that it had come to be relied on, exposed the company to a storm of criticism and attack for which it was ill prepared, and in a moment the monopoly derived from the royal prerogative was gone for ever" (Davies, 1957, p. 104).

[36]Data on slaves embarked from Africa are drawn from *Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016).

[37]Data on the number of slaves embarked by the Company is available for 1680, 1681, 1682, 1685, and 1687 for the pre-1688 period. Data is available for 1689, 1690, 1696, and 1704 for the post-1688 period.

[38]I take the lowest price in the period from 1679 to 1704, as it biases the value of payments downwards and keep the results from being price-inflated. Appendix A.6 presents summary statistics of the price of different types of commodity. The results are robust when the value

to obtain the value of the payment. I do this for all 24,529 payments. Lastly, I calculate the share of each rank in the total value of payments. That is,

$$ValueShare_r = \frac{\sum_{i,rank=r} Quantity_{ic}^r \times Price_c}{\sum_i Quantity_{ic} \times Price_c} \tag{1.1}$$

where $ValueShare_r$ is the share of recipient r in the total value of payments, $Quantity_{ic}^r$ is the quantity of payment i using commodity c made to recipients of rank r, $Quantity_{ic}$ is the quantity of payment i using commodity c, and $Price_c$ is the price of commodity c. The total value of commodities made to recipients of rank r is the summation of $Quantity_{ic}^r \times Price_c$ over payments i restricted to cases of recipient with rank r. The total value of payments is the sum of $Quantity_{ic} \times Price_c$ over payments i.

As a robustness check, I calculate the share in the total volume of payments by rank of recipient. That is, $VolumeShare_r = \frac{Quantity_{ic}^r}{\sum_i Quantity_{ic}}$, where $VolumeShare_r$ is the share of rank r in total volume of payments.

Data on payments are drawn from the Company's Account Journals from 1679 to 1704.[39] Appendix A.3 presents a sample of a journal entry. The years included are determined by the availability of records during the period when the Company held monopoly rights to English trade in West Africa.[40] There are different types of payments. Appendix A.4 presents a definition of each type of payment. The most common were trusted or advanced payments, dasheys, ground payments, customary payments, and ship customs. Each payment contains information on when the payment was made[41], the type of commodity (e.g. alcohol, cloth, firearm) used as a payment, the quantity of the commodity given, and the recipient of the payment. Appendix A.5 shows a list of individual recipients. There are in total 111 individuals named in the Journals.[42] Of whom 20 are head chiefs,

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of payments is calculated using the average of prices from 1679 to 1704. The results are also robust when the value is calculated using current prices. I use the closest price in time whenever the current price is not available from the records.

[39]The Journals are held at the National Archives in London. The Account Journals are coded 365 to 378 in the T70 series at the National Archives in London.

[40]The are gaps from January to June 1679, from April to December 1685, from June to December 1687, from January to December 1688, from January to September 1689, from June to December 1691, from January to December 1692, from January to December 1693, from January to December 1694, from January to December 1695, from June to December 1700, from January to August 1701, and from and May to December 1704. The Journals for the period from May 1713 to March 1717 exist, but 1704 was considered the end date of the present study because the Company effectively lost its right to monopolise West African trade when the 1698 Act of Parliament expired in 1713. See, for example, Davies (1957, Chapter 3).

[41]The date (day, month, year) of the payment is given in the Journals.

[42]The other recipients are unnamed, which maybe individuals or groups. For example, *cabasheer* and *cabasheers*. The former is an individual chieftain while the latter is a group of chieftains.

44 are officeholders, 29 are individual chieftains, four are employees of the Company, nine are traders, and five are soldiers.

Data on prices are also drawn from the Journals. The prices are in units of gold. As most prices are given in angle unit of gold, I convert other units of gold (mark, ounce, taccoe) into angles of gold. One ounce is equivalent to 16 angles.[43] Appendix A.6 presents summary statistics of the price of different types of commodity. The most expensive were firearms. There are 165 prices of firearms observed in the period from 1679 to 1704. The average of these prices is 20 angles.[44] The second most expensive was European cloth. The average of the 826 prices observed in the case of European cloth during this period is ten angles.[45] The third most expensive was other cloth. The average of the 246 prices of other cloth is six angles.[46]

1.3.2 Composition of Payments

What commodities were used for payments and how did this change over time? To address this question I use the same data, and follow the secondary literature to classify payments by type of commodity, including alcohol, cloth, and firearms.[47] Appendix A.7 shows a list of types of commodity used as payments to chiefs. The first two steps are the same as above. In the third step I calculate the share of each type in the total value of payments. That is,

$$ValueShare_k = \frac{\sum_{i,type=k} Quantity_{ic}^k \times Price_c}{\sum_i Quantity_{ic} \times Price_c} \tag{1.2}$$

where $ValueShare_k$ is the share of commodity type k in the total value of payments, $Quantity_{ic}^k$ is the quantity of payment i using commodity c classified as type k, $Quantity_{ic}$ is the quantity of payment i using commodity c and $Price_c$ is the price of commodity c. The total value of commodities classified as type k is the summation of $Quantity_{ic}^k \times Price_c$ over commodities i restricted to cases of commodity with type k. The total value of payments is calculated as above.

Another example is *quarrenteer* and *quarrenteers*. The former is an individual officeholder while the latter is a group of chieftains.

[43]I use the conversion rates given in the secondary literature. See, for example, Law (1997, 2001, 2006). One mark of gold is equivalent to 128 angles. One taccoe is equivalent to 1/12 angles.

[44]The three most expensive firearms during this period were *gunpowder* (30 angles), *firelock* (4.8), and *snaphance* (4.2).

[45]The three most expensive European cloth was *boysadoe* (17 angles), *say* (16), and *striped satin* (12).

[46]The three most expensive types of other cloth were *blue long cloth* (12 angles), *white long cloth* (ten), and *king cloth* (five).

[47]See, for examples, Eltis (1991), Alpern (1995), Northrup (1998).

As a robustness check, I calculate the share in the total volume of payments of each commodity type. That is, $VolumeShare_t = \frac{\sum_i Quantity_i^t}{\sum_c Quantity_c}$, where $VolumeShare_t$ is the share of commodity type t in the total volume of payments.

1.3.3 Competition and Payments

Did payments rise after the Glorious Revolution in 1688 reduced company privileges, facilitating competition from other English merchants? To address this question, I use a triple difference-in-differences estimation strategy and estimate the following regression equation:

$$Payment_{ist} = \sum_t \alpha_t(CaravanRoute_i \times NonCoast_i \times Year_t)$$
$$+ \gamma_i + \lambda_t + \delta_s \times t + X_i'\beta_t + \epsilon_{ist} \tag{1.3}$$

where $Payment_{ist}$ is payments made to chiefs in settlement i, state s, and year t, $CaravanRoute_i$ is an indicator whether settlement i is on the Akani-Twifo caravan routes, $NonCoast_i$ is an indicator whether settlement i is not a coastal destination, $Year_t$ is a year dummy, t is year, γ_i is a vector of settlement fixed effects, λ_t is a vector of year fixed effects, $\delta_s \times t$ is a set of state-specific trends[48], X_i includes time-invariant control variables, and ϵ_{ist} is the error term.

The control variables included in X_i are $CaravanRoute_i$, $NonCoast_i$, $AdministrativeCapital_i$, and $CommercialCentre_i$. $AdministrativeCapital_i$ indicates whether settlement i is an administrative capital and $CommercialCentre_i$ indicates whether settlement i is a commercial centre. I cluster standard errors by settlement i. As there are 32 settlements, I calculate standard errors using a wild cluster bootstrap to adjust for the bias caused by the small number of clusters.[49]

The coefficient of interest is the vector α_t. The hypothesis I test is whether the α_t coefficients are economically and statistically significant. Each coefficient in α_t measures the difference in payments made to chiefs on the non-coast caravan routes and chiefs in other locations in year t. Increasing estimates are interpreted as growing differences in payments between the two groups over time.

Data on spatial characteristics of settlements are drawn from secondary sources.[50] Appendix A.8 shows the spatial characteristics of settlements in the

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[48]There are 17 states in the data. These are: (1) Abrem; (2) Accra; (3) Adangme; (4) Adom; (5) Afutu; (6) Agona; (7) Ahanta; (8) Akani; (9) Akron; (10) Akwamu; (11) Asante; (12) Asebu; (13) Denkyira; (14) Eguafo; (15) Etsi; (16) Fante; (17) Twifo.

[49]See, for example, Cameron, Gelbach, and Miller (2008).

[50]Data on Akani-Twifo caravan routes, settlements that were administrative capital, and

seventeenth-century Gold Coast. 11 of 32 (34 per cent) settlements were situated on non-coastal caravan routes.[51] Eight of 32 (25 per cent) settlements were situated on coastal caravan routes.[52] The latter settlements were the final destinations at the coastal edge of the caravan routes. These settlements had less power to hold up trade for anyone that comes after them, as the routes did not extend beyond those settlements.

Table 1.1 presents summary statistics of variables in Equation 1.3. The dependent variable is payments to chiefs in each settlement in each year. Payments are measured in value or volume. The mean value of payments is 77 angles of gold and its standard deviation is 297.[53] The mean volume of payments is 44 items and its standard deviation is 229.[54] The independent variables are the indicator variables *CaravanRoute*, *NonCoast*, *AdministrativeCapital*, and *CommercialCentre*. 59 per cent of the settlements were on the caravan routes. 56 per cent were non-coastal settlements. 47 per cent were administrative capitals. 38 per cent were commercial centres. In the estimation strategy, I consider only years when data on payments is available from January to December. There are 13 of these years.[55] Hence, with 32 settlements and 13 years, the panel data has 416 observations.

I perform three main robustness checks. Firstly, I check whether the results are robust to alternative prices. I use the average price of each commodity from 1679 to 1704, instead of the minimum price of each commodity in the same period, as an alternative price to calculate the value of payments. Secondly, I check whether the results are robust to alternative measures of payments. I use the volume, instead of the value, as an alternative measure of payments. Thirdly, I check whether the results are robust when "business-related" payments are excluded from the total value of payments. Business-related payments are customary payments, ground payments, ship customs, and service payments.[56]

settlements that were commercial centre in the seventeenth-century Gold Coast were drawn from Kea (1982, Chapters 2 and 7). Data on settlements that were non-coastal destinations are drawn from Kea (1982, Chapter 7) and Law (1997, 2001, 2006).

[51]The 11 settlements on non-coastal caravan routes are (1) Abra, (2) Abrem, (3) Akani, (4) Asante, (5) Asebu, (6) Denkyira, (7) Great Komenda, (8) Fante, (9) Afutu, (10) Kabestera, and (11) Twifo.

[52]The eight settlements on coastal caravan routes are (1) Anashan, (2) Anomabo, (3) Cape Coast, (4) Cape Coast Castle, (5) Egya, (6) Kormantin, (7) Little Komenda, and (8) Elmina.

[53]The minimum and maximum values are 0 (no payment) and 3,337 angles of gold, respectively.

[54]The minimum and maximum values are 0 and 2,764 angles of gold, respectively.

[55]These years are 1680, 1681, 1682, 1683, 1684, 1686, 1690, 1696, 1697, 1698, 1699, 1702, 1703.

[56]The following excerpts provide context to business-related payments. "The Dutchman is still here, haveing noe goods only brandy and a few beades, as for brandy wee shall want for next Tuseday is the time of their danceing here and according to contract made wee are to give the Cabasheers of this towne a perpetuanoe and one broad tapsell which wee have not here, as alsoe 2 halfe ankors of brandy" (Correspondence 1/4). "I should have sent my accompt sooner, but have

I perform additional robustness checks. I check whether the results are robust when I adjust standard errors for spatial and temporal correlations.[57] I check whether the results are robust when I calculate the value of payments using current prices. I check whether the results are robust when I control for state-specific flexible trends, rather than state-specific linear trends. Finally, I check whether the results are robust to when I exclude a particular type of payment from the total value of payments one at a time. That is, I check whether the results do not depend on just one type of payment (e.g. trusted, dashey, ground payments).

To complement the quantitative evidence, I provide qualitative evidence from the correspondence of the Company called the Rawlinson corpus. Named after the collector Richard Rawlinson (1690-1755), the Corpus is a collection of correspondence written and sent by the Company agents to their Agent-General at the Cape Coast, the headquarters of the Company in the seventeenth-century Gold Coast.[58] Law (1997, 2001, 2006) digitized and annotated the Corpus in three volumes of more than 3,000 letters. The letters contain inventories of commodities received from the headquarters, sales and the remittance of sales to the headquarters, salary expenditures, payments made to transport services provided by canoes, and other concerns such as food allowance, health of the agents, and supplies (e.g. paper and ink). The most relevant information for the purposes of the present study is that which provides details of the payments demanded by chiefs from the Company as

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delay'd them that I might advise of the contract with the Queen, with whom I have agreed to pay her five peze per month, & custome at a new Cheifs comeing and a[t] danceing as already I have paid, and at cutting her corn a phota longee or any thing else to that value & a case of liquor, and at Christmas time a say & longee & a case of spirits, & with John Le Grand (the Captain of the towne) I have agreed to pay him four angles per month, & a red cloth at Christmas & other dashes as already paid the Cabbosheers, but Prince, Ataquo & Abarraco I cannot come to an aggrement with, so Ataquoe comes up with these to know what you will please to allow them" (Correspondence 3/1119). "Just now Griffen is come from Fanteen, and the Quarranteeres and Braffo; and they would have custome for every ship that comes here" (Correspondence 2/248).

[57]I follow Fetzer (2014) and Hsiang (2010) in calculating the heteroskedasticity and autocorrelation consistent (HAC) standard errors. As the success of a caravan trade depended on the frequency of resting, the "suggested maximum distance was probably about ten miles [a day]" (Kea, 1982, pp. 255-257), I set the distance cut-off to 20 kilometres. I set the maximum lag of autocorrelation to five.

[58]The Corpus is held at the Bodleian Library at Oxford. The Corpus is a valuable source of information on commercial operations of the Company in its African operations. "The value of this material lies not only in its sheer extent (over 3,000 letters), but also the fact that, unlike most of the RAC documents in the PRO [Public Record Office], those in the Rawlinson corpus are preserved in their full original text... As regards English trade, by comparison with other contemporary material, the principal value of the Rawlinson correspondence lies not only in its much greater density of detail, but also in its particular focus on the local West African end of the trade" (Law, 2006, p. viii). See also the Royal African Networks at https://racnetworks.wordpress.com/the-corpus/ for a brief discussion on the Corpus. The Networks is a collaboration among Anne Ruderman, Mark Heller, and Harry Xue, who map the letters between the officers at the headquarters and their agents on the Coast.

well as details of the payments supplied by the latter to the former.[59] Also relevant is the information on interlopers, whose activities on the coast were reported by agents to their Agent-General in the Cape Coast Castle.[60] Appendix A.9 shows a directory of correspondence of the Company on interlopers.

1.4   Distribution of Payments

Figure 1.2 shows the frequency of payments made to individuals named in the Journals.[61] The Company made payments to head chiefs more frequently than it made payments to other chiefs. This is in spite of the small number of head chiefs relative to the number of other chiefs. Payments made to head chiefs were twice as frequent as those made to individual chieftains, even if head chiefs were just about two-thirds the number of individual chieftains. Payments made to head chiefs were twice as frequent as those made to officeholders, even though head chiefs were less than half the number of officeholders. The difference in frequency of payments is starker when comparing head chiefs to groups of chieftains.

Table 1.2 shows the value of payments by rank of recipient. The Company distributed a disproportionate share of its payments to chiefs in general. The Company distributed *at least* 94 per cent of the total value of payments to chiefs.[62] The Company distributed 75 per cent of the total value of payments to state chiefs. Head chiefs received 62 per cent, while officeholders received 13 per cent of the total value of payments. The Company distributed 19 per cent of the total value of payments to chieftains. Individual chieftains received 15 per cent, while groups of chieftains received four per cent of the total value of payments. Employees, traders, and soldiers received 1.41 per cent, 1.30 per cent, and 0.29 per cent of the total

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[59]Appendix A.1 shows a directory of correspondence of the Company about payments made to chiefs.

[60]The correspondence of the Company offers detailed information on various activities performed by interlopers seen from the coast. "The RAC's factories also regularly reported on the operations of other traders operating [in] competition with the Company. In particular, they offer considerable detailed information on the operations of English 'interlopers', trading in competition with the Company and in defiance of its monopoly rights" (Law, 1997, p. x).

[61]Recall that there are in total 111 individuals named in the Journals, of whom 20 are head chiefs, 44 are officeholders, 29 are chieftains, four are employees, nine are traders, and five are soldiers.

[62]It is likely that some of unspecified recipients were chiefs, that some of the traders and employees were chiefs, and that some of payments made to soldiers actually went to their chief master. For example, John Kabes, a prominent African merchant, was one of the employees of the Company. "John Kabes (who died in 1722) of Little Komenda was a highly successful and prosperous merchant and an *ohene*. For a number of years he was a broker at the Royal African Company's Little Komenda fort. Initially he received a salary of 1,152 dambas [48 angles] a year; in 1698 it was raised to 4,656 dambas [194 angles]" (Kea, 1982, p. 317). For John Kabes, see also Daaku (1970, Chapter 6). Another example is Captain Hansico. "He was a nephew of the King of Fetu, commonly employed by the RAC in the settlement of disputes with African rulers" (Correspondence 1/15).

value of payments, respectively.

Appendix A.10 shows the volume of payments by rank of recipient. The results are qualitatively similar to those obtained in Table 1.2. The distribution of payments is similar if payments are measured in volume rather than in value.

Head chiefs received the greatest value of payments in per capita terms. Among the chiefs named in the records of the Company are head chiefs, individual chiefs, and officeholders. 20 head chiefs received 23,577 angles. Each head chief received 76 angles per year. This is 59 per cent of Company agent's salary and 447 per cent of the cost of subsistence in the seventeenth-century Gold Coast. Head chiefs were the smallest group among the chiefs named in the records of the Company. There are 29 individual chieftains and 44 officeholders in the records. A head chief received six times as much as an individual chieftain and ten times as much as an officeholder.[63]

Before 1688, the share of the total value of payments received by head chiefs was 34 per cent. In the same period, the share received by officeholders was just three percentage points lower than what head chiefs received. After 1688, the share received by head chiefs was 67 per cent, while the share received by officeholders was ten per cent. The difference between the share received by head chiefs and the share received by officeholders increased from only three percentage points in the pre-1688 period to 57 percentage points in the post-1688 period. Head chiefs benefited most substantially after 1688 increased payments, as they were the "first overlord of the land"[64] who could either stop or redirect trade flowing to the Company.

Geographically, the payments received by chiefs on the non-coast caravan routes were greater than the payments received by chiefs in other locations. Figure 1.3 shows the average value of payments made to chiefs on the non-coast caravan routes and the average payments made to chiefs in other locations. Before 1688, the payments received by the former were already greater than those received by the latter. After 1688, the payments received by the former became much greater than those received by the latter. Figure 1.6 depicts the change in average value of payments made to the 32 settlements from the pre-1688 period to post-1688 period. The increase in payments was concentrated on the non-coast caravan routes, particularly on settlements situated just before final destinations on caravan routes.

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[63]The records suggest that Company payments went directly to head chiefs. Appendix A.11 presents a sample journal entry of itemized payments. It is clear in the records to whom payments were made and how much of these payments were to be distributed to each recipient. There is a possibility that the chiefs redistributed payments made to them. That is, it could be that the head chiefs were just residual claimants of payments. Nevertheless, even if the head chiefs were residual claimants, they had at least control of where payments went next.

[64]See Kea (1982, p. 113). For more details, see Kea (1982, Chapter 3).

The total value of payments across all years was 38,155 angles.[65] The value of payments was quantitatively important from the Company's point of view. The total value of payments per year was 2,462 angles.[66] The salary per year of a typical European agent employed by the Company in its forts and factories in Africa during the period was 140 angles.[67] Hence, the total value of payments was 18 times as much as the Company agent's salary. Considering that the Company had six to ten forts and factories in Africa during the period from 1683 to 1704[68], this value is not trivial. The total salary per year of six to ten agents ranged from 840 to 1,400 angles. The total value of payments is about twice as much as the total salary of ten agents serving the Company in the seventeenth-century Gold Coast.

The value of payments was also quantitatively important from the chiefs' perspective. The allowance per year of an African labourer and an African craftsman ranged from six to 12 angles and 24 to 48 angles, respectively.[69] The total value of payments was 51 times as much as the allowance of a (skilled) craftsman in the seventeenth-century Gold Coast. The cost of subsistence per year in the Gold Coast during this period was 17 angles.[70] The value of payments was 145 times the cost of subsistence in the Gold Coast during this period.

In summary, head chiefs, the highest-ranking chiefs in the seventeenth-century Gold Coast, received the greatest value of payments per capita. The share received by head chiefs increased after the Glorious Revolution in 1688. Geographically, payments received by chiefs on the non-coast caravan routes were greater than payments received by chiefs in other locations. After 1688, there was an increase in payments made to chiefs, but the increase was concentrated on settlements situated just before coastal destinations at the end of caravan routes. Lastly, the value of payments was quantitatively important from the perspectives of both the Company

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[65]Recall that calculating the value of payments using the lowest price between 1679 and 1704 is biased downward. The downward bias works against the hypothesis that the value of payments was sizeable. For details, see Section 1.3.

[66]The annual value of payments is the total value of payments divided by the total number of years. Adjusting for gaps in the Account Journals, the total number of years is 15.5. For details, see Section 1.3.

[67]The information on salary of a typical European agent employed by the Company during this period is drawn from Law (1997, 2001, 2006). "My [William Cooper] sallary for 12 months after the rate of [2/3 ds] of 50£per annum in gold at £3.16s per oz (ounce), 1mk (mark) 0oz (ounce) 12a (angels) 4ta (taccoe) [which is equivalent to 140 angles]" (Correspondence 3/957). See also Correspondences 2/197, 3/798, 3/1169, 3/1312.

[68]See Davies (1957, pp. 247-248).

[69]See Kea (1982, Table 8.1). See also (Rönnbäck, 2015a) for wage of a typical African worker at the Cape Coast Castle.

[70]See, for example, Kea (1982). "Commoners in the higher income brackets, namely those earning over 300 dambas [13 angles] a year in the 1660s and 1670s and those earning more than 400 dambas [17 angles] annually in the 1680s and 1690s, were better [able] to satisfy their basic subsistence needs" (Kea, 1982, p. 313).

and the chiefs.

1.5   Composition of Payments

Table 1.3 shows the value of payments classified by type of commodity. In terms of share in the total value of payments, European cloth (44 per cent) was first, firearms (12 per cent) were second, and alcohol (11 per cent) was third. Most payments were made using commodities (kind) rather than gold (currency). Commodities were 95 per cent of the total value of payments, while gold was only five per cent. The results are qualitatively similar when payments are measured in volume. In particular, most payments were made using commodities (78 per cent) rather than gold (22 per cent). Appendix A.12 shows the volume of payments by type of commodity. Since the majority of payments were made using commodities rather than gold, the value of time and effort expended to identify which commodity to use as a payment should be considered especially from a rent-seeking point of view.[71] The value of payments from the Journals should therefore be treated as minimum value, as the Journals did not include information on the time and effort expended by the Company to satisfy the preference of chiefs.

European cloth was the most expensive type of cloth during this period. The average price of European cloth is twice the average price of other cloth, thrice the average price of Indian cloth, and seven times the average price of cloth products (e.g. blankets, carpets, sheets).[72]

Africans imported good quality cloth from Europe, but chiefs received finer cloth as gifts.[73] The consumption of European cloth by chiefs during this period is viewed in the literature as conspicuous consumption, used by chiefs to signal authority and prestige.[74] Chiefs demanded European cloth for protection and adornment.

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[71]See, for examples, Tullock (1967), Krueger (1974), Bhagwati (1982).

[72]See Appendix A.6 for European commodity prices.

[73]As Eltis and Jennings (1988, p. 950) put it, "Certainly, fewer of the finer cottons were sent, except as gifts to rulers, but relative to other regions the African market was not a dumping ground for cheap cloth." Moreover, Eltis and Jennings (1988, p. 953) claim that "only a small proportion of Africans could have been wearing imported cloth." With the pre-colonial African population revised upwards (Manning, 2014, p. 139), the volume of imported cloth per capita would even be lower than Eltis and Jennings (1988)'s calculations.

[74]See, for example, Thornton (1998). "In fact, the consumption of cloth, much more than the consumption of iron, is a means of demonstrating prestige, because its principal use is as much bodily decoration as protection from the elements... With this in mind, we can understand better the dynamics of the demand for European cloth" (Thornton, 1998, pp. 50-51). See also Ipsen (2015, Chapter 4) in the case of African women who married Danish men in Africa. As highly valued status symbol in the nineteenth-century Asante, blankets symbol could be used as security for obtaining loans (Arhin, 1990, p. 530).

"Yours of the 18th instant I received, accompanied with a parcell of necessaryes have received [sic], and should not have troubled you so suddainly but that am forced to it by the Queen, who I can with no argument diswaid from the following demands, viz a piece of saye for a cloth, with somthing for a bre[a]st cloth, with 3 or 4 strings of rangoes to come round her wa[i]st, and a string or two of corrall to hang round her neck, a good cl[o]ath for the Prince, as also for her Braffo and the Kinge of Acroome, with 10 other inferior cloths for Cabbosheers of Barricue, Mumford, Anguina, Wynnebah & Acroonne" (Correspondence 3/1069).[75]

Chiefs desired firearms especially during periods of conflict. Conflicts between states (interstate conflicts) and within states (intrastate conflicts) were widespread in the seventeenth-century Gold Coast. Appendix A.13 shows the major interstate and intrastate conflicts in the Gold Coast from 1681 to 1699[76], according to company correspondence. 59 conflicts were recorded during this period. Of the 59 conflicts, 47 were interstate and 12 were intrastate conflicts. Conflicts presented an opportunity for the Company to advance their business interests with chiefs. For example, chiefs were willing to waive future payments from the Company in exchange for firearms given in the present. In addition, the chiefs were willing to sell captured slaves to the Company should the chiefs emerge victorious from the conflict.

"Just now came down Boneshee from Fanteen, being sent from the Braffo and Curranters, hereing that the Ackims and Aguinas are comeing upon them, they say they want powder to fight them, and have sent to be trusted with four barrells of powder and one ounce in lead barrs, and say they will pay out of their monthly customes, and if they are conquer[er]s

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[75]Three other excerpts highlight the demand for European cloth. "The occasion of my writing is the sending of the inclosed, and to acquaint you the Cabushers are very hard upon mee for their custom, being two perpettuanoes, one anckor of brandy, and a cloath to the Captain of the towne, which I hope you will be pleased to allow in soe expensive a place" (Correspondence 2/679). "Our Cabbosheers have been very importunate with me concerning their customes, they refuseing to take whatt Mr Brownes advice to me specifies, which is three boysadoes instead of five ginghams, and two Welch plaines. They tell me they are noe women to wear boysadoes, I tell them againe that though they doe nott wear itt yett they doe sell itt, being a vendable commodity of this country, and likewise the trade of either money or corne is nott soe great or soe much furthered by any of them, thatt they should be soe scrupleous of takeing their customes" (Correspondence 3/1041). "The Queen was very much displeased you did not send her a mourning cloth, her husband being killed att the warrs, which I excused as well as I could but was forced to give her a piece of sayes to pacify her" (Correspondence 3/1082).

[76]The choice of years is determined by the availability of the Rawlinson corpus.

in slaves" (Correspondence 2/490).[77]

Chiefs demanded alcohol in occasions such as burial, "dancing,"[78] and harvesting. The Company considered the personal choice of chiefs in giving them alcohol.

> "Yesterday send up Nuna to the King of Aguaffo; with an anchor of rum, as custome upon putting his corn in the ground, which is accepted kindly enough, and has promised send to send down 100 scaffold poles, but told him rum was a liquor the people there did not much care for, and desired an anchor of brandy more, and that should sattisfie him" (Correspondence 2/242).[79]

Chiefs derived personal benefits from these payments. The Company made payments tailored to their preferences and tastes. As shown above, head chiefs benefited substantially from these payments, receiving the greatest value of payments per capita. Appendix A.14 shows the shares in total value of commodity received by each rank of recipient. The share in the total value of European cloth received by head chiefs was 69 per cent, which was substantially greater than the shares received by other chiefs. This share was 55, 57, and 67 percentage points greater than the shares received by officeholders, individual chieftains, and groups of chieftains, respectively. The pattern is similar in firearms and alcohol.[80]

Before 1688, European cloth (23 per cent) was first, gold (21 per cent) was second, and alcohol (17 per cent) was third in terms of share in the total value of

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[77]Three other excerpts demonstrate the willingness of chiefs to reciprocate the Company's provision of firearms with commitment for trade. "Pray do not faile to give Ahenesa a gift, to be understood firelocks and spirrits, alsoe send some good powder and bright musketts. Ahenesa desires the same, in soe doeing wee may procure a traid and to hinder our neighbours" (Correspondence 1/409). "These goes by Domini who with 4 of the Cabushers sonns were sent to me to desire me to send the Braffo and Quarranters two small gunns which are about 23 of a hundred[weight] a piece. I told them I would not doe it without your order, they tell us the Dutch lent them two, so Domini goes himselfe to know your pleasure. They promis reward if they overcome. I beg pardon for this troble" (Correspondence 2/503). "The King of Soboe hath sent down to me for 4 barrells powder and about an ounce in lead barrs upon credite, for they intend to go against the Futures tomorrow night. If the bussiness takes good efect they hope to make you full satisfaction, if not they will pay for the powder and barrs" (Correspondence 3/530).

[78]That is, annual ceremonies marked by public dancing. For annual ceremonies in Dixcove, see Correspondence 3/46. For annual ceremonies in Fante, see Correspondence 3/577.

[79]See also the following correspondences. "The King will not drink Portuguese rumme but come to me every day for punch and a dram I had for my selfe, till I have none left. I find he love his belly well. If your Worshipps please to send a little corne brandy to humour his body, till the Fort is in good order, I will doe the best I can to mannage him" (Correspondence 3/258). "She I must needs owne doth her endeavour, therefore if you think it convenient to send her in your names a good cloth with a screwed jugge with brandy, for she drinks no rumme, now it would very much encourage her" (Correspondence 3/1082).

[80]In fact, the pattern is similar in all types of commodity with the exception of other cloth.

payments. After 1688, European cloth (48 per cent) was still first, but its lead over the second commodity increased from two to 36 percentage points. Firearms rose from fifth (11 per cent) to second (12 per cent) during this period. As both interstate and intrastate conflicts were more frequent in the period after 1688, the share of firearms in the total value of payments increased during this period. Although its share decreased by seven percentage points after 1688, alcohol (ten per cent) was still third in terms of share in the total value of payments.

There are various reasons why European cloth's share increased after 1688. Firstly, as discussed above, chiefs personally used European cloth to signal authority and power. Secondly, European cloth was the least constrained by technology among the three types of commodities. More reliable firearms were just beginning to replace less-reliable muskets.[81] Thirdly, alcohol was actually meant to be shared among chiefs and among lower ranks, including slaves.[82] Hence, when the bargaining positions of chiefs improved after 1688, the capacity to get the most exclusive commodity increased.

In summary, most payments were made using commodities rather than gold. European cloth was 44 per cent, firearms 12 per cent, and alcohol 11 per cent of the total value of payments. Chiefs derived personal benefits from these payments. Head chiefs received the greatest value of payments, especially European cloth. The share in the total value of European cloth received by head chiefs was 69 per cent, which was more than 50 percentage points greater than what other chiefs received. The share of European cloth in total value of payments rose from 23 per cent in the pre-1688 period to 48 per cent in the post-1688 period.

1.6   Competition and Payments

1.6.1   Results

Did payments rise after the Glorious Revolution in 1688 reduced company privileges, facilitating competition from other English merchants? I show that the increase in

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[81]See Whatley (2018) for example. "By the 1680s, the more-reliable flintlock technology was replacing the matchlock technology and firearms became a staple outbound cargo on most slave ships destined for Africa. By 1690s, the new flintlock technology was influencing military formations and military strategies along the Lower Guinea Coast, precisely when slave exports from that region began to increase" (Whatley, 2018, p. 82).

[82]See, for example, Akyeampong (1996). "The... King ordered a large quantity of rum to be poured into brass pans, in various parts of the town; the crowd pressing around, and drinking hogs; freemen and slaves, women and children, striking, kicking, and spilling more than they drank. In less than an hour, excepting the principal men, not a sober person was to be seen, parties of four reeling and rolling under the weight of another, whom they affected to be carrying home" (Bowditch 1966, as cited in Akyeampong (1996, p. 6).

the value of payments after 1688 was greater in settlements on the non-coast caravan routes than the increase in other settlements. Column 1 of Table 1.4 presents the baseline estimate of the difference-in-differences coefficients, α_t, in Equation 1.3. None of the estimated coefficients in the pre-1688 period is statistically significant, validating the parallel trends assumption. In marked contrast, all but one of the estimated coefficients in the post-1688 period are statistically significant.[83] The results show greater increased value of payments to the chiefs of settlements on the non-coast caravan routes than increased value of payments to the chiefs in other settlements. On average, the increased payments to chiefs on non-coast caravan routes was greater by 471 angles of gold, which is three times as much as the salary of a Company agent, ten times the allowance of a craftsman at the Cape Coast Castle, and 28 times the cost of subsistence in the seventeenth-century Gold Coast. The estimates of post-1688 coefficients are both statistically and economically significant.

1.6.2 Robustness Checks

Columns 2 to 4 of Table 1.4 present the three main robustness checks. Column 2 presents the results when the value of payments is calculated using the average price instead of the minimum price. The estimates in the pre-1688 period are not statistically significant, while the estimates in the post-1688 period are statistically significant. Hence, the results are robust to whether the value of payments is calculated using the average price. On average, the increase in payments made to settlements on the non-coast caravan routes is greater by 731 angles. This is higher than the average of the baseline estimates. In spite of this, the baseline estimates are still shown to be quantitatively important from the perspectives of the Company and the chiefs.

Column 3 presents the results when payments are measured in volume (i.e. count) rather than in value. The pattern is similar to the baseline. The results are robust as to whether payments are measured in volume. On average, the increase in payments made to settlements on the non-coast caravan routes is 221 items more than those made to other settlements. This is five times as much as the average number of items paid. The Company gave more items to the chiefs on non-coast caravan routes.

Column 4 presents the results when business-related payments are excluded from the total value of payments. Excluding these payments from the total would leave just the "additional" payments. Additional payments increased after 1688, and the increase was greater in settlements on the non-coast caravan routes than in

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[83]The estimate of the coefficient for 1696 is not statistically significant.

other settlements. The average increase is 352 angles. This is 2.5 times the salary of a Company agent, seven times the allowance of a craftsman, and 21 times the cost of subsistence in the seventeenth-century Gold Coast. The results remain economically and statistically significant even if business-related payments are excluded from the total value of payments.

Appendix A.15 presents additional robustness checks. Firstly, the results are robust as to whether standard errors are adjusted for spatial and temporal correlations. Of course, the point estimates are the same as in the baseline. However, the standard errors are different. The maximum distance a caravan merchant could travel per day is 20 kilometres.[84] Many of the settlements, especially settlements on the coast, were within 20 kilometres of each other. Secondly, the results are robust to whether the value of payments is measured using current prices instead of the minimum price. On average, the value of payments increases by more than 677 angles, which is higher than the average of baseline estimates, as expected. Thirdly, the results are robust whether the regression controls for a state-specific flexible trend or a state-specific linear trend. Hence, the greater increase in the value of payments was not because of increasing time trend in the value of payments that differed across states. Finally, the results are robust to whether a particular type of payment (e.g. customary payments, dashey, ground payments) is excluded from the total value of payments one at a time. Hence, the results do not depend on just one particular type of payment.

1.6.3 Mechanisms

I argue that increased payments can be explained by increased bargaining power of chiefs. The Company made payments to chiefs in order to monopolise English trade and keep trade flowing to the Company. The chiefs on the non-coast caravan routes whose geographical location enabled them to capitalize on their power to stop or redirect trade had the greatest power to extract payments from the Company. After 1688, the Company faced competition from other English merchants and began to pay more to the chiefs whose compliance was most important in avoiding competition from interlopers.

If the bargaining position of chiefs improved after 1688, then their share in the gross income of the Company should also have increased during this period. I show that the increase in share of chiefs on the non-coast caravan routes was greater than the increase in share of other chiefs. I calculate the share of payments in the gross income of the Company.

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[84]For details, see section 3.3.

$$GrossIncomeShare_t^j = \frac{Payments_t^j}{GrossIncome_t} \qquad (1.4)$$

where $GrossIncomeShare_t^j$ is the share of chiefs in j in the gross income of the Company in year t, j is an indicator of whether a chief is on the non-coast caravan routes, $Payment_t^j$ is the value of payments received by chiefs in j in year t, $GrossIncome_t$ is the gross income of the Company in year t.

The gross income of the Company, $GrossIncome_t$, is estimated as:

$$GrossIncome_t = \sum_s (p_{st} - c_{st})Q_{st} + (p_{gt} - c_{gt})Q_{gt} \qquad (1.5)$$

where s is slave type (man, woman, boy, girl), g is gold, p_{st} is the selling price of s in the West Indies in year t, c_{st} is the buying price of s in the Gold Coast in year t, Q_{st} is the number of slaves s purchased by the Company in Africa in year t, p_{gt} is the selling price of g in England in year t, c_{gt} is the buying price of g in the Gold Coast in year t, and Q_{gt} is the quantity of gold g bought by the Company in year t.

Data on selling prices of slaves in West Indies, p_{st}, the selling price of gold in England, p_{gt}, and the buying price of gold in Africa, c_{gt}, are drawn from secondary sources.[85] I convert West Indies currencies to British pounds sterling. The data on exchange rates between West Indies currencies and British pounds sterling from 1679 to 1704 are also drawn from secondary sources.[86] Data on buying prices of slaves, c_{st}, numbers of slaves, Q_{st}, and quantities of gold, Q_{gt}, are drawn from the Journals.

Figure 1.4 presents the share of payments in the gross income of the Company. Before 1688, the value of payments made to settlements on the non-coast caravan routes was on average 0.7 per cent of the gross income of the Company. On average, the value of payments made to other settlements was 0.5 per cent during this period. After 1688, the average value of payments made to settlements on the non-coast caravan routes rose from just 0.7 per cent in the pre-1688 period to 5.9 per cent in the post-1688 period. However, the average value of payments made to other settlements only rose from 0.5 per cent to 1.6 per cent in the post-1688 period.

Increased bargaining power of chiefs can be explained by increased threat from interlopers. In correspondence, the Company instructed its agents to report

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[85]The data on selling prices of slaves in West Indies, p_{st}, is drawn from Galenson (1979) and Galenson (1982). The data on selling price of gold in England is drawn from Bean (1974) and Curtin (1975a).

[86]The data on exchange rates between West Indies currencies and British pounds sterling are drawn from McCusker (1978) and Eltis, Lewis, and McIntyre (2010).

on the presence and activities of interlopers seen from the coast.

> "Yesterday receaved yours, and according to your order have inquired
> after the interloopers that are here, one is Richard Murphy in the
> Primrose from London and Mr John Belwood is an owner, is bound
> along the coast for Arda, the other is Roger Mathew in the Exeter
> Marchant and is bound to Calabar if cannot gett slaves on the coast,
> he is a Devensheer man and came from Dartmouth and belongs to the
> Cornish Company" (Correspondence 1/122).[87]

The Company also instructed its agents to apprehend and send captured interlopers
to the Cape Coast Castle.

> "In obedience to your order and Counsells I shall bee verry dilligent in
> apprehending such persons as are interloopers and readily send them to
> Cape Corso per the first oppertunity" (Correspondence 1/391).

The English government granted the Company rights to seize the ships and
cargoes of interlopers and to detain them in their African forts and factories. After
1688, the Company lost these and other privileges.[88] During this period, the
Company headquarters in London stopped issuing orders empowering its captains
to seize interlopers' ships and cargoes.[89]

The withdrawal of privileges after 1688 increased the threat of competition
from other English merchants and in turn increased the bargaining power of chiefs,

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[87]Three other excerpts show reporting of interlopers' activities on the coast by Company agents
to the headquarters at the Cape Coast Castle. "Satureday night last came in this road Captain
Andrews, Captain May and Captain Morphy, interlopers, they provided with all sorts of currant
goods and takes a great deale of money and I to the contrary take not one cracra on shoare in
the Company s factory" (Correspondence 1/78). "The English interloper that lay to windward is
arriv'd in this roade, being a sloop something bigger than the Adventure Sloop. He was fitted out
of Jamaica but the master is a Barbarian [sic: = Barbadian], his name is Steet. He hath a great
cargo aboard of all sorts of goods with a bundall of blew perpetuanoes, by which he takes all the
trade from the shoar, the canoes being continually aboard of him, so that I can take nothing, but
can receive by him noe intelligence of any of the Company ships nor noe other but one which he
suspects to be the pyrate, which gave him chase but could not come up with him" (Correspondence
2/24). "Last night came down a small English interloper and lyes between Annamaboe and Agga,
and his cheife of of his loading is sugar and rum, some allejars and broad nicconees. He tarrys here
to take in fourty chests of corn and on that intent he sent yesterday for Yabboy aboard, who I
beleive will endeavour to supply him" (Correspondence 2/638).

[88]For details, see Section 1.2.

[89]See, for example, Davies (1957). "On 11 December 1688 the King left Whitehall. Seven days
earlier, the secretary of the Company had written out a commission in the usual form to Captain
Rickard of the *Alexander* empowering and requiring him to seize any interlopers he found trading
within the limits of the company's monopoly. It was the last of hundreds to be issued" (Davies,
1957, p. 123).

whose cooperation was needed to deter competition. The correspondence reveals two ways in which the threat of competition with other English merchants increased the chiefs' bargaining power. Firstly, chiefs committed to keep trade flowing to the Company while at the same time barring trade from flowing to interlopers. This increased the chiefs' bargaining power with the Company.

> "Since my last the Queen arrived (who has sent to make up the palaver), whom I acquainted with what you ordered me about money being carried of to interlopers. She say[s] she will stand by me (and lickwise the Cabbosheers) if you will begin to allow her monthly ground rent from this tyme, like as is paid at Accra, and the Cabbosheers some allowance besides, so as noe canoes shall be suffer'd to goe aboard of ships with money, which I think much better then to be as now it is" (Correspondence 3/1111).[90]

Secondly, chiefs threatened to stop the trade flowing to the Company should it fail to meet the chiefs' demand for payments.

> "When I telld Prince that you would not allow him more then 4a per month he said if you gave him not what he demanded, [he] would stop all merchants from comeing hither, & would carry them to & fro to Barracu towne, so to prevent disturbance after many words have

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[90]Other excerpts highlight this commitment to trade. "I have little to add but that the Queen is urgent to know what you'l allow &ca for ground rent, which she says when it is agreed on no canoes shall be suffered to go off to interlopers" (Correspondence 3/1113). "I should have sent my accompt sooner, but have delay'd them that I might advise of the contract with the Queen, with whom I have agreed to pay her five peze per month, & custome at a new Cheifs comeing and a[t] danceing as already I have paid, and at cutting her corn a phota longee or any thing else to that value & a case of liquor, and at Christmas time a say & longee & a case of spirits, & with John Le Grand (the Captain of the towne) I have agreed to pay him four angles per month, & a red cloth at Christmas & other dashes as already paid the Cabbosheers, but Prince, Ataquo & Abarraco I cannot come to an aggrement with, so Ataquoe comes up with these to know what you will please to allow them. The two latter ask 4a per month each, & I offer'd them 2a each, which I thought was verry sufficient, but Prince would not tell me how [much] he would have, but as far as I can gather he expect half as much as the Queen. I desire to know your pleasure per returne of this canoe, & instructions what they must sign to. The Queen & John Le Grand say they will take a fetish in the open market place that none shall be suffered to goe of to interlopers, & if any should gett off will seize on their goods at their returne, and the other three promise the same when you agree with them" (Correspondence 3/1119). "This day since the letter that accompanys this was writt the Cabbosheers of Anguinna have opened to me an unexpected palaver after their difference was made up with the Queen, which was ended principaly by my means, that they have a bendy per month paid to the Queen, of which they have made her promise they shall mont[h]ly have one half part, and if you will not allow it they say noe trade or mony shall come here, but if you will allow the same they promise that they will unanimously take a fatish that no mony shall be carryed aboard" (Correspondence 3/1131).

promised he should have a cloath of scarlett broad cloth or to the value at Christmas time yearely, an iron barr att rowsawing time” (Correspondence 3/1121).[91]

The correspondence of the Company shows that interlopers were causing more problems to the Company after 1688. Agents were now reporting more of the negative effect of interlopers’ activities on the Company’s trade business.

“Here is little trade, nor can I expect any as long as these interlopers ly here, so that I shall send no accompt untill the end of this month” (Correspondence 3/653).[92]

Moreover, there were instances when the Company was aggressive towards interlopers. In one instance, an agent fired cannon shots at an interloper.

“Yesterday came downe here an interloper, a Briganteene, who as I am told by the Blacks offers 4a per chest for corne, soe fear shall gett none

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[91]Other excerpts highlight this threat. “Yours of the 9th instant yesterday received, and shall observe and doe accordingly, and that when received your said the King of Aguoffoe his men staying here for the same [i.e. customs], and that John Cabbess being very earnest for payment of the same, which said if [I] did not pay he [i.e. the King] would be a mighty hinderance of trade to this Castle and very troublesome, much against the intrest of the Royall Company at this place, and that [I] shall not give any custome if can otherways help it, and if [you] think it be not to the intrest of the Royall Company” (Correspondence 3/443). “The King of Quamboes man Affomadoe has been here, & demands five month ground rent, four being due at Mr Bloomes departure from hence. I could give him no other answer then what this certificate derected, only telling him I would advise you of it, & if any thing was due to the King it should be paid. He went away contented with that answer, but as soon as he arrived at Aquamboe, came messengers sent by the King to stop all trade or provitions from us, saying that I was come to cheat him, and I should have no trade before he had his money, but I agreed with the fellowes that they should not put their fetish up, hearing [ms. ’hareing’] how chargeable it had been in Mr Whitings time, till I had sent to Quamboe. The Kings answer was that I cheated him. and that he would make noe pallaver unless I came my selfe, soe was forced to returne the messenger again with a dashee of a broad sattin & a case of spirrits” (Correspondence 3/1284).

[92]Three other excerpts show similar reports. “Haveing received so many unsufferable abusses from Bonnishee and several others belonging to this town, thought it fitt for the intrest and honour of the Company to seize upon him, which accordingly yesterday in the afternoon I did, with Humphrey, Finny, Eggen & Petter Quashi, they all supplying Captains Parish, Bill [= Bell?] & Chantrell with slaves, corne &ca, likewise threatning to s[e]ize all goods that is bought out of the Factory, oblidging all to buy of them, insomuch that since the interlopers came here I have not taken one taccoe of gold, Capt. Parish also keeping a white man in Bonnishees house with goods” (Correspondence 3/646). “The two English interlopers that were lately to the offen of this road being now gone downe to Whidah, I hope to have some traid, and to returne the effects by the latter end of the month” (Correspondence 3/874). “It was my ill fortune a little before gott to Whidah, to meet with the English interloper bound to the same place. He also slaved there, he haveing a much more sortable cargoe, and almost as much again. They took little notice of me, so that I was hard put to it to gett my slaves. I brought of 598, have since lost about 20, the rest are pretty well, am in hopes shall not loose many more. I design, God willing, from hence tomorrow” (Correspondence 3/1401).

whilst he is here. Bonyshee & Humphry both promissed me some on Munday next, on the latter I depend but the other I fear will not comply with his word. I can make noe accompt for this last month, haveing taken but verry little money... PS. I have forst the above mentioned interlooper out of road by firing 2 shott att him, but that will not fright him quite away, he now la[y]ing out of shot of the Castle" (Correspondence 3/789).

In another instance, an agent explained why he failed to advise the headquarters of the presence of an English interloper, suggesting that the Company wrote to the agent and reminded him of his duty to report interlopers' presence and activities to the Company.

"... and as to my not adviseing you of the English interloper that was here last, I did not know that it was your desire to give me that liberty, for you formerly cheidd [= chided] me for putting the Company to the charge of canoes, but you may be assured I shall be mindfull not to neglect any of your commands" (Correspondence 3/70).

Why was the increase in bargaining share only temporary? The decline in the share of gross income among chiefs by the end of seventeenth century can be explained by the decline in trade with caravan merchants in this period. In 1698, Denkyira conquered Assin. Denkyira and Assin were both inland states. Assin was the country of Akani merchants, the merchants responsible for the large-scale mercantile operations in the sixteenth and seventeenth centuries. Human porters carried caravans and travelled a hundred miles between Assin and the coast to trade with European merchants.[93] The military expansion destroyed the towns and villages where caravan merchants and their porters could rest and replenish supplies (e.g. food, water), undermining the geographical and social and economic bases of the trade.[94] Trade with caravan merchants started to decline by the end of the seventeenth-century, and with it the incentive to pay the chiefs for access.

In summary, payments made by the Company to chiefs increased after 1688. The increase was greater in settlements on the non-coast caravan routes than in other settlements. The results remain robust after a battery of robustness checks. The increased value of payments can be explained by the increased bargaining power

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[93]See Tables 7.1 and 7.2 of Kea (1982, pp. 258-259). Also, see Law (1997, 2001, 2006).

[94]See, for example, Kea (1982). "Under the social conditions that contributed to the emergence of militarized expansionist polities the seventeenth-century mercantile organization of the Akani political formation could not flourish... In other words, the geographical and socioeconomic base of Akani trade was undermined" (Kea, 1982, pp. 286-287).

of chiefs. The bargaining power of chiefs increased when the Company faced the threat of other English merchants competing with them. Chiefs on the non-coast caravan routes had more power to stop or redirect trade. After 1688, the share of chiefs on the non-coast caravan routes of the gross income of the Company increased much more than the increase experienced by other chiefs. The increase in the value of payments was only temporary, as trade with caravan merchants diminished at the end of the seventeenth century.

1.7 Conclusion

I have documented the distribution, composition, and dynamics of payments received by chiefs from the Royal African Company in seventeenth-century Ghana. I constructed the database of more than 20,000 payments from handwritten Company archives. The payments were sizeable from the perspectives of both the Company and chiefs. Head chiefs, the highest-ranking chiefs in seventeenth century Ghana, received the highest payments per capita. A head chief receivied six times as much as an individual chieftain and ten times as much as an officeholder. Most payments were made using commodities, such as European cloth, firearms, and alcohol, and chiefs derived personal benefits from these payments. Head chiefs received the lion's share of the total value of payments, especially of European cloth, firearms, and alcohol.

After 1688, the Company faced more competition from other English merchants. The Company paid more to chiefs on the non-coast caravan routes who had more power to stop or redirect trade during this period than to other chiefs. The increased payments to chiefs on the non-coast caravan routes can be explained by their increased bargaining power. Although the share of payments to chiefs on non-coast caravan routes increased by more than the payments to other chiefs, the increase was only temporary. The military expansion of inland states at the end of the seventeenth century diminished trade with caravan merchants and may have reduced the incentives for the Company to pay for exclusive access to trade. Some chiefs found themselves in the right place at the right time and took advantage of the situation.

Figure 1.1: Slaves Embarked from Africa by the Royal African Company, 1679-1704
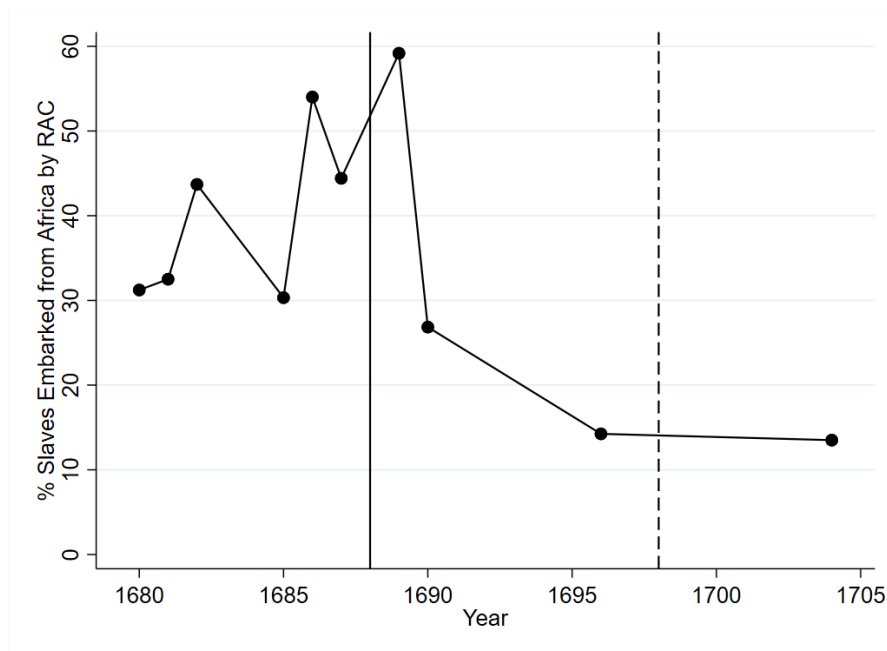
Notes: The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

Figure 1.2: Frequency of Payments by Rank of Recipient
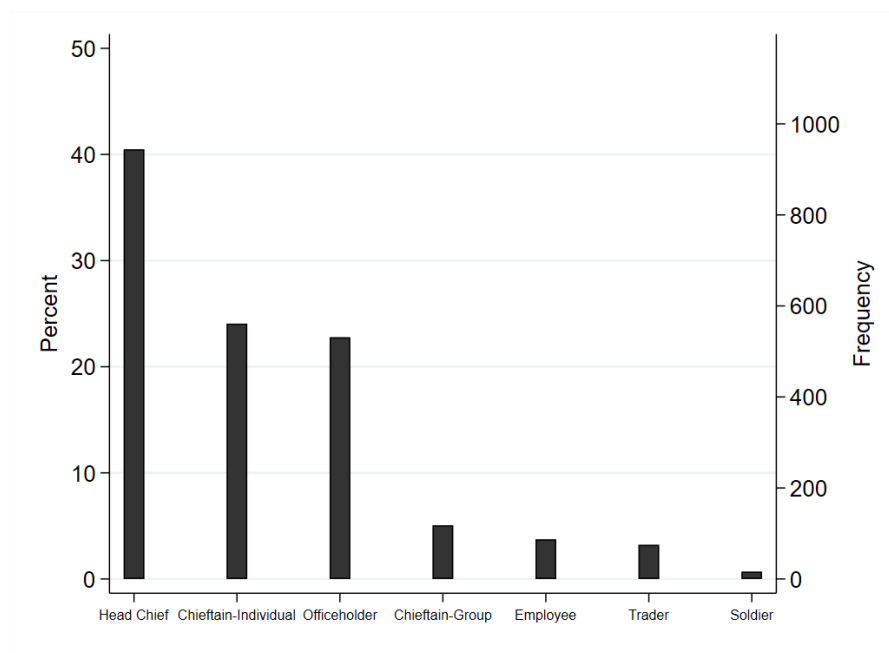
Notes: The first vertical axis shows the frequency of payments in percent. The second vertical axis shows the frequency of payments in level. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Daaku (1970); Kea (1982); Law (1997, 2001, 2006)

Figure 1.3: Average Value of Payments by Royal African Company, 1679-1704
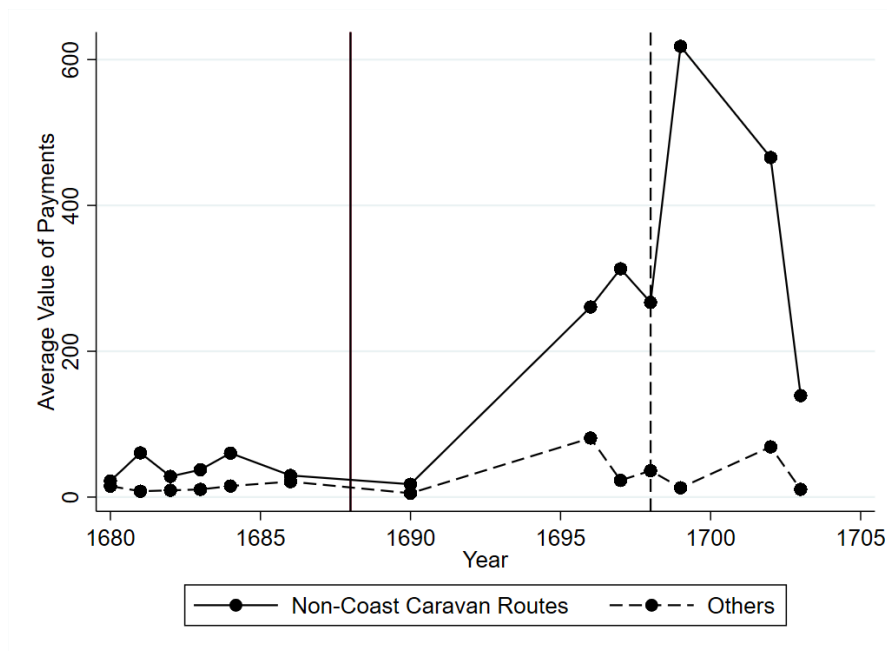
Notes: The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

Figure 1.4: Share of Payments in Royal African Company's Gross Income, 1679-1704
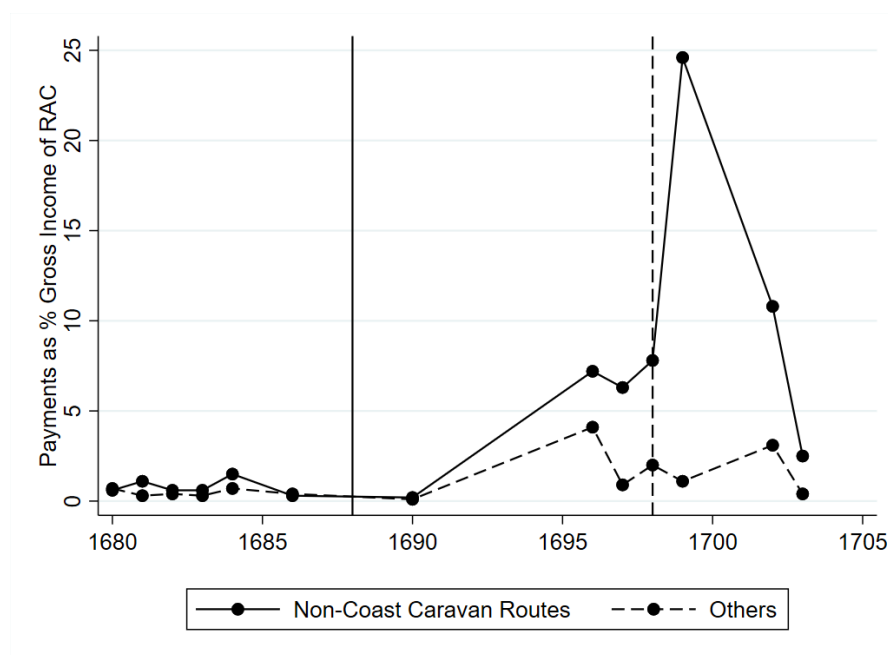
Notes: The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Bean (1974); Curtin (1975a); McCusker (1978); Galenson (1979, 1982)

Figure 1.5: Caravan Routes and Settlements in the Seventeenth-Century Gold Coast
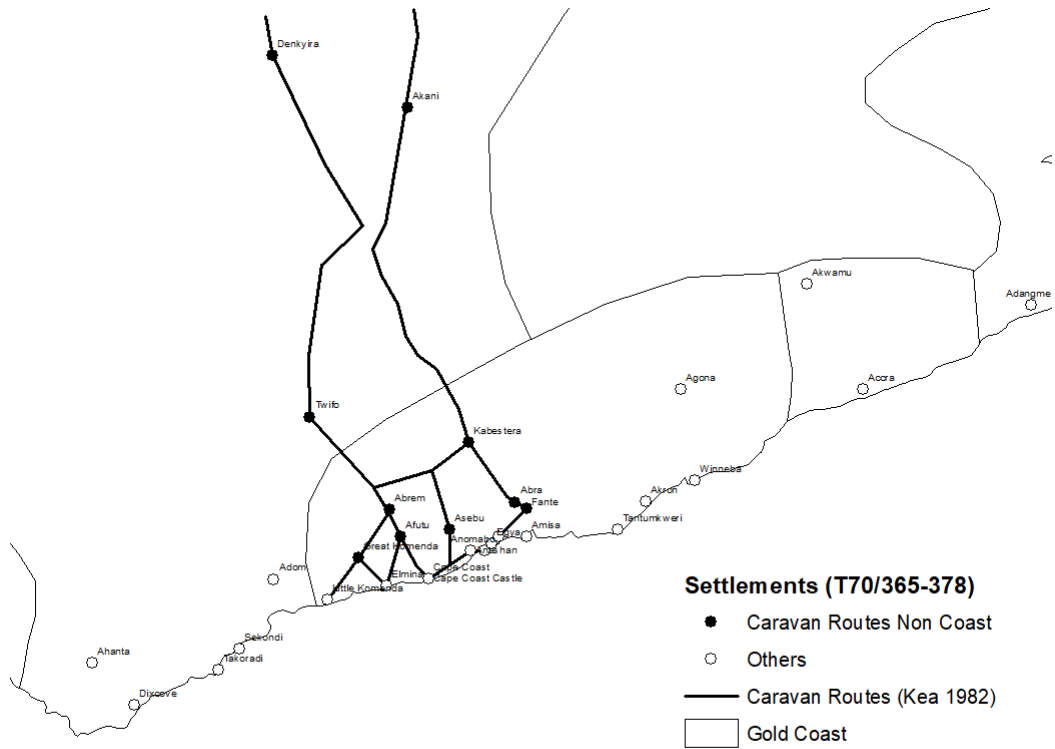
Notes: The map depicts the Akani-Twifo caravan routes and African settlements in the seventeenth-century Gold Coast, namely Abra, Abrem, Accra, Adangme, Adom, Akani, Ahanta, Akron, Akwamu, Amisa, Anashan, Agona, Anomabo, Asante, Asebu, Cape Coast, Cape Coast Castle, Denkyira, Dixcove, Great Komenda, Egya, Fante, Afutu, Kabestera, Kormantin, Little Komenda, Elmina, Sekondi, Takoradi, Tantumkweri, Twifo, and Winneba. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Donnan (1965); Wilks (1975); Kea (1982); Law (1997, 2001, 2006)

Figure 1.6: Change in Average Value of Payments by Settlement
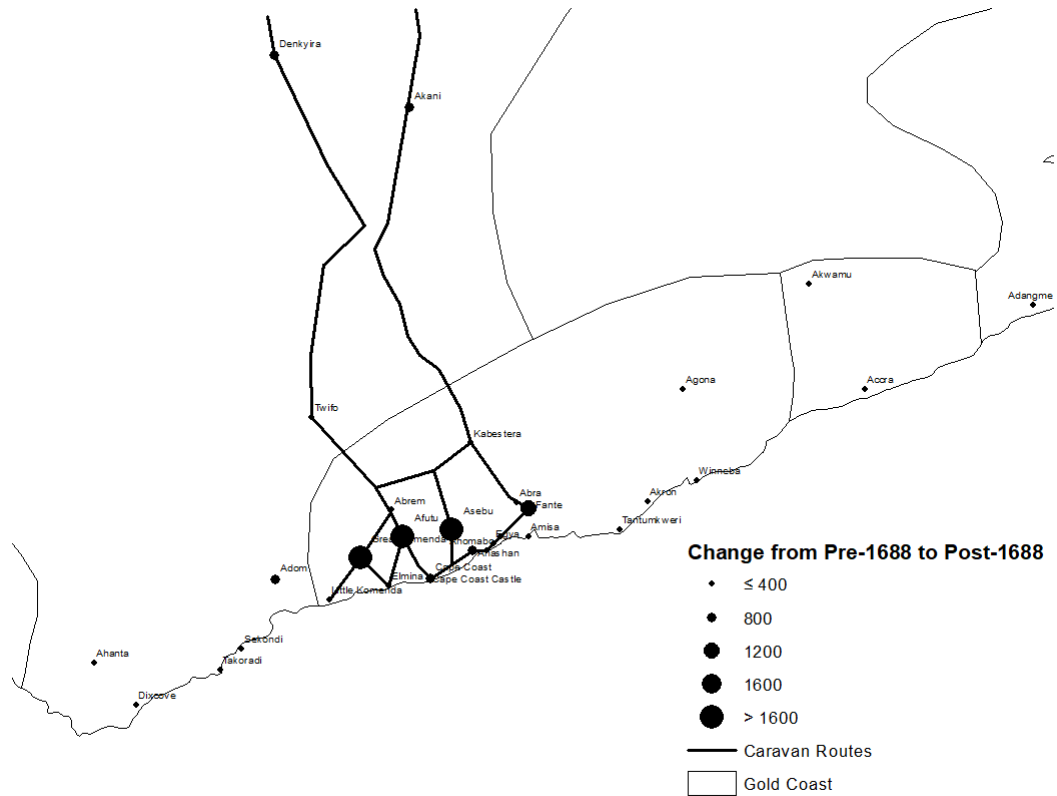
Notes: The map depicts the Akani-Twifo caravan routes and African settlements in the seventeenth-century Gold Coast, namely Abra, Abrem, Accra, Adangme, Adom, Akani, Ahanta, Akron, Akwamu, Amisa, Anashan, Agona, Anomabo, Asante, Asebu, Cape Coast, Cape Coast Castle, Denkyira, Dixcove, Great Komenda, Egya, Fante, Afutu, Kabestera, Kormantin, Little Komenda, Elmina, Sekondi, Takoradi, Tantumkweri, Twifo, and Winneba. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Donnan (1965); Wilks (1975); Kea (1982); Law (1997, 2001, 2006)

Table 1.1: Summary Statistics for Regression

Variable	Mean	SD	Min	Max	N
Dependent variable: *Payments*					
Value	77.11	297.26	0	3337.41	416
Volume	43.99	229.18	0	2764.25	416
Independent variable:					
CaravanRoute	0.59	0.49	0	1	32
NonCoast	0.56	0.50	0	1	32
AdministrativeCapital	0.47	0.50	0	1	32
CommercialCentre	0.38	0.48	0	1	32

Notes: The dependent variable *Payments* is expressed either in value in constant angles of gold or in volume of payments. *CaravanRoute* is an indicator of whether the settlement is on the Akani-Twifo caravan routes. *NonCoast* is an indicator of whether the settlement is not a coastal destination. *AdministrativeCapital* is an indicator of whether the settlement is an administrative capital. *CommercialCentre* is an indicator of whether the settlement is a commercial centre. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Kea (1982); Law (1997, 2001, 2006)

Table 1.2: Value of Payments by Rank of Recipient

Rank	All N	All %	All Rank	Pre-1688 N	Pre-1688 %	Pre-1688 Rank	Post-1688 N	Post-1688 %	Post-1688 Rank
State Chief	28712	75.25		3572	64.61		25140	77.05	
Head Chief	23577	61.79	1	1858	33.61	1	21719	66.57	1
Officeholder	5135	13.46	3	1714	31.01	2	3421	10.48	3
Chieftain	7277	19.07		1524	27.57		5753	17.63	
Individual	5884	15.42	2	603	10.91	4	5281	16.19	2
Group	1392	3.65	4	920	16.65	3	472	1.45	4
Employee	536	1.41	5	276	5.00	5	260	0.80	6
Trader	497	1.30	6	68	1.24	6	429	1.32	5
Soldier	109	0.29	7	2	0.03	7	108	0.33	7
Unspecified	1025	2.69		86	1.56		939	2.88	
Total	38155	100		5528	100		32628	100	

Notes: The value of payments is in constant angles of gold. *All* includes payments from 1679 to 1704. *Pre-1688* includes payments in 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687. *Post-1688* includes payments in 1689, 1690, 1691, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704. *Rank* is rank from highest to lowest: 1 is the highest; 10 is the lowest. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Davies (1957); Eltis (1991); Alpern (1995)

Table 1.3: Value of Payments by Type of Commodity

Type	All N	All %	All Rank	Pre-1688 N	Pre-1688 %	Pre-1688 Rank	Post-1688 N	Post-1688 %	Post-1688 Rank
Alcohol	4321	11.33	3	937	16.96	3	3384	10.37	3
Other Cloth	2545	6.67	5	751	13.58	4	1794	5.50	6
European Cloth	16974	44.49	1	1297	23.47	1	15677	48.05	1
Indian Cloth	1292	3.39	8	538	9.73	6	754	2.31	8
Cloth Products	2741	7.18	4	35	0.63	9	2706	8.29	4
Firearms	4421	11.59	2	604	10.93	5	3817	11.70	2
Gold	1883	4.94	7	1139	20.61	2	744	2.28	9
Metals	1201	3.15	9	83	1.51	8	1118	3.43	7
Metalwares	303	0.80	10	10	0.18	10	294	0.90	10
Miscellaneous	2473	6.48	6	133	2.40	7	2340	7.17	5
Total	38155	100		5528	100		32628	100	

Notes: The value of payments is in constant angles of gold. *All* includes payments from 1679 to 1704. *Pre-1688* includes payments in 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687. *Post-1688* includes payments in 1689, 1690, 1691, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704. *Rank* is rank from highest to lowest: 1 is the highest; 10 is the lowest. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Davies (1957); Eltis (1991); Alpern (1995)

Table 1.4: Estimate of Difference-in-differences Coefficients in Regression

Coefficient	Baseline	Main Robustness Checks		
	(1)	(2)	(3)	(4)
α_{1680}	-124.45	-179.02	-35.80	-104.00
	(82.91)	(119.27)	(23.85)	(69.29)
α_{1681}	-69.40	-84.85	-5.67	-65.60
	(70.07)	(85.68)	(5.73)	(66.24)
α_{1682}	-65.70	-92.26	-14.61	-61.92
	(60.79)	(85.37)	(13.52)	(57.29)
α_{1683}	-53.42	-63.83	16.50	-59.45
	(48.82)	(58.33)	(15.07)	(54.32)
α_{1684}	7.95	22.28	55.74	-19.21
	(47.01)	(131.74)	(329.59)	(113.60)
α_{1690}	123.28	191.68	56.77	77.71
	(67.42)	(104.84)	(31.05)	(42.50)
α_{1696}	293.26	463.06	167.04	207.88
	(205.41)	(324.34)	(117.00)	(145.60)
α_{1697}	486.19	786.73	281.14	372.44
	(218.56)	(353.66)	(126.38)	(167.43)
α_{1698}	491.78	747.57	181.22	397.25
	(239.23)	(363.66)	(88.16)	(193.24)
α_{1699}	708.44	1096.76	362.10	617.81
	(351.33)	(543.89)	(179.57)	(306.38)
α_{1702}	696.19	1076.08	294.52	456.39
	(295.23)	(456.33)	(124.90)	(193.54)
α_{1703}	496.06	754.20	204.69	333.45
	(177.29)	(269.55)	(73.16)	(119.18)
Price	Min	Ave	NA	Min
Volume	No	No	Yes	No
Business-related	Yes	Yes	Yes	No
N	416	416	416	416

Notes: Column (1) shows the results when the value of payments is calculated using minimum prices from 1679 to 1704. Column (2) shows the results when the value of payments is calculated using average prices from 1679 to 1704. Column (3) shows the results when payment is measured in volume rather than in value. Column (4) shows the results when business-related payments (customary payments, ground payments, service payments, ship customs) are dropped from the sample. All specifications include settlement and year fixed-effects, state-specific trends, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by the small number of clusters. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

Chapter 2

Structural Change in the Royal African Company Stock Transfers

2.1 Introduction

English joint-stock companies illustrate how the English stock market developed in its early years (Carlos, 1993; Carlos, Key, & Dupree, 1998; Murphy, 2009). Stock transfer records from the Royal African and Hudson's Bay Companies, for example, show that the foundations of the London capital market did not emerge "Phoenix-like from the ashes of the old regime," where old regime refers to the period before the Glorious Revolution in 1688 (Carlos et al., 1998, p. 319). Individuals participated in the market before, not only after, the Revolution, which in turn complemented the English capital market that flourished immediately after the Revolution (Dickson, 1967; Neal, 1990). But how concentrated or widespread was such participation to learning and experience? If only specific groups of investors participated, for example elites, then the learning and experience were not as wide-reaching as the literature portrays them to be.

In this paper, I provide quantitative evidence of active participation by elites and non-elites using data on transfers of Royal African Company (the Company) stock between 1672 and 1712. The Company attracted people of authority and power to invest in its stock. Political and wealthy elites served as directors of the Company during its formative years and bought and sold stock.[1] How widely did

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[1] Elites who served as directors and traded Company stock during the Company's formative years from 1672 to 1674 include Sir John Ashby, Sir John Banks, John Bence, Lord George Berkeley

elites and non-elites participate in the market for this stock? I highlight three new stylized facts. Firstly, both elite and non-elite stock traders had substantial shares in stock bought and sold in the 1670s and 1680s. Elites bought 56 per cent and sold 55 per cent of the total stock transferred during this period. Non-elites bought 44 per cent and sold 45 per cent. As the data suggests, neither elites nor non-elites dominated the market before the Company made stock more affordable for investors in the 1690s.

Secondly, the share of some elites, particularly Company directors, merchants and titled elites, declined in the period between 1685 and 1690. They became net sellers to non-elites during this period. This correlates with the political events of the 1680s that reduced the Company's royal privileges. The prorogation of Parliament in 1685 was a contest of power between the Crown and Parliament that preceded the Glorious Revolution in 1688. These events shifted political power to Parliament. The reduction in royal privileges and the increased uncertainties faced by the Company discouraged some investors from trading Company stock.

Thirdly, non-elites dominated the Company stock market in the 1690s. In 1691, the Company gave stockholders a 300 per cent bonus on their stock at no additional cost. The bonus in effect quadrupled the book value of stock and made stock more affordable to investors. Using available data, I show that the average stock price fell after 1691. The price of new stock was only about ten per cent of the price per stock before 1691. Hence, Company stock was more affordable after 1691. The Bai-Perron (2003) results suggest that the structural change occurred in 1697 when a large amount of new stock was issued at £12 per stock. The new stock was worth £475,800 in nominal value, which was 76 per cent of the existing stock (Scott, 1903, 1910).

The data suggests that non-elites who were interested in investing in Company stock but were constrained by wealth or income benefited from the fall in stock prices. Between 1672 and 1690, the smallest block of stock (i.e. stock with book value above £0 but below £100) was only one per cent of the total transactions. As stock became more affordable after the quadrupling of stock in

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(the First Earl of Berkeley), Sir Thomas Bludworth, Jarvis Cartwright, Sir Josiah Child (First Baronet), Sir Robert Clayton, Sir Peter Colleton, Nicholas Cooke, Sir John Cooke, Sir William Craven (the Earl of Craven), Thomas Crispe, John Cutting, Sir Francis Dashwood (First Baronet), Sir Samuel Dashwood, Lawrence du Puy, Thomas Heatley, Sir William Hodges (First Baronet), Sir Edward Hopegood, John Jefferies, Peter Joye, Sir Andrew King, Ralph Lee, Charles Modyford, Sir John Morgan, Samuel Moyer, Sir Benjamin Newland, Thomas Nicolls, Sir Peter Paravarini, Henry Richards, Sir Gabriel Roberts, Edward Rudge, Tobias Rustat, John Searle, Sir John Shaw (First Baronet), John Short, Benjamin Skutt, Sir William Stevens, Sir Henry Tulse, Sir Thomas Vernon, Sir Robert Vyner (Baronet), Nicholas Warren, Sir William Warren, Robert Westerne, and Richard Young.

1691 and issuance of new stock in 1697, small blocks increased to 33 per cent of the total transactions. The results suggest that Company decisions played a major role in explaining the widespread participation of elites and non-elites in the stock market.

I contribute to the literature arguing that the foundations of the capital market were laid before the Glorious Revolution in 1688, not after it (Carlos, 1993; Carlos et al., 1998; Murphy, 2009). In this paper, the data suggests that the capital market experience was not confined to elites. Non-elites participated substantially in the stock market. At the same time, the Bai-Perron (2003) results are not dismissive of the view that political events, such as the Glorious Revolution in 1688, changed the institution governing investors' incentives (North & Weingast, 1989; Quinn, 2001; Carlos, Fletcher, & Neal, 2015), as the decline in some stock traders' share in stock transfers occurred against the background of these political events. For instance, Company directors bought 34 per cent less than they sold in the latter half of the 1680s. Their share in the total stock fell from 43.1 per cent in 1687 to 39.4 per cent in 1688.

I also contribute to the literature emphasizing that Company decisions explain a lot about its fate as a chartered company (Scott, 1910; Davies, 1957; Carlos & Brown-Kruse, 1996). I find that both Company decisions and political events affected the Company's secondary stock market. However, as Bai-Perron (2003) results suggest, Company decisions, particularly the issuance of new stock at lower prices in the 1690s, matter more than political events in explaining the structural change in stock transfers from 1672 to 1712.

In Section 2.2, I provide historical background. In Sections 2.3 and 2.4, I present the methodology and data, respectively. In Section 2.5, I discuss the results for the period between 1672 and 1690 and for the period between 1691 and 1712. The conclusion is in Section 2.6.

2.2   Historical Background

King Charles II granted the Royal African Company its charter in 1672. The Company exchanged manufactured goods for commodities and slaves from Africa, which were then exchanged for bills of exchange, bullions, and commodities, such as sugar and tobacco, from the West Indies. Among the joint-stock companies involved in the trans-Atlantic slave trade in the seventeenth century, the Company exported

the greatest number of slaves from Africa.[2] When the Company received its charter in 1672, it was the second-largest joint-stock company in England, after the East India Company.[3]

The charter legalized the sale of stock to raise capital for trade operations. The initial amount of capital stock was £111,100. Since each stock had a nominal value of £100, there were 1,111 shares (Scott, 1910; Davies, 1957; Carlos, 1993). The quadrupling of stock on 30 July 1691 raised the book value of capital stock from £111,100 to £444,400. It gave a 300-per-cent-bonus to current stockholders. According to Scott (1910), the bonus can be attributed to the Company's optimistic view of its finances at the time. As Scott (1910, p. 26) puts it,

> "There is reason to believe that the company had accumulated a considerable reserve out of profits over and above the 10 or 20 guineas per cent. paid annually as dividend. The assistants in speaking of these early years mention the 'great and extraordinary success with which the trade had been carried on.' Houghton, too, stated in 1683 the 'the Guinea company was as safe as the East India company.' The wording of the resolution for the bonus addition of capital confirms this view of the company's finances at the time" (Scott, 1910, p. 26).[4]

Davies (1957) challenges Scott's view. For Davies, "Only by accounting so dubious as to be worthless can Scott's assumption that the bonus payment betokened the existence of considerable capital reserves be accepted" (Davies, 1957, p. 82). Instead, the Company implemented the bonus to make stock more affordable to potential investors and to make it appear that the Company's trade is robust and profitable. Davies (1957, p. 82) argues that

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[2]See, for example, Pettigrew (2013, p. 11). "The Royal African Company of England shipped more enslaved African, women, men, and children to the Americas than any other single institution during the entire period of the transatlantic slave trade. From its foundation in 1672 to the early 1720s, the African Company transported close to 150,000 enslaved Africans, mostly to the British Caribbean. It played a role in establishing England's transatlantic slave trade, stealing market share from the Dutch and French slave trades, and in Africanizing the populations of England's Caribbean plantations. In 1673, soon after the company's foundation, the English had a 33 per cent share in the transatlantic slave trade. By 1683, that share had increased to 74 per cent."

[3]The East India Company was a "monied" company involved in the purchase of government debt. The Royal African Company was not one of the monied companies. Carlos, Moyen, and Hill (2002, p. 62) emphasise that the Company "was not directly involved in the government for equity swap." Smith (2018) argues that investors in the East India Company were more likely to diversify than investors in the Royal African Company. "[Carlos et al. (2015)] did a remarkable job of reconstructing investment practices. They concluded that only small numbers of investors showed interest in diversification... the picture was very different a hundred years earlier, and investors in EIC were much more likely to participate in other ventures" (Smith, 2018, p. 1119).

[4]See also Scott (1903, p. 250).

"There may have been a deliberate intention to increase the number of shares and thus to lower the cost of purchasing the smallest unit in which transfers were normally made, £100. This might have been intended to assuage critics of the company's monopoly who complained that the benefits of the trade were restricted to too few persons. Alternatively the Assistants, by advising this step, may have hoped to give some nominal recompense to stockholders starved of dividends, and, by manufacturing activity in the company's stock, to divert attention from the languishing condition of the trade."

New stock was issued several times thereafter. In 1693 the Company issued £180,850 of stock at £40 per £100. Four years later, in 1697, the Company issued £475,800 of stock at £12 per £100. Appendix B.1 summarizes the capital of the Royal African Company from 1672 to 1712. I normalise stock transferred to adjust for the stock split and for the issuance of new stock.

Stock could be transferred from trader to trader, provided that the seller was not in debt to the Company and was not accused of violating the monopoly rights of the Company (e.g. by trading goods or slaves without permission from the Company). After the Company approved the trade the buyer would pay the seller in a private transaction. Thus, price was not recorded in the transfer books.[5] However, the Company did record the names of the buyer and seller and the book value (i.e quantity) of stock transferred. The information contained in the transfer books was valuable for the Company. The Company had to keep track of who should receive dividends and who could vote.[6]

The Court of Assistants (the Board of Directors) consisted of managing directors. Stockholders met annually at the General Court to elect the directors. To become a director, a stockholder had to have at least £400 worth of stock. In 1691 this requirement was raised to £1,000. Because of the stock split in 1691, this requirement was equivalent to £250 of the original stock. The Articles of the Company specified that a director could serve two years and could be re-elected after three years.[7]

Appendix B.2 shows elites' share in the total stock between 1679 and 1692. Company directors owned on average 45.4 per cent of the total stock in the first half of the 1680s. The average share fell to 42.5 in the latter half of the 1680s and to 33.7

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[5]See Davies (1957, p. 71) and Carlos et al. (1998, p. 324) for detail.

[6]According to Carlos et al. (1998, p. 321), the Company "had to know who might not yet have fully paid for a subscription, who was eligible to vote at the shareholders meetings, commonly known as the General Court, and who should earn dividends."

[7]For more detail, see Davies (1957, pp. 154-155) and Carlos (1993, p. 119).

per cent in the first two years of the 1690s. Titled elites' share declined from 39.3 per cent on average in the first half of the 1680s to 36.4 per cent in the latter half of the 1680s. Merchants' share declined from 28.3 per cent on average to 27.4 per cent, while politicians' share fell from 24.4 per cent to 22.4 per cent. In all cases, shares were increasing in the first half of the 1680s. In the latter half of the 1680s, shares were decreasing. The share of other elites, namely clergy, goldsmiths, and Stuart courtiers, did not fall in the latter half of the 1680s. In the case of the Company, the majority of stockholders were non-directors. Directors owned on average 45.4 per cent of the total stock between 1679 and 1685. Shareholders preferred dividends to retained earnings because directors could use the latter for their own benefit (La Porta, Lopez-de Silanes, Shleifer, & Vishny, 2000).

The Company attracted influential and powerful people to invest in its stock. Noteworthy people served as chief officers and directors. The heads of the Company, known as the chief officers, were the governor, sub-governor, and deputy governor. The business administration was organized by committees and sub-committees. Directly below the chief officers were 24 members of the Board of Directors. Each assistant or director was assigned to one of four sub-committees: accounts, correspondence, goods, and shipping. The sub-committees governed the daily activities of the Company (Scott, 1912; Davies, 1957; Carlos, 1993; Carlos et al., 1998, 2002). James, the Duke of York and later King James II, was the governor and the largest stockholder of the Company until 1688.[8] Lord George Berkeley (the Earl of Berkeley), Sir Peter Colleton, Sir William Craven (the Earl of Craven), Lawrence du Puy, and Sir Joseph Williamson were among the original subscribers to the Company's capital stock. Also notable among the original subscribers were Lord Thomas Clifford (First Baronet), Lord Henry Bennet (Earl of Arlington), George Villiers (Duke of Buckingham), Anthony Ashley Cooper (Third Earl of Shaftesbury), Prince Rupert, Sir William Coventry, John Locke, Sir George Carteret, Thomas Povey, Lord Hawley, and Mathew Wren (Davies, 1957, p. 62). Together with merchants, noblemen, politicians, and other notable people, they served as Company directors.[9]

However, the Glorious Revolution in 1688 shifted power to the Parliament. This reduced the Company's royal privileges and could have increased competition from other English merchants.[10] The Parliament, owing to its "deliberative and

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[8]King James II's stock was £3,000 (Davies, 1957, p. 65). King William III succeeded King James II as the governor of the Company after 1688. King William III's stock was £1,000 (Pettigrew, 2013, p. 45).

[9]See Davies (1957, Chapter 2), Brewer and Staves (1995, Chapter 21), Pettigrew (2013, Chapter 2) for further detail.

[10]Carlos and Brown-Kruse (1996, p. 293) compare the situation where the Company lost its

consultative style," acted on petitions filed both by those who were lobbying for monopoly rights for the Company and by those who were against them.[11] With royal privileges reduced and the royal charter criticized by other English merchants, it was imperative for the Company to obtain a Parliamentary law confirming its monopoly rights. In 1671, the direct predecessor of the Company attempted to obtain statutory support for its monopoly but did not succeed.[12] The Company struggled and eventually failed to obtain the support it needed from the Parliament because of political inertia. Other English merchants thwarted the Company's strategy of obtaining statutory support for its monopoly.[13]

2.3 Methodology

2.3.1 Shares of Elites and Non-Elites in Stock Tansferred

I examine stock transferred by elites and non-elites from 1672 to 1712. Merchants, noblemen, politicians, and other political and wealthy elites bought and sold a substantial amount of stock during the formative years of the Company from 1672 to 1674. I am interested in the correlation between stock transfers and factors internal to the Company, such as the quadrupling of stock in 1691 and the issuance of new stock thereafter. For example, the quadrupling of stock in 1691 reduced the price

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patent which resulted in competitors increasing market share. "In theoretical terms, the Company was a dominant firm with a competitive fringe – interlopers or smugglers. Dominant firms, over time, face market penetration by the fringe. The rate of penetration depends both on the level of cost advantage and on any government protection the dominant firm might receive, such as patents. Very important for the Royal African Company is the role played by its charter, which can be thought of as akin to patent protection. As long as the charter rights could be enforced, the Company should be more able to maintain its market share. However, if such protection was removed or became uncertain then the rate of penetration by the fringe firms would become more rapid and the dominant firm would lose market share and could eventually fail." Davies (1957, p. 104) makes a similar point. "While prerogative was unchallenged, the company was safe; when prerogative was attacked, the company was in danger; when prerogative was overthrown, the company was doomed... But the shock of the Revolution, the sudden withdrawal of the royal support, so long and generously given that it had come to be relied on, exposed the company to a storm of criticism and attack for which it was ill prepared, and in a moment the monopoly derived from the royal prerogative was gone for ever."

[11]See, for example, Pettigrew (2013, Chapter 4).

[12]The predecessor of the Royal African Company was the Company of Royal Adventurers Trading to Africa. See Davies (1957, p. 123).

[13]According to Pettigrew (2013, pp. 118-119), "The principal structural change in this period was parliamentary supremacy over state regulation of the national economy. Because the monopolistic African Company expressed the monarchical dominion and the separate traders expressed the use of parliamentary influence, the shift overwhelmingly favored the separate traders' campaign to deregulate the slave trade... The separate traders' political strategy was to cultivate the broadest base of public support possible and express that support in petitions to block the African Company's attempts to achieve statutory confirmation of its monopoly."

of stock and could have encouraged more buying, as stock was now more affordable from the point of view of stock traders.

The correlations between stock transfers and factors external to the Company, for example, the Glorious Revolution in 1688, the Nine Years' War or the War of the League of Augsburg from 1688 to 1697, are equally interesting. Initially, elites had an optimistic view of the Company and purchased the lion's share of Company stock traded in the market. But the events in the latter half of the 1680s could have affected the Company's business prospects. The reduction of Company privileges and the criticisms from other English merchants competing with the Company after the Glorious Revolution in 1688 could have diminished the Company's business prospects and discouraged elites from purchasing more stock.[14]

I calculate the share of elite stock traders, e, in stock bought using Equation 2.1,

$$ShareInStockBought_t^e = \frac{\sum_e StockBought_t^e}{\sum_i StockBought_t^i} \quad (2.1)$$

where $\sum_e StockBought_t^e$ is the total book value of stock bought by elites and $\sum_i StockBought_t^i$ is the total book value of stock bought by all stock traders in year t. I use Equation 2.2 to calculate elites' share in stock sold.

$$ShareInStockSold_t^e = \frac{\sum_e StockSold_t^e}{\sum_i StockSold_t^i} \quad (2.2)$$

where $\sum_e StockSold_t^e$ is the total book value of stock sold by elites and $StockSold_t$ is the total book value of stock sold by all stock traders in year t.

To examine whether stock transfers were concentrated among few individuals or widespread among many stock traders, I calculate the Hirschman-Herfindhal Index. In case of stock bought, B, in year t, I use Equation 2.3 to calculate the Index.

$$HHI_t^B = \sum_i (ShareInStockBought_t^i)^2 \quad (2.3)$$

I use Equation 2.4 to calculate the Index in the case of stock sold, S, in year t.

$$HHI_t^S = \sum_i (ShareInStockSold_t^i)^2 \quad (2.4)$$

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[14]Another event that could have affected the Company's business was the Nine Years' War. For effects of war on the Company, see Scott (1903), Scott (1910), Davies (1952), Carlos et al. (1998), Carlos et al. (2002).

2.3.2 Structural Change in the Shares

Following Bai and Perron (2003), I determine abrupt changes in the mean of elites' share in the total value of stock bought, *ShareInStockBought*, around the events. I estimate Equation 2.5.

$$ShareInStockBought_t^e = \alpha_j + u_t \tag{2.5}$$

for $t = T_{j-1} + 1, ..., T_j$ and $j = 1, ..., m+1$. $T_1, ..., T_m$ are the unknown breakpoints, m is the number of breaks, and $m+1$ is the number of regimes. Calculating shares provides a measure of a group's dominance in the buying and selling of stock and adjusts for the changes in the capital stock of the Company after 1691.[15] The coefficient α_j is allowed to change across regimes. The distribution of the error term u_t is allowed to change over time. That is, when there are at least two regimes, the variance is permitted to be the same or different across regimes.[16]

I use Equation 2.6 to test for abrupt changes in the mean of elites' share in stock sold, *ShareInStockSold*.

$$ShareInStockSold_t^e = \beta_j + v_t \tag{2.6}$$

As in Equation 2.5, the coefficient β_j is allowed to change across regimes and the distribution of the error term v_t is allowed to change over time.

A more general model allows for a structural break in the mean or slope of elites' share in the total stock transferred. I use Equation 2.7 to test for abrupt changes in the mean and slope of elites' share in stock bought.

$$ShareInStockBought_t^e = \gamma_j + \delta_j t + w_t \tag{2.7}$$

To test for abrupt changes in the mean and slope of elites' share in stock sold, I use Equation 2.8.

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[15]See Appendix B.1 for changes in the capital stock of the Company.

[16]There are 41 data points from 1672 to 1712. Since the test allows for up to five breaks, I use a 15 per cent trimming and include at least six data points per segment. A 20 per cent trimming allows for up to three breaks, while a 25 per cent trimming allows for up to two breaks. For details, see Bai and Perron (2003, p. 14). I allow for serial correlation in the errors and allow the variance to vary from one regime to another. Hence, I adjust for different error structures across different segments when testing the null hypothesis that there is no abrupt change in the mean of stock transfers. Following Bai and Perron (2003) and Andrews and Monahan (1992), I pre-whiten the residuals using a VAR(1) model and construct a heteroskedasticity and autocorrelation consistent covariance matrix using a quadratic kernel with automatic bandwidth selection based on an AR(1) approximation. See Section 6 of Bai and Perron (2003) for more details.

$$ShareInStockSold_t^e = \epsilon_j + \zeta_j t + x_t \qquad (2.8)$$

The coefficients γ_j, δ_j, ϵ_j, and ζ_j are allowed to change across regimes and the distribution of error terms w_t and x_t are allowed to change over time.

2.4 Data

Information on stock transfers is drawn from the Company's Transfer Books from 1672 to 1712.[17] The Books contain information on the date of transfer, the book value of stock transferred, and the names of the seller and buyer.[18] Sale prices were not recorded in the Books as these prices were privately agreed between buyers and sellers.

The total book value of stock transfers for the whole period was £13,720,795. Appendix B.3 presents the book value per year. The average annual value from 1672 to 1690 was £16,773, while the average annual value from 1691 to 1712 increased to £609,187. Hence, there was a 36-fold increase in the average value per year. Some of the increase can be attributed to the stock split in 1691 and to new stock summarized in Appendix B.1. Following the secondary literature,[19] I normalise book values to isolate the effects of the stock split and issuance of new stock. That is, I make the figures from 1672 to 1690 equivalent in value to those from 1691 to 1712. In so doing, I can say, for example, that a stock with a nominal value of £100 in 1672 is equivalent to one worth £400 in 1692. The total value of stock transfers from 1672 to 1712 reduces to £1,928,511 after normalization. Figure 2.1a presents the normalized book value of transactions per year. After normalization, the average value from 1691 to 1712 was £73,174. Still, there was a fourfold increase in the average value after normalization.

Both transactions and the number of distinct individuals show that the stock split in 1691 stimulated stock trading. There are 12,048 transactions between 1672

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[17]The Transfer Books of the Company are held at the National Archives in London under the T70 series. I am grateful to Professor Ann Carlos for sharing the data from 1672 to 1699. I digitized the data from 1699 to 1712. The manuscript records are numbers 190 to 196 in the T70 series at the National Archives. Some Books are in journal form. Others are in ledger form. Journal Books recorded the day-to-day transactions, which were later summarized in Ledger Books for each buyer or seller. I spell out abbreviated names such as Wm (William), Rob (Robert), Chas (Charles), Sam (Samuel), and Gab (Gabriel). I follow the literature in dealing with names with variant spellings. For example, Abarbanel is spelled in the Books as Abarbanell, Abarbonell, and Abrabanell. Other examples include Caillouel (Caillowel, Cailleul, Caillonel), da Costa (de Costa), de Paz Morenu (de Paz Morenue, de Paz Morena, de Paz Morenn, de Paz Moroni), and Nicholls (Nichols, Nicolls).

[18]Names include titles, including *Capt.*, *Esq.*, *Sir*. Female stock traders had their names prefixed by the letter F in the Books.

[19]See, for examples, Carlos (1993), Carlos et al. (1998), Carlos et al. (2015).

and 1712. I digitized 7,626 (63 per cent) of these transactions. Figure 2.1b shows the number of transactions per year. There was a marked increase in the number of transactions in 1691 onwards.[20] There were on average 56 transactions per year in the period from 1672 to 1691. The average number of transactions per year rose to 499 in the period from 1691 to 1712. Hence, there was a nine-fold increase in the number of transactions in the period from 1691 to 1712. Appendix B.4 presents the number of distinct individual names per year. There was a three-fold increase in the average number of individual names of buyers and sellers in the period from 1691 to 1712. There were 64 names on average from 1672 to 1690. The average rose to 222 in the period from 1691 to 1712.

The increased book value and number of transactions which started in 1698 and peaked in 1700 can be partly explained by the issuance of new stock in 1697. The book value of new stock, £475,800, is more than three-quarters of the existing stock, £625,250.[21] However, the price of each new stock, £12, is only about ten per cent of the price of each stock before 1691. See Appendix B.5 for the average stock price from 1674 to 1712.[22]

To distinguish influential and powerful elites, I draw information from the Oxford Dictionary of National Biography and the secondary literature. Appendix B.6 summarizes my data sources. I code as elites those who were clergy,[23] Company directors, goldsmiths, merchants (e.g. City of London merchants), politicians, Stuart courtiers, or noblemen. Appendix B.7 shows summary statistics of the book value of stock bought and sold, the number of unique individuals, and the number of book transfer transactions. Elites bought 31.3 per cent of the total value of stock bought and sold 31.4 per cent of the total value of stock traded during this period. There are 2,221 unique individual names of stock traders from 1672 to 1712. The largest group of stock traders is the titled elites, at ten per cent of the total stock

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[20] There is only one recorded transaction in 1701. Data from 1699 to 1700 are drawn from T70/190. Data from 1701, 1702, 1703, 1704 are drawn from T70/191. However, there can be gap in years even if there is no gap in series codes of the Transfer Books, as in the case of the Company's Journal and Ledger Books.

[21] The issuance of new capital stock in 1697 brought the capital up to £1,101,050. For a summary of the capital stock of the Royal African Company, see Scott (1903) and Scott (1910).

[22] Carlos et al. (1998, p. 327) argue that the issuance of new stock, which can be viewed as an attempt by the Company to "double" the book value of the stock, resulted in a lower stock price. But the Nine Years' War could have also contributed to the fall in stock price. "After the further stock issue in 1697, when the Company attempted to double the nominal value of the capital stock, the share price had fallen to £14. A stock split by itself would have reduced the price to £28-22, but the deleterious effect of the war must have played a role."

[23] The clergy are bishops, chaplains, clergymen, independent ministers, and priests. However, I cannot distinguish between influential clergy (e.g. clergy who served in the royal court) and ordinary clergy (e.g. clergy in rural parts of England). I check whether the results are robust to re-coding elites without clergy.

traders. Company directors and merchants are the second and third largest groups, respectively. Company directors are 8.4 per cent of stock traders, and merchants are 8.2 per cent of the total stock holders. Elites participated in 33.1 per cent of the total number of transactions from 1672 to 1712.

2.5 Results

Figures 2.2a and 2.2b show the actual shares and fitted values of stock bought and sold by elites over time when the model allows for a structural change in mean, as in Equations 2.5 and 2.6. It also shows the book values of stock traded by elites over time. The Bai-Perron results show a structural change in 1697. Tables 2.1 and 2.2 summarize the structural change in stock bought and sold. The first column shows elite and non-elite stockholders. The second and third columns show periods and the number of years included in each period. The fourth and fifth columns present the estimated mean and standard error of the mean for each period. In 1697, elites' share in stock bought decreased from 56 per cent to 29 per cent. This means that non-elites' share increased from 44 per cent to 71 per cent in 1697. In 1698, elites' share fell from 56 per cent to 28 per cent, while non-elites ' share rose from 44 per cent to 72 per cent. Non-elites dominated the Company stock market in the 1690s.

Figures 2.3a and 2.3b show the results when the model allows for a structural change in mean or slope, such as Equations 2.7 and 2.8. The turning points are 1682, 1689, and 1703 in the case of shares in stock bought. However, the results in the case of shares in stock sold show a different set of turning points, namely 1689 and 1705. Overall, the Bai-Perron results suggest that there were abrupt changes in the 1680s, the 1690s, and in the 1700s.

2.5.1 Non-Elites Participated Substantially in Stock Transfers, 1670s-1680s

Elite and Non-Elite Participation in Stock Transfers

Both elite and non-elite stock traders had substantial shares in stock bought and sold in the 1670s and 1680s. In total, elites bought £177,030 (56 per cent of the total stock bought) and sold £174,400 (55 per cent of the total stock sold). Non-elites bought £141,650 (44 per cent) and sold £144,280 (45 per cent). There are 410 unique individual stock traders from 1672 to 1690, of which 154 (38 per cent of the total individuals) are elites and 256 (62 per cent) are non-elites. Therefore, on average individual members of the elite spent twice as much per capita on stock as non-elites

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spent. The same can be said for stock sold. That is, on average individual members of the elite sold twice the value of stock that non-elites sold. Non-elites participated substantially in the trading of Company stock, albeit at a smaller amount per head.

Figure 2.4 shows the annual Herfindahl-Hirschman Index (HHI) of shares in stock bought and sold from 1672 to 1712. It suggests that trading Company stock was not the business of a few individuals.[24] The HHIs for this period are 0.0016 and 0.0017 for stock bought and sold, respectively. These are low indices considering that the upper bound is one.[25] The highest share in stock bought from 1672 to 1690 was 1.73 per cent. 11 out of 410 individuals had at least a one per cent share in stock bought, nine of whom were elites[26], and the other two were non-elites.[27] In the case of stock sold, the highest share was 1.88 per cent. Ten individuals had at least one per cent share in stock sold. Eight were elites[28] and two were non-elites.[29] Overall, the evidence suggests that the Company stock trading was not confined to a few individuals.

Shares of Some Elites in Stock Transfers

The shares of some types of elites in the market for Company stock declined in the latter half of the 1680s. To begin with, titled elites', directors', and merchant elites' shares declined during this period. Titled elites' share in 1685 decreased from 33 per cent to 17 per cent. In 1686, directors' share declined from 44 per cent to 27 per cent. Merchants' share fell from 26 per cent to 17 per cent in 1688.

Directors' share in stock bought declined in 1686, but their share in stock sold did not fall until 1691. Directors' share in stock bought dropped in 1686, but their share in stock sold declined only in 1691, from 37 per cent to 22 per cent. Similar patterns are observed for merchants and titled elites. Merchants' share in

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[24]Herfindahl-Hirschman Index is calculated as the sum of squared share of individuals. See Equations 2.3 and 2.4.

[25]HHI can be written as $\frac{1}{N} + N\sigma^2$, where N is the number of individuals and σ^2 is the statistical variance of individual shares, $s_i = \frac{1}{N}$. In the extreme case where $N = 1$, HHI is 1.

[26]Elites who had a share in stock bought of at least one per cent are John Bull (1.73 per cent), John Jefferies (1.66 per cent), Sir William Turner (1.54 per cent), Robert Williamson (1.44 per cent), Thomas Hall, Esq. (1.27 per cent), Sir William Langhorne, Baronet (1.26 per cent), Lord George Berkeley, First Earl of Berkeley (1.16 per cent), Sir William Hussey (1.07 per cent), and Capt. Francis Wilshaw (1.07 per cent).

[27]Non-elites who had at least one per cent share in stock bought are Rich Mounteney Jr. (1.51 per cent) and Nich Hayward (1.07 per cent).

[28]Individuals who had at least one per cent share in stock sold are John Bull (1.88 per cent), Sir Robert Vyner, Baronet (1.44 per cent), Robert Williamson (1.38 per cent), Lord George Berkeley (1.32 per cent), Sir William Langhorne (1.29 per cent), John Jefferies (1.22 per cent), Sir William Turner (1.04 per cent), and Sir Thomas Vernon (1.04 per cent).

[29]Non-elites who had at least one per cent share in stock sold are William Goulston (1.62 per cent) and Thomas Rider (1.29 per cent).

stock bought declined in 1688, but their share in stock sold decreased only in 1690, from 25 per cent to 16 per cent, then to nine per cent a decade later. In 1685, titled elites' share in stock bought fell, but their share in stock sold fell only in 1690, from 27 per cent to 14 per cent.

Secondly, the data suggests that some types of elites were selling more Company stock than they were buying in this period. Table 2.3 shows the percentage of stock bought categorised by whether the seller was a director, merchant, or titled elite. In the latter half of the 1680s, all had a percentage less than 100 per cent. Directors had the lowest percentage in this period. Stock bought by directors from 1686 to 1690 was only 66 per cent of the stock directors sold in the same period. The amount of stock bought by directors never went below stock sold in the periods between 1672 and 1685. From 1672 to 1675, directors bought £24,400 of stock. This was 110 per cent of stock sold by directors in the same period. From 1676 to 1680, stock bought was 157 per cent of stock sold. As in earlier periods, stock bought as percentage of stock sold in the period from 1681 to 1685 was above 100 per cent. Stock bought was 114 per cent of stock sold.

Thirdly, the proportion of directors who were selling more than buying was high. There are 51 uniquely-named directors between 1686 and 1690. 39 (76 per cent of directors) were net sellers, of whom 16 (31 per cent) never bought stock after 1690, five were net sellers during and after the period 1686 to 1690, and 18 were net sellers during the period, but net buyers after 1690. 12 (24 per cent) bought more stock than they sold during the period. From 1686 to 1690, directors sold £40,850 and bought only £21,350. Stock bought during this period was just 52 per cent of stock sold. Sir William Langhorne sold £1,850 (45 per cent of the total amount he sold from 1686 to 1690) to elite stockholders, and 55 per cent of his sales were to non-elites. Langhorne sold £400 to William Des Bowerie (Company director), £300 to Jeff Jefferies (member of Parliament), £250 to William Bridges (London merchant), £200 to Thomas Hall, Esq. (Company director), £200 to Sir William Hussey (merchant), £200 to Sir Thomas Cooke (merchant and member of Parliament), £200 to Richard Craddock (Company director), and £100 to Thomas Bludworth (merchant and mayor of London). King James II transferred all his shares to James Grahme, who was a member of Parliament, a Stuart courtier, and Company secretary.[30] Edward Colston sold £400 to Thomas Pitt (member of

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[30]King James II appointed James Grahme keeper of the privy purse and master of the buckhounds. Grahme was the secretary of the Company when King James made the stock transfer. Scott (1903, p. 241) notes that "The original transfer from James II to Graham, the secretary of the company, is bound up in one of the minute books (No. 1456, f. 32), and, although it is dated August 20, 1691, James still entitled 'the King's most excellent Majesty' and 'King James'." King

Parliament), £300 to Henry Nurse (Company director)[31], and £100 to Sir William Fazakerley (Company director). In total, Colston sold £800 (44 per cent of the total amount he sold during the period) to elites. The remainder was sold to non-elites.

Lastly, the directors who sold more stock than they bought were people of authority and power. Sir William Langhorne, who was created a baronet in 1668 after inheriting an East India Company holding from his father William Langhorne, sold £4,100 during the period. This was the largest total sale during the period. King James II transferred £3,000. Edward Colston, both a politician and a merchant from Bristol, and John Jefferies, a politician, sold £2,600 each. Others who sold at least £1,000 were politician and merchant Sir Arthur Ingram (£1,500), politician and merchant Sir William Turner (£1,400), merchant Robert Williamson (£1,200), and Henry Nurse (£1,100). Together, they represent about 60 per cent of total stock sold during the period. Sir Benjamin Bathurst (a city of London elder-merchant) sold £900, Nicholas Cooke (a goldsmith) sold £800, Sir William Turner (a Tory) sold £800, Sir John Cooke (a lawyer) and Peter Joye (a merchant) sold £700 each, Thomas Hall, Esq. (a clergyman) sold £600, and Urban Hall, Esq. sold £550. Lord George Berkeley (first earl of Berkeley), Sir Benjamin Newland (a merchant and politician), Sir Dudley North (an economist and merchant), John Smith (a merchant and politician), Sir Joseph Williamson (a politician), Sir Stephen Evance (a politician), and Sir Peter Paravani (a merchant) all sold £500.[32] The majority of these prominent stockholders were selling out and bought nothing after 1690.[33]

Mortality was not the reason for selling more than buying stock. Sir William Langhorne died 25 years later in 1715. King James II died in 1701, more than a decade after he left London in December 1688. Edward Colston died in 1721, more than three decades years after 1690. Sir John Morgan served in the Parliament between 1689 and 1693, Sir Benjamin Newland between 1689 and 1699, Sir Gabriel Roberts between 1713 and 1714, Sir William Stevens between 1695 and 1698,

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William III and Queen Mary succeeded King James II in 1689. The Company transferred £1,000 from King James II to King William III and Queen Mary. Scott (1903, p. 241) notes that "It may be mentioned that James II held £1,000 'original stock.' After the Revolution it was decided that this stock must be transferred to William and Mary."

[31]Henry Nurse later became an independent trader.

[32]Others were sold by Sir John Ashby (£400), Stephen Pitts (£400), Sir Gabriel Roberts (£400), Sir John Shaw (£400), Sir Henry Tulse (£400), Sir Thomas Vernon (£400), William Sedgwick (£400), Sir William Stevens (£300), Arthur Bailey (£300), Abraham Hill (£300), Robert Stamper (£300), Sir William Craven Earl of Craven (£200), Thomas Crispe (£200), John du Bois (£200), Sir Thomas Bludworth (£100), Sir Thomas Cooke (£100), William Johnson (£300), and Sir John Morgan (£100).

[33]There are a few exceptions. The net buyers were Sir Thomas Bludworth, Sir Thomas Cooke, Sir William of Craven Earl of Craven, Sir James Edwards, Sir William Fazakerley, Thomas Hall, Esq., Urban Hall, Esq., Sir William Hodges First Baronet, William Johnson, Sir John Moore, Henry Nurse, and William Sedgwick.

Sir William Turner between 1690 and 1691, and Sir Thomas Vernon was in the Parliament session from 1690 to 1691.[34] The records indicate that Sir Thomas Bludworth, Nicholas Cooke, Sir Arthur Ingram, and Stephen Pitts passed away in this period.[35] For most sellers, however, death was not the reason for selling their stock. Excluding those who died in this period from the sample, stock sold equals £38,050 while stock bought equals £26,100. Stock sold was 146 per cent of stock bought.

Political Events in the 1680s

The decline in shares of some elites in stock transfers between 1685 and 1690 occurred against the background of political events in the latter half of the seventeenth century. One is the prorogation of the Parliament in 1685. King James II succeeded King Charles II in February 1685. A few months later King James II thwarted a rebellion headed by King Charles II's son, James, Duke of Monmouth. The rebellion began at Lyme Regis in Dorset in June 1685 and ended when the Duke of Monmouth was executed at the Tower of London in July 1685.[36] The rebellion led by the Duke of Monmouth provided a pretext for James to increase the size of his army. King James II employed Catholics in the army and commissioned Catholic officers, violating the Test Acts of 1673, which prohibited the Crown from employing officers who were Catholic. The Parliament expressed their concern about the King's efforts to increase the size of the army and, in so doing, violating the Test Acts. The Parliament was concerned about absolutism. King James II reacted by proroguing Parliament in 1685. In addition, in a campaign to pack the Parliament, King James II abandoned the Tories and turned to Dissenters (Protestants) for support to repeal the Test Acts.[37] King James II reigned without Parliament until King William III and Queen Mary succeeded him in 1689.[38]

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[34]Sir John Ashby died in 1693, Sir Benjamin Bathurst in 1707, Lord George Berkeley in 1698, Edward Colston in 1721, Sir John Cooke in 1710, Sir Dudley North in 1691, John Smith in 1723, and Sir Joseph Williamson in 1701.

[35]In case of a deceased stockholder, dummy transactions could occur. Carlos (1993, pp. 122-123) notes that "shares were transferred to some third party and then transferred to the executor, who might or might not have the same family name as person who died."

[36]See, for example, Pincus (2009, p. 104).

[37](J. Miller, 2014, p. 9) suggests that King James II turned to Dissenters for support to repeal the Test Acts as his agents believed that Dissenters would tolerate Catholics in government offices. "The king's agents argued that they could make sure of the liberty they now enjoyed only if they repealed the Test Acts as well as the penal laws. They claimed that Dissenters had nothing to fear from the Catholics and that they should be happy to repeal the Test Acts, as gesture of gratitude to James."

[38]J. Miller (2014) provides a summary of the view. "Unfortunately for James, events in 1685 showed not only the bankruptcy of Whiggery but the limits to the Tories' support. While prepared to vote him an adequate revenue, the Commons would do nothing to benefit the Catholics.

The other major political event is the Glorious Revolution in 1688. King James II served as the governor of the Company from its creation in 1672 until the Glorious Revolution in 1688. Although the position was honorary[39], close association with the Crown was important for the Company because of the royal privileges granted by the former to the latter. The Company's rights and royal privileges enabled it to monopolise English trade in West Africa. The Company could seize ships and cargoes of "interlopers."[40] It could file cases against interlopers at a royal-sponsored court in West Africa. It could detain interlopers in the Company's forts on the West African coasts. After the Glorious Revolution in 1688, many of these privileges were either withdrawn or became uncertain.

The literature offers different mechanisms through which the Glorious Revolution in 1688 could have affected the Company. Firstly, the sudden withdrawal of royal privileges could be considered a shock to the Company that drew "a storm of criticism and attack."[41] Secondly the Company, anticipating its decline, could have used its charter and royal privileges to optimally manage its decline over time.[42] Thirdly, the shift of power from the Crown to the Parliament after the Glorious Revolution in 1688 made it challenging for the Company to obtain a Parliamentary statute owing to "political inertia." The other English merchants successfully thwarted the Company's strategy of obtaining Parliamentary statute

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In November both Houses expressed their concern about James's enlarging the army and his commissioning eighty to ninety Catholic officers, in defiance of the Test Acts. Standing armies were always seen as instruments of absolutism and James's conduct seemed doubly sinister at the time when Louis XIV was using his army to convert Huguenots to Catholicism. Incensed by what he saw as its groundless suspicion and insubordination, James prorogued the most exuberantly monarchist parliament of the century. It never met again" (J. Miller, 2014, pp. 5-6).

[39]See, for examples, Scott (1903, p. 245) or Scott (1910, p. 20).

[40]The Company referred to other English merchants trading without permission from the Company as "interlopers." See, for examples, Davies (1957, Chapter 3), Carlos and Brown-Kruse (1996), Zahedieh (2010), and Pettigrew (2013).

[41]"While prerogative was unchallenged, the company was safe; when prerogative was attacked, the company was in danger; when prerogative was attacked, the company was in danger; when prerogative was overthrown, the company was doomed... But the shock of the Revolution, the sudden withdrawal of the royal support, so long and generously given that it had come to be relied on, exposed the company to a storm of criticism and attack for which it was ill prepared, and in a moment the monopoly derived from the royal prerogative was gone for ever" (Davies, 1957, p. 104).

[42]Carlos and Brown-Kruse (1996, p. 293) consider the royal charter as a patent that inhibited other English merchants from joining the slave trade. "In theoretical terms, the Company was a dominant firm with a competitive fringe – interlopers or smugglers. Dominant firms, over time, face market penetration by the fringe. The rate of penetration depends both on the level of cost advantage and on any government protection the dominant firm might receive, such as patents. Very important for the Royal African Company is the role played by its charter, which can be thought of as akin to patent protection. As long as the charter rights could be enforced, the Company should be more able to maintain its market share. However, if such protection was removed or became uncertain then the rate of penetration by the fringe firms would become more rapid and the dominant firm would lose market share and could eventually fail."

in support of its monopoly.[43]

Such political events reduced the Company's royal privileges and increased uncertainties faced by the Company. These in turn could have discouraged stock traders and "stock jobbers," or those who buy and sell Company stock for gain, from investing in the Company stock. Since the Company attracted elites during the Company's formative years, elites were particularly vulnerable to such events. Sir William Langhorne bought £4,000 from 1683 to 1684. He sold £4,100 from 1688 to 1689, and never bought or sold stock again after 1689. An example of a stock jobber who stopped buying and selling stock in the latter half of the 1680s was Lord George Berkeley. On 17 August 1677, he bought £400 worth of stock. He sold £100 a week later, on 25 August. On 25 September and 8 November of the same year, he bought £500 and £300, respectively. On 20 December he sold £600. He continued doing this until 1688. On 15 April 1687, he bought £100. The last transaction he made in the 1680s was on 11 January 1688, when he sold £50. Similar cases include John Bull, John Jefferies, Sir William Turner, Robert Williamson, Sir William Hussey, Capt. Francis Wilshaw, and Sir Benjamin Bathurst.

2.5.2 Non-Elites Dominated Stock Transfers, 1690s-1700s

By 1698, non-elites' share in stock bought and sold had already reached 71 per cent and 72 per cent, respectively. Figures 2.2a and 2.2b show the shares and book values of stock bought and sold by elites over time. Both figures show that elites' shares were declining not because elites were buying or selling less stock. Neither stock bought nor stock sold by elites was declining in absolute value. Instead, elites' shares were falling because non-elites bought and sold much more than elites did.

The quadrupling of stock in 1691 was essentially a stock split that provided a 300 per cent bonus to every stockholder. The literature provides three possible explanations for the bonus. One is to make the smallest unit of stock cheaper. The second is to signal that there was "great improvement" in the Company's trade. Lastly, there was indeed a great improvement in the Company's trade, and the bonus was a reflection of a profitable trade. Stock prices fell after the stock split.[44]

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[43] "The principal structural change in this period was parliamentary supremacy over state regulation of the national economy. Because the monopolistic African Company expressed the monarchical dominion and the separate traders expressed the use of parliamentary influence, the shift overwhelmingly favored the separate traders' campaign to deregulate the slave trade... The separate traders' political strategy was to cultivate the broadest base of public support possible and express that support in petitions to block the African Company's attempts to achieve statutory confirmation of its monopoly" (Pettigrew, 2013, pp. 118-119).

[44] Carlos et al. (1998, p. 327) argue, "As one would expect, once the company started to increase the nominal value of the capital stock, the share prices fell. After the fourfold increase in shares in

In particular, average stock price fell in the post-1691 period. Appendix B.5 shows the average stock price before and after the quadrupling of stock in 1691.[45]

Non-elites were interested in investing in Company stock but were constrained by wealth or income. They benefited from the stock split as it made stock more affordable. Table 2.4 shows the number of transactions for different blocks of stock before and after the stock split in 1691. The total number of transactions increased more than ten-fold after 1691. From 1672 to 1690, the smallest block (i.e. £0-99) was only one per cent of all transactions. However, as stock became more affordable after 1691, the £0-99 block increased from one per cent to 33 per cent of the total number of transactions. The results suggest that non-elites were interested in investing in Company stock but were initially constrained by wealth or income and benefited from the fall in stock prices. When stock became more affordable, they bought it.

As a group, non-elites dominated the stock market. Individually, however, none of them dominated. The HHI for this period is 0.00019 for stock bought and 0.00018 for stock sold. The indices are too low to conclude that stock trading was dominated by a few individuals. William Shepherd, a goldsmith banker, had the highest share in total stock bought and sold. But his shares were too few to say that he dominated the market. His shares between 1691 and 1712 are only 2.7 per cent of stock bought and 2.3 per cent of stock sold.

The results suggest that stock traders were not interested in controlling the Company's organization in the period after 1691.[46] 42 per cent of transactions were in the £101-200 block. Only six per cent were in the £301-500 block, reflecting the number of stock required to get elected to the Company's directorship. Instead, stock traders were interested in the buying and selling of stock. William Shepherd is an example. He was the most active buyer and seller after 1691. From 1691 to 1700, he bought £362,125 in 434 transactions and sold £313,700 in 448 transactions. Hence, William Shepherd sold 87 per cent of the amount he bought at an average turn-over rate of 50 transactions per year.

1691, Scott lists the price of a share in 1692 as between £56 and £44, which is close to what one might expect if the presplit market price was £173."

[45]Stock price data for the Company is sparse before the 1690s. See, for examples, Scott (1903), Davies (1957), Carlos et al. (2002), and Carlos et al. (2015).

[46]Carlos et al. (1998, p. 329) make the same point for the period before 1691. "More than 50 percent of the activity between 1672 to 1691 was taking place in the £100 to £200 range, with 29 per cent of transactions in the £301 to £500 range reflecting the election requirement. These data suggest that people mainly held one or two shares in this company and were not interested in control over the actual activities of the organization."

2.6 Conclusion

I have analyzed the composition of the Royal African Company stock transfer from 1672 to 1712. Consistent with the literature arguing that capital market experience was already widespread even before the bull market in the 1690s, I have shown quantitative evidence that non-elites participated substantially in the Company stock market from 1672 to 1712. Using the Herfindahl-Hirschman Index, I have shown that the experience was not confined to a few stock holders. The evidence supports the view that there was already participation in the London capital market before 1688. It shows that the participation was widespread and included both elites and non-elites. Non-elites dominated the market for Company stock when it became more affordable after the stock split in 1691.

The shares of some types of elites, particularly Company directors and merchants, declined in the latter half of the 1680s. The decline happened at a time of political upheaval that reduced the Company's royal privileges and future prospects. Certain types of investors could have reacted to this by trading less Company stock or by holding less stock. The evidence supports the view that the political turmoil in the latter part of the 1690s had an effect on the business prospects for the Company.

Figure 2.1: Stock Transfers, 1672-1712
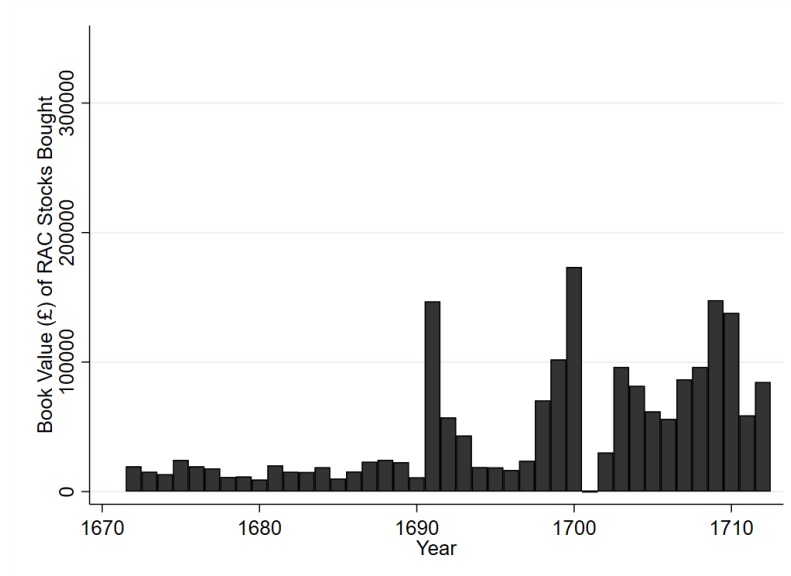
(a) Normalized Book Value
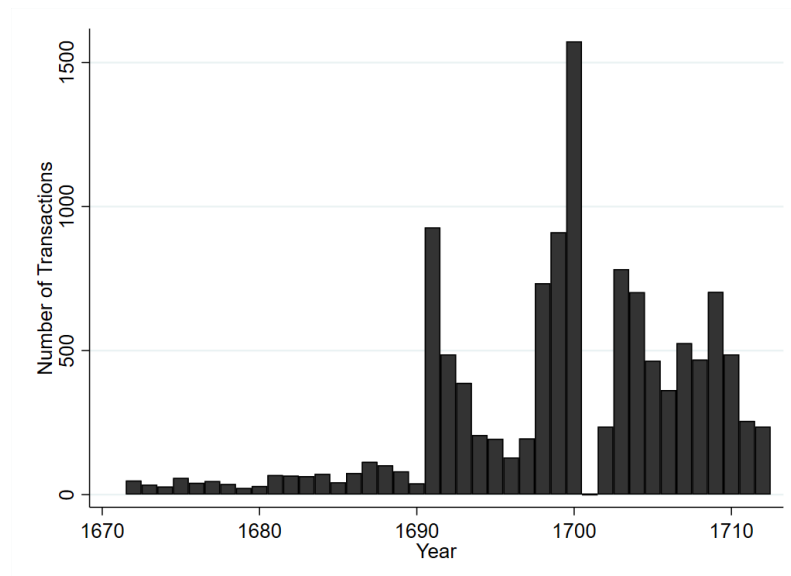
(b) Number of Transactions

Notes: (a) The book values of transactions from 1672 to 1712 are normalized after the stock split in 1691 and issuance of new stock summarized in Appendix B.1. (b) The number of transactions is derived from the number of stock bought or sold. *Source:* T70/190-196

Figure 2.2: Elites' Share in Total Stock Bought and Sold, 1672-1712
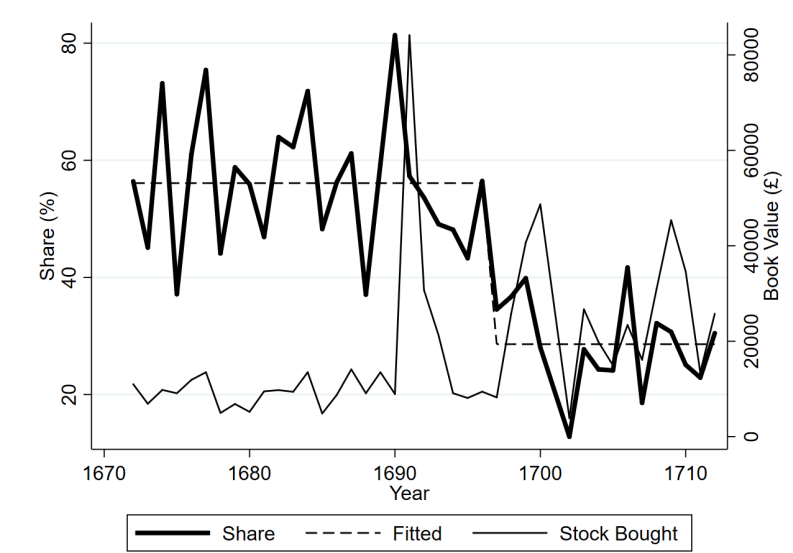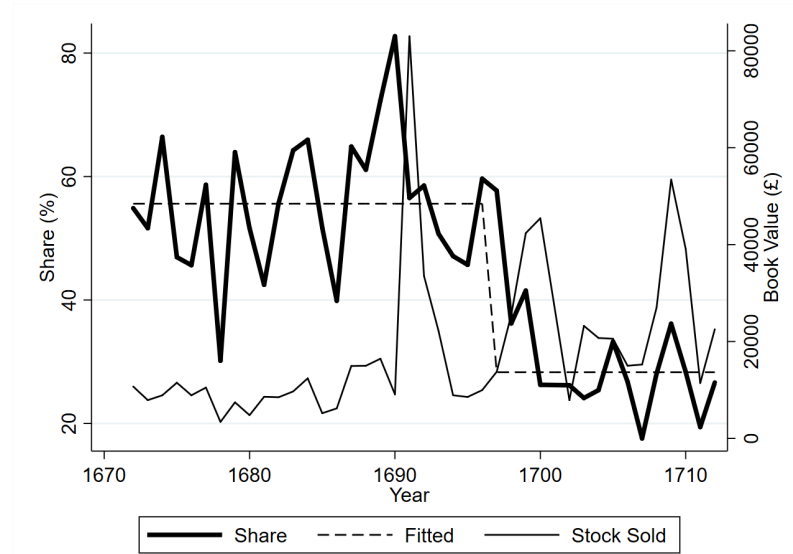
(a) Bought

(b) Sold

Notes: (a) *Share* is elites' share in the total stock bought from 1672 to 1712. *Fitted* is the fitted values estimated using Equation 2.5. The turning point is 1697. *Stock Bought* is the normalized book value of stock bought by elites. *Source:* T70/190-196. (b) *Share* is elites' share in the total stock sold. *Fitted* is the fitted values estimated using Equation 2.6. The turning point is 1697. *Stock Sold* is the normalized book value of stock sold by elites. *Source:* T70/190-196

Figure 2.3: Elites' Share in Total Stock Bought and Sold, 1672-1712
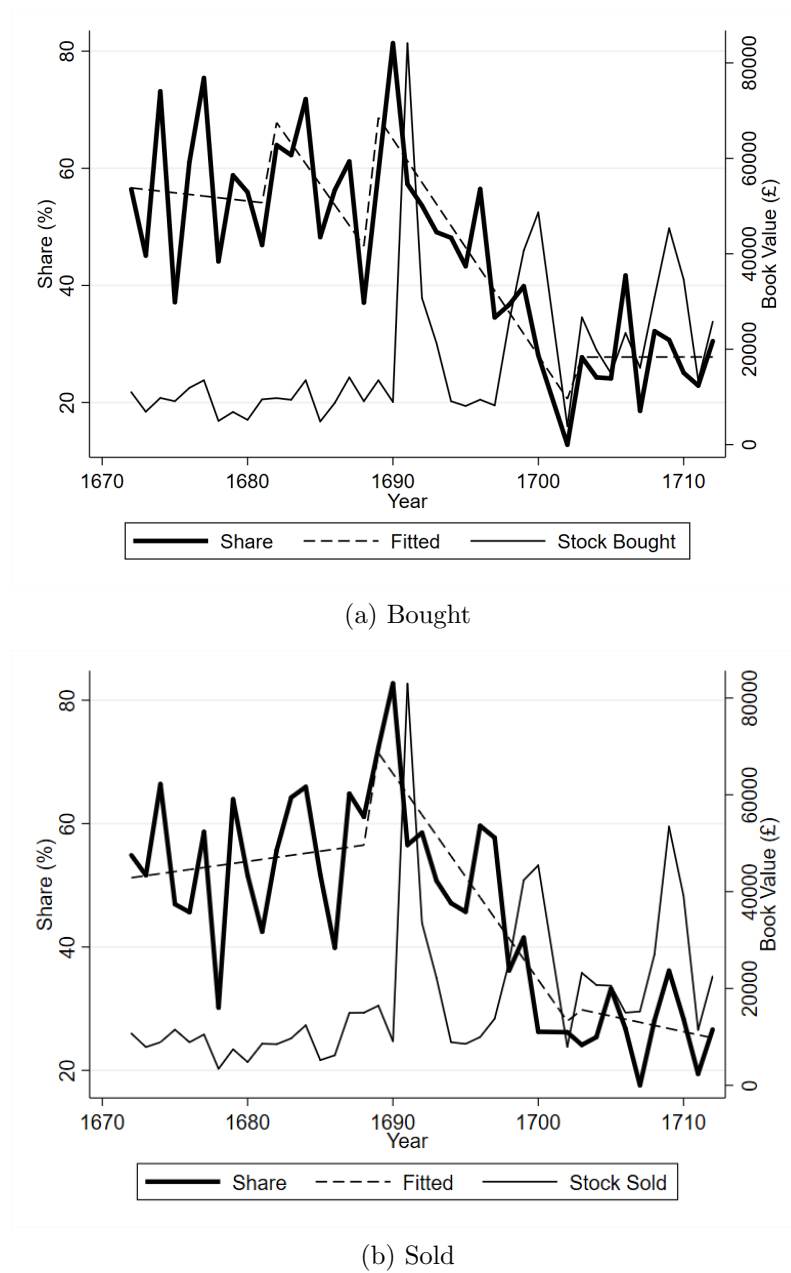
(a) Bought

(b) Sold

Notes: (a) *Share* is elites' share in the total stock bought from 1672 to 1712. *Fitted* is the fitted values estimated allowing for abrupt change in mean or slope. The turning points are 1682, 1689, and 1703. *Stock Bought* is the normalized book value of stock bought by elites. *Source:* T70/190-196. (b) *Share* is elites' share in the total stock sold. *Fitted* is the fitted values estimated allowing for abrupt change in mean or slope. The turning points are 1689 and 1705. *Stock Sold* is the normalized book value of stock sold by elites. *Source:* T70/190-196

Figure 2.4: Herfindahl-Hirschman Index of Shares in Stock Sold and Bought, 1672-1712
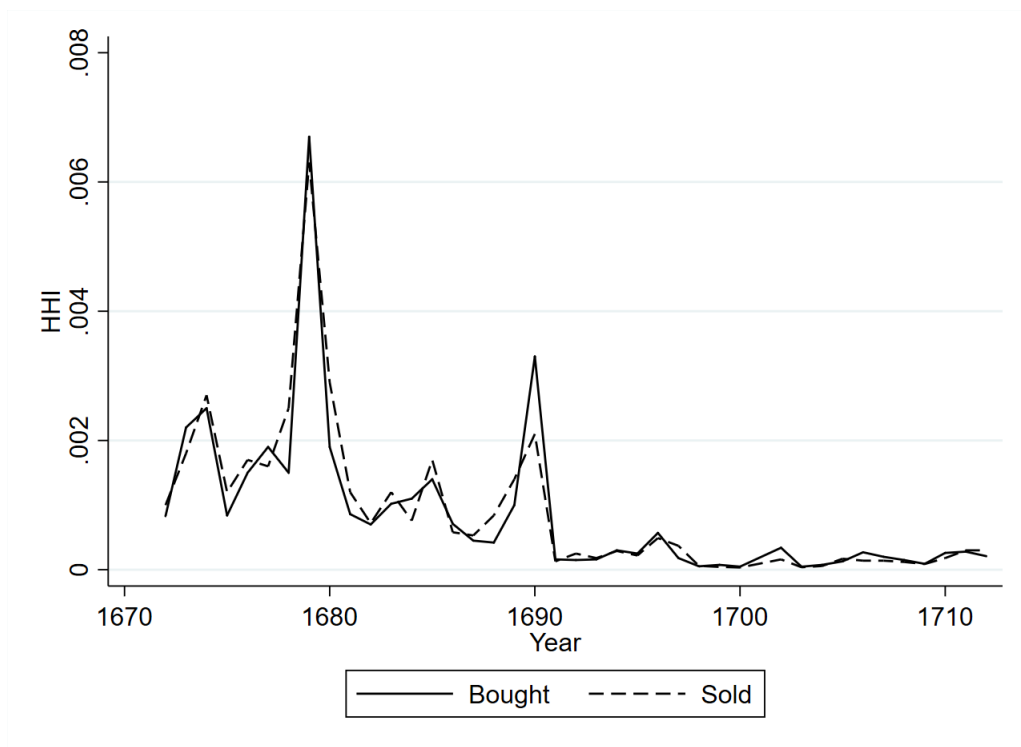
Notes: Herfindahl-Hirschman Indices for stock bought and sold are given by Equations 2.3 and 2.4, respectively. *Source:* T70/190-196

Table 2.1: Structural Change in Stock Bought by Stock Traders, 1672-1712

Stock Trader	Period	N	$\hat{\alpha}_j$	SE
Elite	1672-1696	25	56.1	1.7
	1697-1712	15	28.6	1.5
Clergy	1672-1680	9	0.2	0.2
	1681-1689	9	3.3	0.5
	1690-1712	22	1.0	0.2
Director	1672-1685	14	43.7	3.1
	1686-1696	11	26.6	2.7
	1697-1712	15	13.8	1.9
Goldsmith	1672-1701	29	5.6	1.5
	1702-1712	11	0.05	0.03
Merchant	1672-1687	16	26.1	1.6
	1688-1696	9	16.6	1.7
	1697-1712	15	9.5	1.0
Politician	1672-1690	19	18.2	1.5
	1691-1712	21	4.4	0.7
Stuart Courtier	1672-1712	40	1.5	0.6
Titled	1672-1684	13	33.0	3.9
	1685-1699	15	16.9	2.3
	1700-1712	12	8.2	0.8
Non-Elite	1672-1690	25	43.9	1.7
	1697-1712	15	71.4	1.5

Notes: I estimate the mean share in stock bought by each group of stock traders using Bai and Perron (2003). The model is given in Equation 2.5. There are in total nine separate regressions. The $\hat{\alpha}_j$ column reports the estimated mean for each regression. Following Bai and Perron (2003) and Andrews and Monahan (1992), I pre-whiten the residuals using a VAR(1) and construct a heteroskedasticity and autocorrelation consistent covariance matrix using a quadratic kernel with automatic bandwidth selection based on an AR(1) approximation. *SE* refers to the heteroskedasticity and autocorrelation robust standard errors. *N* refers to the number of observations relevant to the period. *Source:* T70/190-196; Andrews and Monahan (1992); Carlos et al. (1998); Bai and Perron (2003)

Table 2.2: Structural Change in Stock Sold by Stock Traders, 1672-1712

Stock Trader	Period	N	$\hat{\beta}_j$	SE
Elite	1672-1697	26	55.6	2.5
	1698-1712	14	28.3	1.8
Clergy	1672-1712	40	1.3	0.3
Director	1672-1690	19	36.5	5.4
	1691-1699	9	22.4	1.3
	1700-1712	12	13.0	0.9
Goldsmith	1672-1712	40	3.6	0.8
Merchant	1672-1684	13	29.6	2.4
	1685-1699	15	18.2	1.5
	1700-1712	12	9.3	0.7
Politician	1672-1697	26	14.1	1.9
	1698-1712	14	3.7	0.3
Stuart Courtier	1672-1694	23	2.4	0.4
	1695-1712	17	0.3	0.5
Titled	1672-1689	18	27.3	2.8
	1690-1712	22	14.1	2.1
Non-Elite	1672-1697	26	44.4	2.5
	1698-1712	14	71.7	1.8

Notes: I estimate the mean share in stock sold by each group of stock traders using Bai and Perron (2003). The model is given in Equation 2.6. There are in total nine separate regressions. The $\hat{\beta}_j$ column reports the estimated mean for each regression. Following Bai and Perron (2003) and Andrews and Monahan (1992), I pre-whiten the residuals using a VAR(1) and construct a heteroskedasticity and autocorrelation consistent covariance matrix using a quadratic kernel with automatic bandwidth selection based on an AR(1) approximation. *SE* refers to the heteroskedasticity and autocorrelation robust standard errors. *N* refers to the number of observations relevant to the period. *Source:* T70/190-196; Andrews and Monahan (1992); Carlos et al. (1998); Bai and Perron (2003)

Table 2.3: Directors, Merchants, and Titled Elites, 1672-1690

	Director			Merchant			Titled		
Year	Bought	Sold	%	Bought	Sold	%	Bought	Sold	%
1672-1675	24400	22100	*110*	17000	20100	*85*	19300	17700	*109*
1676-1680	31570	20100	*157*	19750	15300	*129*	28300	17400	*163*
1681-1685	40210	35250	*114*	19350	23000	*84*	24600	26100	*94*
1686-1690	27100	40850	*66*	18800	20000	*94*	21800	27850	*78*
1691-1695	216500	217500	*100*	156300	160600	*97*	146550	150900	*97*
1696-1700	502910	493050	*102*	370040	436340	*85*	437510	462050	*95*
1701-1705	329823	336900	*98*	182110	256500	*71*	249000	325650	*76*
1706-1710	610802	661100	*92*	575692	434800	*132*	457450	558700	*82*
1711-1712	232000	165700	*140*	65900	94100	*70*	41000	75200	*55*

Notes: *Bought* shows the book value of stock bought for each period. *Sold* shows the book value of stock sold for each period. *%* shows the percentage of stock bought in terms of stock sold. *Source:* T70/190-196

Table 2.4: Royal African Company Share Size, 1672-1712

	Share Size						
Period	0-99	100	101-200	201-300	301-500	> 500	Total
1672-1690	20	630	592	222	512	168	2144
	1%	*29%*	*28%*	*10%*	*24%*	*8%*	
1691-1712	7217	606	9223	2840	1212	845	21943
	33%	*3%*	*42%*	*13%*	*6%*	*4%*	

Notes: Both the number of transactions and percentage of the total transactions in the period are given for each share size. Block sizes are adopted from Carlos (1993) and Carlos et al. (1998). *Source:* T70/190-196; Carlos (1993); Carlos et al. (1998)

Chapter 3

Turning Points in the Slave Trade

3.1 Introduction

The literature suggests that slave exports from Africa as a whole responded to external demand. Curtin (1975b, p. 114) provides a summary of the traditional view on the supply and demand factors in the slave trade saying, "Where 'Africa' appears to supply slaves in response to economic demand, the individual coastal regions appear to supply slaves in response to their own patterns of political affairs, anarchy, civil and international warfare." But previous analysis of the slaves embarked from Africa relied only on decennial or quadranscentennial data. As Behrendt (1997, p. 211) points out, relying only on these data when yearly data are available might leave out important details, such as significant annual turning points in the slave trade. I ask to what extent were turning points in slave exports unique to specific regions, and to what extent were they common across all of Africa? Analysis of individual African regions shows that slave exports are determined by both external demand and response to such demand. This is important because it helps us understand the determinants of demand for and supply of slaves from Africa.

Using the Trans-Atlantic Slave Trade Database, I determine whether structural breaks in slaves exported from different African regions are related to factors external or internal to Africa. I use the Bai and Perron (2003) methodology to test for structural breaks in slaves exported from eight African regions, namely Senegambia, Sierra Leone, the Windward Coast, the Gold Coast, the Bight of Benin, the Bight of Biafra, West Central Africa, and Southeast Africa from 1514 to 1866. The Bai-Perron test determines structural breaks in the mean and trend

of time-series data. It distinguishes a structural break from a mere deviation from the mean or trend of the data.

The Bai-Perron results show that external demand shocks are relatively important in explaining the end of the slave trade. Slave exports from Africa started decreasing in 1815. When efforts to abolish the slave trade started in the 1780s, slave exports from the Bight of Biafra diminished quickly. The slave trade in the Windward and Gold Coasts declined immediately when Britain abolished its slave trade in 1807. For a map of the major regions of Africa, see Appendix C.1. In 1815, slave exports from West Central Africa, the Bight of Benin, and Southeast Africa dropped discontinuously. Senegambia and Sierra Leone are exceptions, as slave exports from these regions declined earlier than in other regions. Slave exports from Senegambia and Sierra Leone started declining in 1752 and 1760, respectively.

Supply shocks are also relatively important in explaining how slave exports changed over time. Generally, slave exports increased with conflicts and decreased with peace. Some examples include the collapse of the Wolof Kingdom in sixteenth-century Senegambia, religious wars in eighteenth-century Sierra Leone and the Windward Coast, the Asante expansion in the seventeenth-century Gold Coast, the Oyo expansion in eighteenth-century Bight of Benin, and inland expansions of slavery in eighteenth-century Bight of Biafra, West Central Africa, and Southeast Africa.

The results are robust to heteroskedasticity and serial correlation in the error term. Furthermore, the results are robust when the error term is allowed to vary across regimes or time periods determined by structural breaks.

I contribute to a growing literature that analyzes supply and demand factors in the slave trade (Curtin, 1972; Behrendt, 1997; Eltis & Richardson, 2010; Walvin, 2014). In this paper, I use the Bai-Perron structural break test to analyze annual data on slaves embarked from Africa during the slave trade. Africa exported 12.5 million slaves during the trans-Atlantic slave trade (Eltis, 2016). Contrary to existing views, the abolition of the slave trade had an immediate and significant impact on the slave trade, even if countries such as Portugal and Brazil continued transporting slaves after the abolition. The abolition was the beginning of the end of the trans-Atlantic slave trade.

I also contribute to the economic literature on the slave trade (Nunn, 2008; Nunn & Wantchekon, 2011; Whatley & Gillezeau, 2011; Whatley, 2012; Dalton & Leung, 2015; Fenske & Kala, 2015; Obikili, 2016; Whatley, 2018). To the best of my knowledge, this paper is the first to use a structural break test to relate the chronology of historical events to the rise and fall of the trans-Atlantic slave trade.

In Section 3.2, I provide historical background. In Sections 3.3 and 3.4, I discuss the Bai-Perron methodology and data, respectively. In Section 3.5, I present and discuss the results for each African region. I provide an overall discussion at the end of Section 3.5. The conclusion is in Section 3.6.

3.2 Historical Background

In 1482, the Portuguese built the El Mina Castle on the Gold Coast and gained access to the gold mines inland. They bought slaves from other African regions, from Benin for example, and traded them to African merchants in exchange for gold. Slaves worked in gold production. Direct slave trade between Africa and the New World began in the 1520s. In 1526, King Afonso of the Kingdom of Kongo told Portuguese officials of the adverse effects of the slave trade on the Kingdom, particularly depopulation, and expressed the wish to prohibit the slave trade within the Kingdom. In response, the Portuguese created a new slave port at Luanda in 1576 (Iliffe, 2017, pp. 137-138). Brazil demanded slaves to work in its new plantations in the late sixteenth century (Curtin, Feierman, Thompson, & Vansina, 1995, p. 184). Slave exports increased until about 1640s. After the union between Spain and Portugal ended in 1640, it became illegal for Portuguese merchants to deliver slaves to Spanish territories (Eltis & Richardson, 2010). Slave exports temporarily decreased during this period, as shown in Figure 3.1. Slave exports picked up in the 1650s with the rise of the New World sugar plantations. European and African diseases decimated the local population and African slaves became the main source of labour for sugar and other New World products (Gemery & Hogendorn, 1974). The supply of slaves increased in response to demand during this period and, as a result, the price of slaves did not increase (Manning, 1990, pp. 129-130).

The trans-Atlantic slave trade entered a new era by the end of the seventeenth century. It was during this period that slaves replaced gold as the most valuable African export (Bean, 1974). The literature suggests that the slave trade peaked in the latter half of the eighteenth century (Curtin, 1972; Curtin et al., 1995; H. S. Klein, 2010; Iliffe, 2017) and attributes the decline in the trans-Atlantic slave trade to the European wars of the 1790s. According to Curtin (1972, pp. 266-267), for example, "The slave trade began to decline in the 1790s – not after 1808 with the legal abolition of the British trade. The drop of the 1790s seems to be accountable to the Napoleonic Wars, and it continued into the decade of the 1800s." Figure 3.1, however, suggests that the peak was reached during the first half of the nineteenth

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century. The demise of the slave trade is correlated to its legal abolition by major countries involved in the trade, such as Britain and the U.S.A.

Appendix C.2 shows the number of slaves embarked from Africa by country of purchaser from 1514 to 1866. Portugal and Brazil[1] embarked 39 per cent of the total slaves purchased from Africa. Great Britain embarked 31 per cent. Together, Portugal and Brazil and Great Britain, embarked 70 per cent. France, which embarked 13 per cent, was third in terms of the number of slaves embarked from Africa. The Netherlands, Spain and Uruguay[2], the U.S.A., and Denmark and Baltic[3] embarked 6, 5, 4, and 1 per cent, respectively. Whether it was due to moral or economic pressures (Williams, 1994; Solow & Engerman, 2004; Eltis, 2016), the slave trade was legally abolished in these slave-trading nations. Denmark abolished its slave trade in 1803, and, among these nations, it was the first to do so. Great Britain and the U.S.A. abolished their slave trades in 1807. The Netherlands and France ended their slave trades in 1814 and 1815, respectively. In 1817, a treaty was signed between Great Britain and Spain in which the latter agreed to end its slave trade in 1820. Also in this year, Portugal and Spain joined Great Britain in establishing courts that determined cases of slave ships captured trading illegally. Brazil ended its slave trade in 1831, while Portugal abolished its slave trade in 1836. Rebellions and revolutions with anti-slavery and anti-colonial sentiments occurred prior to the abolition of the slave trade. Such events include the Jamaican revolts in the 1760s and the Haitian revolution in St. Domingue in the 1790s. The latter resulted in Haiti's independence from France in 1804 (Eltis & Walvin, 1981; Manning, 1990; Thornton, 1998; Eltis & Richardson, 2010; Walvin, 2014).

3.3   Methodology

The Bai and Perron (2003) methodology endogenously determines sudden changes in the intercept and slope of a series. The methodology uses the time-series properties of a series to determine the structural breaks. Consider a model given by Equation 3.1.

$$y_t = z_t' \delta_j + u_t \tag{3.1}$$

for $t = T_{j-1} + 1, ..., T_j$ and $j = 1, ..., m + 1$, where m is the number of breaks, $m + 1$

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[1]Portuguese and Brazilian traders are coded as Portugal/Brazil in the Trans-Atlantic Slave Trade Database.

[2]Spanish and Uruguayan traders are coded as Spain/Uruguay in the Database.

[3]Danish and Baltic traders are coded as Denmark/Baltic in the Database.

is the number of regimes, and the indices $T_1, ..., T_m$ refer to break points.[4] y_t is the dependent variable and z_t is a vector of covariates. Following Bai and Perron, the model I run includes an intercept and a trend that are allowed to change across regimes. That is, I allow the error term, u_t, to change across regimes. I also allow heteroskedasticity and serial correlation in the error term. As in Bai and Perron, I follow Andrews and Monahan (1992) in adjusting for heteroskedasticity and serial correlation.[5] Such adjustment produces heteroskedasticity-and-autocorrelation consistent (HAC) standard errors. In all regression analyses, I check whether the results are robust to heterogeneity in the error terms across regimes and whether the results are robust to heteroskedasticity and serial correlation in the error term. The Bai-Perron test differentiates long-term from short-term changes in the mean or trend of a time-series data. The test is useful when a structural break is visually difficult to differentiate from a blip or deviation from the long-run trend of a series.

Economists and economic historians use the Bai-Perron methodology to determine the impact of historical events on social and economic outcomes. Fenske and Kala (2017) find a permanent increase in African conflicts after Britain abolished its slave trade in 1807. One of the methodologies Fenske and Kala used to determine structural breaks in African conflicts is a Bai-Perron test. Kaila, Singhal, and Tuteja (2018) use a Bai-Perron test to determine the effect of a border that divides the Indian state of Jammu and Kashmir into a Pakistan-controlled and Indian-controlled areas. Kaila, Singhal, and Tuteja find that the border aided peace and economic development in the state. Chaney (2016) applies a Bai-Perron test to a data set of scientific books produced in the seventeenth-century Istanbul and finds that the production of scientific books decreased with the rise of political elites. Kelly and Ó Gráda (2010) use a Bai-Perron test and quantify the impact of the Little Ice Age, the period of sustained drop in the temperature from the fourteenth to the nineteenth centuries, on crop yields in pre-industrial Western Europe. Kelly and Ó Gráda find no structural breaks in the climate and suggest that the Little Ice Age had little economic impact on Western Europe. Waldenström and Frey (2008) use a Bai-Perron test and analyze turning points in Nordic sovereign bond yields and spreads during the Second World War. Contrary to a conventional Nordic view, Waldenström and Frey conclude that people in Nordic countries did perceive the Second World War as a risky event, reflected in the sudden shifts in the sovereign

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[4]The convention is to set $T_0 = 0$ and $T_{m+1} = T$, where T is the total number of observations in a series.

[5]Andrews and Monahan (1992) use a VAR(1) model to pre-whiten the residuals and construct a heteroskedasticity-and-autocorrelation consistent covariance matrix using quadratic kernel with automatic bandwidth selection based on an AR(1) approximation. For more details, see Section 6 of Bai and Perron (2003).

debt yields and spreads. The Bai-Perron test is a useful toolkit for analyzing turning points in history.

A visual inspection of data on slaves exported from Africa from 1514 to 1866 suggests that the peak was reached in 1825. Figure 3.1 shows the overall time-trend of the slave trade in Africa. The Bai-Perron test, however, suggests that a structural break in slave exports occurred in 1815. The peak in 1825 is not a structural break but a mere deviation from the trend that changed in 1815. Failing to recognize 1815 as a turning point undermines the importance of the events in 1815. After the wars in 1815, when major countries such as Britain, the Netherlands, France, and the U.S.A. became opponents of the slave trade, the trend of the slave trade started moving towards zero. In 1815, in particular, Britain started using its navy to suppress the slave trade.

The traditional literature argues that the "effective end" of the Atlantic slave trade occurred in the middle of the nineteenth century when American countries, such as Brazil and Cuba, ended their slave trade with Africa.[6] The Bai-Perron results suggest that the effective end of the Atlantic slave trade began in 1815, although illegal slave trading continued after that year. The Napoleonic Wars between 1793 and 1815 disrupted the slave trade (O'Rourke, 2006, p. 130).

Another turning point in African slave exports is the increase in 1698. Eltis and Richardson (2010) and Walvin (2014) provide a timeline of major events in the slave trade. This includes events such as the discovery of gold in Brazil in 1695 and the end of Nine Years' War in 1697, which could explain the sudden increase in slave exports from Africa in 1698. However, the timelines fail to mention other potentially relevant events such as the Komenda Wars from 1694 to 1700 and the "Ten Per Cent" Act of 1698. The Komenda Wars in the Gold Coast were primarily fought between the Kingdom of Eguafo and the Dutch West India Company, but other local settlements, including Ahanta, Adom, and Fetu, and the Royal African Company were also involved in the War (Law, 2007). Another significant event in 1698 was the passing into law of the Ten Per Cent Act. The Act allowed English merchants to participate in the slave trade upon paying ten per cent duties on imports and exports to the Royal African Company (Davies, 1957; Pettigrew, 2013). This increased the demand for slaves, particularly from English merchants. Appendix C.2 suggests that a majority of slaves exported from Africa during the the 1690s was purchased by English merchants. Appendix C.7 suggests that slaves exports from the Gold Coast

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[6]See, for examples, Curtin et al. (1995), Eltis and Richardson (2010), Lovejoy (2011). "The effective end of the Atlantic slave trade came only when American countries began to enforce their own anti-slave-trade laws, as Brazil did after 1850, and as Cuba did after the late 1860s." (Curtin et al., 1995, p. 332).

surged during the Komenda Wars and that a majority of slaves exported from the Gold Coast during the period was purchased by English merchants. The evidence suggests, then, that the Komenda Wars and the Ten Per Cent Act were important in explaining the increase in slave exports from Africa, particularly from the Gold Coast, in 1698.

3.4   Data

The source of data on slaves embarked from Africa is the Trans-Atlantic Slave Trade Database.[7]   The Database contains information on 34,948 slave-trading voyages between 1514 and 1866.[8]   I draw information on slaves embarked from the major regions of Africa, namely Senegambia, Sierra Leone, the Windward Coast, the Gold Coast, the Bight of Benin, the Bight of Biafra, West Central Africa, and Southeast Africa, as defined in the Database. See Appendix C.1 for a map of the major regions of Africa. In many cases, the authors of the Database have to impute the number of slaves embarked from Africa. Out of 29,095 ships that left Africa with slaves, only 8,272 (28 per cent) have information on the number of slaves embarked.

   To make a reasonable inference about the number of slaves on other voyages from Africa, the authors of the Database depended on existing information, including deaths among slaves embarked based on 6,438 voyages.[9]   In particular, the authors imputed the number of slaves embarked based on the information provided by the 8,272 voyages and subtracted from this the number of slaves who died in the Middle Passage based on the information provided by the 6,438 voyages.

   In this paper, I calculate the annual number of slaves embarked for each region from 1514 to 1866. Eltis and Richardson (2010) provide summary statistics from the Database. The number of slaves embarked from Africa between 1514 and 1866 is 12,520,170.[10]   Appendix C.3 provides a summary of slaves embarked from the African regions. West Central Africa exported the most slaves. It exported 32.8 per cent of the total slaves from Africa. The Bight of Benin, also called the Slave Coast, which exported 14.5 per cent of the total slaves, is the second highest. The Bight of Biafra, which exported 10.5 per cent of the total slaves, is the third largest

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[7]The database is accessible from http://slavevoyages.org/voyage/.

[8]Dalton and Leung (2019) notes that the Database is widely used by economists and historians in their African studies. Eltis (2016) provides an introduction to the database.

[9]The deaths-to-slaves-embarked ratio for all Africa based on the available information is 11.9 per cent. The ratio is highest in Southeast Africa (19.3 per cent) and lowest in West Central Africa (9.1 per cent). See the section entitled "Imputing Number of Slaves" in Eltis (2016).

[10]See Table 4 in Eltis and Richardson (2010). There is a discrepancy between Table 4 and the figures obtained from the website because of the rounding rules adopted by Eltis and Richardson.

slave exporter. Together, these regions exported 57.8 per cent of the total slaves from Africa. The rest of the regions, namely the Gold Coast (seven per cent of the total), Senegambia (5.7 per cent), Southeast Africa (3.8 per cent), Sierra Leone (2.3 per cent), and the Windward Coast (1.9 per cent), exported a total of 20.7 per cent of the total slaves. The remaining 21.6 per cent is exported by Other Africa. These slaves came from different regions, but it is not clear how many came from each region (Eltis & Richardson, 2010, p. 89).

3.5 Results

3.5.1 Senegambia

Figure 3.2 shows three turning points in Senegambian slave exports between 1514 and 1866. The turning points are 1601, 1677, and 1752, and they divide the period into four regimes. Senegambia's slave exports grew by 4.65 per cent annually between 1514 and 1600.[11] It exported 1,851 slaves per year during this period. Slave exports increased from 1514 to 1600, which could be the result of political instability and state wars. Once the new political situation became relatively stable in the period from 1601 to 1676, slave exports decreased. From 1601 to 1676, annual exports contracted by 1.72 per cent and average slave exports fell to 927 slaves. Slave exports increased again from 1677 to 1751, as slaves from the interior were brought to the Senegambian coasts. In the 1677-1751 regime, slave exports rebounded to 1,521 per year with an annual growth rate of 0.19 per cent. The region exported 2,240 slaves per year in the final regime from 1752 to 1866. The average slave exports is higher in the final regime, but starting from 1752 it began declining annually by 7.24 per cent. The rise of Muslim states from 1752 to 1866 coincides with the decrease in trans-Atlantic slave exports. Also, the 1752-1866 regime coincides with decreased demand for slaves in this region owing to European wars, particularly the Anglo-French wars.

The first panel of Table 3.1 summarizes the structural change in intercept of the slope of Equation 3.1 for Senegambia. The results of the structural break test are robust to heteroskedascity and serial correlation in the error term. Such results are robust when heterogeneity in error terms across four regimes is allowed.

The breaking up of the Wolof empire in the Senegambian region explains the

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[11]The growth formula I use is $\frac{ln(1+SlaveExports_t)-ln(1+SlaveExports_{t-1})}{T}$, where $SlaveExports_t$ is the number of slaves exported at the end of period T and $SlavesExports_{t-1}$ is the number of slaves exported at the beginning of period T. I calculate the natural logarithm of one plus slave exports because there are zero observations.

increase in slaves exported between 1514 and 1600. Wolof was the major source of slaves during this period (Curtin, 1972; Curtin et al., 1995). The estimated annual average of slave exports from Senegambia between 1526 and 1550 is 499, of which 271 (54 per cent) were from Wolof.[12]

Toward the end of the sixteenth century, the political situation was relatively stable. In particular, there was political stability between 1601 and 1676. Slave exports declined as war captives declined.

Slaves from inland flowed to the Senegambian coasts from the middle of the seventeenth century. New states in the interior produced new sources of slaves. One example is the rise of the Kingdom of Segu. The rise of Mamari Kulubali of the Segu Kingdom was associated with the new source of Bambara slaves (Curtin, 1975a, p. 179). The rise in slave exports between the 1720s and and 1740s could be due to the Islamic religious wars (H. S. Klein, 2010, p. 59). Slave exports from 1677 to 1751 increased, as depicted in Figure 3.2.

In 1752, slave exports started to decline. Spikes in slave exports, such as those in the 1750s and the 1770s, are consistent with slave revolts during the period. A Muslim clerical party revolted against Fulbe state of Futa Tooro in the 1750s (Iliffe, 2017, p. 149). In the 1770s, there was a religious revolution involving a *torodbe* faction against the Denianke rulers of Fuuta Tooro (Eltis & Walvin, 1981, p. 83). But the downward trend of slave exports started in 1752. Two events coincided with the decline in slave exports. Firstly, the Muslim states effectively banned the sale of Muslim slaves and preferred trans-Saharan trade to trans-Atlantic trade.

Secondly, wars broke out among European countries involved in the slave trade. Britain and France, two major European slave buyers in the Senegambian region, were involved in these wars. The decline in European countries' interest in Senegambia is related to the Anglo-French wars in the middle of the eighteenth century (Curtin, 1975a, p. 112).[13] Ships were either embargoed or redeployed for privateering (Davies, 1957). Fewer ships were available for the slave trade.

3.5.2 Sierra Leone

Figure 3.3 shows 1760 as a turning point in slave exports from Sierra Leone. The turning point divides the whole period into two regimes, from 1514 to 1759 and from 1760 to 1866. On average, Sierra Leone exported 114 slaves per year between 1514 and 1759. During this period, slave exports grew by three per cent annually.

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[12]The annual average of slave exports in Senegambia is 271 in Wolof, 110 in Malinke, 110 in Serer, four in Fulbe, and four in Tukulor (Curtin, 1972, p. 100).

[13]Also, see Barry (1998, p. 97)

It exported 2,040 slaves per year in the 1760-1866 regime, which is higher than the previous regime's yearly slave exports. Slave exports, however, started declining in 1760, which continued until 1866 at an annual rate of 7.49 per cent.

Table 3.1's second panel summarizes the results for Sierra Leone. The structural break test results are robust even if heteroskedasticity and serial correlation are allowed. The results are also robust when heterogeneity between the two regimes is allowed.

The spikes in the 1560s could be attributed to invasions from the inland savanna.[14] Slave exports dropped in 1570 when these invasions stopped. Religious wars in the early decades of the eighteenth century, such as the Fulbe *jihad* in Futa Djalon in the 1720s, peaked in 1760 and continued until the nineteenth century.

Slave exports surged during religious wars, as in the 1780s. The high slave exports in the decades between the 1760s and 1780s could be attributed to further wars waged by Ibrahima Sori of the Almamate in Fuuta Tooro (Curtin, 1975b, p. 116). However, the downward-sloping trend of slave exports started in the 1750s, when peace and stability were reinstalled. In the 1750s, the Kingdom of Fuuta Tooro was established. Trans-Atlantic slave trade fell as Muslim states rose, and Sierra Leone is similar to Senegambia in this respect.

3.5.3   Windward Coast

Figure 3.4 suggests 1752 and 1808 as turning points in the Windward Coast. Slave exports from the Windward Coast grew by 3.21 per cent annually and averaged 96 slaves per year between 1514 and 1751. The next two regimes are periods of declining slave exports. The decline had two phases between 1752 and 1807, and again in 1808. Between 1752 and 1807, slave exports declined by 0.83 per cent per annum. The region exported 3,047 slaves during this period. In the final regime, from 1808 to 1866, slave exports contracted by 9.48 per cent annually. The region's annual average fell to 152 slaves per year.

As the third panel of Table 3.1 shows, the structural break test results are robust to heterogeneity across three regimes. The results are also robust to heteroskedasticity and serial correlation. However, the specification with HAC standard errors suggests 1700 as an additional turning point. The rise in slave exports between 1700 and 1751 is consistent with wars in the early decades of the eighteenth century. The surge in slave exports in the 1720s could be attributed to Fulbe *jihads* in Fuuta Djalon (Curtin et al., 1995, p. 199).

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[14]Mande, an offshoot of the Mande people of the savanna, invaded parts of Sierra Leone (Curtin et al., 1995, p. 198).

As in Senegambia and Sierra Leone, the decline in slave exports that started in 1752 coincides with the rise of Muslim states. The westward expansion of Asante, a kingdom in the Gold Coast, and the Baule wars it triggered could explain the spikes in slave exported in the 1770s.[15] But these are mere deviations from the downward trend that started in 1752.

Britain abolished its slave trade in 1807. This immediately affected the Windward Coast. The effect on Senegambia and Sierra Leone is not as immediately visible as it is in the Windward Coast. British ships dominated the slave trade in all three regions just before 1808. See Appendices C.4 to C.6 for Senegambia, Sierra Leone, and the Windward Coast, respectively. When Britain outlawed the trade in 1807, British traders stopped purchasing slaves while traders from other countries, particularly Portugal and Brazil, continued purchasing slaves. This was not the case in the Windward Coast. In the Windward Coast, there was no corresponding increase in the number of slaves purchased by other countries when countries such as Britain and the U.S.A. abolished their slave trades in 1807.

3.5.4 Gold Coast

The turning points in the Gold Coast are 1650, 1703, and 1808. See Figure 3.5. There was virtually no slave trade during the 1514-1649 regime, as gold was the primary export from this region during this period. Slave exports started increasing when multinational companies, such as the English Company of Royal Adventurers in 1660 and the Royal African Company in 1672, were chartered. This could be why slave exports increased in the 1650-1702 regime. African states, such as Akwamu, Denkyira, and Asante, became powerful and a new regime of increased slave exports occurred from 1703 to 1807. Slave exports during the 1650-1702 and 1752-1807 regimes grew annually by 3.46 per cent and 0.52 per cent, respectively. The Gold Coast exported 1,135 slaves per year during the 1650-1702 regime and 6,434 per year during the 1752-1807 regime. Slave exports dropped suddenly in 1808, when Britain abolished its slave trade. Its annual slave exports fell to 138 between 1808 and 1866. Slave exports during this period contracted by 13.01 per cent annually.

The fourth and last panel of Table 3.1 summarizes the results for the Gold Coast. The structural break test results are robust to heterogeneity across regimes as well as to heteroskedasticity and serial correlation in the error term.

Europeans were initially interested in African gold in the Gold Coast, and

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[15]See, for examples, Engerman and Genovese (1975, p. 121) and Curtin et al. (1995, p. 199). Both refer to Baule wars as a possible source of the spikes in slaves exported from the Grand Lahou, a coastal town in Ivory Coast, during this period.

this probably why Europeans positioned their headquarters close to mining activities in the Gold Coast (Hopkins, 1973, p. 87). In addition, Europeans did not consider the Gold Coast as a place where they could purchase slaves. Evidence suggests that there was no organized slave trade in this region before 1650.[16]

Slave exports increased after 1650. In 1664, Britain acquired the Cape Coast Castle from Sweden and competed with the Netherlands for African commodities and slaves flowing from inland.[17] Local wars broke out during the period, including the war between Akwamu and Accra in 1680 and the war between Denkyira and Assin in 1698. The Komenda Wars of the 1690s also broke in this period. These wars increased the supply of war captives, who were subsequently sold as slaves on the coasts. As Davies (1957, p. 226) observes, "The slave-trade thrived on war and declined in peace."

The Gold Coast became a major slave exporter at the end of the seventeenth century (Daaku, 1970; Hopkins, 1973; Bean, 1974; Kea, 1982; Donkoh, 2007; Inikori, 2007, 2014). But the structural break in slave exports occurred in the early decades of the eighteenth century. Asante conquered Denkyira in 1701. Asante thus gained political power in the Gold Coast.[18] The rise in the trans-Atlantic slave trade in this region is consistent with the rise of Asante as a powerful state. Asante used slaves to obtain firearms from European merchants. The firearms in turn were used to maintain a militaristic-political social order and to expand Asante territory, for example by raiding weaker states or by making them pay slaves as a tribute to the empire, thereby increasing the capture of slaves (Arhin, 1990; Whatley, 2018).

At the same time, the Ten Per Cent Act expired in 1712. The Act's expiration increased competition for the chartered companies, such the English Royal African Company and the Dutch West India Company, from English merchants, which in turn increased demand for slaves on the Gold Coast (Davies, 1957; Daaku, 1970; Carlos & Brown-Kruse, 1996; Pettigrew, 2013).

As in the Windward Coast, there was a sudden drop in slave exports in 1808. Appendix C.7 shows that British traders were the dominant purchasers of slaves in this region. There was no corresponding increase in slaves purchased by other countries after 1808. The difference with the Windward Coast is the magnitude

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[16]Daaku (1970, p. 9) argues, for example, that English activities in this region were "unorganized" and without a purpose. British traders began to organize their activities when joint-stock companies, such as the Company of Royal Adventurers, were established during the reign of James I of England.

[17]See Davies (1957, p. 240). The Dutch acquired the Elmina Castle from the Portuguese in 1637 (Davies, 1957, p. 8). The Elmina Castle was founded in 1480 (Van Dantzig, 1980, p. 90).

[18]Asante lost political control over the Gold Coast in 1826 in a battle against the British (Iliffe, 2017, p. 160).

of the sudden drop in slave exports. On the Windward Coast, slave exports fell suddenly by about 2,000 in 1808. In the same year, slave exports dropped by about 6,000 on the Gold Coast.[19]

3.5.5   Bight of Benin

Figure 3.6 suggests four turning points in the Bight of Benin, or the Slave Coast, namely 1646, 1704, 1757, and 1815. The Bight of Benin exported 70 slaves per year during the 1514-1645 regime. Slave exports grew annually by 5.16 per cent during this period. The 1646-1703 regime had a similar annual growth rate at 5.56 per cent. Slave exports rose to 3,521 per year in the 1646-1703 regime. States such as Dahomey and Oyo became powerful and supplied slaves between 1645 and 1756. The average slave exports increased to 11,680 in the subsequent regime, from 1704 to 1756, before declining to 9,205 in the 1757-1814 regime, then to 3,155 in the 1815-1866 regime. Enslavement eventually drained the source of slaves during the 1757-1814 regime. Unlike the Windward and Gold Coasts, slave exports did not drop suddenly in 1808 in the Bight of Benin. Instead, slave exports dropped in 1815, when Britain began using its navy to suppress the slave trade. In summary, slave exports started contracting from the 1704 to 1756 regime, and went from an annual contraction rate of 0.14 per cent in the 1704-1756 regime to annual contraction rates of 0.02 per cent and 17.08 per cent in the 1757-1814 and 1815-1866 regimes.

The 1645 and 1815 turning points are robust to heteroskedasticity and serial correlation, according to the first panel of Table 3.2. 1704 and 1757, however, are not robust to these checks. The specification with HAC standard errors determines 1614, 1737, and 1815 as turning points, but not 1704 and 1757.

On the supply side, slave exports increased when states and trade routes were established between 1646 and 1703. Oyo, a Yoruba state, was active in the slave trade during this period.[20] Oyo won the contest over control of the coastal port of Whydah and made Dahomey, the state that absorbed Whydah, its tributary in the 1720s (Law, 1977b; Eltis, 2000; Lovejoy, 2011; Iliffe, 2017). Conflicts among local settlements are consistent with the surge in slave exports, especially in the 1720s. On the demand side, it was during this period that European merchants became more competitive by responding to the taste and preferences of African merchants. English merchants, for instance, became better than their Dutch competitors at

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[19]Slavery in the Gold Coast did not end in 1808. Quantitative evidence suggests that slave ownership and slavery within Africa rose in the nineteenth century. In the case of Asante, see Austin (2005).

[20]Law (1977b, p. 34) argues that the capital of the Oyo Kingdom is not Oyo Ile but Oko, a place further north and closer to the Niger River.

choosing the merchandise that they would exchange for African commodities and slaves (Ryder, 1969, p. 95).

Oyo achieved its greatest military power in the 1780s (Law, 1977a, p. 245). However, slave exports declined from 1757, not in the 1780s. Excessive raiding of slaves resulted in population decline and fewer people who could be captured as slaves. As Manning (1982, p. 10) points out,

> "For the Aja peoples in particular the heavy drain on population actually
> led to population decline in the eighteenth century: an average of 8,500
> Aja slaves per year... were exported for 50 years from 1690 to 1740,
> which amounted to some 3% of the total population per year. No birth
> rate would have been high enough to prevent depopulation under these
> conditions."

Slave exports declined further in 1815. Dahomey rose to power following the collapse of the Oyo Empire in the 1820s. One notable revolt against the Oyo Empire was the jihad in 1817.[21] But such events did not increase the number of slaves traded across the Atlantic. Instead, the fall in slave exports is more consistent with the British enforcement of the anti-slave-trade law in 1815. According to Curtin et al. (1995, p. 332), "After 1815... Great Britain began using its navy in a large-scale attempt to suppress the trade at sea." In 1848, King Gezo of Dahomey told British officials that he was reluctant to yield to the British demand to abolish the slave trade. Such reluctance resulted in more political pressure from Britain to abolish the slave trade and in the occupation of Lagos, a Yoruba city heavily involved in the slave trade, in 1851. The drop in slave exports in 1851 is visible in Figure 3.6.

Usman dan Fodio waged and subsequently won a religious war against the local rulers of Gobir, a kingdom of Hausaland. Usman dan Fodio's jihad resulted in the capture of the city, killing of its ruler, and the establishment of a new capital at Sokoto (Curtin et al., 1995, p. 329). As in the Upper Guinea Coast, as Muslim states rose, the Atlantic part of the slave trade fell. The rise of the Sokoto Caliphate under dan Fodio is consistent with the fall of slave exports from the region in the early decades of the nineteenth century and with the rise of slave trade within Africa (Lovejoy & Hogendorn, 1993; Lovejoy, 2011).[22]

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[21]See, for examples, Lovejoy (2011), Reid (2014), Iliffe (2017). Reid (2014, p. 404) argues that "[Dahomey] expanded considerably its range of military operations in the course of the nineteenth century - including westward, into Yoruba country, following the collapse of Oyo - and was one of the worst offenders in the illegal slave trade down to the 1850s, whereupon it turned increasingly to the export of agricultural produce."

[22]Lovejoy (2011, p. 46) cites evidence from Lovejoy and Hogendorn (1993) suggesting that "there

In the later decades of the nineteenth century, the Benin Kingdom withdrew from the slave trade. Ryder (1969, p. 22) suggests that the Kingdom withdrew from the slave trade to protect itself from Britain, which now had influence on the Kingdom's neighbouring states, particularly Yorubaland. In the 1870s, for example, the Kingdom closed the Oke Igbo route, a slave trade route between the Kingdom and the Benin coast.

3.5.6 Bight of Biafra

Figure 3.7 suggests 1711 and 1784 as turning points in the Bight of Biafra. The region exported 624 slaves per year during the 1514-1710 regime. The 1615-1710 regime is a period of gradual increase in slave exports from the region. Slave exports increased steeply in the 1711-1783 regime. The Bight of Biafra's annual slave exports grew by 4.02 and 4.08 per cent during the 1514-1710 and 1711-1783 regimes. The increase coincides with the rise of Bonny, displacing the Old Calabar and Elem Kalabari (New Calabar) as major slave-trading ports in the region. Bonny is known for institutions that established trust between the local and European merchants. The average rose to 5,945 in the following regime, from 1711 to 1783. In the final regime, from 1784 to 1866, annual exports increased further to 6,675 per year, but slave exports declined by 11.95 per cent annually. The period from 1784 to 1866 is a regime of rising customs duties paid to African rulers and declining slave exports in the region. It is also during this period that wars involving European merchants, for example the Anglo-French wars and the War of Independence in the North American colonies, occurred.

For the Bight of Biafra, the second panel of Table 3.2 summarizes the results. Both 1711 and 1784 turning points are robust to heteroskedasticity and serial correlation as well as to heterogeneity across regimes. In addition to 1711 and 1784, the specification also suggests 1644 as a turning point.

Slave exports from the region increased in the 1640s and increased rapidly in the first decade of the eighteenth century (Dike, 1956; Lovejoy, 2011). Competition among multinational companies increased in the period, and the Bight of Biafra is similar to the Gold Coast and Bight of Benin in this respect.

Slave exports in the 1711-1783 regime increased steeply. This was in spite of the relatively high mortality rate of slaves transported to the New World (Eltis, 2000, p. 185). It was during this period that Bonny replaced the Old Calabar as the major

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were probably as many enslaved people in 1860 in the Sokoto Caliphate, in the interior of West Africa, as the number of enslaved African Americans who were in the U.S.A. at the outbreak of the American Civil War."

slave-trading port in the Bight of Biafra. Lovejoy and Richardson (2004) argue that institutions in Bonny were better for slave-trading than those in neighbouring ports, such as the Old and New Calabars, at enforcing trust and exchange between local and European merchants. The enforcement of credit arrangements, for example, was more effective in Bonny than in Old Calabar. Bonny relied on state intervention, while Old Calabar depended on human pawnship and local organizations, such as the Ekpe society, for credit enforcement.[23]

Wars between the British and their colonies in North America in the 1780s reduced demand for slave exports, which "was the continuation of the six-year lull that started in 1777" (Behrendt, 1997, p. 199). Wars increased the risk of attack from enemy ships as well as the cost of insuring a ship, which discouraged the slave trade. It could also be the case that some slave vessels were forced to redeploy as privateers. Local events could have also played a role in explaining the decline of slave exports in the region during the period. There was a sudden increase in customs duties or "comey" during the period, particularly in Old Calabar.[24]

3.5.7   West Central Africa

Figure 3.8 suggests three turning points in West Central Africa. These are 1640, 1723, and 1815. Slave exports were growing during the 1514-1639 regime. West Central Africa exported 2,138 slaves per year between 1514 and 1639. Annual slave exports during this regime grew by 2.52 per cent. The Portuguese founded Luanda in 1575 and established a relationship with the Kongo and Imbangala people, who supplied slaves to Portuguese merchants. Slave exports declined in the 1640s, but started to increase again at the onset of the civil wars in the latter half of the seventeenth century. The wars resulted in the disintegration of the Kongo Kingdom. The annual slave exports slightly increased to 2,941 slaves, but growth slowed to 1.04 per cent between 1640 and 1722. Slave exports then increased substantially in the 1723-1814 regime. In the 1723-1814 regime, the region's slave exports rose steeply to 20,651 per year, although annual growth slowed further to 0.70 per cent. Wars further inland from Luanda and increased participation in the slave trade by inland states produced more slaves for export during the period. The annual slave exports between 1815 and 1866 is similar to the previous regime. The region exported 20,225 slaves per year during the 1815-1866 regime. During this regime, however, exports were shrinking by 20.09 per cent each year from 1815 until 1866. Slave

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[23]See Lovejoy and Richardson (2004) for comparative analysis of credit enforcement between Bonny and Old Calabar. Also, see Sparks (2002, 2009).

[24]See Lovejoy and Richardson (2004, p. 371) for "exorbitant" duties requested by Old Calabar chiefs from English merchants.

exports started to decline in 1815, as major European countries began enforcing their anti-slave-trade laws.

The 1640, 1723, and 1815 turning points are all robust to heteroskedasticity and serial correlation as well as to heterogeneity across regimes. See the third panel of Table 3.2. In addition to 1640, 1723, and 1815, the specification with HAC standard errors suggests 1588 as a turning point. The political stability during the 1514-1587 regime, such as King Afonso I's reign in the first half of the sixteenth century, produced a relatively lower number of slaves for export. King Afonso I of the Kingdom of Kongo reigned from 1504 to 1543 (Iliffe, 2017, p. 149). After the collapse of the Kingdom of Kongo in the latter half of the seventeenth century, slave exports began to increase until 1815.

In the first half of the seventeenth century, the Portuguese had access to slaves by employing African allies, particularly the Imbangala people, to raid people from the southern Kongo (J. C. Miller, 1988, p. 142). The Kingdom of Kongo collapsed in the latter half of the seventeenth century. The slave trade provided access to firearms to the Kongo and other African peoples. For example, the trade with the Portuguese in Luanda after 1576 gave the rulers from the southern province independent access to imported goods, particularly firearms (Iliffe, 2017, p. 150). The Kongo Kingdom's rulers faced a series of civil wars and struggled to maintain the political stability they had in the latter half of the seventeenth century. King Garcia II's successor as ruler of the Kingdom of Kongo died in the Battle of Mbwila in 1665 (Iliffe, 2017, p. 149). This was a source of political instability for the Kongo Kingdom. By 1683, the Portuguese established their position in the slave trade in this region (Eltis, 2000, p. 189). As a result, slave exports increased in the 1614-1722 regime. Wars and plunder, as Lovejoy (2011, p. 74) points out, resulted in widespread enslavement.

Slave exports increased further during the 1723-1814 regime. The structural change in slave exports in this period is consistent with Portuguese efforts to expand inland in search of more slaves. The wars are related to the consolidation of states who raided weaker states and sold their captives as slaves to European merchants (J. C. Miller, 1988; Thornton, 1998; Northrup, 2002; Lovejoy, 2011; Iliffe, 2017). Firmly established networks among African enslavers, such as the rulers of the Lunda Empire in the center and Ovimbundu Kingdom in the southern parts of the region, aided the transportation of slaves along the routes to the ports of West Central Africa. The wars led by inland states produced "captives for sale" and the "coalitions of African entrepreneurs" organized the transportation and exchange of slaves for imported goods (Northrup, 2002, p. 229).

Appendix C.10 shows that the Portuguese continued buying slaves until the 1850s. But the results suggest that slave exports started declining in 1815. Slave exports started declining when major European countries, such as Denmark, England, and France, denounced the slave trade, for example, during the Congress of Vienna, not after Portugal and Brazil abolished their slave trades in 1836 and 1851 (Eltis & Richardson, 2010; Walvin, 2014). The major slave purchasers in this regime were Portuguese and Brazilian purchasers. If the slave trade ended in the 1850s in this region, then 1815 was the beginning of this end.

3.5.8   Southeast Africa

There are two turning points in Southeast African slave exports. Figure 3.9 suggests 1763 and 1815 as the turning points. 92 slaves per year were exported from Southeast Africa from 1514 to 1762. During this regime, slave exports grew annually by 2.39 per cent. The highest growth is observed during the 1763-1814 regime. Slave exports began increasing substantially in 1763 and this could be because of increased demand from France for slaves to work in its sugar plantations in the Indian Ocean islands. Slave exports grew 15.62 per cent annually, exporting 2,022 slaves per year during this regime. As in West Central Africa, slave exports from Southeast Africa started declining in 1815. During the 1815-1866 regime, annual slave exports rose to 5,308 on average, but the trend was declining at an annual rate of 16.44 per cent.

As the bottom panel of Table 3.2 shows, both 1763 and 1815 turning points are robust to heteroskedasticity and serial correlation as well as to heteregoneity across regimes.

Increased demand from sugar producers in the islands of the Indian Ocean, such as Mauritius and Reunion to the east of Madagascar, is consistent with increased exports of Southeast African slaves from the middle of the eighteenth century (Newitt, 1995, p. 245). Manning (1990, p. 138) notes that the increase in demand from French planters of the Indian Ocean compensated for the decreased demand owing to the slave rebellion in St. Dominique in the West Indies. Appendix C.11 shows that slaves purchased by France increased during the period. The spikes in the 1780s coincide with the Madagascar revolt (Hawthorne, 2003, p. 10).

Similar to West Central Africa, the decline in 1815 was due to the abolitionist efforts. Contrary to existing views, the results suggest that abolitionist efforts did curb the slave trade in this region. For example, Lovejoy (2011, p. 140) maintains that "abolitionist efforts failed to stem the flow of the enslaved traffic in the first half of the 19th century, although some parts of the African coast were blockaded, thereby forcing the trade to adjust." The results show that slave exports declined

from 1815. The decline happened even if other countries, particularly Portugal and Brazil, continued their purchase of slaves from Africa. The spikes in the 1820s are consistent with *mfecane* wars, where warring groups such as Ngoni and Shangaans captured slaves for sale in the coast (Cobbing, 1988; Manning, 1990; Eldredge, 1992; Hamilton, 1992; Omer-Cooper, 1993; Gordon, 2009; Fenske & Kala, 2017). The wars continued throughout the nineteenth century.[25] However, the spikes are just deviations from a downward-sloping trend that began in 1815.

3.5.9 Discussion

The trans-Atlantic slave trade began declining in 1815. Slave exports from West Central Africa, the Bight of Benin, and Southeast Africa followed the same pattern. Together, these regions exported 51.1 per cent of the total slaves produced from 1514 to 1866. West Central Africa exported 32.8 per cent of the total slaves, the Bight of Benin exported 14.5 per cent, and Southeast Africa exported 3.8 per cent. The downward-sloping trend of slave exports from the Windward and Gold Coasts began in 1808. The Windward and Gold Coasts exported 1.9 per cent and 7.0 per cent of total slaves. Slave exports from the Bight of Biafra started declining in 1784. In total, these regions exported 70.5 per cent of African slaves produced in the whole period.

The abolition, therefore, affected African regions that exported at least 70 per cent of the total slaves produced in Africa from 1514 to 1866. Contrary to traditional views, the abolition's effect on the trans-Atlantic slave trade was substantial. After the abolition, West Central Africa became the most important source of slaves for Portuguese and Brazilian purchasers. But even in this region, slave exports started declining in 1815, not in the middle of the nineteenth century when Portugal and Brazil abolished their slave trades.

Trade opportunities other than slaves were different for each region. European merchants were initially interested in gold in the Gold Coast region. Physical structures, such as forts and factories (i.e. trading posts), dotted the Gold

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[25]See, for example, Newitt (1995). "During the wars of mfecane and the expansion of Gaza power in the 1830s and 1840s, large numbers of slaves found their way to Delogoa Bay and the export of slaves was to continue almost thoughtout the century in spite of the emphatic denials by the Portuguese and claims that the trade had definitely ceased by 1845" (Newitt, 1995, p. 293). Also, see Reid (2002). "The Ganda fought wars for a number of reasons, with both short- and long-term gain in mind. The mistake must not be made of assuming that the immediate and most tangible yields of a battle – for example, cattle, women and slaves – represent the final desired result, although such booty was clearly important. This was particularly true in the late nineteenth century, with the increased demand for slaves among the coastal merchants, although the argument that the Ganda fought more wars at this time to fulfil this demand is unconvincing and unsubstantiated" (Reid, 2002, p. 178).

Coast and were used to store gold and other African commodities. Slave exports from the Gold Coast increased at a later period than in Senegambia. European merchants, particularly Portuguese, were supplying slaves to the Gold Coast in the fifteenth and sixteenth centuries. Slave exports from Senegambia increased with the collapse of a local kingdom in the late sixteenth century. Slave exports in some regions increased at a much later period. Southeast African slave exports, for example, did not increase until the middle of the eighteenth century.

On one hand, demand-side shocks (e.g. abolition of the slave trade) were relatively important in explaining the beginning and the end of the trans-Atlantic slave trade. Supply-side shocks (e.g. African conflicts), on the other hand, were relatively important in explaining the dynamics of the trade. Generally, slave exports rose with conflicts or wars, but fell with peace. But incentives could differ across regions according to whether slaves would be sold on the Atlantic coasts or across the Sahara desert. Slave exports from Senegambia and Sierra Leone declined in 1752 and 1760, respectively. These structural breaks are about half a century earlier than 1808. The Anglo-French wars could explain the decline of slave exports in this region. But there is some historical evidence that Muslim states in the Upper Guinea Coast traded more with Muslim merchants of North Africa than with European merchants on the Atlantic coasts. It is therefore possible to observe Muslim conflicts with decreasing trans-Atlantic but increasing trans-Saharan or within-Africa slave trades.

Slave exports increased in periods of conflict or war. In periods of war, slaves were captured and exchanged for imported goods. The imported goods were then used to either expand or defend a territory. When imported goods, particularly firearms (Inikori, 1977), are used to expand a territory, then slave production increases further (Whatley, 2018). The Asante in the Gold Coast is a case in point. In other regions, imported goods like iron were used to make agricultural implements and to defend a territory. One example is the Balanta people of Guinea Bissau (Hawthorne, 2003). These had opposite effects. While the former resulted in increased slave production, the latter led to decreased slave production. The gun-slave cycle, indeed, is far from a simple idea (Reid, 2012).

3.6 Conclusion

In this paper, I have analyzed the turning points in the trans-Atlantic slave trade between 1514 and 1866. I have shown that demand shocks, particularly the abolition of the slave trade by countries involved in it, such as Britain, the

Netherlands, France, and the U.S.A., and wars among major slave purchasers (e.g the Anglo-French and Napoleonic Wars) are significant factors in the era of diminishing trans-Atlantic slave trade. Other demand shocks, such as the creation of sugar plantations and increased competition from European merchants, played a role in the beginning of the slave trade. Supply shocks, specifically wars and conflicts, can also explain the rise and fall of slave exports. Both demand and supply factors were important in describing how the slave trade began. Demand factors were relatively more important in the ebbing of the slave trade. The literature that has relied only on decennial or quadranscentennial data has missed this important insight, which is visible only in the annual series of slave exports.

Figure 3.1: Structural Change in Slaves Embarked from Africa, 1514-1866
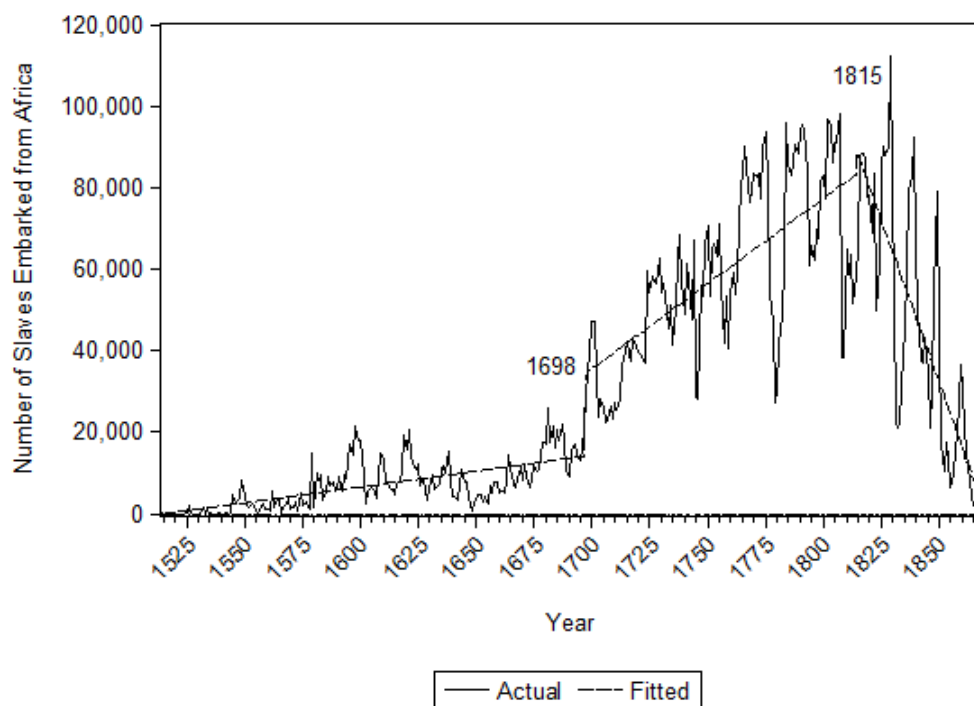
Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org. (2016)

Figure 3.2: Structural Change in Slaves Embarked from Senegambia, 1514-1866
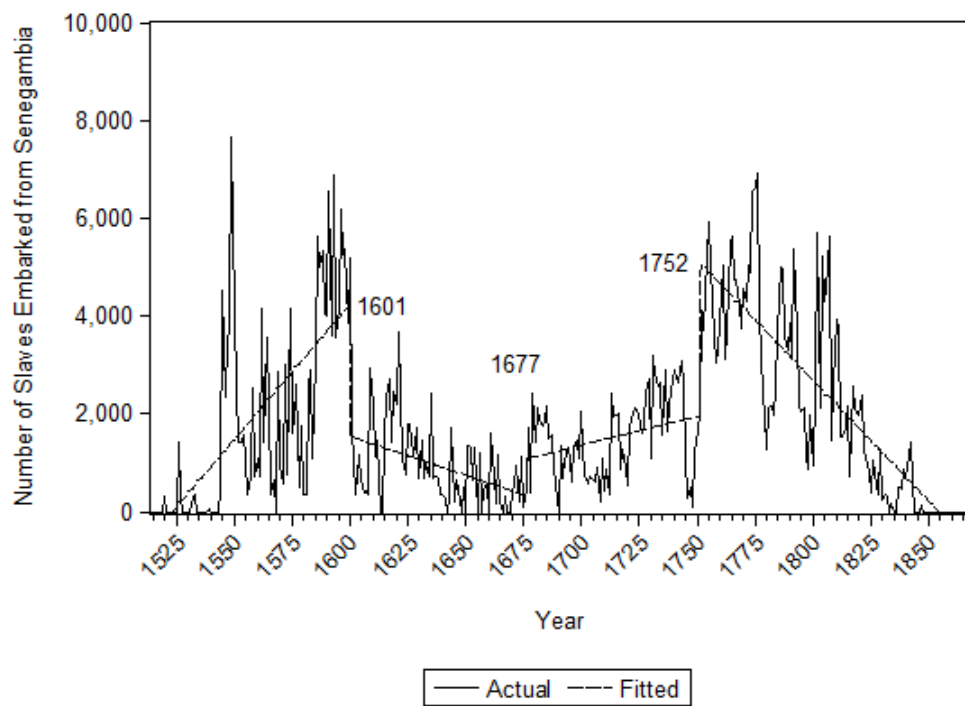
Figure 3.3: Structural Change in Slaves Embarked from Sierra Leone, 1514-1866.
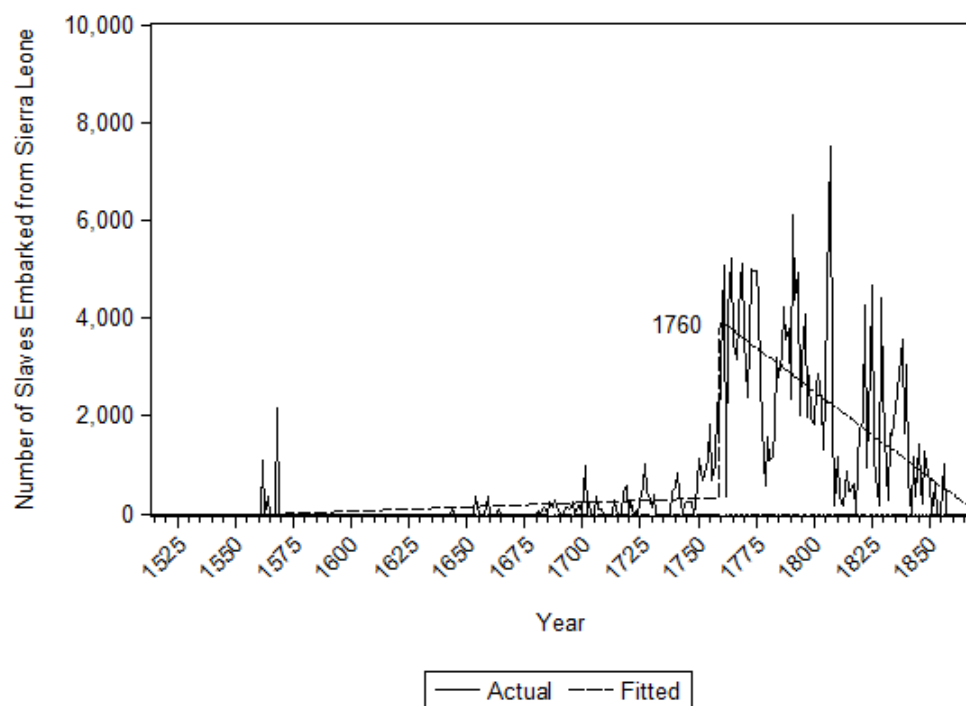
Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org. (2016)

Figure 3.4: Structural Change in Slaves Embarked from the Windward Coast, 1514-1866
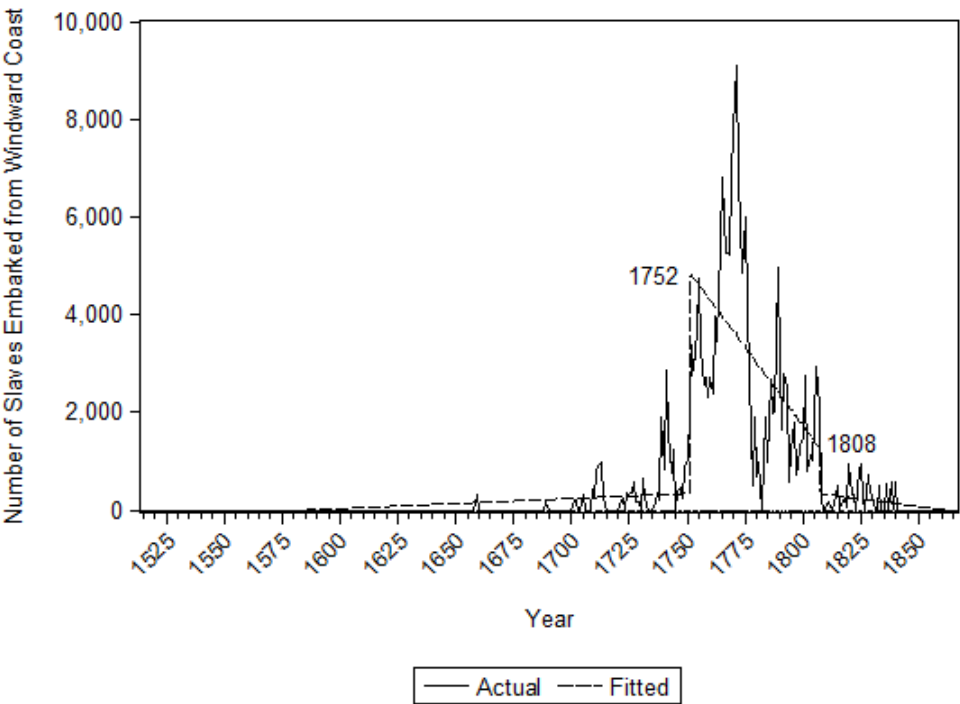
Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org. (2016)

Figure 3.5: Structural Change in Slaves Embarked from the Gold Coast, 1514-1866
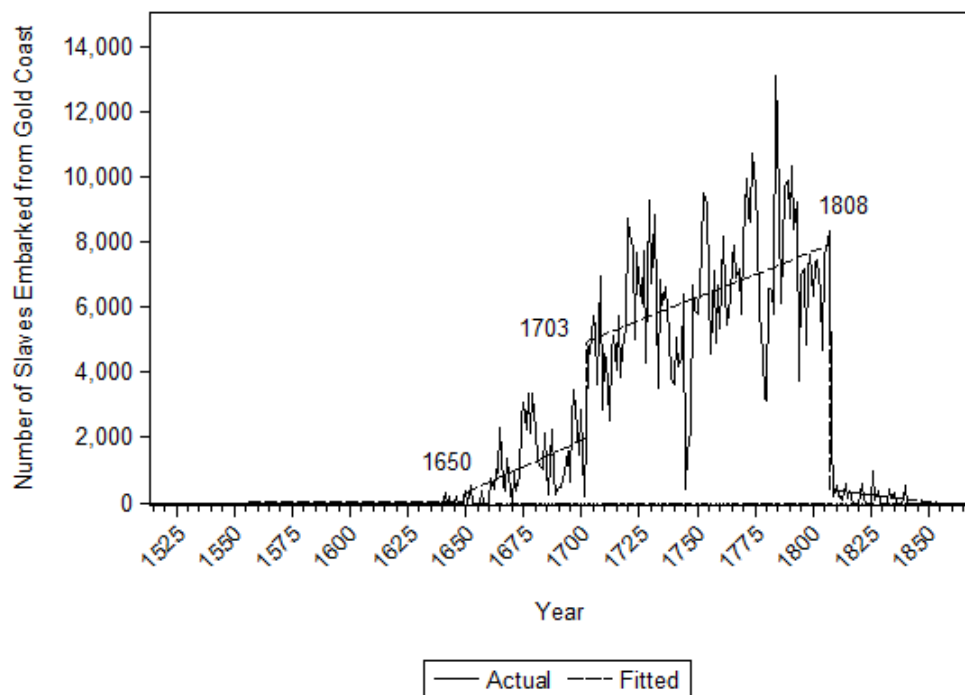
Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org. (2016)

Figure 3.6: Structural Change in Slaves Embarked from the Bight of Benin, 1514-1866
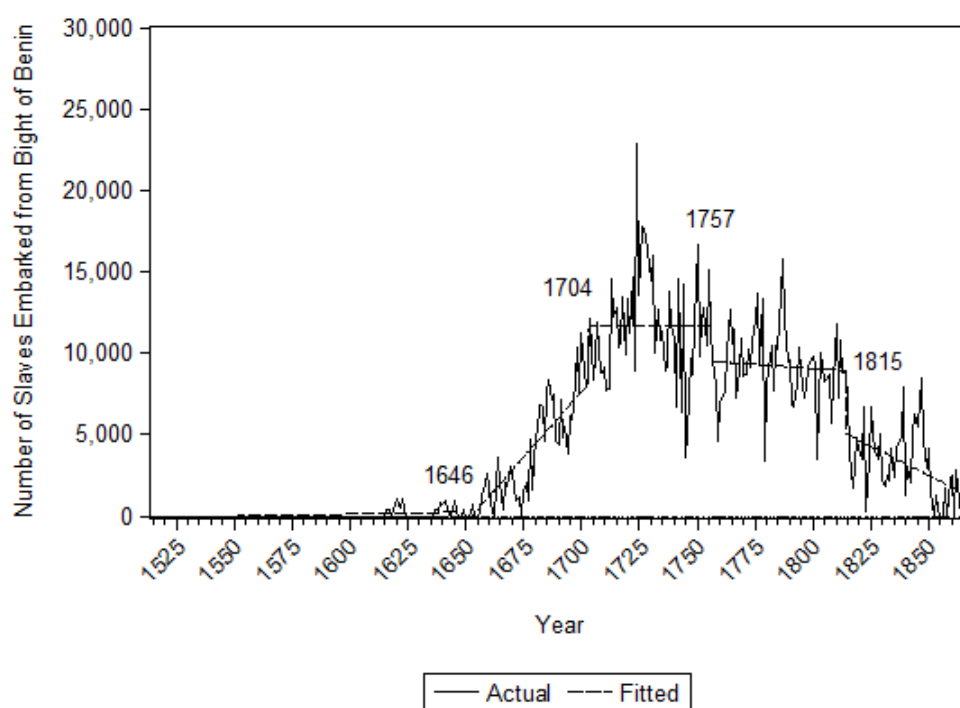
Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org. (2016)

Figure 3.7: Structural Change in Slaves Embarked from the Bight of Biafra, 1514-1866
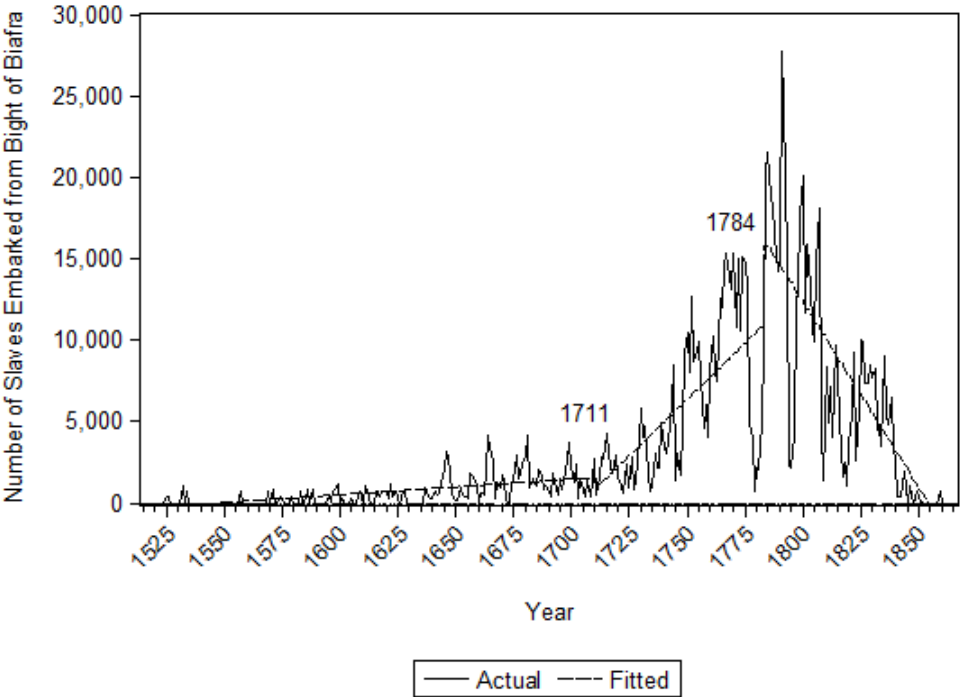
Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org. (2016)

Figure 3.8: Structural Change in Slaves Embarked from West Central Africa, 1514-1866
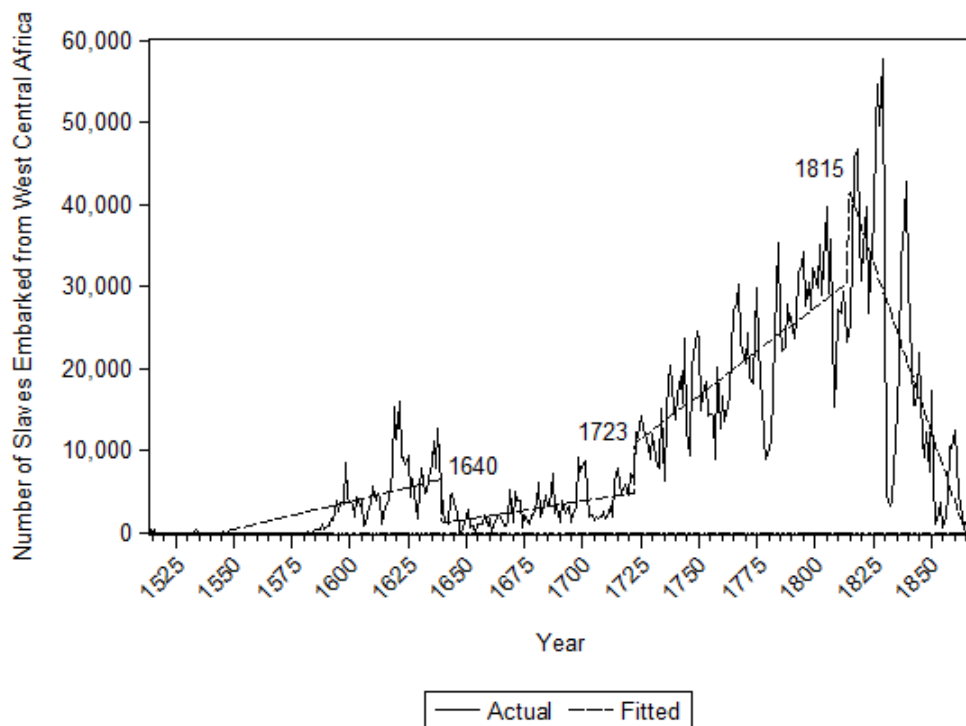
Figure 3.9: Structural Change in Slaves Embarked from Southeast Africa, 1514-1866
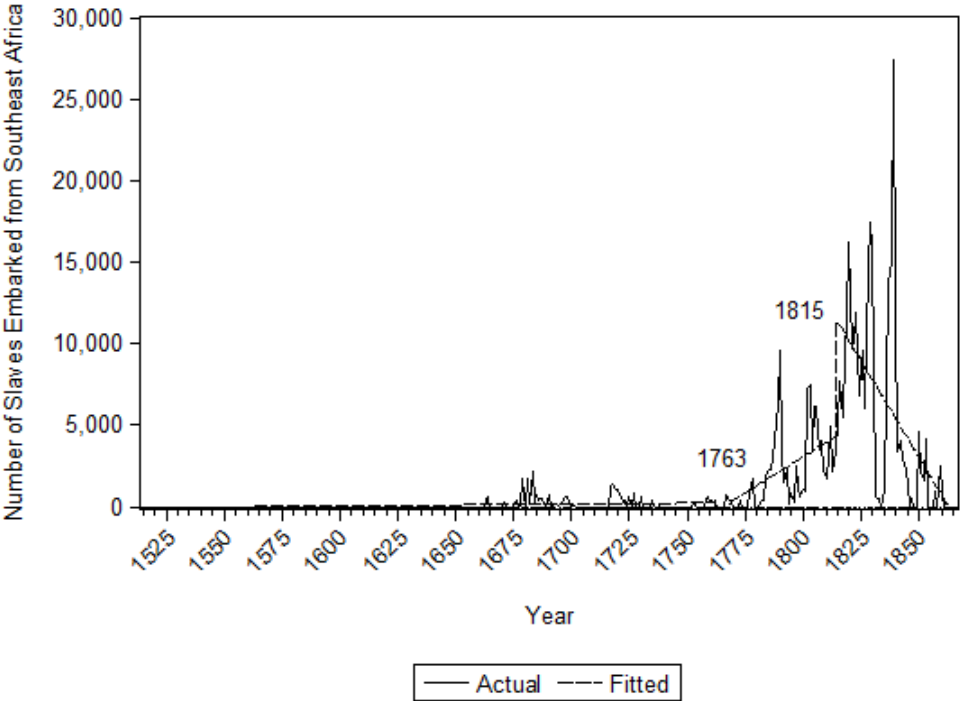
Table 3.1: Structural Change in Slaves Embarked from Senegambia, Sierra Leone, the Windward Coast, and the Gold Coast, 1514-1866

Region	Period	N	Intercept	Slope
Senegambia	1514-1600	87	-84221.80	55.28
			(11916.00)	(7.69)
	1601-1676	76	27042.10	-15.94
			(10445.10)	(6.31)
	1677-1751	75	-18842.87	11.88
			(15871.92)	(9.32)
	1752-1866	115	91393.81	-49.28
			(11207.42)	(6.12)
Sierra Leone	1514-1759	246	-2739.40	1.74
			(1257.97)	(0.79)
	1760-1866	107	66291.62	-35.44
			(8303.60)	(4.53)
Windward Coast	1514-1699	186	-91.53	0.06
			(59.02)	(0.04)
	1700-1751	52	-30915.56	18.17
			(11122.31)	(6.49)
	1752-1807	56	116650.50	-63.84
			(39126.90)	(21.8)
	1808-1866	59	11430.53	-6.14
			(3823.18)	(2.07)
Gold Coast	1514-1649	136	-330.43	0.21
			(217.16)	(0.14)
	1650-1702	53	-52888.36	32.23
			(13855.12)	(8.30)
	1703-1807	105	-42862.12	28.09
			(14513.47)	(8.29)
	1808-1866	59	15748.39	-8.50
			(5721.12)	(3.10)

Notes: I estimate the intercept and slope of Equation 3.1. There are in total four separate regressions in this table, one for each region. Following Bai and Perron (2003) and Andrews and Monahan (1992), I pre-whiten the residuals using a VAR(1) and construct a heteroskedasticity and autocorrelation consistent covariance matrix using a quadratic kernel with automatic bandwidth selection based on an AR(1) approximation. The number in parenthesis refers to the heteroskedasticity and autocorrelation robust standard error. N refers to the number of observations relevant to the period. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

Table 3.2: Structural Change in Slaves Embarked from the Bight of Benin, the Bight of Biafra, West Central Africa, and Southeast Africa, 1514-1866

Region	Period	N	Intercept	Slope
Bight of Benin	1514-1645	132	-3845.86	2.48
			(1491.59)	(0.96)
	1646-1731	86	-327385.50	197.71
			(23630.20)	(14.03)
	1732-1814	83	53511.33	-24.73
			(18577.77)	(10.42)
	1815-1866	52	135534.20	-71.93
			(35231.34)	(19.24)
Bight of Biafra	1514-1643	130	-4844.42	3.20
			(1268.55)	(0.81)
	1644-1710	67	-3880.49	3.17
			(21279.62)	(12.61)
	1711-1783	73	-235664.30	138.30
			(137695.70)	(79.43)
	1784-1866	83	422690.60	-227.95
			(82546.92)	(44.88)
West Central Africa	1514-1587	74	-788.00	0.53
			(4857.70)	(3.16)
	1588-1639	52	-219836.70	139.43
			(51045.13)	(31.92)
	1640-1722	83	-72174.10	44.68
			(31321.06)	(18.74)
	1723-1814	92	-358579.10	214.44
			(55096.44)	(31.46)
	1815-1866	52	1554161.00	-833.43
			(317417.90)	(170.77)
Southeast Africa	1514-1762	249	-1873.06	1.20
			(582.71)	(0.37)
	1763-1814	52	-156371.20	88.56
			(31521.10)	(17.74)
	1815-1866	52	442091.00	-237.32
			(65979.57)	(35.61)

Notes: I estimate the intercept and slope of Equation 3.1. There are in total four separate regressions in this table, one for each region. Following Bai and Perron (2003) and Andrews and Monahan (1992), I pre-whiten the residuals using a VAR(1) and construct a heteroskedasticity and autocorrelation consistent covariance matrix using a quadratic kernel with automatic bandwidth selection based on an AR(1) approximation. The number in parenthesis refers to the heteroskedasticity and autocorrelation robust standard error. N refers to the number of observations relevant to the period. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

Appendix A

Chapter 1: Competition and Rent-Seeking During the Slave Trade

A.1 Correspondence of the Company on Payments to Chiefs

Settlement	Vol.	Letter
Accra	1	407, 409, 414, 425, 428, 440
Accra	2	723, 731, 793
Accra	3	1232, 1284, 1285, 1287, 1288, 1291, 1297
Amisa	3	1043
Anashan	1	125, 149
Anashan	2	361, 362, 363, 378, 379, 381
Anashan	3	511, 516, 518, 520, 521, 523, 526, 549, 556, 574, 577, 582, 591
Anomabo	1	247, 248, 276, 277, 332
Anomabo	2	382, 383, 384, 407, 411, 453, 455, 463, 464, 486, 498, 499, 503, 520, 521, 522, 524, 525, 531, 532, 538, 540, 541, 547, 549, 550, 554, 561, 596, 606, 609
Anomabo	3	612, 613, 614, 629, 655, 656, 667, 682, 687, 694, 706, 707, 708, 716, 717, 744, 767, 790, 791, 817, 836, 871, 873, 877, 885, 886, 887, 925
Dixcove	3	1, 14, 23, 30, 31, 36, 38, 43, 46, 56, 65, 78, 79, 83, 90, 91, 107, 108, 112, 117, 135, 137
Egya	1	381
Egya	2	618, 627, 629, 630, 631, 632, 633, 634, 642, 663, 664, 665, 666, 667, 674, 679, 684, 691, 693, 694, 701, 702, 704
Egya	3	932, 933, 934, 935, 936, 938, 939, 942, 948, 949, 1026, 1041
Komenda	1	55, 56, 59, 60, 61, 85, 105
Komenda	2	166, 171, 186, 190, 192, 194, 199, 201, 206, 210, 215, 216, 224, 227, 242, 246, 247, 248, 251, 254, 255, 261, 262, 276, 281, 299, 314, 320, 326, 329, 332, 333
Komenda	3	263, 264, 265, 271, 278, 279, 280, 281, 286, 287, 288, 297, 298, 304, 305, 306, 325, 327, 329, 332, 337, 341, 343, 346, 347, 353, 358, 365, 378, 379, 390, 392, 416, 426, 430, 440, 442, 443, 447, 448, 450
Sekondi	1	1, 2, 4, 13, 15, 23, 28
Sekondi	2	4, 7, 10, 36, 37, 39, 42, 49, 69, 90, 107, 109, 119, 120, 122, 123, 125, 128, 129, 136
Sekondi	3	156, 161, 162, 167, 240, 246, 254, 256, 257, 259, 260, 262
Tantumkweri	3	1051, 1053, 1054, 1059
Winneba	1	385
Winneba	3	1067, 1069, 1072, 1076, 1080, 1082, 1083, 1086, 1098, 1103, 1104, 1105, 1106, 1111, 1113, 1116, 1119, 1121, 1122, 1123, 1131, 1132, 1134, 1137, 1141, 1143, 1144, 1172, 1179, 1180

Source: Rawlinson Corpus in Law (1997, 2001, 2006)

A.2   Rank of Recipient

Rank	Description
State Chief	
Head Chief	*Ahenfo kese* = royal; *ahenfo* = noble by birth
Officeholder	*Afahene* = ruler of administrative units; *okyeame* = the cancellar or cancellatius, called *fetere* or *fitiro*; *day* = the state treasurer, governor of the capital, and chief of the army); *brafo* = high-ranking military officer
Chieftain	
Individual	*Cabasheer* = chieftain; *Quarrenteer* = chieftain
Group	*Cabasheers* = chieftains; *Quarrenteers* = chieftains
Trader	*Batafo* = merchants
Employee	African employee
Soldier	Retainer or commoner
Unnamed	Any of the above

Source: Company of Royal Adventurers of England Trading with Africa and Successors (T70/365-378); Daaku (1970); Kea (1982); Law (1997, 2001, 2006)
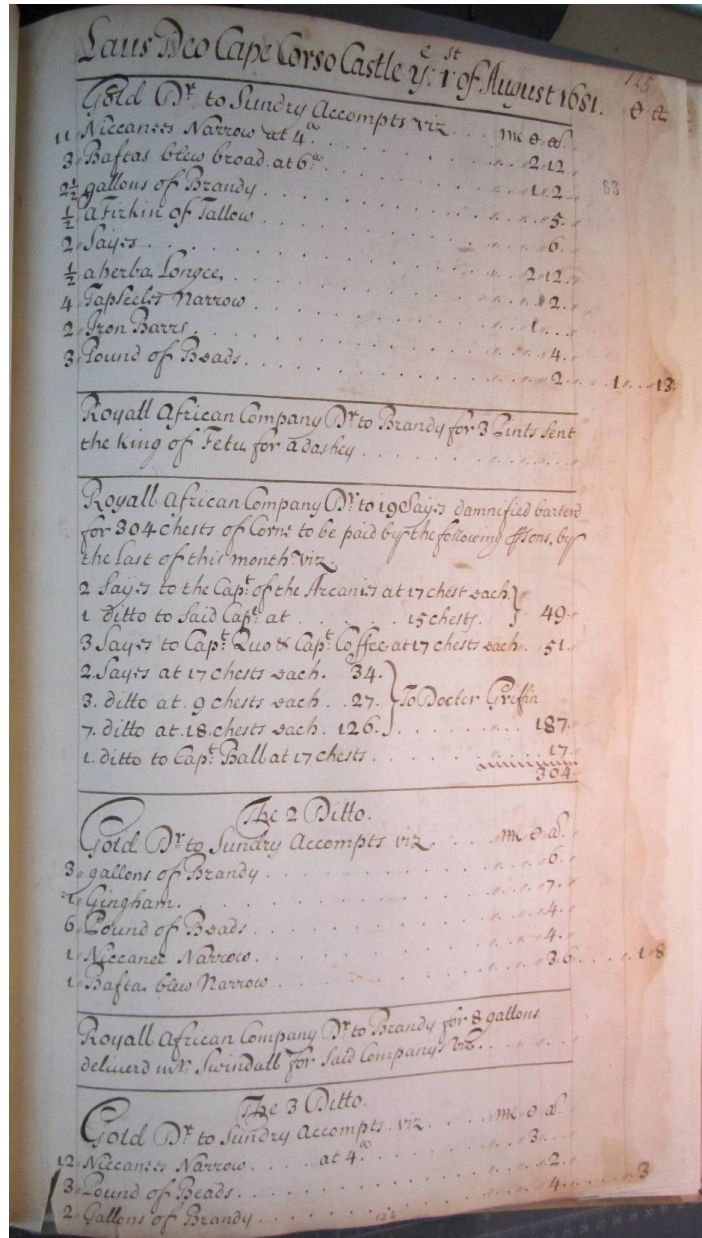
Notes: The picture shows a sample of an Account Journal entry. The entry reads "Royall African Company Dr to Brandy for 3 Pints Sent the King of Fetu for a dashey" (T70/366, folio 63). *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

A.4 Type of Payment

Payment	Definition
Customary	Payments made in relation to customary laws, for example "rowsowing," planting, harvesting, "dancing," burial
Dashey	Gifts
Ground	Payments made in exchange of rights to build and maintain forts and factories on the land
Palavara	Payments made associated with settling differences
Promise Gift	Payments made after taking an oath of allegiance to the Company
Service	Payments made for services rendered by dependants of chiefs
Ship Customs	Payments made for anchored ships of the Company
Trade Gift	Payments made by the Company to promote trade
Trusted	Advanced payments made by the Company in relation to any payments, especially ground payments and ship customs
War Aid	Payments made to allies of the Company amidst war or conflict

Source: Company of Royal Adventurers of England Trading with Africa and Successors (T70/365-378); Law (1997, 2001, 2006)

A.5 Individual Recipient

Rank	Named Recipient
Head Chief	King of Accra, King of Adangme, King of Adom, King of Ahanta, King of Akani, King of Akron, King of Akwamu, King of Agona, King of Asebu, King of Denkyira, King of Eguafo, King of Afutu, King of Komenda, King of Twifo, Queen of Akwamu, Queen of Agona, Queen of Asebu, Queen of Afutu, Prince of Agona, Prince of Eguafo
Officeholder	Brafo of Abra, Brafo of Anomabo, Brafo of Asebu, Brafo of Fante, Brafo of Afutu, Brafo of Takoradi, Brafo of Tantumkweri, Day of Asebu, Day of Eguafo, Day of Fante, Day of Afutu, Fetere of Adom, Fetere of Asebu, Fetere of Eguafo, Fetere of Afutu, Fetere of Komenda, General of Adom, General of Anashan, Herald of Cape Coast, Herald of Denkyira, Herald of Twifo, Mareen of Cape Coast, Mareen of Egya, Mareen of Fante, Mareen of Afutu, Mareen of Komenda, Messenger of Adom, Messenger of Anomabo, Messenger of Asebu, Messenger of Denkyira, Messenger of Fante, Messenger of Little Komenda, Quarrenteer of Anashan, Quarrenteer of Fante
Chieftain	Cabasheer of Abra, Cabasheer of Abrem, Cabasheer of Accra, Cabasheer of Adangme, Cabasheer of Adom, Cabasheer of Ahanta, Cabasheer of Akani, Cabasheer of Akron, Cabasheer of Amisa, Cabasheer of Anashan, Cabasheer of Agona, Cabasheer of Anomabo, Cabasheer of Asebu, Cabasheer of Cape Coast, Cabasheer of Denkyira, Cabasheer of Dixcove, Cabasheer of Eguafo, Cabasheer of Egya, Cabasheer of Fante, Cabasheer of Afutu, Cabasheer of Kabestera, Cabasheer of Komenda, Cabasheer of Kormantin, Cabasheer of Little Komenda, Cabasheer of Mina, Cabasheer of Sekondi, Cabasheer of Tantumkweri, Cabasheer of Twifo, Cabasheer of Winneba
Employee	Employee from Agona, Employee from Anomabo, Employee from Cape Coast, Employee at Cape Coast Castle
Trader	Trader from Akani, Trader from Anomabo, Trader from Asante, Trader from Asebu, Trader from Cape Coast, Trader from Denkyira, Trader from Afutu, Trader from Kabestera, Trader from Komenda
Soldier	Soldier from Adom, Soldier from Akani, Soldier from Cape Coast, Soldier from Eguafo, Soldier from Afutu

Source: Company of Royal Adventurers of England Trading with Africa and Successors (T70/365-378)

A.6   Price of Commodity

	N	Min	Max	Mean	SD
Alcohol	*297*	*0.5*	*6*	*2.7*	*1.5*
Spirits	90	4	6	4.7	0.8
Spirits Half	12	2	2.5	2.4	0.2
Brandy	122	0.5	4	2	0.3
Rum Barbados	16	1	2	1.5	0.2
Rum	57	0.5	1.5	1.2	0.3

	N	Min	Max	Mean	SD
European Cloth	*826*	*1*	*30*	*10.4*	*5*
Boysadoe	84	10	30	17.1	4
Say	121	10	24	16	3.2
Satin Stripe	13	10	12	11.8	0.6
Perpetuana	62	8	13	11.2	1.3
Welsh Plain	52	8	12	9.8	0.6
Welsh Plain Blue	40	8	11	9.6	0.9
Welsh Plain Red	38	8	11	9.6	0.9
Perpetuana Blue	111	7	12	9.5	1.1
Perpetuana Red	61	6	11	8.5	0.9
Welsh Plain Green	9	6	10	8	1.1
Perpetuana Green	53	5	9	7.9	0.9
Welsh Plain Yellow	3	7	8	7.7	0.6
Sletia Fine	54	6	16	7.6	1.7
Satin Stripe Narrow	7	6	8	6.6	1
Sletia Coarse	107	4	10	4.9	1.3
Sletia Paper	4	3	3	2.9	0
Annaba	7	1	1.5	1.1	0.2

Appendix A.6 Price of Commodity (Cont'd)

	N	Min	Max	Mean	SD
Indian Cloth	*996*	*0.6*	*10*	*4*	*1.9*
Photae	2	5	10	7.5	3.5
Gingham	66	3	7	6.7	0.6
Tapseils Broad	78	5	7	6.6	0.5
Allejar	59	4	7	6.5	0.6
Salampores	27	5	8	5.6	0.6
Chintz Broad	22	4	6	5.2	0.5
Nicanee Broad	50	3.5	7	5.2	1.1
Bafta Blue Broad	56	3.5	6	4.9	1
Longee Flowered	12	4	5	4.9	0.3
Pintado Broad	59	1.5	6	4.7	0.6
Chercolees	27	4	6	4.3	0.7
Tapseils Narrow	50	3	6	4.1	0.6
Bafta White	7	4	4	4	0
Salampores White	10	3	4	3.9	0.3
Chintz	28	3	5	3.8	0.5
Nicanee Narrow	67	2	5	3.6	0.7
Longee Silk	57	1	7	3.4	1.1
Bafta Blue Narrow	22	2.5	4	3.3	0.5
Pintado Narrow	7	2	5	2.9	1.1
Longee Herba	56	1	4	2.7	0.9
Brawl	85	1.5	2.5	2	0.4
Pautke White	2	0.6	2.5	1.6	1.3
Pautke Blue	64	1	2	1.5	0.1
Guinea Cloth	83	0.6	1.5	1.2	0.2

Appendix A.6 Price of Commodity (Cont'd)

	N	Min	Max	Mean	SD
Other Cloth	*246*	*0.5*	*12*	*5.6*	*3.6*
Cloth Long Blue	11	11.5	12	11.9	0.2
Cloth Long White	64	6	12	10.4	1.9
Cloth King	2	5	5	5	0
Cloth Silk Stripe	9	1	5	4.1	1.3
Cloth Broad Scarlet	42	3.7	5	4	0.2
Cloth Scarlet	29	3.7	4	4	0.1
Cloth Gambia	5	2.5	5	3.7	1.2
Cloth Violet	10	3	4	3.1	0.3
Cloth Blue	12	3	3	3	0
Cloth Green	3	3	3	3	0
Cloth Long Broad Blue	15	2	4	3	0.5
Cloth Red	23	2	4	3	0.3
Cloth Arda	4	1	3	2.5	1
Cloth Cape Verde	8	1	5	2.3	1.2
Cloth Benin	9	0.5	1.5	1	0.3

	N	Min	Max	Mean	SD
Cloth Product	*325*	*0.5*	*4*	*1.4*	*0.7*
Carpet Stripe	14	2.5	4	3.6	0.4
Blanket White	38	1	3	2.1	0.7
Carpet English and Turkey	39	1	3	1.9	0.3
Carpet Birds Eye	16	1	4	1.3	0.8
Blanket	60	1	2	1.2	0.4
Carpet Painted	14	1	1	1	0
Sheet	142	1	1.2	1	0.1
Canvas	2	0.5	0.5	0.5	0

	N	Min	Max	Mean	SD
Firearm	*165*	*2*	*48*	*20.1*	*14.3*
Gunpowder	102	16	48	30	8.4
Firelock	6	4	5	4.8	0.4
Snaphance	6	4	5	4.2	0.4
Carbine	9	4	4	4	0
Musket	40	2	5	4	0.5
Pewter Gun	2	4	4	4	0

	N	Min	Max	Mean	SD
Metal	*255*	*1*	*2.5*	*1.6*	*0.3*
Iron Bar	152	1.1	2.5	1.7	0.3
Lead Bar	103	1	2	1.5	0.1

	N	Min	Max	Mean	SD
Metalware	*283*	*0.1*	*4*	*1.8*	*1.3*
Pewter Screwed Jug	69	1	4	3.8	0.6
Pewter Jug Spout Pot	29	1.3	3	1.7	0.6
Pewter Basin	72	0.25	3	1.3	0.7
Pewter Tankard	11	1	2	1.1	0.3
Brass Diglin	11	0.5	2	1	0.7
Knife	58	0.1	1.5	0.9	0.3
Brass Kettle	13	0.4	2	0.6	0.4
Kettle	7	0.5	1	0.6	0.2
Brass Pan	13	0.5	0.5	0.5	0

Appendix A.6 Price of Commodity (Cont'd)

	N	Min	Max	Mean	SD
Miscellaneous	*231*	*0.3*	*14*	*1.4*	*0.7*
Loozes	2	12	14	13	1.4
Tallow	119	5	12	7.2	1.3
Paper Blue	2	4	4	4	0
Hat	3	3.5	4	3.8	0.3
Wherry	3	2.5	2.5	2.5	0
Cowries	13	0.3	4	2.1	1.7
Looking Glasses	7	0.3	6	1.8	2.3
Bouges	7	0.4	2.5	1.7	2.5
Coral	21	1.5	2	1.5	0.1
Beads Graneta	3	0.9	1	1	0.1
Guilt Skin	2	1	1	1	0
Beads	46	0.5	2	0.8	0.5
Beef	3	0.3	0.3	0.3	0

Notes: Prices are in angles of gold. N is the number of observations from 1679 to 1704. 1 ounce of gold is equivalent to 16 angles of gold. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Eltis (1991); Alpern (1995)

A.7   Type of Commodity

General	Specific
Alcohol	Brandy, rum, spirits
Other Cloth	Plain, Benin, blue, blue broad, green, king's, long white, red, red broad, silk, scarlet, scarlet blue, scarlet broad, violet
European Cloth	Boysadoe, perpetuana, perpetuana blue, perpetuana green, perpetuana red, satin stripes broad, say, silk, sletia coarse, sletia fine, Welsh plain, Welsh plain blue, Welsh red
Indian Cloth	Bafta, bafta blue, bafta blue narrow, brawl, chintz, chintz broad, chintz narrow, gingham, Guinea cloth, longee flower, longee herba, longee silk, longee silk flowered, nicanee broad, nicanee narrow, pautke, pautke blue, pautke white, photae, pintado broad, pintado narrow, salampores, tapseil broad
Cloth Product	Blankets, white blankets, carpets, bird's eye carpets, English and Turkey carpets, painted carpets, sheets
Firearm	Fire lock muskets, fuzees, gunpowder, muskets, match locks muskets, snaphances
Gold	Gold
Metal	Copper bar, iron bar, lead bar
Metalware	Brass, brass basin, brass diglin, brass kettle, brass pan, knife, pewter basin, pewter screwed jug, pewter tankard
Others	Bead coral and cowry, cane, hat, hat and band, guilt skin, looking glass, pipe, tallow, tobacco

Source: Company of Royal Adventurers of England Trading with Africa and Successors (T70/365-378); Eltis (1991); Alpern (1995); Northrup (1998)

A.8   Settlements in the Seventeenth-Century Gold Coast

Settlement	State	Caravan Route	Non Coast	Administrative Capital	Commercial Center
Abra	Fante	Y	Y	N	N
Abrem	Abrem	Y	Y	Y	Y
Accra	Accra	N	Y	Y	Y
Adangme	Adangme	N	Y	N	N
Adom	Adom	N	Y	Y	Y
Ahanta	Ahanta	N	Y	Y	N
Akani	Akani	Y	Y	N	N
Akron	Agona	N	Y	Y	N
Akwamu	Akwamu	N	Y	Y	Y
Amisa	Fante	N	N	N	N
Anashan	Fante	Y	N	N	N
Agona	Agona	N	Y	Y	N
Anomabo	Fante	Y	N	N	Y
Asante	Asante	Y	Y	Y	N
Asebu	Asebu	Y	Y	Y	N
Cape Coast	Afutu	Y	N	N	Y
Cape Coast Castle	Afutu	Y	N	N	Y
Denkyira	Denkyira	Y	Y	Y	Y
Dixcove	Ahanta	N	N	N	N
Great Komenda	Eguafo	Y	Y	Y	N
Egya	Fante	Y	N	N	N
Fante	Fante	Y	Y	Y	N
Afutu	Afutu	Y	Y	Y	N
Kabestera	Etsi	Y	Y	Y	N
Kormantin	Fante	Y	N	N	Y
Little Komenda	Eguafo	Y	N	N	Y
Elmina	Eguafo	Y	N	N	Y
Sekondi	Ahanta	N	N	N	N
Takoradi	Ahanta	N	N	N	N
Tantumkweri	Fante	N	N	N	N
Twifo	Twifo	Y	Y	Y	N
Winneba	Agona	N	N	N	Y

Notes: Y = Yes; N = No. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Kea (1982); Law (1997, 2001, 2006)

A.9   Correspondence of the Company on Interlopers

| Settlement	Vol.	Letter
Accra	1	391, 398, 399, 446
Accra	2	711, 720
Amisa	3	1043, 1243, 1244, 1273, 1288
Anashan	1	122
Anomabo	1	209, 211, 219, 223, 228, 334, 339, 340, 341, 343, 371
Anomabo	2	555, 561
Anomabo	3	633, 635, 636, 642, 653, 687, 690, 789, 807, 853, 854, 874, 882, 895, 926
Dixcove	3	5, 17, 22, 37, 38, 70, 72, 74, 96, 100, 102, 105, 118, 133, 135
Egya	1	384
Egya	2	638, 666
Fredericksburg	2	343
Komenda	1	36, 53, 54, 56, 62, 72, 75, 78, 80, 84, 86, 93, 105, 106, 107, 108
Komenda	2	165, 166, 167, 212, 221, 222, 259, 260, 268, 285
Komenda	3	287, 354, 355
Sekondi	1	6, 7, 8, 23
Sekondi	2	4, 5, 6, 13, 15, 16, 24, 26, 39, 40, 51, 67, 83, 87, 96
Sekondi	3	158, 160, 162, 163, 168, 170, 176, 179, 216, 221, 236
Winneba	1	387
Winneba	3	1066, 1076, 1085, 1086, 1111, 1113, 1116, 1119, 1132, 1171, 1176

Source: Rawlinson Corpus in Law (1997, 2001, 2006)

A.10 Volume of Payments by Rank of Recipient

	All			Pre-1688			Post-1688		
Rank	N	%	Rank	N	%	Rank	N	%	Rank
State Chief	18722	76.33		3846	72.27		14876	77.45	
Head Chief	14003	57.09	1	1401	26.32	2	12602	65.61	1
Officeholder	4719	19.24	2	2445	45.95	1	2274	11.84	3
Chieftain	4370	17.82		1162	21.83		3208	16.70	
Individual	3420	13.94	3	454	8.53	4	2966	15.44	2
Group	950	3.87	4	708	13.30	3	242	1.26	4
Employee	446	1.82	5	222	4.17	5	224	1.16	6
Trader	333	1.36	6	29	0.54	6	304	1.58	5
Soldier	89	0.36	7	3	0.06	7	86	0.45	7
Unspecified	569	2.32		60	1.13		509	2.65	
Total	24529	100		5322	100		19207	100	

Notes: The value of payments is in constant angles of gold. *All* includes payments from 1679 to 1704. *Pre-1688* includes payments in 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687. *Post-1688* includes payments in 1689, 1690, 1691, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704. *Rank* is rank from highest to lowest: 1 is the highest; 10 is the lowest. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Davies (1957); Eltis (1991); Alpern (1995)
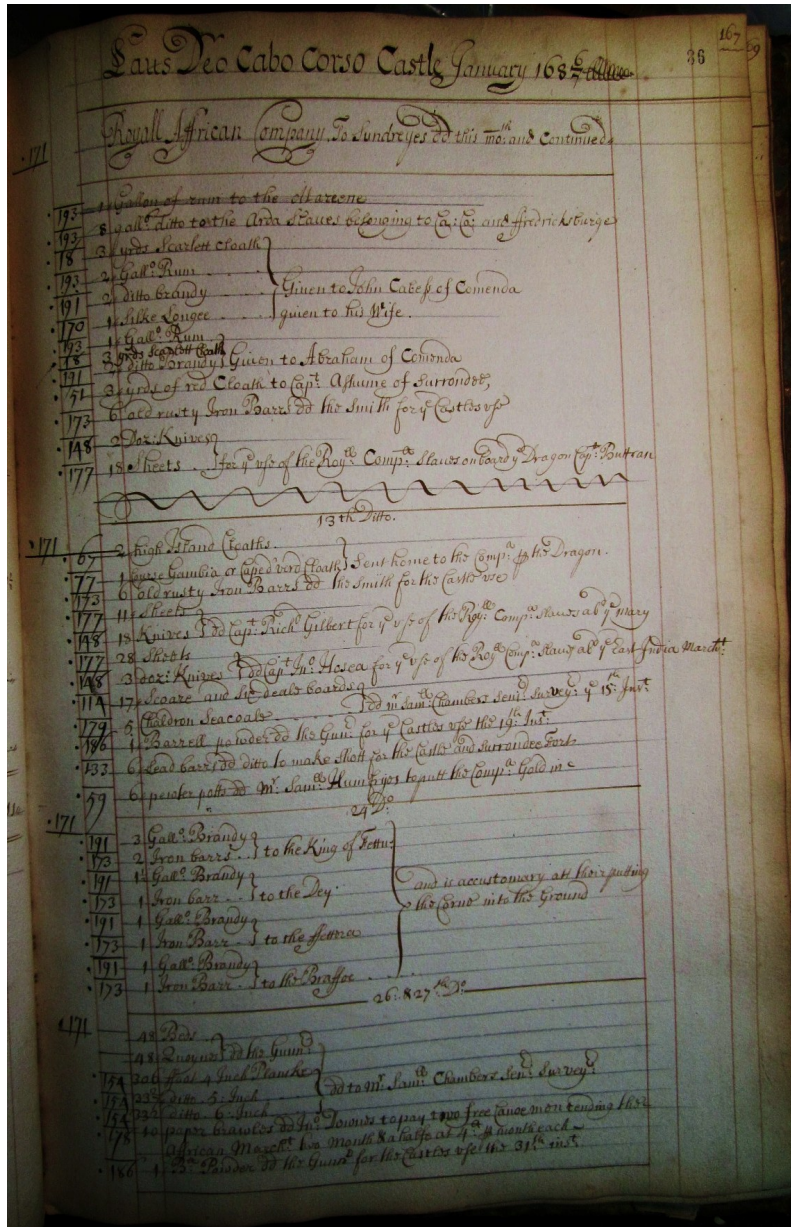
Notes: The picture shows a sample of itemized Account Journal entry; the entry reads "3 Gallo Brandy, 2 Iron barrs to the King of Fettu; 1.5 Gallo Brandy, 1 Iron barr to the Dey; 1 Gallo Brandy, 1 Iron Barr to the Fettera; 1 Gallo Brandy, 1 Iron Barr to the Braffoe, and is accustomary att their putting the Corne into the Ground" (T70/374B, folio 36). *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

A.12   Volume of Payments by Type of Commodity

	All			Pre-1688			Post-1688		
Type	N	%	Rank	N	%	Rank	N	%	Rank
Alcohol	5889	24.01	1	1542	28.98	2	4347	22.63	1
Other Cloth	967	3.94	8	232	4.36	5	735	3.83	8
European Cloth	2310	9.42	5	160	3.00	6	2150	11.19	5
Indian Cloth	650	2.65	10	258	4.85	3	392	2.04	10
Cloth Products	2741	11.17	4	35	0.66	9	2706	14.09	3
Firearms	878	3.58	9	20	0.37	10	629	3.27	9
Gold	5308	21.64	2	2692	50.58	1	2616	13.62	4
Metals	2809	11.45	3	74	1.39	7	2735	14.24	2
Metalwares	1974	8.05	6	60	1.13	8	1914	9.97	6
Others	1002	4.08	7	250	4.69	4	983	5.12	7
Total	24529	100		5322	100		19207	100	

Notes: The value of payments is in constant angles of gold. *All* includes payments from 1679 to 1704. *Pre-1688* includes payments in 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687. *Post-1688* includes payments in 1689, 1690, 1691, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704. *Rank* is rank from highest to lowest: 1 is the highest; 10 is the lowest. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378); Davies (1957); Eltis (1991); Alpern (1995)

A.13 Interstate and Intrastate Conflicts, 1681-1699

Period	Pre-1688	Post-1688	Change	%
Interstate	19	28	9	47
Intrastate	4	8	4	100
Total	23	36	13	57

Notes: *Pre-1688* shows the number of conflicts before the Glorious Revolution in 1688. *Post-1688* shows the number of conflicts after the Glorious Revolution in 1688. *Change* shows the difference between *Post-1688* and *Pre-1688*. *%* shows the percentage change between *Post-1688* and *Pre-1688*. The *pre-1688 intrastate conflicts* were: Ahanta v. English (1683); Eguafo v. English (1680); Abrem v. Abrem (1683); Allada v. English (1681). The *post-1688 intrastate conflicts* were: Ahanta v. English (1694); Ahanta v. English (1698); Braffo Fante v. Chiefs Fante (1697); Braffo Fante v. Chiefs Fante (1699); Dutch v. Komenda (1694); English v. Great Taggee (1698); Akwamu v. Danish (1693); Akwamu v. Akwamu (1693). The *pre-1688 interstate conflicts* were: Adom v. Ahanta (1681-1682); Akron v. Agona (1681); Akwamu v. Accra (1681); Akwamu v. Akyem (1682); Akwamu v. Tafo (1682); Akwamu v. Kwaman (1682); Akwamu v. Adangme (1682); Akwamu v. Adangme (1683); Adom v. Wassa (1688); Afutu v. Akyem (1687); Afutu v. Agona (1687); Akwamu v. Akyem (1686); Akwamu v. Akani (1686); Akwamu v. Kyerepong (1686); Akwamu v. Adangme (1688); Akwamu v. Agona (1688); Elmina & Dutch v. Komenda & English (1688); Fante v. Akyem & Agona (1687); Fante v. Afutu (1688). The *post-1688 interstate conflicts* were: Adom v. Ahanta (1690-94); Asirifi v. Yankey (1691-92); Asirifi v. English & Adom (1694); Ahanta & Little Taggee & Dutch v. English & Adom (1698); Dutch & Little Taggee v. English & Great Taggee (1696); Dutch & Akani v. Eguafo (1697); Dutch & Twifo v. Eguafo (1695); Adom & Dutch v. Eguafo (1696); Fante & Akani v. Kabestera-Etsi (1693-94); Fante v. Asebu & Afutu (1692); Fante v. Afutu (1691); Fante v. Komenda (1695); Fante v. Komenda (1697); Fante & Akani v. Denkyira (1698); Akwamu v. Agona (1689); Akani v. Denkyira (1698); Akwamu v. Adangme (1690s); Akwamu & Little Popo v. Whydah (1692-93); Akwamu & Little Popo v. Anlo (1695); Akwamu v. Kyerepong (1697); Basua v. Ado (1693); Akwamu v. Akyem (1699-1700); Offra & Whydah v. Allada (1690-91); Allada & Little Popo v. Offra (1692); Allada & Little Popo v. Whydah (1692); Little Popo v. Adangme (1693-95); Whydah v. Great Popo (1694); Fante v. Kabestera-Etsi (1696). *Source:* Law (1997, 2001, 2006)

A.14   Share Received by Rank of Recipient

| Commodity | State Chief | | Chieftain | | Employee | Trader | Soldier | Unnamed |
	Head Chief	Officeholder	Individual	Group				
Alcohol	37.33	19.17	28.40	6.55	1.97	2.15	0.82	3.62
European Cloth	69.26	13.17	12.22	2.37	0.25	0.29	0.12	2.32
Indian Cloth	39.30	13.97	21.19	10.20	6.76	3.10	0.00	5.49
Other Cloth	21.54	17.24	45.39	3.50	3.25	8.04	0.00	1.06
Cloth Product	74.74	9.61	1.90	9.07	0.33	2.39	0.00	1.97
Firearm	67.75	12.07	9.62	4.82	0.32	0.90	0.90	3.62
Gold	52.43	19.54	16.57	11.05	0.41	0.00	0.00	0.00
Metal	79.84	10.67	5.89	1.00	0.00	0.28	1.08	1.23
Metalware	43.95	40.34	6.23	0.26	1.30	0.00	0.00	7.91
Miscellaneous	82.02	1.48	3.15	0.00	8.25	0.10	0.00	4.99

Source: Company of Royal Adventurers of England Trading with Africa and Successors (T70/365-378); Davies (1957); Eltis (1991); Alpern (1995)
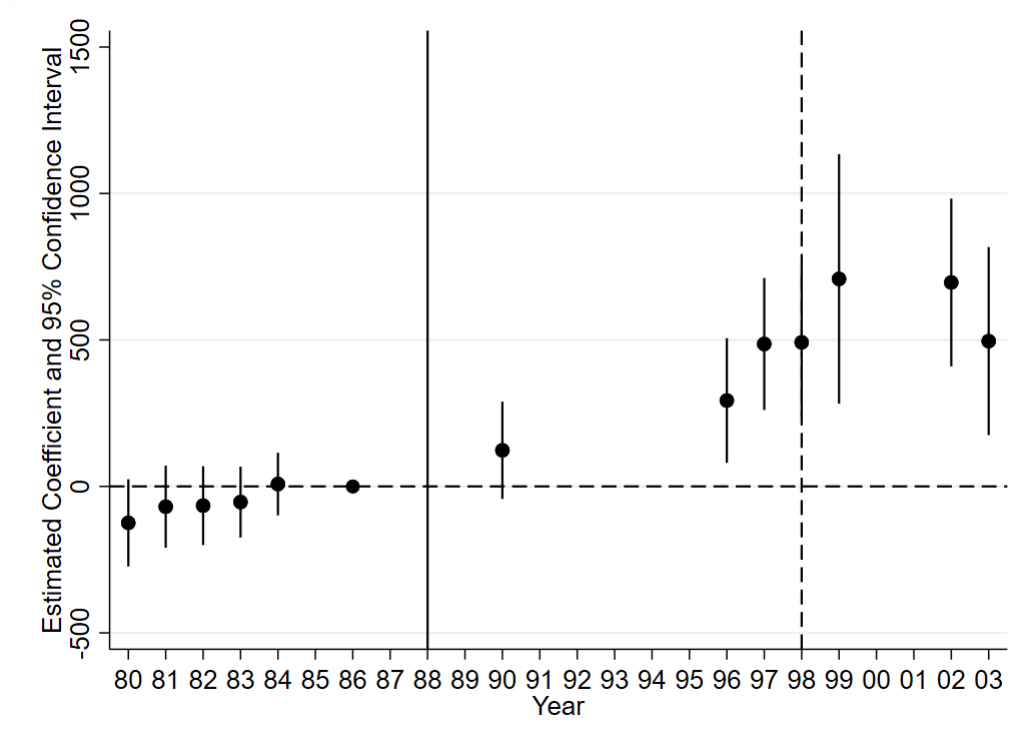
A.15   Plot of Estimated Coefficients
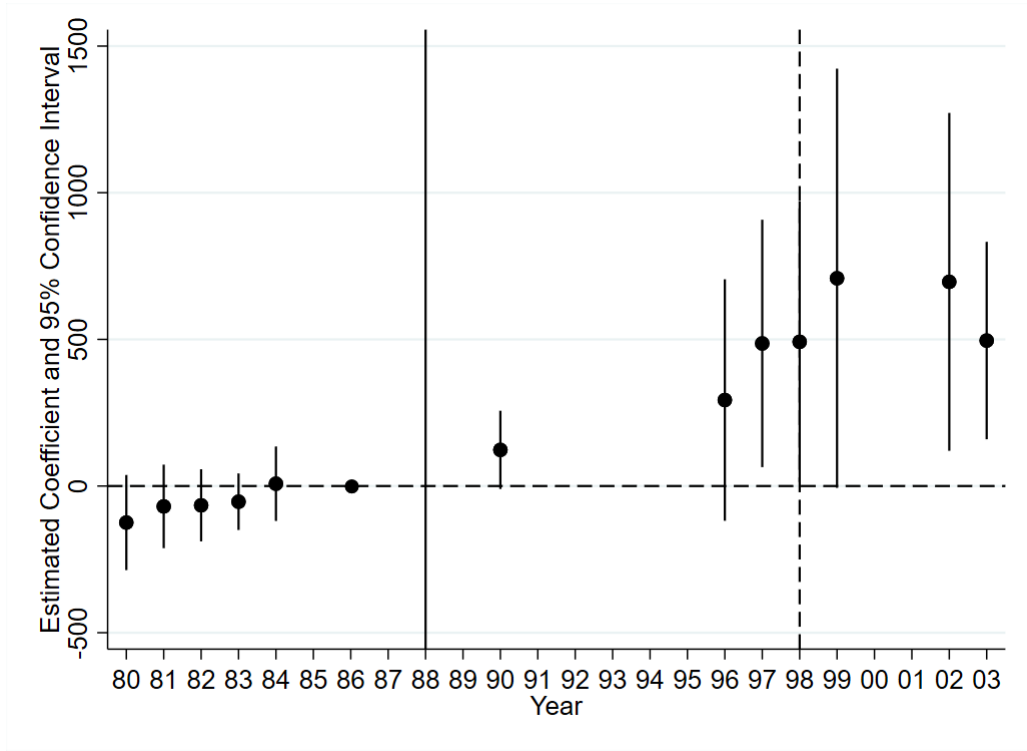
Notes: Plot of Estimated α_t in Equation 1.3: Baseline. The value of payments is calculated using the minimum price from 1679 to 1704. The specification includes settlement and year fixed-effects, state-specific trends, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by small number of clusters. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

## Appendix A.15 Plot of Estimated Coefficients (Cont'd)

Notes: Plot of Estimated α_t in Equation 1.3: HAC Standard Errors. The value of payments is calculated using the minimum price from 1679 to 1704. The specification includes settlement and year fixed-effects, state-specific trends, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a heteroskedasticity and autocorrelation consistent standard errors to correct for spatial and temporal correlation. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

Appendix A.15 Plot of Estimated Coefficients (Cont'd)
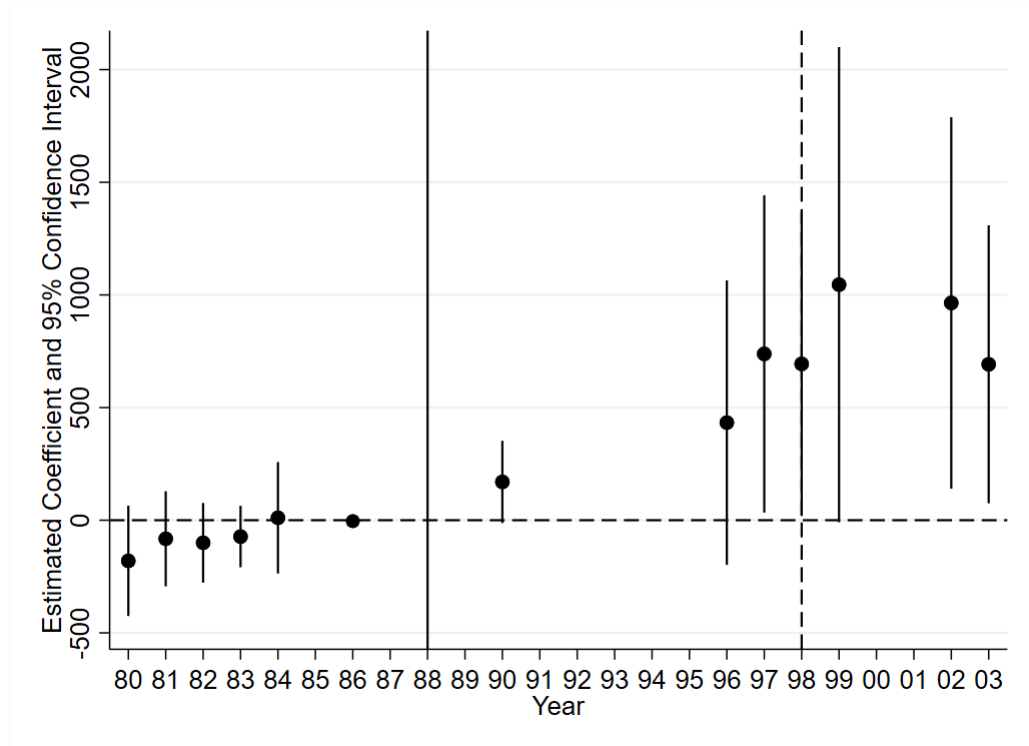
Notes: Plot of Estimated α_t in Equation 1.3: Value in Current Prices. The value of payments is calculated using current prices from 1679 to 1704. If current price is unavailable, I adopt the closest price in time. The specification includes settlement and year fixed-effects, state-specific trends, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by small number of clusters. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)
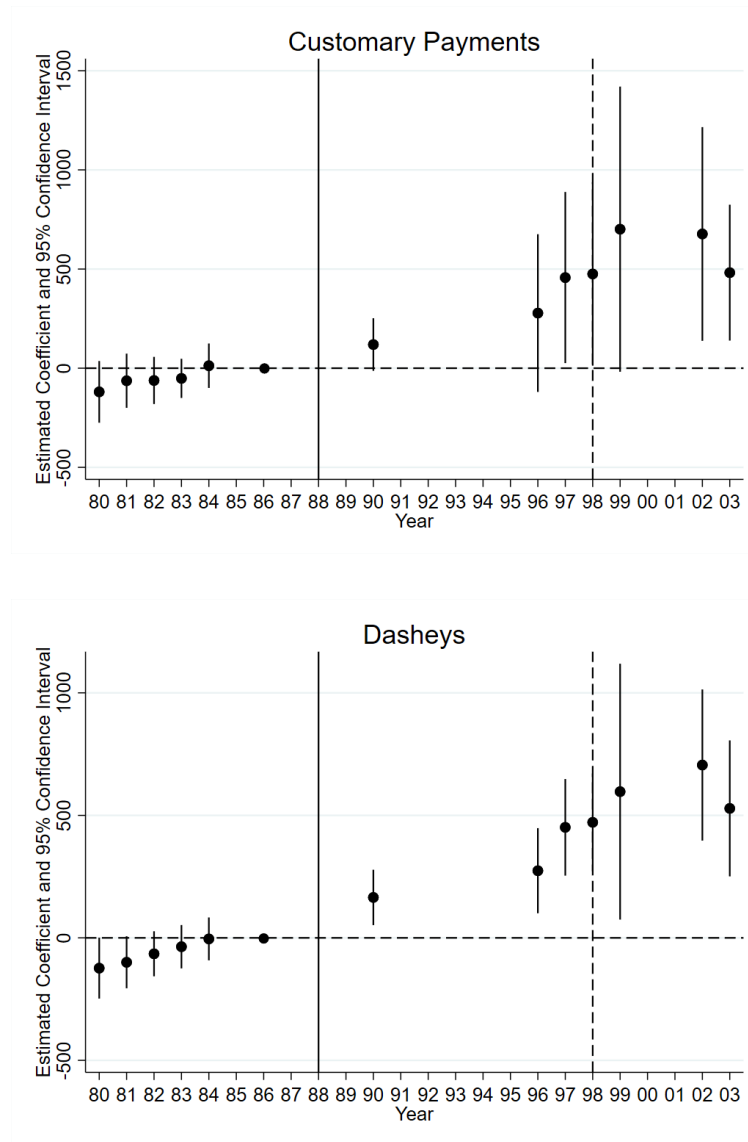
Appendix A.15 Plot of Estimated Coefficients (Cont'd)
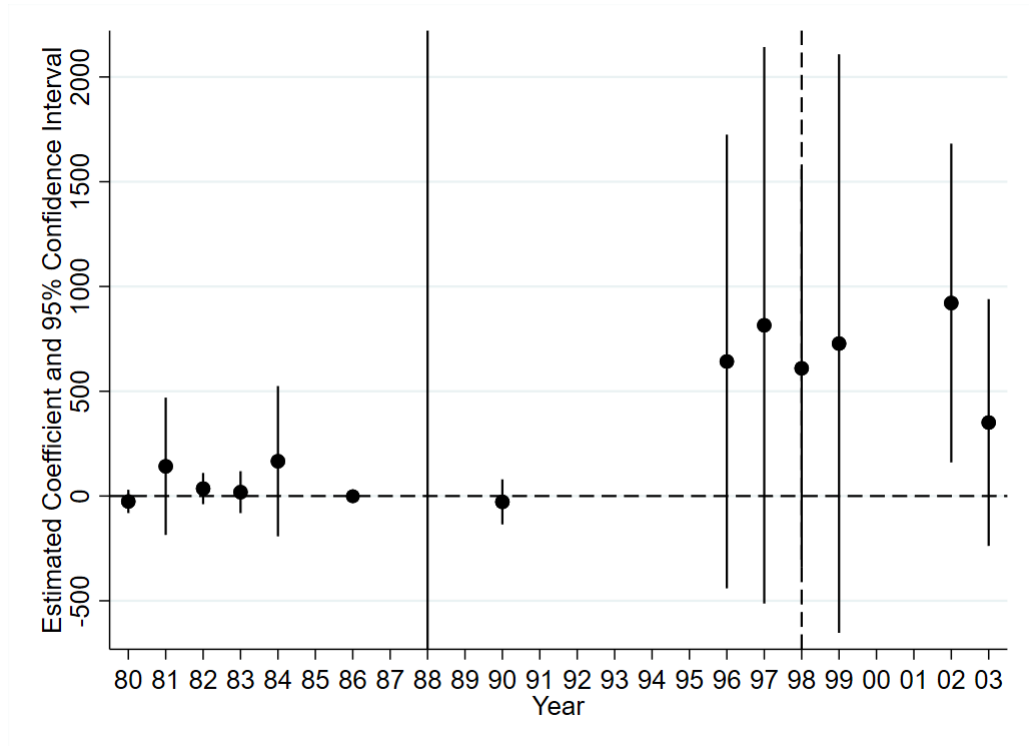
Notes: Plot of Estimated α_t in Equation 1.3: State-specific Flexible Trends. The value of payments is calculated using the minimum price from 1679 to 1704. The specification includes settlement and year fixed-effects, state-specific flexible trends, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by small number of clusters. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

Customary Payments

Dasheys

Notes: Plot of Estimated α_t in Equation 1.3: Customary Payments and Dasheys. *Customary Payments* shows the results when customary payments are dropped from the data. *Dasheys* shows the results when dasheys are dropped from the data. The value of payments is calculated using the minimum price from 1679 to 1704. Both specifications include settlement and year fixed-effects, state-specific flexible trend, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by small number of clusters. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

Ground Payments

Palavara

Notes: Plot of Estimated α_t in Equation 1.3: Ground Payments and Palavara. *Ground Payments* shows the results when ground payments are dropped from the data. *Palavara* shows the results when palavara are dropped from the data. The value of payments is calculated using the minimum price from 1679 to 1704. Both specifications include settlement and year fixed-effects, state-specific flexible trend, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by small number of clusters. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

Promise Gifts

Service Payments

Notes: Plot of Estimated α_t in Equation 1.3: Promise Gifts and Service Payments. *Promise Gifts* shows the results when promise gifts are dropped from the data. *Service Payments* shows the results when service payments are dropped from the data. The value of payments is calculated using the minimum price from 1679 to 1704. Both specifications include settlement and year fixed-effects, state-specific flexible trend, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by small number of clusters. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

Ship Customs

Trade Gifts

Notes: Plot of Estimated α_t in Equation 1.3: Ship Customs and Trade Gifts. *Ship Customs* shows the results when ship payments are dropped from the data. *Trade Gifts* shows the results when trade gifts are dropped from the data. The value of payments is calculated using the minimum price from 1679 to 1704. Both specifications include settlement and year fixed-effects, state-specific flexible trend, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by small number of clusters. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)

Trusted

War Aid

Notes: Plot of Estimated α_t in Equation 1.3: Trusted and War Aid. *Trusted* shows the results when trusted are dropped from the data. *War Aid* shows the results when war aid are dropped from the data. The value of payments is calculated using the minimum price from 1679 to 1704. Both specifications include settlement and year fixed-effects, state-specific flexible trend, and a full set of control variables. Standard errors are clustered by settlements and are calculated using a wild-cluster bootstrap to adjust for the bias caused by small number of clusters. Each vertical band represents 95% confidence interval. The first vertical line marks the Glorious Revolution in 1688. The second vertical line marks the military expansion of inland states that started in 1698. *Source: Company of Royal Adventurers of England Trading with Africa and Successors* (T70/365-378)
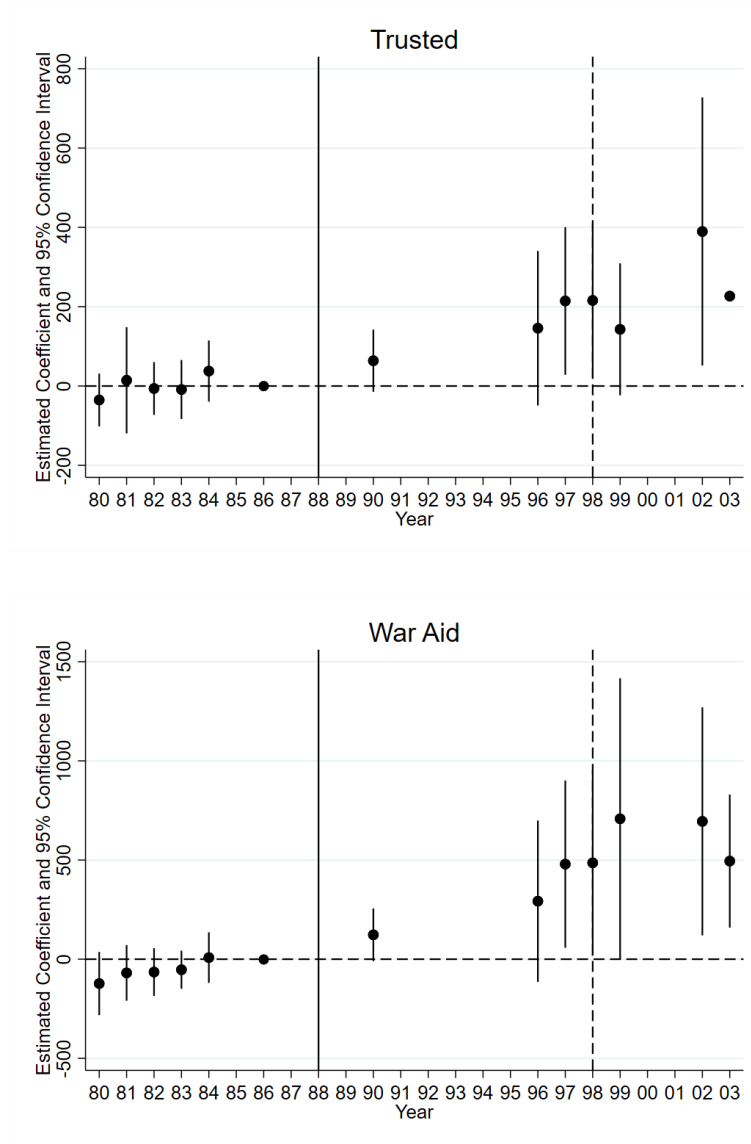
Appendix B

Chapter 2: Structural Change in the Royal African Company Stock Transfers

B.1   Capital Stock of the Royal African Company, 1672-1712

Date	Stock	%	Period
1 January 1672	111,100	100	01 January 1672 - 30 July 1691
30 July 1691	444,400	400	31 July 1691 -27 March 1693
27 March 1693	625,250	563	28 March 1693 - 7 October 1697
7 October 1697	1,101,050	991	8 October 1697 - 9 April 1706
9 April 1706	1,052,550	947	10 April 1706 - 11 July 1706
11 July 1706	1,055,650	950	12 July 1706 - 15 July 1706
15 July 1706	1,056,350	951	16 July 1706 - 25 September 1712
25 September 1712	451,350	406	26 September - 31 December 1712

Notes: *Date* shows the date when new stock was issued. *Stock* shows the book value of stock. *%* is calculated as the present stock divided by the initial stock on 1 January 1672, multiplied by 100. 444,400, for example, is 400% of the initial stock. *Period* accounts for the period when the stock was available for transfer. *Source:* Scott (1903); Scott (1910); Carlos et al. (1998); Carlos et al. (2015)

B.2 Share of Elites in Total Stock, 1679-1692
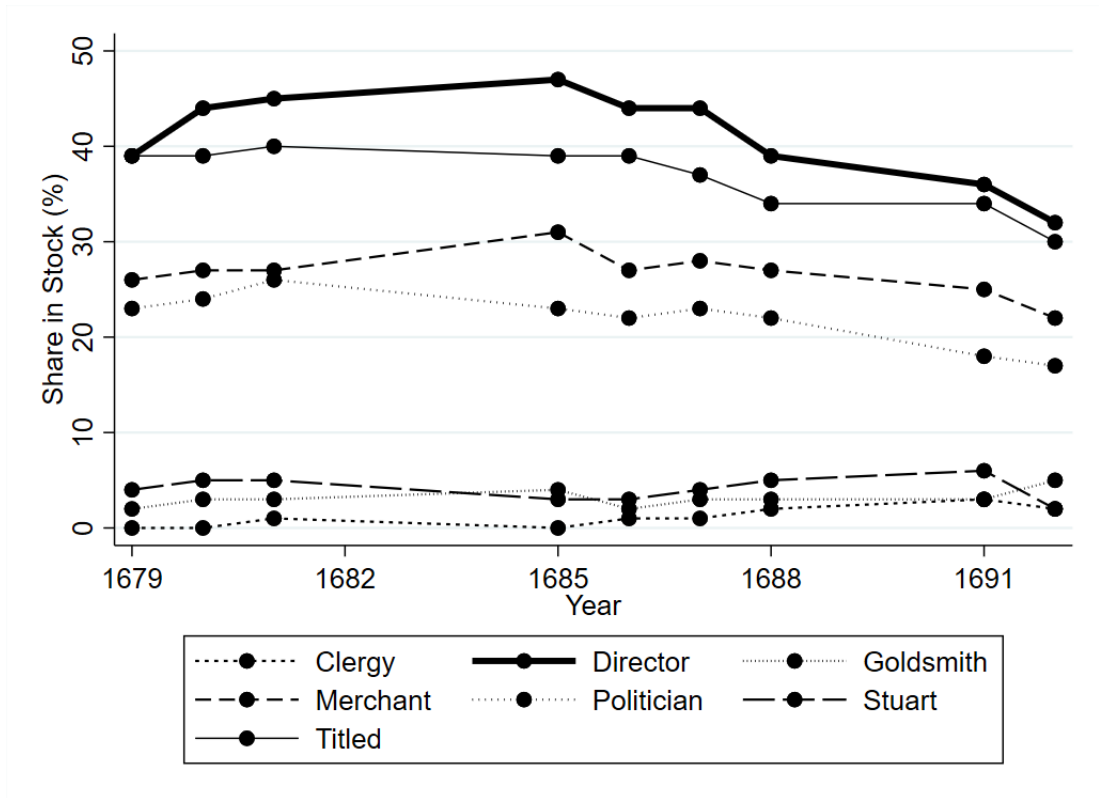
Notes: Shares are calculated from dividend payments made by the Royal African Company to each individual stockholder. The data on dividend payments are drawn from the Minute Books of the Company. *Source:* T70/78-83

B.3   Book Value of Transactions, 1672-1712
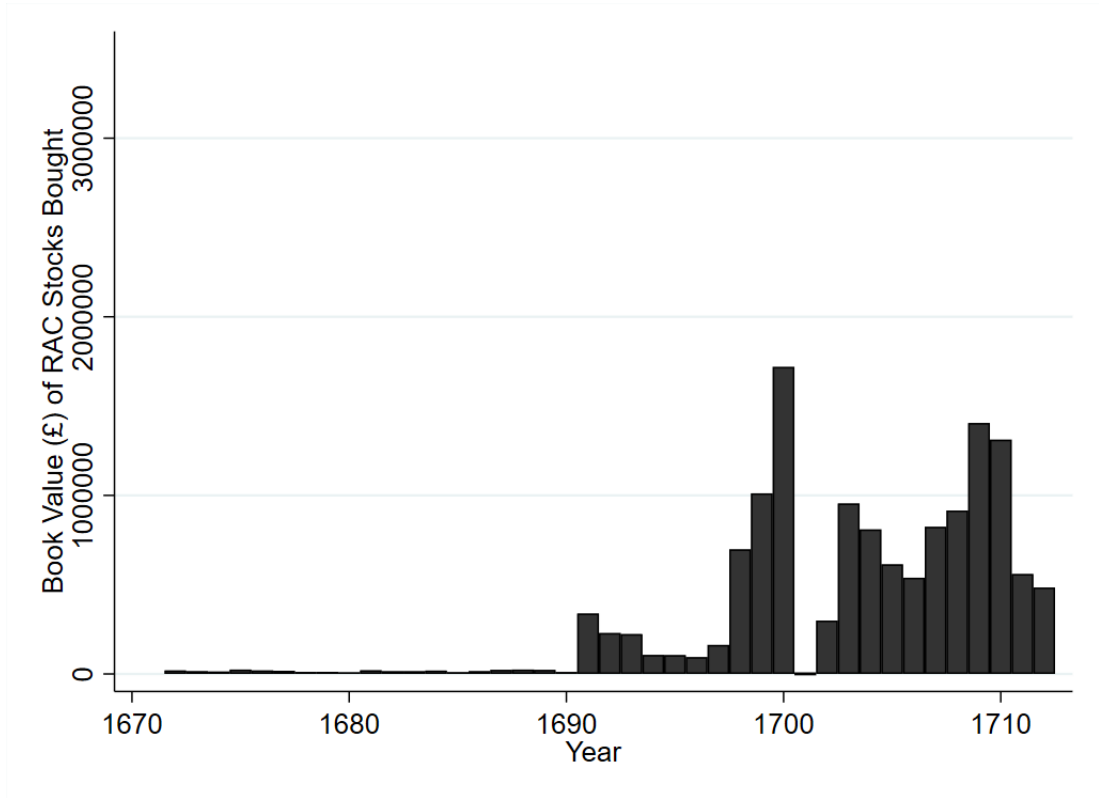
Notes: Book values are *not* normalized after the stock split in 1691 and issuance of new stock summarized in Appendix B.1. *Source:* T70/190-196

B.4   Number of Unique Individual Names, 1672-1712
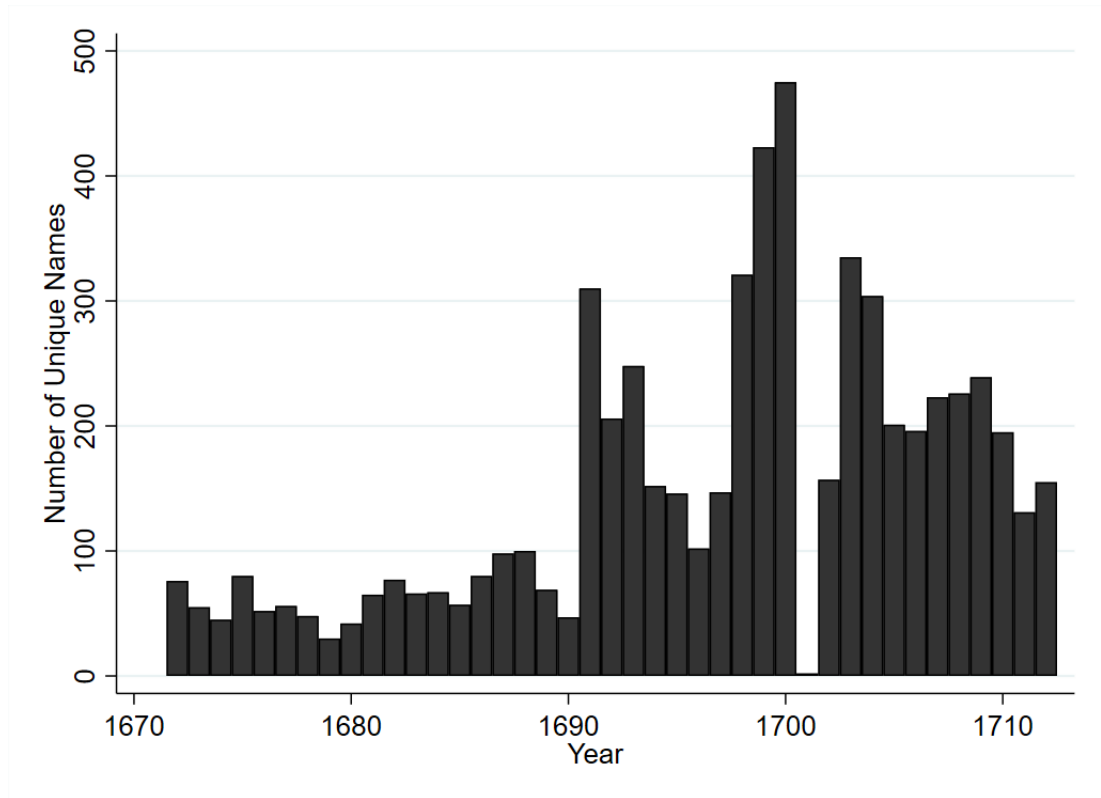
Notes: Individual names are added up per year. *Source:* T70/190-196

B.5   Average Stock Price Before and After 1691
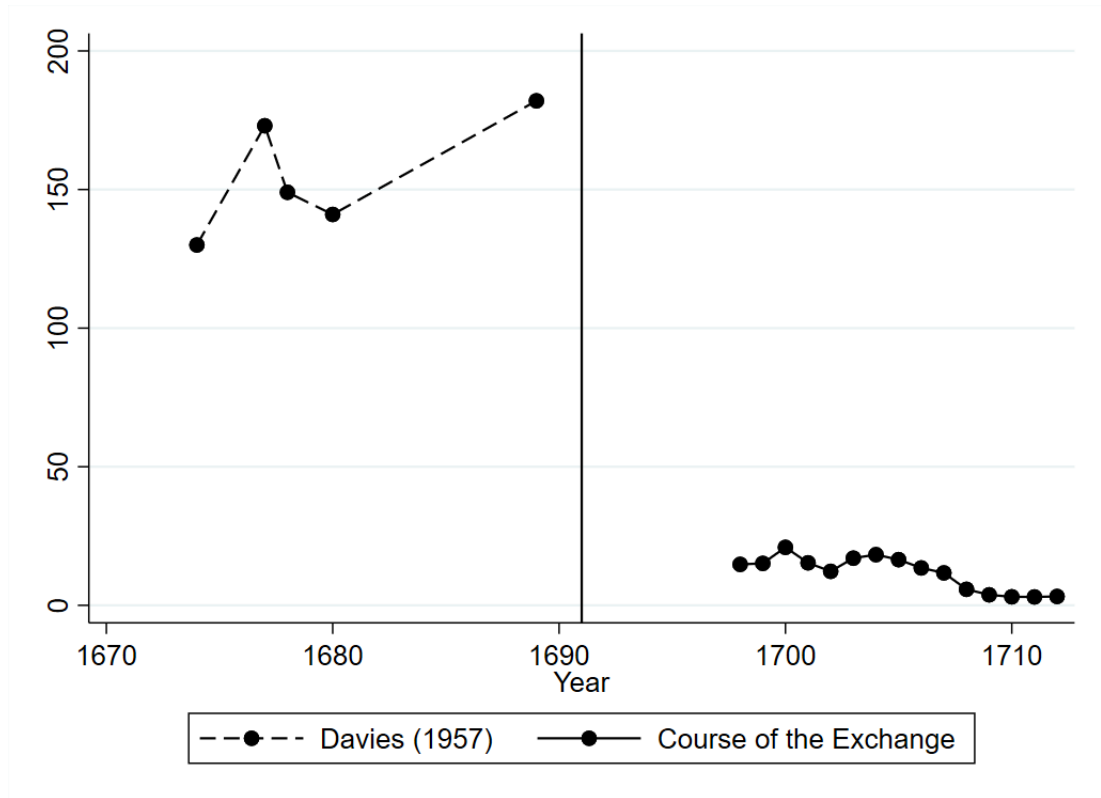
Notes: *Course of the Exchange* refers to data on stock prices compiled by Professor Larry Neal from John Castaing's *Course of the Exchange*. I am grateful to Professor Neal for sharing the data. *Davies (1957)* refers to the price data compiled by Davies (1957, p. 72). The vertical line marks the quadrupling of stock in 1691. *Source:* Course of the Exchange; Davies (1957)

B.6   Data and Sources

Data	Source
Date of transfer, book value of stock transferred, name of buyer and seller	Numbers 186 to 189 of the T70 series for Transfer Books from 1672 to 1699 (from Professor Ann Carlos) and numbers 190 to 196 of the same series for Transfer Books from 1700 to 1712
Clergy, Directors of the Company, goldsmiths, merchants (e.g. City of London merchants), politicians, Stuart courtiers, titled elites.	Brewer and Staves (1995), Davies (1957), Dickson (1967), Hayton (2002), Lee (1878), J. Miller (2014), Neal (2015), Oxford Directory of National Biography, Pettigrew (2013), Pincus (2009), Scott (1903, 1910, 1912)

B.7   Summary Statistics, 1672-1712

	Stock Bought		Stock Sold		Unique Individual		Transaction	
Stock Traders	Value	%	Value	%	Number	%	Number	%
Elite	4294932	*31.30*	4310640	*31.42*	477	*21.48*	3989	*33.11*
Clergry	131550	0.96	129500	0.94	19	0.86	137	1.14
Director	2016115	14.69	1991750	14.52	186	8.37	1720	14.28
Titled	1425510	10.39	1661550	12.11	223	10.04	1340	11.12
Goldsmith	417525	3.04	414240	3.02	14	0.63	544	4.52
Merchant	1424442	10.38	1461240	10.65	182	8.19	1415	11.74
Politician	585060	4.26	573600	4.18	75	3.38	553	4.59
Stuart Courtier	40800	0.30	49800	0.36	17	0.77	89	0.74
Non-Elite	9425863	*68.70*	9407601	*68.58*	1744	*78.52*	8059	*66.89*
Total (Elite and Non-Elite)	13720795	*100*	13718241	*100*	2221	*100*	12048	*100*

Notes: *Value* is the book value of stock bought or sold. *Number* is the number of unique individuals or transactions. *%* is the share in percentage terms.
Source: T70/190-196

Appendix C

Chapter 3: Turning Points in the Slave Trade

C.1 Major Regions of Africa Where Slaves Were Embarked
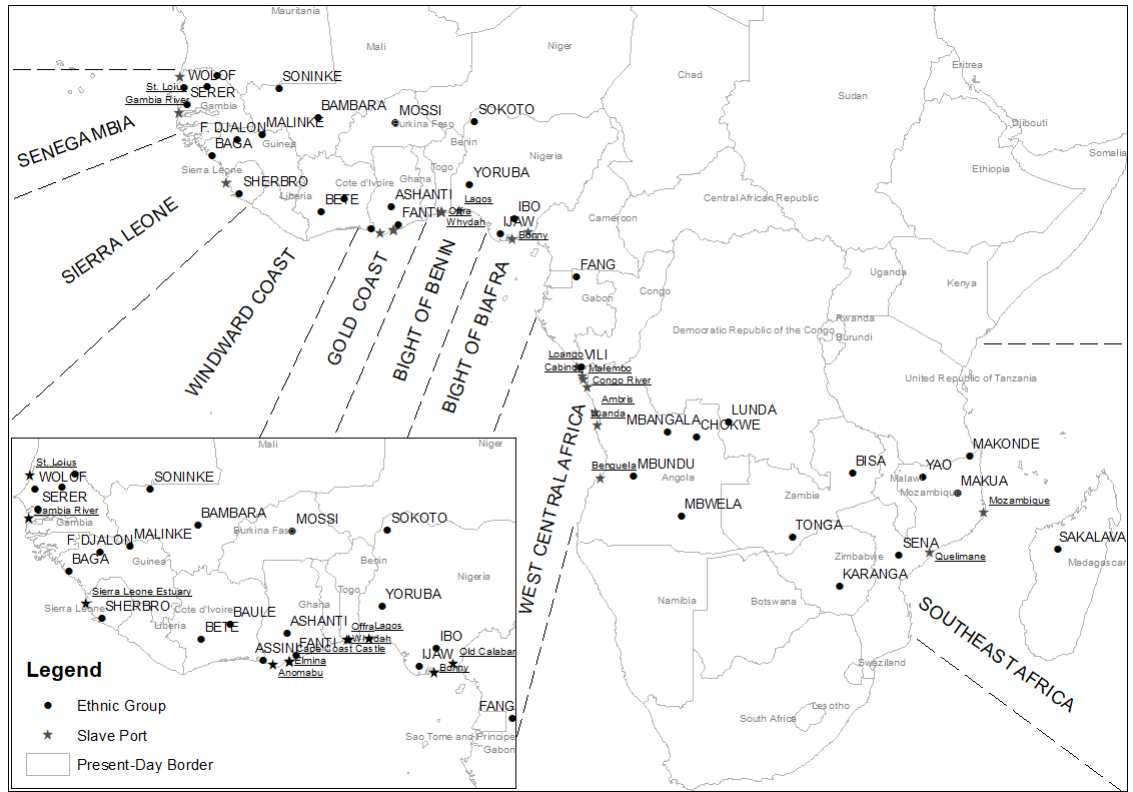
Notes: Major regions of Africa where slaves were embarked. The regions include Senegambia, Sierra Leone, Windward Coast, Gold Coast, Bight of Benin, Bight of Biafra, West Central Africa, and Southeast Africa. *Source:* Eltis and Richardson (2010); Iliffe (2017)

C.2 Slaves Embarked from Africa by Country of Purchaser, 1514-1866
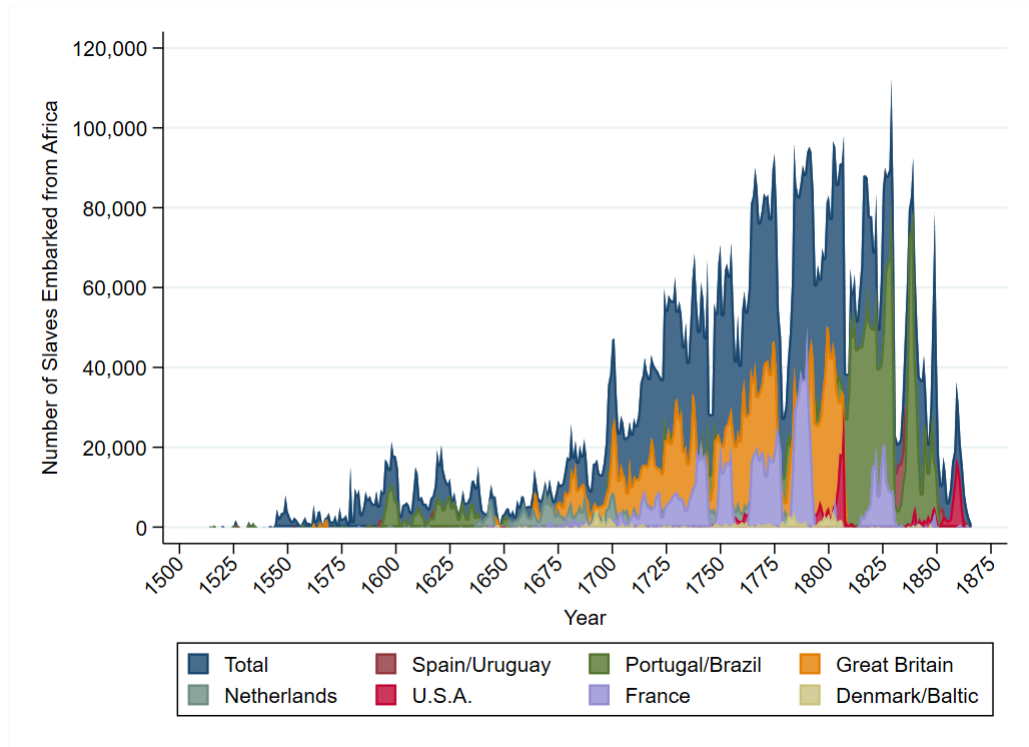
Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

C.3 Number of Slaves Embarked by African Regions, 1514-1866

Year	Senegambia	Sierra Leone	Windward Coast	Gold Coast	Benin	Biafra	West Central Africa	Southeast Africa
1501-1525	324	0	0	0	0	359	624	0
1526-1550	28673	0	0	0	0	2154	359	0
1551-1575	37737	1408	0	0	0	2980	0	0
1576-1600	86589	0	0	0	0	6290	32614	0
1601-1625	37456	0	0	0	4386	9579	144523	0
1626-1650	20141	90	0	1061	5550	15691	112263	0
1651-1675	13661	793	316	15180	31242	29227	40141	940
1676-1700	32815	1997	180	41461	142981	41819	89076	10424
1701-1725	29116	3217	5156	123796	279540	43123	127321	7035
1726-1750	50912	7305	14979	134389	290807	93109	368406	1887
1751-1775	111734	72298	113257	184545	248041	266920	477818	4167
1776-1800	72608	69923	44746	182374	242382	302415	603285	44958
1801-1825	63594	47381	17257	54201	162501	186863	788395	158939
1826-1850	10132	35866	3779	2983	104692	101163	592738	160889
1851-1875	0	1640	0	0	12834	675	70275	11280
Total	595492	241918	199670	739990	1524956	1102367	3447838	400519
% of Africa	5.7	2.3	1.9	7.0	14.5	10.5	32.8	3.8

Notes: Senegambia includes the Offshore Atlantic. Bight of Biafra includes Gulf of Guinea Islands. West Central Africa includes St. Helena. Southeast Africa includes Indian Ocean Islands. The total does not include Other Africa. Other Africa is 21.6 per cent of the total slaves embarked from Africa. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

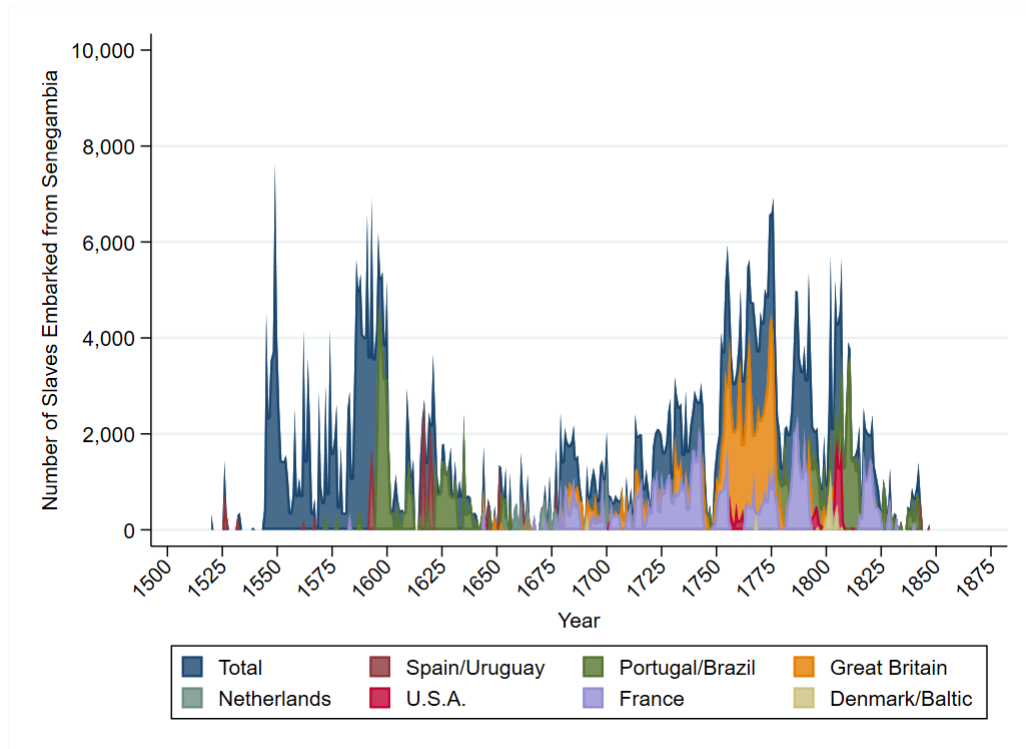## C.4 Slaves Embarked from Senegambia by Country of Purchaser, 1514-1866

Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org. (2016)*

C.5   Slaves Embarked from Sierra Leone by Country of Purchaser, 1514-1866
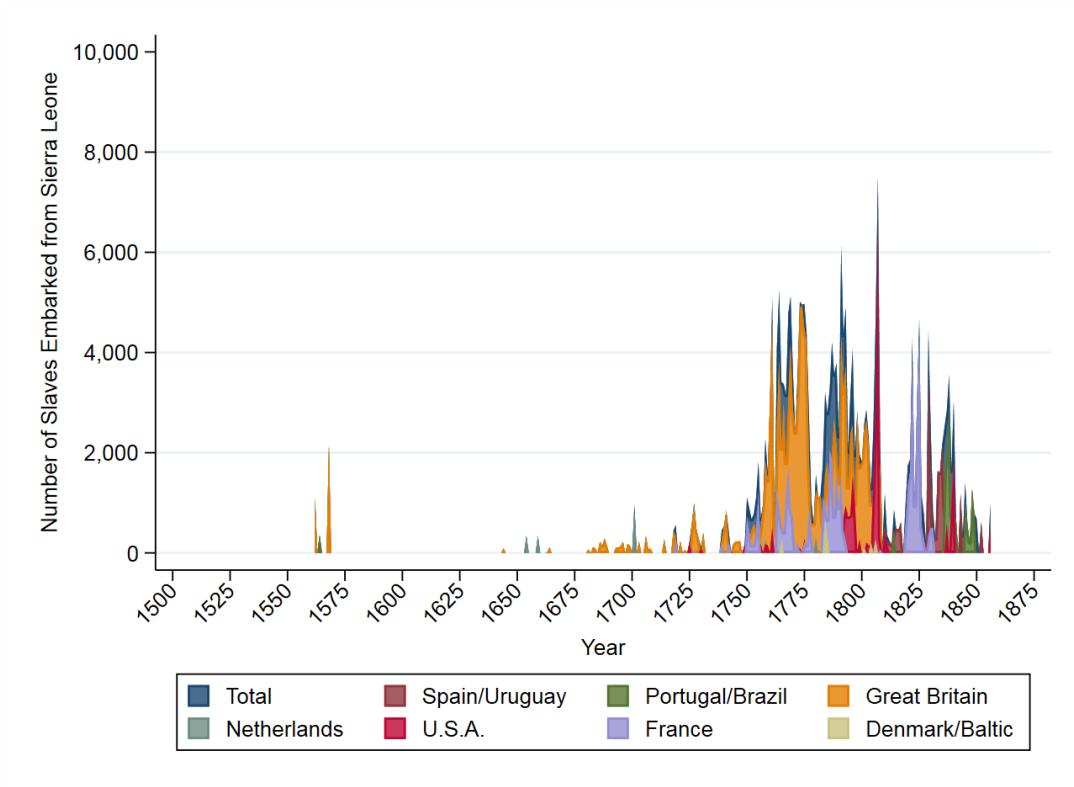
Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

C.6   Slaves Embarked from the Windward Coast by Country of Purchaser, 1514-1866

Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

C.7 Slaves Embarked from the Gold Coast by Country of Purchaser, 1514-1866
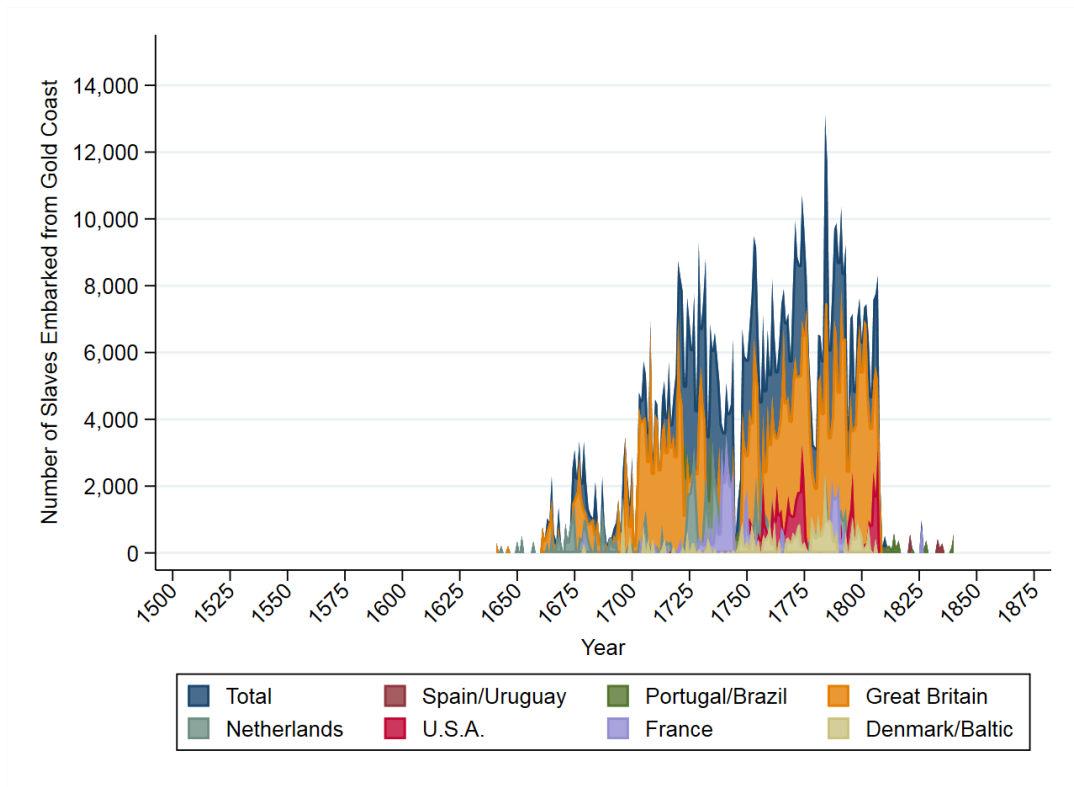
Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

C.8   Slaves Embarked from the Bight of Benin by Country of Purchaser, 1514-1866
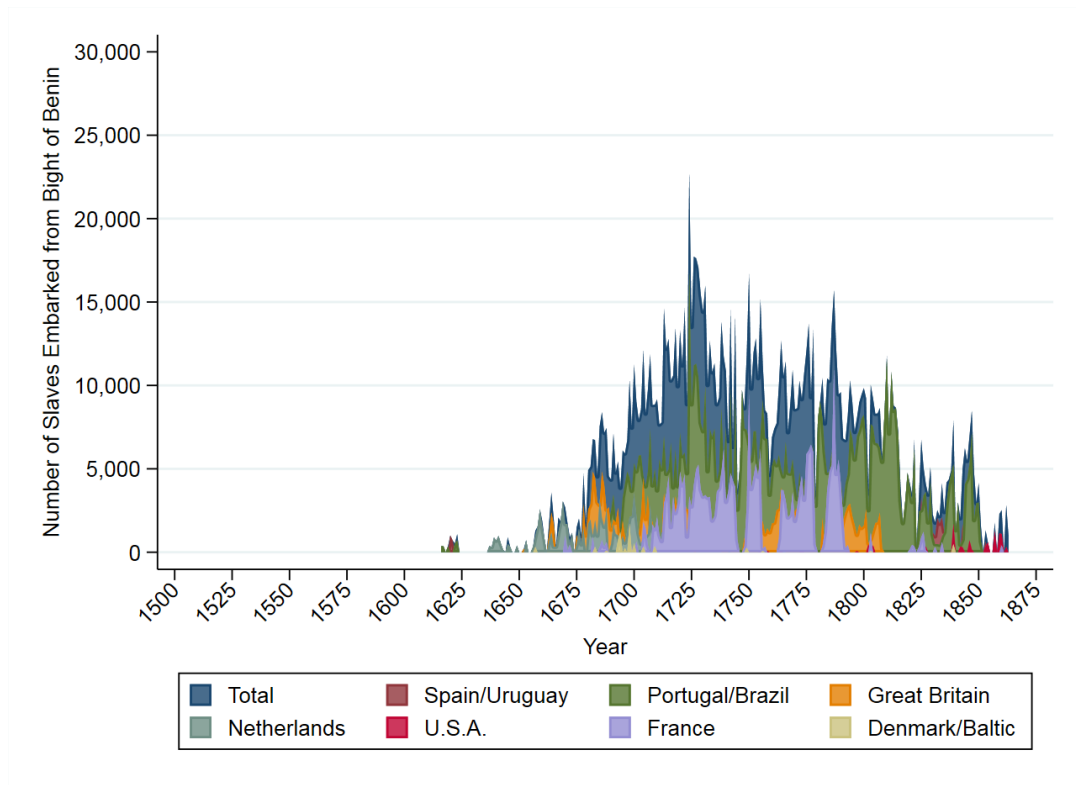
Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

C.9 Slaves Embarked from the Bight of Biafra by Country of Purchaser, 1514-1866
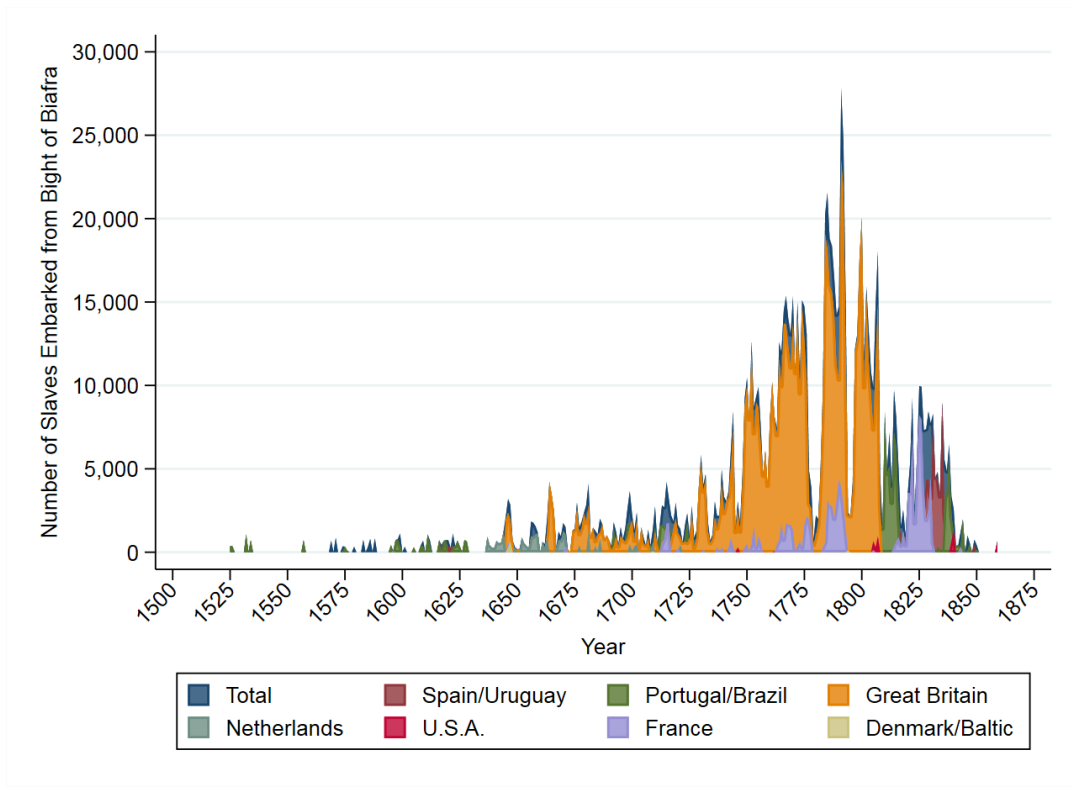
Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

C.10 Slaves Embarked from West Central Africa by Country of Purchaser, 1514-1866
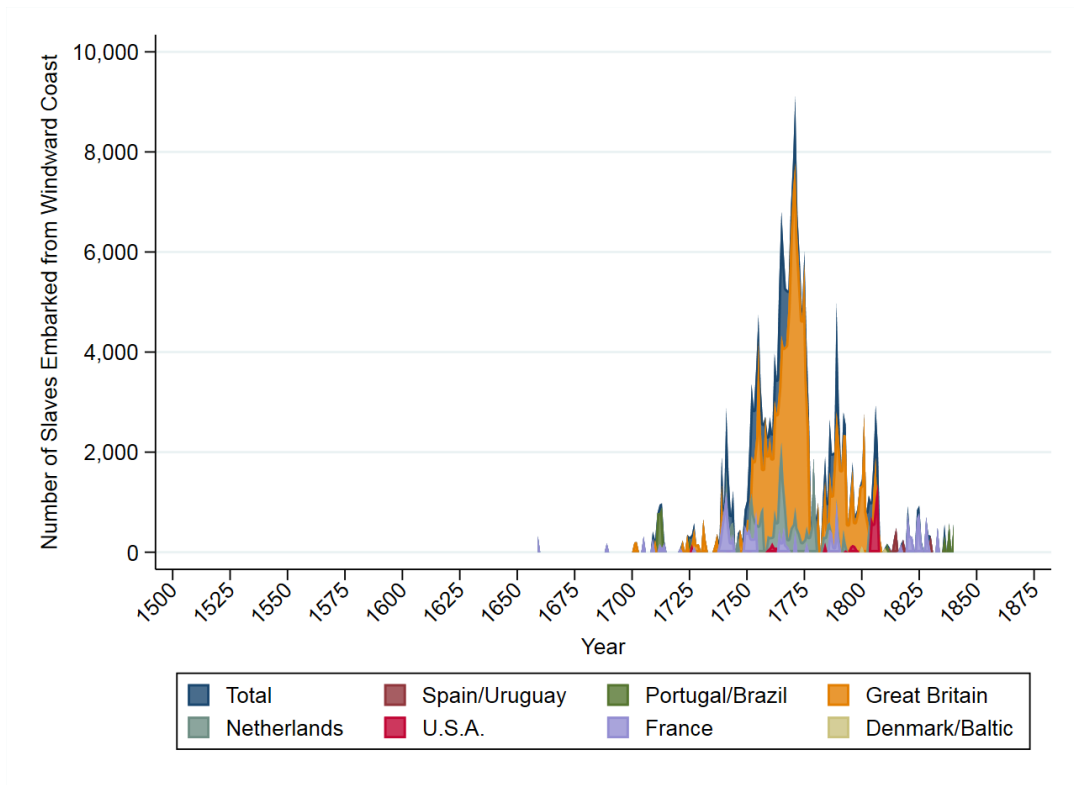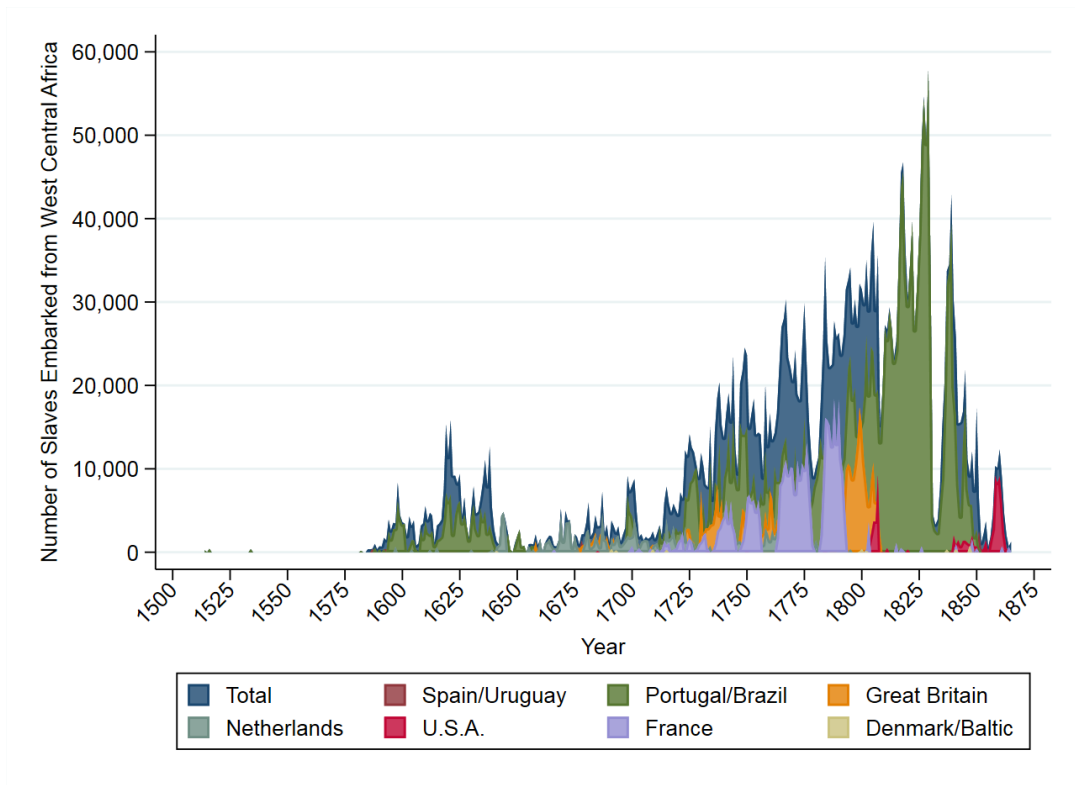

Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

C.11 Slaves Embarked from Southeast Africa by Country of Purchaser, 1514-1866
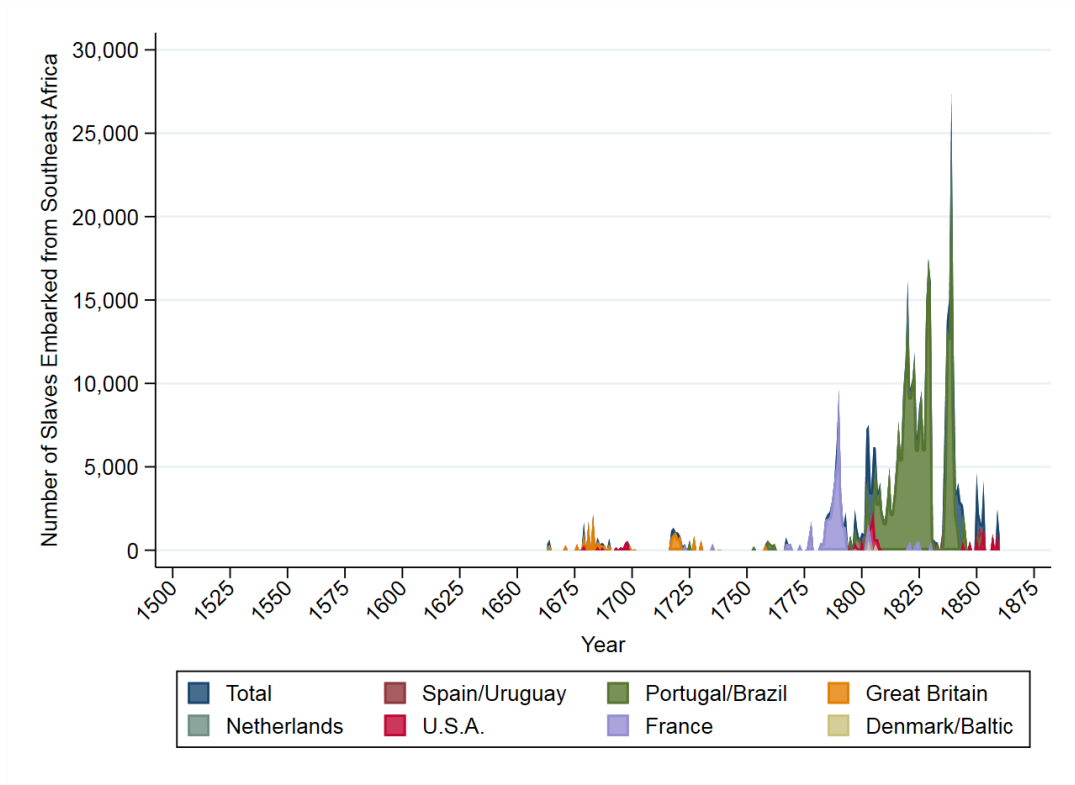
Notes: Slaves embarked are calculated from the Trans-Atlantic Slave Trade Database. The groups Spain/Uruguay, Portugal/Brazil, and Denmark/Baltic are adopted from the original data. *Source: Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.* (2016)

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