

Current Version: *December 27, 2018*

The Transatlantic Slave Trade, The South Sea Company and the Financial Revolution in Great Britain

Gregory N. Price *

Warren Whatley **

Abstract

In 1711 British Parliament formed the South Sea Company (Company), a public-private corporation chartered to convert illiquid short-term public debt into tradeable Company equity. The government also awarded the Company an international monopoly to supply slaves to the Spanish Empire. We use historical slave trade and financial data to estimate a Capital Asset Pricing Model to determine if Company slave trading increased the risk-adjusted return on South Sea Company stock. We find that slave trading created substantial positive returns for Company shareholders and precisely when the government used the Company to refinance the public debt.

JEL Classification: *G12, G14, G23, H62, N23, N43, N73.*

Keywords: Slave Trade, Britain, Public Finance, South Sea Company, Financial Revolution

* Department of Economics, Morehouse College, 830 Westview Dr. SW, Atlanta GA, 30314
email: gregory.price@morehouse.edu, tel#: 470-639-0702

** Department of Economics, University of Michigan, Ann Arbor MI, 48109
email: wwhatley@umich.edu

For invaluable comments and critique on earlier versions of this paper, the authors thank participants of 17th World Economic History Congress, Kyoto, Japan, August 3 - 5, 2015. Financial support from the Division of Business Administration and Economics at Morehouse College is also acknowledged and appreciated.

I. Introduction

What was the relationship between slavery and the rise of western capitalism? In 1944 Eric Williams began his classic study *Capitalism and Slavery* with the following preface: “The present study is an attempt to place in historical perspective the relationship between early capitalism as exemplified by Great Britain, and the Negro slave trade, Negro slavery and the general colonial trade of the 17th and 18th centuries (page ix).” For Williams, as for Karl Marx, slavery and slave trading were sources of the primary accumulation of the capital that would finance the material triumph of what Joel Mokyr (2017) calls the Western culture of growth. Yet after almost a century of debate, there is still no consensus on the role of slavery and slave trading in the global ascendancy of capitalism. The arguments and the evidence, with Great Britain being the modal example, range from slavery playing no role (McCloskey, 2010), to it playing a negligible role (Eltis and Engerman, 2000; Acemoglu, Johnson, and Robinson, 2005), to it playing a significant role (Angeles, 2013; Blackburn, 1997; Darity, 1992; Daudin, 2004; Inikori, 1981, 2002; O’Brien and Engerman, 1993; Rodney, 1972; and Solow, 1985; Wright, 2006).¹ Darity (1992), notes that what unites all of these studies regardless of their conclusion is a reliance on static ratios like labor productivity, investment rates and sectoral compositions.

In this paper we take a more-historical approach. Research on the rise of Western Europe has documented the important role of state capacity in financing public debt during the critical 18th century race to empire among western European nation-states (North and Weingast, 1989; Brewer, 1988; Stasavage, 2003; Dincecco, 2011; Dinecco and Prado, 2012; Drelichman and Voth, 2008).² In general, a nation’s expansion as a commercial and military empire requires central government capacity to finance that expansion, with the costs largely determined by the supply price of government-issued debt and the ability to tax. In this paper we consider the role that commercial slave-trading may have played in reducing the cost of public debt in Great

¹ While much of the literature on the importance of the slave trade to the rise of western European nations as global empires focuses on the profitability of slavery and slave-trading, an alternative mechanism has been considered by Forestier (2005). To the extent that slavery and slave-trading introduced significant principal-agent problems that one observes in modern market societies, exposure to slavery and slave-trading by European nations could have created networks of mutual trust in which trading ideologies could emerge, which is complementary to the development of a materially prosperous market society.

² Acemoglu, Johnson and Robinson (2001) argue that the winner(s) of this race and the structures of their colonial institutions have had long-term and lasting effects on patterns of economic growth and inequality around the world.

British in the early 18th century. As such, we investigate the intersection between the financial history of Britain and the history of the British slave trade.³

As can be seen in Figure 1, the period from 1711 to 1725 was one of overall improvement in the cost of government borrowing in Britain. The market value of the national debt approached par and the cost of long-term government borrowing declined from 8.7% to approximately 3%. This revolution in public debt financing is often called the British financial revolution—the conversion of deeply discounted high-interest short-term public debt into widely-accepted low-interest long-term public debt (Dickson, 2017; Carswell, 1961; Neal, 1990; Temin and Voth 2013). It has been argued that Britain’s ability to solve this public finance problem, which in many ways is the culmination of the credible commitment problem emphasized by North and Weingast (1989),⁴ allowed Britain to win the race to empire in the 18th and 19th centuries. (Brewer 1988, pp. 171-174).

At the center of the British financial revolution was the South Sea Company -- a joint-stock company chartered by parliament in 1711 for the expressed purpose of converting high-interest short-term public debt into equity shares in the South Sea Company. Figure 1 also shows the years during which the South Sea Company held a world monopoly right to supply African slaves to the Spanish colonies in the Americas — the *Asiento de Negros*.⁵ The South Sea Company held the Asiento option when it was called upon repeatedly to refinance government funded debt via a series of debt-for-equity swaps. Profits from Asiento-related activities could have enhanced British fiscal capacity by making it cheaper for the government to refinance its debt this way. If true, then the Asiento at least partially conditioned British fiscal capacity on slave-trading and slave commerce during the financial revolution.⁶

³ We are only aware of a few attempts to do this. Inikori (2002) documents the relationship between the British slave trade and the development of British financial institutions, but it does not discuss the South Sea Company or the British financial revolution. Sheridan (1958) looks at the impact of long-distance slave trading on the increased use of bills of exchange and other commercial paper, but it also does not discuss the South Sea Company or the British financial revolution.

⁴ For critical assessments of the argument put forth by North and Weingast (1989), see the papers in Coffman, Leonard and Neal (2013).

⁵ See Du Bois (1896) for an overview of the Asiento.

⁶ Temin and Voth (2013), Neal (1990) and Carlos, Fletcher, Neal and Wandschneider (2013) also emphasize the importance of the South Sea Company in the success of the British financial revolution, but they attribute the success to organizational innovations other than slave trading. According to Carlos et al (2013 pp. 148-149), “... the government’s success in maintaining the marketability of the South Sea Company’s securities after the collapse of the South Sea Bubble in 1720 was the defining moment for this innovation. In particular, debt refinancing through

As in Goetzmann and Ukhov (2006) we adopt a modern portfolio-theoretic approach to address this issue. We consider the value to the British government of particular investment opportunities that rational investors faced. In particular, we consider the opportunities afforded by the South Sea Company under the Asiento slave-trading contract between 1713 – 1743. We estimate the parameters of a Capital Asset Pricing Model (CAPM) that produces an estimate of the contributions of Asiento-related slave-trading to the risk-adjusted value of South Sea Company equity shares. We control for a variety of discrete historical events like wars, the South Sea Bubble, changes in the institutional structure of British equity markets and government policy.

We find that the risk-adjusted returns on South Sea Company stock increased when the Company held the Asiento option. More importantly, we find that the South Sea Company exercised this option strategically. In months when at least one South Sea Company slave ship departed London for Africa and the South Seas, the monthly risk-adjusted return on South Sea Company stock increased by an estimated 7.8%. The departures were timed to entice the public to convert public debt into Company shares precisely when the Company was called upon to refinance government debt. As such, we argue that slave trading under the Asiento was a critical component of parliament ability to establish its credible commitment to repay its debt and Britains ability to win the race to empire in the 18th and 19th centuries.

Our findings have implications for a number of issues and debates. First, it offers additional support for the Williams Thesis that British slave-trading was profitable and enabled the financial means for the expansion of empire. Second, it contributes to the history of the South Sea Company, which until now has minimized the importance of the Asiento and slave trading. Third, it offers a new perspective on the role of the slave trade in the British government's effort to establish credible commitment and to finance the military race to empire against France and Spain. Finally, it removes the Williams debate from the straitjacket of ratios and places it squarely within the historical perspectives that emphasizes path-dependence,

the Company in 1720 and the Company's reorganization in 1723 were the key developments that allowed Britain to

historical contingency and critical junctures.

The main body of the paper is organized as follows. Section two describes the role that the South Sea Company played in the British Financial Revolution. Section 3 discusses the possible linkages between Asiento-related activities, South Sea Company share values and the cost of government borrowing. Section four develops the CAPM framework for viewing the South Sea Company as a investment opportunity for wealth-maximizing investors in the 18th century London stock market. Section five discusses the data and methodology. The sixth section reports parameter estimates for various specifications of a Capital Asset Pricing Model. The last section concludes.

II. The South Sea Company and the British Financial Revolution

In late 1710 the fledgling Parliament of British was preparing the launch a scheme to improve the perceived credibility of its commitment to repay its debts. Britain was emerging from a 10-year war against France and Spain, and the solvency of the national debt was a pressing concern. Parliament proposed that the public convert its government holdings into equity shares in a new public-private corporation called the South Sea Company (Company).⁷ To bolster share price and to encourage public subscription, Parliament also awarded the Company an economic monopoly. This type of scheme had been used before with some success. In 1694 the Bank of England was formed in a similar manner and for the same purpose. The Bank of England's monopoly was banking. The South Sea Company's monopoly was the Asiento, formally the *Asiento de Negros*—Spanish for “Negro contract.” The Asiento secured for the Company the sole right to carry the African slave trade into the Spanish Empire of the South

manage its debt successfully on through the wars of the eighteenth century, and into the nineteenth.”

⁷ The scheme to restore confidence began to take shape in August of 1710, following a Tory political victory in Parliament. Robert Harley was appointed Chancellor of the Exchequer and sought to centralize management of Parliament's debt. In January of 1711 the House of Commons agreed to appoint a committee to investigate. The debt until then had been a hodgepodge of departmental budgets. The House Committee concluded that Parliament had a debt exposure of £ 9 million with no allocated income to pay it off. Harley then proposed that the exposed debt be converted into equity shares of a newly-formed private monopoly called the South Sea Company. On September 11, 1711 government awarded the *Asiento* to the South Sea Company. The government also agreed to pay 6% on the transferred debt plus administrative expenses.

Sea.⁸ The Asiento was a diplomatic prize of the recent war against France and Spain.

In historical retrospect, the scheme was a great success. Figure 1 displays the discount on nominal British debt between 1700 and 1775.⁹ The Figure also displays the long-term yield on government bonds, as an indicator of the cost of long-term government borrowing.¹⁰ During the first half of the war (1701-1706) the national debt floated at approximately 50% of its nominal value. It fell to 36% by the end of the war (1711). By 1713, two years after the launch of the South Sea scheme, the national debt rebounded to 63% of its nominal value and the cost of long-term government borrowing declined from 8.7% to 5.9%. Over 90 percent of the bond-holding public eventually subscribed to the scheme. Robert Harley, the scheme's most-prominent supporter, was appointed Earl of Oxford.

The South Sea Company would be called upon repeatedly to manage similar and larger debt-for-equity swaps for the British government. In February of 1719, Parliament granted the Company the right to refinance all of the outstanding post-1710 government lottery annuities. In February of 1720 a much larger scheme was launched—a voluntary conversion of the entire £30,981,712 of unconsolidated national debt into equity shares in the Company. The government would pay 5% on the debt for the next four years, 4% thereafter. The South Sea Company agreed to extend a £4 million cash loan to the government. Temin and Voth (2013) note a critical flaw in the scheme: “The exchange ratio between shares and bonds was not set in advance, which meant that bondholders could theoretically be bought out with fewer shares as the share price of the South Sea Company increased (p. 99).” Neal (1990, p. 98) calls this the “fatal attraction” that led to the infamous South Sea Bubble. In January of 1720, before the

⁸ Spain was prohibited from trading in Africa. In 1494 Pope Alexander VI negotiated the Treaty of Tordesillas between Spain and Portugal. The treaty divided the newly discovered lands outside of Europe along a line 370 leagues west of the Cape Verde islands off of the West coast of Africa. Lands east of the line went to Portugal. Lands west of the line went to Spain. Since Spain did not have a presence on the coast of Africa, the Spanish government, in 1518, introduced the *Asiento*, a licensed to deliver African slave to the Spanish Empire. The license was made available to merchants and nations for a fee paid to the King or Queen. It was held by France prior to being held by England.

⁹ Values come from the data annex to Hills et al (2010). The measure for discounted debt = (market value of the debt/nominal value of the debt). Nominal values are taken from the series in Mitchell (1971), p. 401, and is the nominal value of the unredeemed capital of the public debt at the end of the year. The market value comes from the estimates in Janssen et al (2002) which estimates the market value of central government debt at the end of the financial year.

¹⁰ The long-term government bond yield is the yield implied by Janssen (2002).

Bubble began, the Company share price stood at £ 173. The Bubble peaked in June of 1720 at £ 950 a share before collapsing to £ 200 in December of 1720.

The South Sea Bubble is often considered a great debacle in British financial history.¹¹ According to MacKay (1869), "Exchange Alley was in a fever of excitement, ...as if the whole nation had turned to stock-jobbing (p. 50-52)." Short-sellers made fortunes on the way up by buying shares without paying fully and selling them back to the Company at inflated prices. Latecomers like Sir Isaac Newton lost fortunes. Public confidence was shaken and Parliament was recalled in December of 1720 to launch an investigation. On April 4, 1721 Sir Robert Walpole became the first Prime Minister of Britain, marking the beginning of Whig control of government for the next half century.¹²

In 1721 a Parliamentary Report revealed widespread fraud and corruption in both the public and private sectors. The Chancellor of the Exchequer was imprisoned. The estates of Company directors were confiscated and used to relieve suffering subscribers. The South Sea Company was bailed out by the government, forgiving £7 million of Company debt. To relieve subscribers, Parliament adjusted subscription prices ex-post and allowed subscribers to stop payment on future installments (Temin and Voth 2013, p. 122). As Carswell (1961, p. 229) notes, "Unlike the earlier schemes of reconstruction, both of which were based on the principle that private bargains should be left intact, the new plan proposed to rearrange a whole network of private transactions by parliamentary fiat."

As can be seen in Figure 1, the cost of government borrowing continued to decline, falling to 3% by 1725. How did the South Sea Company facilitate this decline? The conventional

¹¹ In his classic *Memoirs of Extraordinary Popular Delusions and the Madness of Crowds*, McKay (1869) quotes Robert Walpole, a staunch opponent of the scheme, as saying, "The great principle of the project was an evil of first rate magnitude; it was to raise artificially the value of the stock, by exciting and keeping up a general infatuation, and by promising dividends out of funds which could never be adequate to the purpose." In a prophetic spirit he added, that if the plan succeeded, the directors would become masters of the government, form a new and absolute aristocracy in the kingdom, and control the resolutions of the legislature. If it failed, which he was convinced it would, the result would bring "general discontent and ruin upon the country (page 50)." Temin and Voth (2013) call the 1720 South Sea scheme a "classic Ponzi scheme (p. 100)."

¹² Stasavage (2003) argues that the formation and ascendancy of the Whig Party, with its changing political coalitions, improved government access to capital at least as much as the changes in the British constitution following the Glorious Revolution of 1688.

wisdom is that the debt-equity swaps converted illiquid government debt into liquid Company shares that could be traded on the emerging London stock market. Rather than being a side-show, the South Sea Bubble of 1720 was a critical event. The Bubble was many things, but the take-up rates demonstrated the public's willingness to pay for liquidity.¹³ Carlos et al, (2013) emphasize the growing number of stock jobbers that emerged during the Bubble and how they survived the crash to facilitate the easy transfer of publicly held Company stock.¹⁴ Temin and Voth (2013) emphasize how the government bailout of both the South Sea Company and the investing public reduced the perceived risk of holding long-term government debt. According to Temin and Voth (2013):

Preserving England's reputation as a fair borrower was an important outcome of the South Sea debacle's resolution. The successful South Sea scheme of 1719 demonstrated that they (the public) prized liquidity above all else. The next step in the evolution of public borrowing was to combine the low risk inherent in government debt—demonstrated by the fair treatment of subscribers to the South Sea bubble—with the liquidity of company shares. (pp. 123-124).

The next step was demonstrated during the final financial act of the South Sea Company. In 1723 the Company held £ 38 million of public debt (of approximately £ 50 million of total public debt). £ 4 million were transferred to the Bank of England, leaving £ 34 million with the South Sea Company. Each investor received one half of their holdings as equity shares in the Company, the share price being determined by the market. The other half of their holdings they received as perpetual annuities bearing 5% interest for five years, 4% thereafter. In December of 1722, before the split, the Company's share price stood at £ 100. By December of 1725, three years later, the share price was up 18 percent to £ 118. According to Neal (1990):

“That was the final innovation to emerge, and it completed a structure of financial

¹³ Neal (1990; pp. 111-112) argues that the first appreciation of Company stock—during the first subscription—reflects the public's willingness to pay for liquidity. If a person held the stock from January 1 to December 31 of 1720 they would have realized a return of 56 percent.

¹⁴ Carlos, Fletcher, Neal and Wandschneider (2013) document the greater popularity of South Sea Company stock among small investors, compared to the holdings of the stocks of the Bank of England and the East Indian Company.

instruments for British government that proved its worth in each war for the next two centuries. Henceforth, the Exchequer and the army and the navy could issue bills in times of emergency, and the bills could then be retired from the proceeds of selling new issues of perpetual annuities, which in turn could be retired at the government's discretion or left in circulation (page 117)."

In 1726 the government successfully floated 3% non-redeemable annuities as long-term government debt. In 1727 the government was able to float 3% redeemable perpetual annuities. In 1751 the first 3% Consol was circulated, which became the principal means of central government financing for the next century and a half.

III. The South Sea Company and the *Asiento de Negro*

None of these accounts of the British financial revolution attach any weight to the *Asiento* monopoly that the South Sea Company held, or how slave trading may have increased the market value of South Sea Company stock. The view from the finance literature assumes that the *Asiento* added little if any value to the Company. Instead, it is argued that the British government sought the *Asiento* primarily because it granted British traders the right by international treaty to ply Spanish waters.¹⁵ The literature maintains that the real economic value of the *Asiento*, if any, was the illicit contraband trade that British merchants and seamen conducted under the cover of the slave trade (Nelson, 1945; Sorby, 1975).¹⁶ As for the legal slave trade, it is assumed that operational inefficiencies within the Company reduced slave-trading profits and hostilities between England and Spain often disrupted the trade (Carswell, 1961; p. 56; Neal 1990, p. 91; Donnan, 1930, pp. 445-450; Temin and Voth 2013, p. 97).

¹⁵ The Whig interpretation emphasizes the lure of South Sea gold and silver and the competitiveness of British manufactures, if only British merchants could gain access to the South Sea market (Mackay, 1869; pp. 46 - 53).

¹⁶ Nelson (1945, p. 54) concludes that the "[d]etermination of the exact volume and value of illegal importations into the Spanish colonies under the *Asiento* during these years is impossible because of the very nature of the trade." By 1728 the Spanish government has secured positive proof of contraband trade. The South Sea Company's board of directors was not known to be particularly honest, but no less honest than the Spanish inspector agents in the South Sea ports that they bribed. According to Nelson (1945; p. 64) revenue of "... at least £ 5 million resulted from the illicit traffic in the company's Negro ships during the years from 1730 to 1739, accounting for 90 percent of the contraband revenue"

The evidence, however, does not always support these assumptions. First, the transatlantic slave trade was the fastest growing capital investment of the early 18th century and promoters of the South Sea scheme did not hesitate to advertise the Company's monopoly. Second, to the originators of the South Sea scheme, the *Asiento* was considered a critical piece of the puzzle from the very beginning. Securing the *Asiento* was an urgent and top priority in the peace negotiations that ended Britain involvement in the War of Spanish Succession. Britain declared peace in the summer of 1711, two years before the Treaty of Utrecht. At those negotiations Britain revealed its willingness to trade other considerations to secure the *Asiento* for 30 years.¹⁷ Negotiations on the *Asiento* were completed on August 20, 1711. On September 11, 1711, less than a month later, the first conversion scheme was announced to the public.

The *Asiento* was officially transferred to Britain in March of 1713, following the Treaty of Utrecht, but negotiations with the South Sea Company were not concluded until July of 1714 (Donnan 1930, 425-430). The *Asiento* award was a 30 year contract (1713 - 1743) and stipulated the delivery of 4800 *pieza* (slaves) per year to the Spanish American Empire. The Spanish also permitted the South Sea Company to send an annual merchandise ship of 500 tons, later 650 tons, to trade duty-free at the fairs held at Cartagena, Porto Bello or Vera Cruz. A quarter of the profit was reserved for the King of Spain, but he never received it. Officially, the *Asiento* was granted to Queen Anne of England who awarded it to the South Sea Company. A quarter of the profit was originally awarded to the Queen, but she relinquished her share to the Company. To the architects of the scheme, the *Asiento* was considered a valuable Company asset.

Finally, while there exists indirect evidence that the contraband trade was widespread, there is no evidence that it improved Company share values. The illicit nature of the trade makes it virtually impossible to get reliable estimates of its size. Brown (1926, pp. 662-667) argues that

¹⁷ According to Frey and Frey (1995) "Although Robert Harley, earl of Oxford, negotiated secretly with the French from late 1710 to April 1711, it was with the idea that the allies would be included in the final agreement for a peace conference. After June 1711, however, he dropped the intent of including them. He was bent on creating a South Sea Company to fund unsecured government debt. For this he needed monopolistic concessions in the Spanish colonies. When Mesnager (the French negotiator) met with Oxford and Charles Tolbert, Duke of Shrewsbury, on 15 August 1711, he was told that the territorial concessions were necessary for peace. Five days later, however, Oxford dropped his demand for the four towns and told Mesnager that Britain would accept in their place an extension of the *Asiento* treaty from 10 to 30 years. Mesnager worked through September on the other points in Oxford's demands (p. 285)."

trade in contraband was company policy. In 1729 the fact was exposed to Spanish authorities by two well-compensated company informants.¹⁸ Their testimony revealed large-scale bribing of Spanish officials in South Sea ports. They also revealed how company policy encouraged company officials and seaman to conduct private contraband trade from their slave ships. They also documented how the annual merchandise ship was re-stocked between fairs. There is evidence that the contraband trade continued beyond 1729.¹⁹ In fact, it has been argued that conflicts over the Asiento and the contraband trade contributed directly to the outbreak of the War of Jenkin's Ear in October of 1739.²⁰

It is unlikely, however, that contraband trade added much value of South Sea Company equity. According to Sorsby (1975):

“Undoubtedly the illicit trade was profitable to some directors and most factors and Company ship's officers; it is doubtful if such benefit accrued to company stockholders. The final balance sheet of the company's *Asiento* trade can be assessed only from the legal, registered and recorded trade (p. 260).”

¹⁸ As chronicled by Nelson (1945), the informants were Dr. John Burnet who had been a factor at Porto Bello and Cartagena; and Matthew Plowes who was secretary and principal accountant for the Company. They produced 42 documents which included detailed financial statements. Included in the documents were names of Spanish officials who had accepted bribes and allowed the import of contraband goods. The informant also affirmed that the chief Spanish representative to the company in London has also received bribes, one being £ 1000 and an annual pension of £ 800 in return for false measurements of permission ships and other frauds on behalf of the company.

¹⁹ Having secured solid evidence of noncompliance, Philip V of Spain was able to place an agent on the company's board of directors, Sir Thomas Geraldino, the Spanish ambassador to Britain (Nelson, 1945; p. 58). In 1730, the Company responded by placing sub-governors and deputy-governors in charge of all matters of importance. Only routine matters were placed before the court in the presence of the Spanish agent. Much of the evidence on contraband trade after 1730 is contained in the private correspondences of these sub and deputy directors and are contained in the Shelburne Collection. They reveal rampant bribery and falsification of documents (Nelson, 1945, p. 58; Palmer, 1981, p. 27, 72; Reibman, 2012).

²⁰ In 1729, the Treaty of Seville establish a commission to settle disputes between England and Spain. The first meeting was in 1732 but it disbanded without solving the competing claims. England claimed it was due compensation for confiscated ships and merchandise. Spain claimed compensation for the duty on slaves that it never received. Geraldino was the chief negotiator for Spain. A plan was devised that would have Spain pay England £ 140,000 and the South Sea Company pay the King of Spain £ 68,000. Neither side trusted the other and demanded that the other pay before they pay. On January 10, 1739 the King of Spain reserved to himself the right to suspend the *Asiento* in case the demands of Spain were not met. On June 11, at the time payment was overdue, the British government ordered its merchants to withdraw their ships and effects from Spain immediately. War was declared in October 1739, de facto ending the *Asiento* contract for the South Sea Company. It was company factors in the Spanish ports who were responsible for the clamor against Fandino, a *guarda costa* suspected of cutting off

The dominant “legal, registered and recorded trade” was the slave trade. As a slave-trading company, the South Sea Company is often viewed as an inefficient monopolist. Adam Smith (1776, p. 107) uses the Company’s board of directors as an example of the separation of ownership from control. Carswell (1961, p. 56) calls it “clumsy and fussily inefficient.” Again, the evidence is mixed. First, there is some indirect evidence that the Company’s slave trading activities responded to market realities. The *Asiento* contract stipulated that only high-quality slave be delivered to the Spanish Empire. After meeting with free-traders, the company decided to hire the Royal African Company because it was considered a more-efficient way to guarantee a steady supply of the type of high-quality slaves the *Asiento* demanded (Donnan 1930, 430-433). The Company also established a brisk entrepot trade in Jamaica and Barbados, where it bought and sold slaves when market conditions shifted on the African coast or in the South Sea. Jamaican planters and slave traders complained that the Company was ruining the Jamaican slave market by driving up slave prices on the island (Donnan, 1930; pp. 439-443; Palmer, 1981; pp. 59-79).²¹

The quantitative evidence on profitability is also mixed. The most-cited work on this is Elizabeth Donnan’s 1930 study of the early days of the Company. The study concludes that slave trading operated at a loss. Donnan uses primary Company sources to document the early years of the Company’s formation and organization, but the study is not a serious study of Company profitability.²²

Palmer (1981; pp. 145-170) estimates profit rates based on available records from Spanish South Sea ports. Between 1714 and 1721, the estimates of average profit range from 10% in Cartagena, to 25.7% in Buenos Aires and 57.1% in Porto Bello and Panama. For 1731, the estimated profit rate for Cuba is 38.9%. For Havana between November 1730 and July 1731

Jenkins’ ear (Hildner, 1938, p. 324)

²¹ Other evidence of monopoly practices is the branding of South Sea Company slaves and the constant threat posed by free-traders trying to enter the South Seas slave trade (Palmer, 1981; chapter 5).

²² “To determine with finality whether the Company was conducting its Negro sales at a profit or loss would require a much more extended study than is here possible. From cursory examination of scattered figures it seems obvious that the business was a losing one and that the question for examination is the size of the loss (Donnan 1930, p. 447).

it is 47.7%.²³ Palmer (1981) also estimates profits rates for the late 1730s, this time calculated from data found in South Sea Company corporate reports. The Company recorded average expenditures and receipts per slave for the period 1731-1736. The estimated profit rates based on Company data show lower rates of profit for most South Sea ports. The slave prices used in the Company report are lower than those recorded in the Spanish records, presumably because the Company report was being prepared to negotiate a settlement over disputed profits due the King of Spain (Sorsby, 1975).²⁴

III. The Asiento Option and Portfolio Choice

The *Asiento* was an economic option available to the South Sea Company when it was at the center of the British financial revolution. Did the Company, by exercising its slave-trading rights under the *Asiento*, enjoy profitable returns, or perhaps excess profits? Or was slave-trading a negligible activity unrelated to the Company's ability to refinance public debt? This is the central question we wish to address empirically.

Palmer (1981) reports data on the volume on South Sea Company slave deliveries to the South Sea. These were gathered from factor reports stored in the *Archivo General de Indias* in Seville (Palmer 1981, ch. 6). Figure 2 displays these numbers along with the price of South Sea Company shares. Between 1714 and 1717 slave trading and share prices increased together. They diverge during wars and during the South Sea Bubble but they increase in tandem again during the critical period 1721 to 1726 — from the 1721 bailout following the South Sea Bubble, through the 1723 split of Company capital into stocks and annuities, and into 1726 when the Bank of England issued its 3% annuity. Deliveries then collapsed during the War with Spain (1726-1729) but then recovered sharply in 1730, reaching new highs in 1731 before trailing off in the later 1730s.²⁵ The pattern suggests a positive, and perhaps causal relationship between

²³ Palmer does not explain how these rates were calculated.

²⁴ "... when company accountants in London began their final audit of factory books at the end of each five year period so as to submit a complete record of the Asiento trade they had insufficient information to determine the amount of duties owed from the introduction of slaves, or the profit due to Philip V from the merchandise introduced on the license and annual ships... The company and Spanish officials agreed that for purposes of bookkeeping the sale price of each slave introduced would be entered as 200 pesos, a figure that probably favored the company (Sorby 1975, page 258)."

²⁵ The War of Jenkins Ear (1739-1741) and the War of Austrian Succession (1741-1748) effectively put an end to

slave-trading and South Sea Company equity returns. If true, then the Company's slave trading may have increased the public's willingness to convert government debt into Company equity, and precisely when need most.

Our theoretical framework for investigating this issue treats the South Sea Company and the British public debt nexus as a portfolio choice problem. In particular, as in McWatters (2008) and Daudin (2004) we infer the profitability of slave-trading and its consequences from the investment returns in a market where wealth-maximizing individuals trade equities. We appeal to the Capital Asset Pricing Model (CAPM) of Linter (1962) and Sharpe (1964). Given the wealth maximizing objective of investors in the South Sea Company, a CAPM specification of equilibrium expected return on equity is $\mu_i = r + \frac{\sigma_{ip}}{\sigma_p^2}(\mu_p - r)$, where r is the risk-free rate of return, μ_p is the expected return on the market portfolio, σ_p^2 is the variance of return on the market portfolio and σ_{ip} is the covariance between the return on South Sea Company equity and the market portfolio. Defining $\beta_i = \frac{\sigma_{ip}}{\sigma_p^2}$, the CAPM enables a specification of the expected return on equity as a linear function of the expected return on the market portfolio relative to the risk-free return: $\mu_i - r = \beta_i(\mu_p - r)$, where β_i is a measure of market/systematic risk associated with holding the equity.²⁶ Since it is impossible to eliminate this risk through portfolio

the *Asiento* trade in October of 1739.

²⁶ This follows from assuming that wealth maximizers are risk averse and prefer to receive a fixed payment τ to a random payment of wealth $W = \sum w_i \mu_i$, where $0 \leq w_i \leq 1$ is the weight of asset i in the wealth portfolio, and μ_i is the expected return on asset i . If an individual is indifferent between $E[U(W)]$ and $U[E(W) - \tau]$ then these two payments must be equal or $E[U(W)] = E(U(E[W] - \tau)) = U(E[W] - \tau)$, where E is the expected value operator, and $U(\cdot)$ is a utility function. Let $z = -U''(E(W))/U'(E(W))$, where $U''(E[W])$ is the n^{th} derivative of $U(\cdot)$ with respect to its argument evaluated at $E(W)$, a first order Taylor expansion—neglecting higher order terms—on both sides of the indifference relationship with respect to W allows representing utility as $U = U^i(E[U(W)]) = \mu_p - 1/2(z\sigma_p^2)$, where $\mu_p = \sum w_i \mu_i$, and $\sum w_i = 1$. The maximization of $U^i(\cdot)$ subject to $\sum w_i = 1$ generates a solution for the relative return on equity i as $\mu_i - r = \beta_i(\mu_p - r)$, where $\beta_i =$

$$\frac{\sigma_{ip}}{\sigma_p^2}.$$

diversification, holders of the equity are compensated for bearing the risk with a higher return relative to the risk-free return — an excess return.

A CAPM equilibrium specification of returns on South Sea Company equity enables regression specifications of how the Asiento may have conditioned returns on South Sea Company equity. Our approach is that of a regression-based event study (Cable and Holland, 1999; Pynnonen, 2005) applied to a historical financial episode, similar to the approach found in Carlos, Fletcher and Neal (2015).

The first event we consider is the Asiento contract itself. Let A be a binary variable for the years $t = 1 \dots T$ in which the South Sea Company held the Asiento. Then

$$\mu_t - r_t = \beta_o + \beta_1 A_t + \beta_2 (\mu_{pt} - r_t) + \beta_3 [A_t \times (\mu_{pt} - r_t)] + \varepsilon_t \quad (1)$$

where ε_t is an error terms.

If $\partial (\mu_t - r_t) / \partial A_t > 0$ then the period of time during which the South Sea Company held the Asiento was a period of excess Company profit. The inclusion of a dummy variable for the Asiento enables an estimate of how the Company's rate of return differed during the Asiento period and how it affected the risk premium as measured by estimates of β_1 and β_3 respectively.²⁷

The Asiento dummy captures the total period-effect of the time the Company possessed the Asiento option. As discussed above, the Company engaged in a series of debt-equity swaps with the government during this period. We add dummies for these events as well as other events like the South Sea Bubble, the Bubble Act, wars and the post-Bubble period. The latter is added to capture any of the hypothesized changes in the institutional structure of London equity markets that may have resulted from the bubble and the government interventions that followed

²⁷ If Asiento-induced excess returns on South Sea Co. equity encouraged longer holding periods for British debt, if the market value of debt is $BVD/(1+r)^n$, where BVD is the book value of debt, r is the current market interest rate,

(Temin and Voth, 2013; Neal, 1990).

Within the context of these controls, we look to see if Company slave trading had any appreciable affect on company excess profit. In a portfolio choice framework, slave trading activities influence excess profits through the expected or perceived profitability of the activity. How and when does the appropriated information arrive at the London stock market? It could arrive via company reports, but reports were not regular or reliable (Sorby 1975, 258-9).²⁸ Reports were also ex-post. Nor were the reports “events” that we can intrgrate into the CAPM framework.

Instead, we use ship data found in the Transatlantic Slave Trade Database.²⁹ We construct variables that equal one for months when at least one South Sea Company slave ship left London harbour. Ship departures were easily-observed by investors and they contained reliable information on Company slave-trading activities. Market reactions to ship departures should reflects investors’ expectations of the profitability of slave-trading by the Company. A control for contraband trade is also added. Detailed descriptions of all the variable are discussed in the next section.

IV. Data

Data for the statistical analysis come primarily from three sources. Covariates for estimating the CAPM parameters are constructed from data provided by the European State Financial Database (ESFD).³⁰ In particular, we use the data on monthly stock prices for the Bank of England, the South Sea Company and the East India Company from 1711 - 1795.³¹ Fiscal variables are constructed from data in Three Centuries of Macroeconomic and Financial Data for

and n is the number of compounding periods, then $\partial \text{BVD} / \partial n < 0$.

²⁸ “A bi-annual audit of factory books was mandatory, but rarely observed, primarily because they were incomplete and inaccurate, and conform to no standardized accounting system... (Sorby 1975, page 258).”

²⁹ Data downloaded on February 15, 2015.

³⁰ ESFD data are available at www.esfdb.org/Database.aspx

³¹ The data are based on stock prices compiled from John Castaing’s *Course of Exchange* (Neal, 1987; 1990) which appeared twice a week starting in 1698 and ending in 1811.

the United Kingdom compiled by Hills, Thomas and Dimsdale (2010).³² Third, we use data from the Transatlantic Slave Trade Database to construct binary monthly observations on the departure of South Sea Company slave ships from London harbour.

The price of a firm's stock is assumed to be determined by a dividend discount model such that $E[P_t] = E[D_{t+1}]/(E[r_t] - E[g_t])$, where E is the expected value operator, P_t is the stock price at time t , D_{t+1} is the nominal dividend payout on the stock at time $t + 1$, r_t is the discount rate at time t , and g_t is the annual growth rate of dividends at time t .³³ The excess return on South Sea Co. stock ($\mu_t - r_t$) is measured as the percent change in the monthly price of South Sea Company stock (μ_{it}) minus the return on long-term government bond yields (r_t). As the stocks of the South Sea Co., the East India Co., and the Bank of England were the most followed and actively traded stocks in the United Kingdom during the eighteenth century, we follow Mirowski (1981) and Zhang and Jacobsen (2013) in constructing the return on the market portfolio. The return on the market portfolio (μ_{pt}) is measured as the percent change in the monthly price of a portfolio consisting of a unit each of South Sea Co., East India Co., and Bank of England stock.³⁴ The years in which the South Sea Co. held the Asiento slave contract (A_t) is measured as a dummy variable equal to one for 1713 - 1743.

Table 1 reports statistical summaries for all covariates used in our specifications. A total of 995 year-monthly observations between 1711 - 1794 were obtainable, with equity prices measured at the monthly level. The mean value of the dependent variable—the excess return on South Sea Co. equity—is negative. The same is true for the excess return for the Bank of England, East India Co., and the market portfolio. However, the CAPM is a specification of equilibrium expected returns, and negative actual excess returns across assets are permissible as long as their holdings are consistent with mean-variance efficiency in the wealth portfolios of optimizing investors where individuals are compensated for bearing market risk.

³² The data are available at www.bankofengland.co.uk/publications/Pages/other/monetary/mpreadinglistf.aspx

³³ While earnings-based models are an alternative to rationalizing stock prices, Foerster and Sapp (2005) find that the dividend discount model performs better at explaining stock prices.

³⁴ This 3 stock index appears to be a good approximation of the market portfolio for eighteenth century investors, as Mirowski (1981) found that for an index of 8 stocks (which includes those of the South Sea Co., East India Co., and

Table 1 also reports a statistical summary of the other binary covariates. We add binary controls for the South Sea Bubble (SSB_t), the Bubble Act of 1720 (BA_t), the actual swapping of British Central government debt for South Sea Company debt (SWP_t), and 4 wars that Britain was engaged in during the period ($WAR1_t$, $WAR2_t$, $WAR3_t$, $WAR4_t$). To enable a determination of how actual slave trading under the Asiento mattered for share values, we construct a monthly binary covariate equal to one if at least one South Sea Company ship disembarked London for Africa and the South Sea ($SHIP1_t$). To disentangle any affect of South Sea Company commerce to British possessions, we construct a binary covariate that equals one if at least one South Sea Company ships departed London for a British possession in a given month ($SHIP2_t$). To the extent that an active contraband trade existed (Sorsby, 1975; Pearce, 2001) and could serve as a hedge when slave prices were low (Borucki, Eltis, and Wheat, 2015) we construct a binary covariate ($CBAND_t$) that equals one if a departing vessel had a history of carrying contraband, as identified in Sorsby (1975).

Finally, post-bubble financial events could have impacted returns on South Sea Company equity. After the bubble, British parliament stabilized equity and public debt markets by parliamentary fiat. These financial interventions could have reduced the perceived riskiness of holding public debt (Temin and Voth, 2013), and/or enhanced the liquidity of South Sea Company equity (Neal, 1990). Either could have lowered the desired risk premium for investing in the South Sea Company. We control for this by creating binary covariates for the post-intervention years. $FLOAT_t$ captures any long-term effects that may have lasted until December of 1727, when the Bank of England first floated a 3 percent redeemable annuity. $ISSUE_t$ captures long-term effects that may have lasted to December 1751, when the first 3 percent Consol was issued.

the Bank of England) the share prices are all highly correlated except for the period of the South Sea Bubble.

V. RESULTS

We report results for three different specifications of the error term: homoskedastic Ordinary Least Squares (OLS), Auto-Regressive Conditional Heteroskedasticity with Threshold (ARCHT), and Generalized Auto-Regressive Conditional Heteroskedasticity with Threshold (GARCHT).³⁵ For the Ordinary Least Squares (OLS) estimates, we report a Lagrangian Multiplier test for heteroskedasticity as a diagnostic for the adequacy of the ARCHT/GARCHT specifications.³⁶ As goodness-of-fit measures, we report for each specification the Root Mean Square Error (RMSE) and the Akaike Information Criterion (AIC).

We also estimate ARCHT/GARCHT specifications, because financial time series typically exhibit volatility clustering where large changes tend to follow large changes and small changes tend to follow small changes, resulting in a serially dependent error term (Engle, 1982; 2001; Bollerslev, 1986). To allow for the possibility that the conditional variance is asymmetric in its response to say increases versus decreases in asset returns, we allow for threshold effects based on the magnitude of the lagged errors (Zakoian, 1994). Our ARCHT/GARCHT specification of the conditional error variance (h_t) is:

$$h_t = \gamma_0 + \gamma_1 \varepsilon_{t-1}^2 + \delta_1 h_{t-1} + \tau d_{t-1} \varepsilon_{t-1}^2$$

where γ_0 is a constant, γ_1 , δ_1 , and τ are nonnegative conditional response parameters, $d_{t-1} = 1$ if $\varepsilon_{t-1} < 0$, and zero otherwise. The error variance has a ARCHT specification when $\delta_1 = 0$, and a GARCHT specification when $\delta_1 > 0$.

Allowing for asymmetric threshold effects in the conditional variance also mitigates or eliminates any bias in our parameter estimates due to missing monthly observations on asset

³⁵ All parameters were estimated with *STATA 13.0*

³⁶ The Lagrangian Multiplier test for heteroskedasticity is based on a specification of the variance of the error term as $h_t = \gamma_0 + \gamma_1 \varepsilon_{t-1}^2$, and testing $H_0: \gamma_1 = 0$.

returns.³⁷ Non-random patterns of missingness could introduce a generalized selection bias in our parameter estimates absent an explicit consideration of the pattern of missingness. The threshold specification of errors allows for adjustments to the error variance of parameters by recognizing the heteroskedasticity consequences of missing monthly observations on the magnitude and direction of the residuals of the specification.³⁸

Results for the simple CAPM are reported Table 2. The coefficient on the Asiento and its interaction with excess return are positive and significant for the South Sea Company. As a counterfactual exercise Tables 3 and 4 estimate the same model for the Bank of England and the East India Company. The coefficient on the *Asiento* option is only positive for the South Sea Co., suggesting that the Asiento had a distinct and positive impact on excess returns for the South Sea Company alone. In each instance, the OLS parameter estimates reject homoskedasticity, justifying the heteroskedastic error specifications of ARCHT/GARCHT.

To evaluate the practical significance of the parameter estimate on the Asiento option, we report estimates of the marginal effect of the Asiento on risk-adjusted annual excess returns. The marginal effects are evaluated at the mean value of the Asiento and the expected excess return on the market portfolio conditional on the Asiento.³⁹ For the ARCHT/GARCHT specifications the

³⁷ The 83 year period under consideration would result in 1008 monthly observations in the absence of missing data, instead of the 991 observations upon which the parameter estimates are based on.

³⁸ Suppose for a specification $Y^* = X\beta_1 + \varepsilon_1$, and the rule determining whether we observe Y^* is given by $Y = Y^*$ for $H^* > 0$ where $H^* = Z\beta_2 + \varepsilon_2$. It follows that for $H = 1$ (actually observing Y):

$$E(Y | X, H = 1) = X\beta_1 + E(\varepsilon_1 | \varepsilon_2 > -Z\beta_2)$$

Estimating $E(Y | X)$ without accounting for the sample selection—the process determining whether observations on the dependent variable are non-missing—introduces an omitted variable bias, and an additional source of heteroskedasticity in the standard error of the parameter estimates. A threshold specification accounts for the sample selection by allowing for $H = 1$ when $d_{t-1} = 1$ for $\varepsilon_{t-1} < 0$, and zero otherwise to enable standard errors robust to the heteroskedasticity caused by possible omitted variable bias that results from failing to account for how Y is selected into the sample.

³⁹ In particular, for the CAPM specification of excess returns:

$$\mu_t - r_t = \beta_o + \beta_1 A_t + \beta_2 (\mu_{pt} - r_t) + \beta_3 [A_t \times (\mu_{pt} - r_t)] + \varepsilon_t$$

we estimate as a marginal effect:

minimum AIC GARCHT estimates suggest that the Asiento had the affect of increasing excess return by approximately 2 percent on an annual basis. This translates into an additional two nominal pounds of capital gains per share, based on the average share price of approximately 101 nominal pounds over the period under consideration. This suggests that for South Sea Company shareholders, slave-trading, or at least the right to trade slaves under the Asiento, was profitable.

Table 5 adds the other event dummies. The OLS-based tests for homoskedasticity and the minimum AIC parameter estimates favor the GARCHT specification. The estimate implies that the value of holding the Asiento option, after controlling for the other events, declines to approximately 0.49 percent on an annual basis. Much of the previous Asiento-effect is now picked up by the variable *SHIP1*. In months when at least one Company slave ship left London for Africa and the South Sea, excess return on Company equity increased by approximately 7.8 percent. This is consistent with Inkori's (1981) finding that slave-trading yielded abnormally high profits for British investors. If at least one slave ship left every month of the year, this would translate into an annual increase of 147% -- a staggering amount.

Not every month saw a slave ship leave London for Africa and the South Sea. There are only 34 *SHIP1*-months in the entire Asiento period (1713 and 1743).⁴⁰ The timing, however, reveals how slave trading was used strategically to improve excess returns when needed most. Fourteen (14) of the *SHIP1*-months fall between December 1714 and January 1718 -- following Company receipt of the Asiento contract and before the second debt-equity swap with the government.⁴¹ In other words, in 37 percent of the months between December 1714 and January

$$\partial(\mu_t - r_t)/\partial A_t = \beta_1 + \beta_3[(\mu_{pt} - r_t) | A_t]$$

The marginal effect estimates for the fiscal space measures are computed similarly. In each instance, as the marginal effects are measure at the monthly level, we express the marginal effects as annualized monthly returns according to $[(1 + R)^{12} - 1]$, where $R =$ the monthly estimate of $\mu_t^s - r_t$.

⁴⁰ Five (5) South Sea Company slave ship found in the Transatlantic Slave Trade Database did not have information on month of departure and were excluded from the analysis.

⁴¹ Stasavage (2003, pp. 77-78) notes that "... for a brief period between 1710 and 1713 the British government actually found itself paying interest rates that were higher than those that had prevailed before the Glorious Revolution." The Company then receives the Asiento, commences slave trading and stock values begin to rise. Dincecco (2011, p. 67) consistently estimates the period 1711-1716 as a structural break in the government deficit ratios for Britain.

1718, investors observed a South Sea Company ship leaving London for Africa and the South Sea. Applying the estimated coefficient on *SHIP1* from Table 6 implies that slave trading increased excess Company profit by approximately $.37 \times 1.47 = 54\%$ during the period. This is in line with the increase in share prices observed in Figure 2, which probably put the Company in a strong position to refinance more government debt in 1719 and 1720.

The next flurry of slave trading came after the Bubble and bailout -- between March of 1722 and April of 1725. This period falls between the 50/50 split of Company capital into stocks and bonds and the first government issue of a 3% non-redeemable bond. During this period, 31 percent of the months witnessed at least one Asiento slave ship leave London, increasing excess returns by an estimated $.31 \times 1.47 = 46\%$ during the period. Again, these are in line with the increases in Company share value observed in Figure 2. Table 6 reports results for the model that replaces *FLOAT* with *ISSUE*. Nothing changes.

It is instructive to note that in all the estimated CAPM specifications the estimated constant is always negative and significant. In a CAPM specification the estimated constant — known as Jensen's alpha (1968) — measures the marginal excess return on equity associated with unobservables like innovative financial strategies deployed by fund managers and any value it adds (Lo, 2008). This suggests that our estimates of the positive effect of the Asiento on South Sea Company equity returns cannot be attributed to any particular financial management innovations not specific to the Asiento. In addition, since the constant measures the abnormal return above what would be earned if the CAPM held (Elton and Gruber, 1997), a negative constant suggests that the Sharpe-Linter CAPM condition (that risk premium being equal to the market return minus the risk-free return) does not hold (Fama and French, 2004). However this does not invalidate the CAPM as a way to test for efficient portfolios. A nonzero constant is consistent with mean-variance efficiency in asset portfolios chosen by wealth maximizers so long as there is a positive risk premium (Fama and French, 2004)—reflected in a positive value for β_2 —which is the case for all the parameter estimates reported in Tables 2 - 6.

VI. Conclusion

John Brewer (1988), in the influential book *The Sinews of Power*, identifies the period of our study as one of a surprising military recovery in Britain:

“The 1713 Treaty of Utrecht marked England’s arrival as a major European power. But it in no way guaranteed that she would remain one. It was by no means certain that England would make as quick a recovery as France, which had far greater resources at its disposal... The hostilities of 1739 were the beginning of the two mid-century wars which saw British military power reached its 18th century Zenith. Between the outbreak of the War of Jenkins Ear and the signing of the Treaty of Paris in 1763, Britain not only managed to check French power in Europe but also became a great colonial and commercial power (Brewer 1988, p. 172).”

This paper considered the extent to which slave-trading contributed to this surprising military recovery. In 1713 a newly-formed public-private venture called the South Sea Company was awarded the *Asiento de Negros*, a prize of the recent war against France and Spain and a monopoly in the international slave trade to the Spanish Empire in the Americas. British Parliament repeatedly called on the South Sea Company to reduce its cost of borrowing by swapping short-term, high-interest government debt for Company equity. By so doing, the Company was at the center of Britain’s financial revolution and the establishment of Parliament’s credible commitment to repay its debts.

Using historical financial data on the stock prices of British firms, we estimate the parameters of a Capital Asset Pricing Model to determine if Company slave trading under the *Asiento* conditioned risk-adjusted returns on South Sea Company stock. We find that *Asiento*-related slave-trading was associated with substantial positive abnormal/excess risk-adjusted returns on Company stock and precisely when the British government relied on the Company to refinance its debt. We believe our findings establish slave trading as an important economic

determinant of the success of these institutional and financial innovations in Britain.⁴² They also provide support for the William's (1944) thesis that slave-trading was profitable and an important catalyst for the rise of Great Britain as the dominant economic and imperial power in the world.

⁴² Wennerlind (2011, chapter 6) views the British financial revolution and the spread of credit arrangements as a kind of state-sponsored social control mechanism, and discusses how slave trading to the South Sea excited the "imagination" of investors without concern for the fact that it was human slaves being traded.

Figure 1



Figure 2.

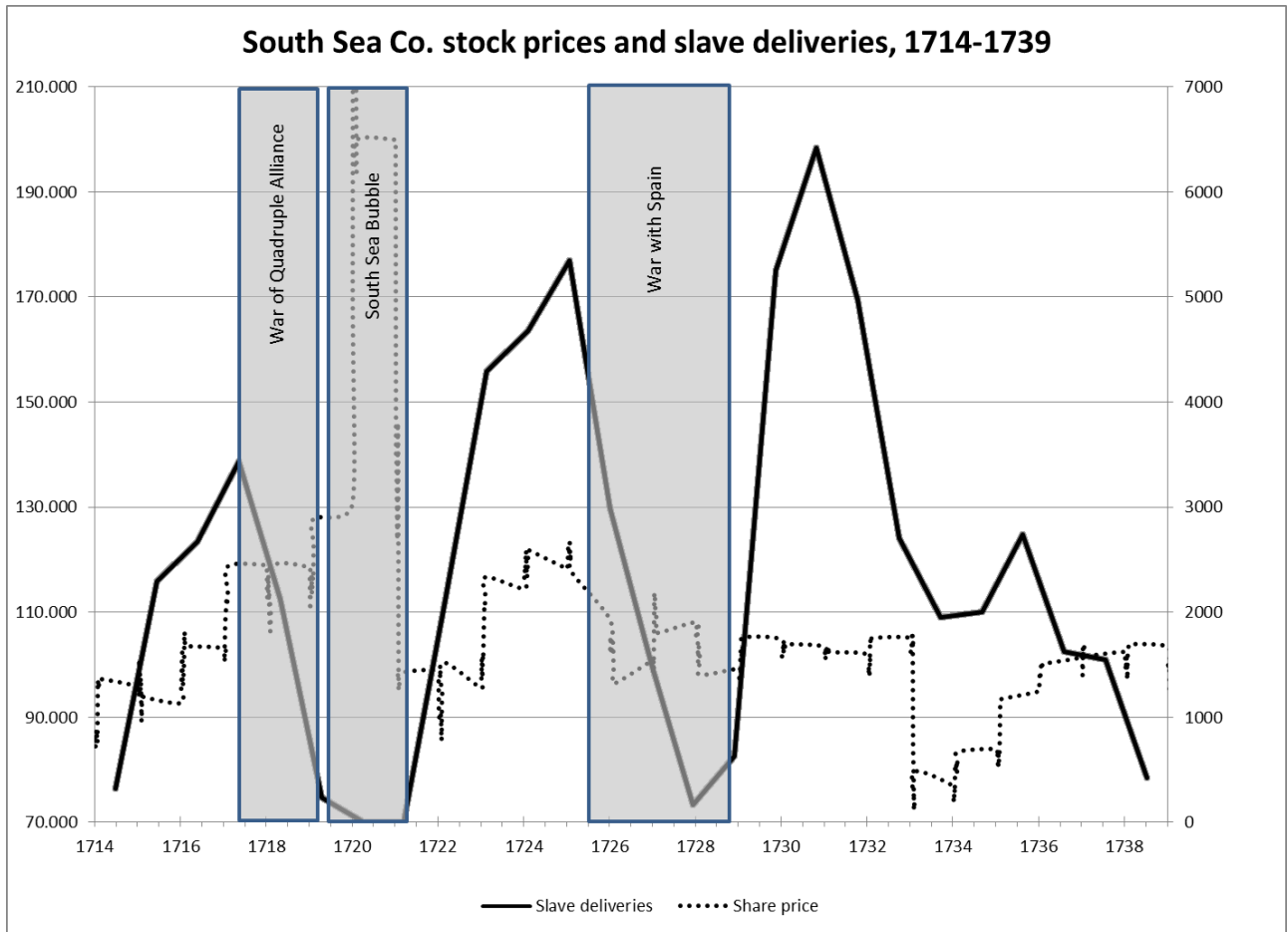


Table 1
Covariate Summary

Covariate	Description	Mean	Standard Deviation	Number of Observations
$\mu_t^s - r_t$	Excess return on South Sea Co. Stock: ^a Period T change in Stock price relative to period T - 1 (μ_t^s) minus the period T yield on long-term British Government Bonds (r_t)	-.0361	.0564	995
$\mu_t^b - r_t$	Excess return on Bank of England Stock: ^a Period T change in Stock price relative to period T - 1 (μ_t^b) minus the period T yield on long-term British Government Bonds (r_t)	-.0369	.0298	995
$\mu_t^e - r_t$	Excess return on East India Co. Stock: ^a Period T change in Stock price relative to period T - 1 (μ_t^e) minus the period T yield on long-term British Government Bonds (r_t)	-.0364	.0401	995
$\mu_{pt} - r_t$	Excess return on market portfolio: ^a Period T change in the price of stock of Bank of England, East India Co. and South Sea Co. relative to period T - 1 (μ_{pt}) minus the period T yield on long-term British Government Bonds (r_t)	-.0366	.0392	995
A_t	Asiento de Negros: Binary variable equal to unity if the South Sea Co. held and operated the Asiento (1713 - 1743)	.3628	.4810	995
SSB_t	South Sea Bubble: Binary variable equal to unity for the duration for the South Sea Bubble (February 1720 - September 1720)	.0080	.0893	995
BA_t	Bubble Act: Binary variable equal to unity for year in which the 1720 Bubble Act was passed	.0010	.0317	995
SWP_t	Debt-Equity Swap: Binary variable equal to unity for the year 1719 when South Sea Co. equity was swapped for British government debt	.0110	.1046	995
$WAR1_t$	War of Quadruple Alliance: Binary variable equal to unity for the time period of the War of Quadruple Alliance, January 1718 - February 1720	.0261	.1596	995
$WAR2_t$	Anglo-Spanish War: Binary variable equal to unity for the time period of the Anglo-Spanish War, February 1727 - November 1729	.0342	.1817	995

Table 1 cont.
Covariate Summary

Covariate	Description	Mean	Standard Deviation	Number of Observations
$WAR3_t$	War of Jenkins Ear: Binary variable equal to unity for the time period of the War of Jenkins Ear, October 1739 - May 1741	.0201	.1404	995
$WAR4_t$	War of Austrian Succession: Binary variable equal to unity for the time period of the War of Austrian Succession, January 1741 - October 1748	.0945	.2926	995
$SHIP1_t$	Shipment to Spanish Possessions: Binary variable equal to unity if the South Sea Co. had at least one monthly shipment to Spanish possessions in a given month October 1715 - March 1737	.0060	.0774	995
$SHIP2_t$	Shipment to British Possessions: Binary variable equal to unity if the South Sea Co. had at least one monthly shipment to British possessions in a given month March 1714 - January 1726	.0090	.0947	995
$CBAND_t$	Contraband Vessel: Binary variable equal to unity if the South Sea Co. vessel had a history shipping contraband	.0030	.0548	995
$FLOAT_t$	Perpetual Annuity Float: Binary variable equal to unity for the time period in which Bank of England floated a 3 percent redeemable perpetual annuity, August 1721 - December 1727	.0362	.1868	995
$ISSUE_t$	3 percent Consol Issue: Binary variable equal to unity for the time period in which Britain issued the first 3 percent Consol August 1721 - December 1751	.1568	.3638	995

Source: European State Financial Database (www.esfdb.org/Database.aspx) and the data (www.bankofengland.co.uk/publications) considered by Thomas, Hills and Dimsdale (2010). The Asiento, South Sea Bubble, and control covariates were derived within the data, and based upon relevant historical event dates.

Notes:

^a Share prices are in nominal £.

^b Millions of nominal £.

Table 2
The Asiento and Monthly Risk-Adjusted South Sea Co. Stock Returns
CAPM Parameter Estimates: 1711 - 1794

Specification:	(OLS)	(ARCHT)	(GARCHT)
<i>Regressand</i> = $\mu_{it} - r_{it}$			
<i>Regressors:</i>			
Constant	-.0117 (.0018) ^a	-.0104 (.0024) ^a	-.0101 (.0024) ^a
A_{it}	.0284 (.0024) ^a	.0231 (.0038) ^a	.0203 (.0038) ^a
$\mu_{pit} - r_{it}$	.7039 (.0400) ^a	.7123 (.0583) ^a	.7160 (.0593) ^a
$A_{it} \times (\mu_{pit} - r_{it})$	.7441 (.0462) ^a	.6402 (.0945) ^a	.5567 (.0883) ^a
γ_0		.0004 (.00005) ^a	.0003 (.00007) ^a
γ_1		.0716 (.0709)	.0804 (.0734)
δ_1			.1328 (.0614) ^b
τd_{t-1}		.3451 (.1787) ^b	.4148 (.1997) ^b
Marginal Effect Of Asiento On Excess Return	.0428	.0157	.0169
<i>Diagnostics:</i>			
N	995	995	995
RMSE	.0247	.0249	.0254
$\chi^2(1)$ ($H_0: \gamma_1 = 0$)	39.93 ^a		
<i>Akaike Information Criterion</i>	-4534.23	-4857.82	-4880.37

Standard errors in parentheses.

^aSignificant at the .01 level

^bSignificant at the .05 level

^cSignificant at the .10 level

Table 3
The Asiento and Monthly Risk-Adjusted Bank of England Stock Returns
CAPM Parameter Estimates: 1711 - 1794

Specification:	(OLS)	(ARCHT)	(GARCHT)
<i>Regressand</i> = $\mu_{it} - r_{it}$			
<i>Regressors:</i>			
Constant	-.0557 (.0014) ^a	-.0058 (.0015) ^a	-.0051 (.0014) ^a
A_{it}	-.0132 (.0018) ^a	-.0108 (.0031) ^a	-.0046 (.0027) ^c
$\mu_{pit} - r_{it}$	.8437 (.0303) ^a	.8495 (.0350) ^a	.8583 (.0358) ^a
$A_{it} \times (\mu_{pit} - r_{it})$	-.3673 (.0350) ^a	-.3674 (.1069) ^a	-.1149 (.0732)
γ_0		.0002 (.00003) ^a	.0001 (.00001) ^a
γ_1		.3929 (.3052)	.4329 (.1282) ^a
δ_1			.3945 (.0688) ^a
τd_{t-1}		-.2523 (.2968)	-.4004 (.1356) ^b
Marginal Effect Of Asiento On Excess Return	-.3687	-.1689	-.1066
<i>Diagnostics:</i>			
N	995	995	995
RMSE	.0188	.0188	.0209
$\chi^2(1)$ ($H_0: \gamma_1 = 0$)	143.37 ^a		
Akaike Information Criterion	-5086.44	-5283.98	-5455.95

Standard errors in parentheses.

^aSignificant at the .01 level

^bSignificant at the .05 level

^cSignificant at the .10 level

Table 4
The Asiento and Monthly Risk-Adjusted East India Co. Stock Returns
CAPM Parameter Estimates: 1711 - 1794

Specification:	(OLS)	(ARCHT)	(GARCHT)
<i>Regressand</i> = $\mu_{it} - r_{it}$			
<i>Regressors:</i>			
Constant	.0104 (.0013) ^a	.0092 (.0015) ^a	.0091 (.0015) ^a
A_{it}	-.0183 (.0017) ^a	-.0129 (.0021) ^a	-.0129 (.0019) ^a
$\mu_{pit} - r_{it}$	1.263 (.0287) ^a	1.256 (.0393) ^a	1.256 (.0381) ^a
$A_{it} \times (\mu_{pit} - r_{it})$	-.4964 (.0332) ^a	-.3788 (.0574) ^a	-.3673 (.0480) ^a
γ_0		.0002 (.00002) ^a	.0002 (.00003) ^a
γ_1		.7404 (.3612) ^b	.6084 (.1828) ^a
δ_1			.1221 (.0584) ^b
τd_{t-1}		-.7139 (.3649) ^b	-.5899 (.1867) ^a
Marginal Effect Of Asiento On Excess Return	-.3591	-.2782	-.2737
<i>Diagnostics:</i>			
N	995	995	995
RMSE	.0178	.0182	.0183
$\chi^2(1)$ ($H_0: \gamma_1 = 0$)	61.24 ^a		
<i>Akaike Information Criterion</i>	-5193.59	-5362.64	-5423.98

Standard errors in parentheses.

^aSignificant at the .01 level

^bSignificant at the .05 level

^cSignificant at the .10 level

Table 5
The Asiento and Monthly Risk-Adjusted South Sea Co. Stock Returns
CAPM Parameter Estimates With Additional Controls: 1711 - 1794:

Specification:	(OLS)	(ARCHT)	(GARCHT)
<i>Regressand</i> = $\mu_{it} - r_{it}$			
<i>Regressors:</i>			
Constant	-.0179 (.0018) ^a	-.0108 (.0024) ^a	-.0102 (.0026) ^a
A_{it}	.0265 (.0024) ^a	.0209 (.0031) ^a	.0161 (.0034) ^a
$\mu_{pit} - r_{it}$	.7034 (.0369) ^a	.7047 (.0582) ^a	.7137 (.0607) ^a
$A_{it} \times (\mu_{pit} - r_{it})$	.7445 (.0440) ^a	.6209 (.0816) ^a	.4648 (.0969) ^a
SSB _{it}	.1098 (.0088) ^a	.0896 (.0974)	.1369 (.0316) ^a
BS _t	-.1909 (.0265) ^a	-.1394 (.1362)	-.1796 (.0528) ^a
SWP _t	.0049 (.0091)	.0034 (.0135)	.0093 (.0051) ^c
WAR1 _t	.0080 (.0061)	.0102 (.0132)	.0027 (.0048)
WAR2 _t	.0006 (.0053)	.0026 (.0022)	.0032 (.0018) ^c
WAR3 _t	.0007 (.0025)	.0016 (.0022)	.0019 (.0023)
WAR4 _t	-.0063 (.0042)	-.0046 (.0023) ^b	-.0041 (.0017) ^b
SHIP1 _t	.1525 (.0133)	.1282 (.0032) ^a	.0783 (.0022) ^b
(Marginal Effect			
of Shipments to			
Spanish Possessions			
On Excess Return			
SHIP2 _t	-.0052 (.0078)	-.0033 (.0064)	-.0029 (.0057)
CBAND _t	-.0158 (.0187)	-.0141 (.0041) ^a	-.0121 (.0034) ^a

FLOAT _t	.0031	.0058	.0049
	(.0041)	(.0045)	(.0026) ^c
Marginal Effect	.0145	.0012	.0036
Of Asiento On			
Excess Return			
<i>Diagnostics:</i>			
N	995	995	995
RMSE	.0228	.0232	.0244
$\chi^2(1)$	14.06 ^a		
(H ₀ : $\gamma_1 = 0$)			
<i>Akaike Information</i>	-4682.37	-4916.47	-4950.39
<i>Criterion</i>			

Standard errors in parentheses.

^aSignificant at the .01 level

^bSignificant at the .05 level

^cSignificant at the .10 level

Table 6
The Asiento and Monthly Risk-Adjusted South Sea Co. Stock Returns
CAPM Parameter Estimates With Additional Controls: 1711 - 1794:

Specification:	(OLS)	(ARCHT)	(GARCHT)
<i>Regressand</i> = $\mu_{it} - r_{it}$			
<i>Regressors:</i>			
Constant	-.0117 (.0017) ^a	-.0107 (.0024) ^a	-.0103 (.0026) ^a
A _{it}	.0271 (.0024) ^a	.0214 (.0031) ^a	.0163 (.0034) ^a
$\mu_{pit} - r_{it}$	.7038 (.0369) ^a	.7063 (.0583) ^a	.7123 (.0608) ^a
A _{it} × ($\mu_{pit} - r_{it}$)	.7440 (.0440) ^a	.6232 (.0799) ^a	.4623 (.0981) ^a
SSB _{it}	.1092 (.0088) ^a	.0885 (.0999)	.1323 (.0344) ^a
BS _t	-.1910 (.0265) ^a	-.1401 (.1402)	.0209 (.0706)
SWP _t	.0048 (.0091)	.0037 (.0124)	.0079 (.0052)
WAR1 _t	.0073 (.0062)	.0096 (.0121)	.0037 (.0051)
WAR2 _t	.0002 (.0053)	.0022 (.0021)	.0029 (.0018)
WAR3 _t	.0009 (.0026)	.0013 (.0024)	.0017 (.0024)
WAR4 _t	-.0060 (.0042)	-.0042 (.0022) ^b	-.0038 (.0054)
SHIP1 _t	.1429 (.0133)	.1228 (.0036) ^a	.0719 (.0022) ^b
Marginal Effect of Shipments to Spanish Possessions On Excess Return			
SHIP2 _t	-.0053 (.0078)	-.0036 (.0063)	-.0037 (.0054)
CBAND _t	-.0157 (.0187)	-.0140 (.0049) ^a	-.0120 (.0035) ^a
ISSUE _t	-.0012	.0002	.0049

	(.0022)	(.0045)	(.0026) ^c
Marginal Effect Of Asiento On Excess Return	.0218	.0012	.0072
<i>Diagnostics:</i>			
N	995	995	995
RMSE	.0228	.0232	.0245
$\chi^2(1)$	14.06 ^a		
(H ₀ : $\gamma_1 = 0$)			
<i>Akaike Information Criterion</i>	-4682.05	-4914.24	-4944.34

Standard errors in parentheses.

^aSignificant at the .01 level

^bSignificant at the .05 level

^cSignificant at the .10 level

REFERENCES

- Acemoglu, Daron; Simon Johnson and James Robinson.** 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation: Reply." *American Economic Review*, 102(6), 3077-110.
- _____. 2005. "The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth." *The American Economic Review*, 95(3), 34.
- Angeles, Luis.** 2013. "On the Causes of the African Slave Trade." *Kyklos*, 66, 1 – 26.
- Blackburn, Robin.** 1997. *The Making of New World Slavery: From the Baroque to the Modern, 1492-1800*. London: Verso.
- Bollerslev, Tim.** 1986. "Generalized Autoregressive Conditional Heteroscedasticity." *Journal of Econometrics*, 31, 307 – 27.
- Borucki, Alex; David Eltis and David Wheat.** 2015. "Atlantic History and the Slave Trade to Spanish America." *American Historical Review*, 120, 433 – 61.
- Brewer, John.** 1988. *The Sinews of Power: War, Money and English State, 1688 - 1783*. Cambridge: Harvard University Press.
- Brown, Vera Lee.** 1926. "The South Sea Company and Contraband Trade." *American Historical Review*, 31, 662 – 78.
- Cable, John and Kevin Holland.** 1999. "Regression Vs. Non-Regression Models of Normal Returns: Implications for Event Studies." *Economic Letters*, 64, 81-85.
- Carlos, Ann M.; Erin K. Fletcher and Larry Neal.** 2015. "Share Portfolios in the Early Years of Financial Capitalism: London, 1690 – 1730." *Economic History Review*, 68, 574 – 99.
- Carlos, Ann M.; Erin K. Fletcher; Larry Neal and Kirsten Wandschneider.** 2013. "Financing and Refinancing the War of Spanish Succession, Then Refinancing the South Sea Company," D. M. Coffman, A. Leonard and L. Neal, *Questioning Credible Commitment: Perspectives on the Rise of Financial Capitalism*. New York: Cambridge University Press,
- Carswell, John.** 1961. *The South Sea Bubble*. Palo Alto: Stanford University Press.
- Coffman, D'Maris; Adrian Leonard and Larry Neal eds.** 2013. *Questioning Credible Commitment: Perspectives on the Rise of Financial Capitalism*. Cambridge: Cambridge University Press.
- Darity, William A.** 1992. "A Model of Original Sin: Rise of the West and Lag of the Rest." *American Economic Review*, 82, 162 – 67.
- Daudin, Guillaume.** 2004. "Profitability of Slave and Long-Distance Trading in Context: The Case of 18th Century France." *Journal of Economic History*, 64, 144 – 71.
- Dickson, Peter.** 2017. *The Financial Revolution in England: A Study in the Development of Public Credit, 1688 – 1756*. New York: Rutledge.
- Dincecco, Mark.** 2011. *Political Transformations and Public Finances: Europe, 1650 – 1913*. Cambridge: Cambridge University Press.
- Dincecco, Mark and Mauricio Prado.** 2012. "Warfare, Fiscal Capacity, and Performance." *Journal of Economic Growth*, 17, 171 – 201.
- Donnan, Elizabeth.** 1930. "The Early Days of the South Sea Company, 1711 – 1718." *Journal of Economic and Business History*, Two, 419 – 50.
- Drelichman, Mauricio and Hans-Joachim Voth.** 2008. "Debt Sustainability in Historical Perspective: The Role of Fiscal Repression." *Journal of the European Economic Association*, Six, 657 – 67.

- Du Bois, W.E.B.** 1896. *The Suppression of the Atlantic Slave Trade to the United States of America, 1638 – 1870*. New York: Longmans, Green and Company.
- Eltis, David and Stanley L. Engerman.** 2000. "The Importance of Slavery and the Slave Trade to Industrializing Britain." *The Journal of Economic History*, 60(1), 123-44.
- Elton, Edwin J. and Martin J. Gruber.** 1997. "Modern Portfolio Theory, 1950 to Date." *Journal of Banking and Finance*, 21, 1743 – 59.
- Engle, Robert F.** 2001. "Garch 101: The Use of Arch/Garch Models in Applied Econometrics." *Journal of Economic Perspectives*, 15, 157 – 68.
- Fama, Eugene F. and Kenneth R. French.** 2004. "The Capital Asset Pricing Model: Theory and Evidence." *Journal of Economic Perspectives*, 3, 25 – 46.
- Forestier, Albane.** 2005. "Principle – Agent Problems in the French Slave Trade: The Case of Rochelais Armateurs and Their Agents, 1763 – 1792," D. o. E. H. London School of Economics and Political Science, *Working Paper*. London:
- Frey, Linda and Marcia Frey.** 1995. *The Treaties of the War of Spanish Succession: An Historical and Critical Dictionary*. Westport: Greenwood Press.
- Goetzmann, William N. and Andrey D. Ukhov.** 2006. "British Investment Overseas 1870 – 1913: A Modern Portfolio Theory Approach." *Review of Finance*, 10, 261 – 300.
- Hildner, Ernest G., Jr.** 1938. "The Role of the South Sea Company in the Diplomacy Leading to the War of Jenkins' Ear, 1729 – 1739." *The Hispanic American Historical Review*, 18(3), 322 – 41.
- Hills, Sally; Ryland Thomas and Nicolas Dimsdale.** 2010. "The Uk Recession in Context - What Do Three Centuries of Data Tell Us?" *Bank of England Quarterly Bulletin*, (Q4).
- Inikori, Joseph.** 2002. *Africans and the Industrial Revolution in England: A Study in International Trade and Economic Development*. Cambridge: Cambridge University Press.
- _____. 1981. "Market Structure and the Profits of the British African Trade in the Late 18th Century." *Journal of Economic History*, 41, 745 – 76.
- Janssen, Norbert; Charles Nolan and Ryland Thomas.** 2002. "Money, Debt and Prices in the United Kingdom, 1705 – 1996." *Economic a*, 69, 461 – 79.
- Jensen, Michael C.** 1968. "The Performance of Mutual Funds in the Period 1945 – 1964." *Journal of Finance*, 23, 389 – 416.
- Linter, John.** 1965. "Security Prices, Risk and Maximal Gains from Diversification." *Journal of Finance*, 20, 587 – 615.
- Lo, Andrew W.** 2008. "Where Do Alphas Come From: A Measure of the Value of Active Management." *Journal of investment management*, Six, 1 – 29.
- Mackay, Charles.** 1869. *Extraordinary Popular Delusions and the Madness of Crowds*. London: Routledge and Sons.
- McCloskey, Deirdre N.** 2010. *Bourgeois Dignity: Why Economics Can't Explain the Modern World*. Chicago: University of Chicago Press.
- McWatters, Cheryl S.** 2008. "Investment Returns and La Traite Negriere: Evidence from 18th Century France." *Accounting Business and Financial History*, 18, 161 – 85.
- Mirowski, Philip.** 1981. "The Rise (and Retreat) of a Market: English Joint Stock Shares in the 18th Century." *Journal of Economic History*, 41, 559 – 77.
- Mitchell, B. R.** 1971. *Abstract of British Historical Statistics*. Cambridge: Cambridge University Press.
- Mokyr, Joel.** 2017. *A Culture of Growth: The Origins of the Modern Economy*. Princeton: Princeton University Press.

- Neal, Larry.** 1987. "The Integration and Efficiency of the London and Amsterdam Stock Markets in the 18th Century." *Journal of Economic History*, 47, 967 – 80.
- _____. 1990. *The Rise of Financial Capitalism: International Capital Markets in the Age of Reason*. New York: Cambridge University Press.
- Nelson, George H.** 1945. "Contraband Trade under the Asiento, 1730 – 1739." *American Historical Review*, 51, 55 – 67.
- North, Douglas and Barry R. Weingast.** 1989. "Constitutions and Commitment: The Evolution of Institutions Governing Public Finance in 17th Century England." *Journal of Economic History*, 49, 803 – 32.
- O'Brien, Patrick and Stanley L. Engerman.** 1993. "Exports and the Growth of the British Economy from the Glorious Revolution to the Piece of Amiens," B. Solow, *Slavery and the Rise of the American System*. Cambridge: Cambridge University Press, 177 – 209.
- Palmer, Colin A.** 1981. *Human Cargoes: The British Slave Trade to Spanish America, 1700 – 1739*. Chicago: University of Illinois Press.
- Pearce, Adrian J.** 2001. "British Trade with the Spanish Colonies, 1788 – 1795." *Bulletin of Latin American Research*, 20, 233 – 60.
- Pynnonen, Seppo.** 2005. "On Regression Based Event Studies." *Acta Washensia*, 143, 327 – 54.
- Reibman, Henry.** 2012. "Pvt. Profits and the South Sea Company: Illicit Trafficking under the Asiento." *Michigan Journal of History*, For, 49 – 78.
- Rodney, Walter.** 1972. *How Europe Underdeveloped Africa*. London,: Bogle-L'Ouverture Publications.
- Sharpe, William F.** 1964. "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk." *Journal of Finance*, 19, 425 – 42.
- Sheridan, Richard B.** 1958. "The Commercial and Financial Organization of the British Slave Trade, 1750-1807." *Economic History Review*, 11(2), 249-63.
- Smith, Adam.** 1776. *The Wealth of Nations*. London: Methuen and Co., Ltd.
- Solow, Barbara L.** 1985. "Caribbean Slavery and British Growth: The Eric Williams Hypothesis." *Journal of Development Economics*, 17, 99 – 115.
- Sorsby, Victoria Gardner.** 1975. "British Trade with Spanish America under the Asiento, 1713 – 1740," U. o. London, *Doctoral Dissertation*. London:
- Stasavage, David.** 2003. *Public Debt and the Birth of the Democratic State: France and Great Britain, 1688 – 1789*. Cambridge: Cambridge University Press.
- Temin, Peter and Hans-Joachim Voth.** 2013. *Prometheus Shackled: Goldsmith Banks and England's Financial Revolution after 1700*. Oxford: Oxford University Press.
- Wennerlind, Carl.** 2011. *Casualties of Credit: The English Financial Revolution, 1620 – 1720*. Cambridge: Harvard University Press.
- Williams, Eric.** 1944. *Capitalism and Slavery*. Chapel Hill: University of North Carolina Press.
- Wright, Gavin.** 2006. *Slavery and American Economic Development*. baton Rouge: Louisiana State University Press.
- Zakoian, Jean-Michel.** 1994. "Threshold Heteroscedastic Models." *Journal of Economic Dynamics and Control*, 18, 931 – 55.