The Microstructure of the First Emerging Markets in Europe in the 18th Century

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ABSTRACT

While there was no formal stock exchange in London to handle the increase in transactions that accompanied the South Sea bubble of 1720, Exchange Alley had already established itself as the focus for the secondary market in financial securities of all descriptions. The extraordinary pressures on these informal market structures created by the issuance on new stock by the South Sea Company forced the authorities and the practitioners to lay down new rules, both formal and informal, to deal with breach of contracts. These were eventually codified in the formal rules of the London Stock Exchange in 1812 after another financial crisis, but the rules enforced in the 1720s laid the basis for the growth of trading in government securities over the intervening century.

Introduction

By the end of the seventeenth century, secondary markets for shares in joint stock corporations were well established in Amsterdam, London, and Paris. Starting in 1719, however, the participants in these early emerging markets were caught up in the rise and demise of John Law's System in Paris, then the South Sea Company's scheme to imitate the French success in refinancing government debt by issuing new equity stock, and finally some belated attempts by various Dutch cities and provinces to imitate the apparent successes of the French and British experiments. By this time, the wealth derived from the burgeoning commercial activities in the Atlantic port cities of Europe was sufficiently dispersed to allow capital market access to those well down the social hierarchy, not just to those in the nobility or peerage but to merchants and tradesmen, widows and spinsters (Earle, 1989; Grassby, 2001; Zahadieh, 1994). Although most individuals active in the markets in 1720 lived in the immediate metropolitan regions of Amsterdam, London, and Paris, participation was not limited to these regions. Indeed, all three markets were dedicated to encouraging investors from other parts of the Netherlands, Britain, France and the rest of Europe. Many of them responded by using trusted agents in Amsterdam, London, and Paris. (Gelderblom and Jonker for Amsterdam, Carlos and Neal, 2006, for London, and Velde for Paris.)

Yet, for the secondary market to operate those who wished to purchase a share had to be able to find someone who wished to sell a share. How was this accomplished? How did those who wanted to buy a share or sell a share find a counterparty in these developing markets in 1720 Amsterdam, London, or Paris? Once they had made a contract with a stock-jobber, how was that contract enforced? In short, what was the microstructure of these early financial markets and how did their architecture respond to the shock of the collapse of the various European stock market bubbles in 1720? Below, we describe first the context within which the markets operated, then look closely at the activities of a major speculator and investor in all three markets at the time, before turning to the legal conflicts that arose as a result of broken contracts in the aftermath of the collapse. We conclude that the precursors of the essential rules of the London Stock Exchange when they were first published in 1812 arose from the debris left in Exchange Alley after 1720, while Paris languished for another century, and Amsterdam turned its attention first to the more rewarding market that had emerged in London and later to other emerging markets in the rest of Europe.

Information and the Market

A potential buyer of a stock presumably already has some idea what a share purchase might mean and what benefits might derive from holding a financial asset. Yet a potential buyer of stock also needs to know how to do it – where to go, what forms to fill and file, what to ask for, and what price to pay. In a completely decentralized market, sellers and buyers would have to spend considerable amounts of time trying to find one another and then negotiate over price and terms of settlement. As the market becomes more centralized, information about forms, prices and potential counterparties becomes more widely accessible. This kind of market information can be considered a public good in that one shareholder's knowledge does not impinge on what another shareholder can know. There are three potential and certainly not mutually exclusive sources of such information: print media, centralized locations, and experienced people contacted through networks.

Print media

Amsterdam was the cradle of printing of all types of products for western Europe from the early 16th century on. As the most important port for transshipments of products between northern and southern Europe by the beginning of the 17th century, it was also the main source of mercantile information.[i] While the regularly published price currents focused on wholesale prices of the major commodities that flowed through the Amsterdam markets, they included current exchange rates on the major cities in Europe and occasionally the prices of shares in the major Dutch corporations, the Dutch East Indies Company and later the West Indies Company. One suspects that there were daily or at least twice-weekly ephemera published in Amsterdam that gave exchange rates and forward prices of the major Holland securities. While only occasional copies have been found in personal archives, the gazettes in other Dutch cities such as Utrecht, Leuven, and Delft did publish securities prices from the Amsterdam Beurs by the end of the 17th century.[ii] As ephemera, the various price currents were regularly included in correspondence among European merchants and bankers to verify the legitimacy of the prices at which transactions had been completed for their principals. The gazettes were included in the regular mails carried on packet boats between Amsterdam (Hook of Holland) and London (Harwich) and by express coach between Amsterdam and Paris.

In London, printers were allowed general freedom with the accession of William of Orange to the throne of England in 1688/9 so a number of print sources emerged to keep potential investors informed of developments in its emerging securities market. Newspapers regularly inserted paragraphs to report on the latest prices for the major forms of government debt available. Perhaps even more useful, a specialized publication, John Castaing's *Course of the Exchange,* began regular appearance at least by 1698. (Figure 1.) Castaing was followed by competition from John Freke's *The Price of Several Stocks,* the last issue of which appeared June 22, 1722, while Castaing's *Course of the Exchange* continued through to 1810. It appeared twice-weekly, on Tuesdays and Fridays, which also happened to be the days that mail packet boats left from Harwich to the Dutch port at Hook of Holland. Each issue contained the prices of the major securities over the prior three days, as well as the latest exchange rates for bills of exchange on major European cities. It concluded with notes on the days of dividend payment for the major government stocks and the numbers on tallies that currently paid off at the Exchequer.

As Neal (1990, p. 33) has documented, the "combination of low price, inexpensive delivery and rapid posting to the countryside and abroad" must have made Castaing the standard for those involved in the market, even though several other competing price lists had appeared by the time of the South Sea Bubble in 1720. After the bubble, although Castaing's *Course of the Exchange* continued as the most authoritative price list, a wider public could now obtain stock prices from *Lloyd's List* (weekly) and *Gentleman's Magazine* (monthly), both of which included regular sections on stock prices in addition to their primary material.

In Paris, prices for bills of exchange and stocks in the government sponsored trading companies were included in the official publication, the *Mercure de Paris*, at least after 1724 when the official Paris Bourse was opened. Its opening followed completion of the Visa begun in 1721 that had destroyed John Law's System for once and for all. Before 1724, there may have been ephemeral price sheets issued by licensed *agents de* *change* to their favored customers, but economic historians now are forced to rely on occasional archival sources, such as Giraudeau's "Variations Exactes de tous les effets en papier qui on eu cours sur la place de Paris a commencer au mois d'Août 1719 jusques au dernier Mars 1721," found in the Bibliothèque Mazarine, MS. 2820. The relative paucity of price evidence for securities traded in Paris is evidence of the stultification of a secondary market for financial assets throughout the eighteenth century for France.

Central Trade Locations

Amsterdam's Beurs contained a section where dealers in securities could ply their trade, although during periods of financial speculation their activities moved sometimes to a bridge connecting the Beurs to Kalverstraat and from there in the coffee houses along Kalverstraat. Josef de la Vega's classic work, *Confusion de Confusiones*, first published in Spanish in Amsterdam in 1689, presumably for the edification of wealthy Sephardic Jewish patrons, describes in vivid detail the operations of the various investors, spculators, and their intermediaries.

In his *Collection for Improvement of Husbandry and Trade (1692-1703)*, John Houghton explained the mechanics of the emerging stock market in London for the new investor as well as how s/he could access the market and learn the prices of the various securities on offer. He explained that securities could be purchased either by going directly to someone who wanted to sell or by using a broker who would help guide the new investors through the process. Houghton noted that an investor could find out "what Prices the Actions bear for most of the Companies trading Joynt-stocks" at Garraways and two years later he noted that "brokers as being 'chiefly upon the Exchange, and at Jonathan's Coffee-house, sometimes at Garaways's and at some other Coffee-Houses." (Dickson, 490). These 'brokers' provided both expertise and information about the market, but generally were not regarded as useful professionals in Houghton's time. Some of the antipathy might have come from the threat to the social order and status quo possible from the very anonymity of the impersonal market. Houghton was writing in the 1690s during a period of heightened activity in the market in securities (Carlos, Key and Dupree, 1998; A. L. Murphy, 2006) when the high level of activity in conjunction with the monetary crises in the mid-decade generated calls for restrictions on the market. These resulted in 8 & 9 Wm III, c. 32, which limited the number of all kinds of brokers to

100, called *Sworn Brokers*, and forbade them from dealing in government securities without the Treasury's permission. The law also prohibited these 100 *Sworn Brokers* from dealing in stock themselves. As we show below, not all Sworn Brokers followed the letter of the law.

Houghton informed his readers that they could find willing dealers in any of the securities available among the several coffee houses clustered around Exchange Alley behind the Royal Exchange. (Figure 2.)

While a royal decree in 1638 had established a corporation of official *agents de change* in Paris, they focused on the business of drawing and accepting foreign bills of exchange more than trading in securities. In common with the monarchy's technique of selling remunerative offices to well-to-do bourgeoisie and nobles, the agents were required to make a forced loan to the Crown. When the Crown needed more revenue, it either increased the size of the bond required or the number of agents. By 1720, trade in securities had gravitated to rue de Quincampoix, where trading among individuals could take place without the intermediation of the official *agents de change*. At the height of speculative frenzy in John Law's Compagnie des Indes in autumn 1719, all available space along the street had been leased to speculators. Law closed down the street by a decree of March 22, 1720 to bring trade inside his company's offices at the Hotel Soissons, which he declared by a decree of July 20, 1720 to be the official bourse for all trading in government securities. He even suppressed the offices of the agents de change in August, replacing them with sixty "commissions" of his own choosing. By October, Law again changed course, closing the bourse on October 29 and creating 60 new offices for agents de change. Thereafter, all business simply ceased while the Visa was carried out to determine what losses would be imposed on each investor, a process not completed until 1725.[iii]

Personal networks

The interested buyer or seller could also get information from the networks of people they knew. Such links into social networks through liveried companies, churches or political affiliation or informal through location or friends could further reduce the costs of gathering information. While the individual can choose with whom to spend time and share information, individual choices are, in turn, affected by geography, occupation, social customs, religion and mores, each of which tends to generate connections between any given individual and many others. Networks, therefore, can provide the individual with a short cut for acquiring information in that they potentially help agents screen out irrelevant information and help evaluate the information to which they are exposed. Obviously, not all networks are identical or of equal effectiveness. For instance, networks can be of different sizes. Burt (1992, p. 16) has argued that bigger networks are better because "more contacts can mean more exposure to valuable information, more likely early exposure, and more referrals."

Granovetter (2005) has examined frequency of interaction – where more frequent interaction means stronger ties – with special focus on the strength of those ties. He argues that networks built on strong ties will quickly exhaust information in the network. He therefore points out the "weakness of strong ties," meaning that networks based on weak ties can provide participants more new information that may force them to discard preconceived and possibly erroneous notions about the world around them. Weak networks in this sense expose people to new information because they allow diverse groups to interact. These loose links allow individuals to move beyond mutually reinforcing ideas received from like-minded people within a tightly knit environment or rigid social structures such as liveried companies.[iv] Exchange Alley from this perspective served as a central meeting place for individuals from a variety of tighter-knit networks. (Figure 3.)

In earlier work (Carlos and Neal, 2006), we have analyzed the transfer books of the Bank of England during the bubble year of 1720 to identify an implicit network of "market makers," or "stock-jobbers" as they were pejoratively termed at the time. The 15 most active dealers in Bank of England stock accounted for fully one-third of the total transactions during that year when 100 percent of the capital stock of the Bank changed hands. Table 1 shows the variety of occupations, social status, religion, and indeed gender among these individuals. Contrary to the opprobrium dealt them in the press at the time, we consider them as the prototype of a viable stock exchange, precisely because of the variety of clientele they encouraged to participate in the market. In sum, they represent the "strength of weak ties" made famous in social network analysis by Mark Granovetter.

This core group of market makers formed a weak network, with an inner core, or “clique,” comprised of wealthy London merchants and large stock holders in the Bank who dealt regularly with each other on a reciprocal basis. Figure 3 shows the network among these 15 most active traders of Bank of England stock during the year 1720. Table 2 provides an overview to help interpret the figure with its multiple nodes

Table 1. Summary Statistics of Transfers by Top 15 Jobbers

First Name	Surname	Status	Book Value	Count
George	Caswall	Knight, MP	£366,197	214
Robert	Westley	Merchant taylor	£105,556	199
James	Martin	Goldsmith banker	£135,250	107
Francis	Pereira	Sephardic merchant	£90,550	103
Peter	Delme	Knight, Huguenot, Director	£93,225	72
Abraham	Craiesteyn	Dutch émigré	£40,350	51
Samuel	Strode	Broker	£79,999	48
Solomon	Pereira	Sephardic merchant	£34,379	48
Thomas	Houghton	London merchant	£38,099	45
Gerard	Bolwerk	Dutch émigré	£43,600	42
Moses	Hart	Ashkenazic broker	£40,337	41
Robert	Tothill	B of E clerk	£24,390	38
Anthony	da Costa	Sephardic merchant	£25,612	37
Johanna	Cock	Widow of Dutch émigré	£33,000	37
Philip	Vanendenden	Dutch émigré	£22,640	32

and directional vectors. Basically, there were seven traders at the center of the network who were willing to buy and sell from each other as the occasion arose, in addition to engaging in large numbers of trades both as buyers and sellers with their respective clienteles. George Caswall, a central figure of scorn in Daniel Defoe’s *Anatomy of Exchange Alley*, was clearly the main figure within this network. As a partner in the Sword Blade Bank, which helped finance the South Sea Company’s operations in refinancing the government’s outstanding debt in 1720, Caswall’s motives may be suspect. But analysis of his holdings show that that during the bubble year his net holdings of Bank stock tended to level out at the same level he had been accustomed to hold as inventory in the previous year. Moreover, he bought and sold an equal number of times with the other major traders in Bank stock.

Of the other six "reciprocal" traders, James Martin in partnership with his older brother Thomas in the famous Grasshopper bank founded by Thomas Gresham was the preeminent goldsmith banker in London at the time. His firm was a major banker for the South Sea Company, along with the Sword Blade Company and the Bank of England itself. Francis Pereira was the wealthiest stockholder among the group, son and executor of Isaac Pereira, one of the leading Sephardic Jews who had come to London with William III in the 1690s as an army contractor. Moses Hart was the only formally licensed broker among the core group, and was a leading figure in the recently growing Ashkenazic Jewish community. While an active trader on his own account, closer analysis of his trades show that he never dealt with the Sephardic Jews, the two Pereiras and Anthony da Costa. Abraham Craiesteyn was also a naturalized citizen from the Netherlands and nearing the end of his long career as a London merchant in 1720. Sir Peter Delme was a leader of the Huguenot community, an Alderman of the City of London, and a Director of the Bank of England. His holdings were second in size only to those of Pereira.

Table 2. Reciprocity Relations within the Network of Market Makers

Reciprocal Traders	**# of Buys/ #of Sales**
George Caswall	17 / 17
James Martin	7 / 12
Francis Pereira	15 / 9
Abraham Craiesteyn	9 / 10
Peter Delme	11 / 16
Moses Hart	4 / 6
Anthony Da Costa	4 / 3
Buying Traders	
Samuel Strode	6 / 0
Salomon Pereira	11 / 5
Thomas Houghton	7 / 1
Johanna Cock	6 / 3
Philip Vandenenden	10 / 2
Selling Traders	
Robert Tothill	0 / 4
Gerard Bolwerk	1 / 11
Robert Westley	4 / 13

The second group includes net purchasers of stock from the other leading dealers and they were also a heterogeneous group. Samuel Strode was the other licensed broker along with Moses Hart, but his six purchases from other members of the market-making network were done to make up the single very large sale he made in the middle of the year. Salomon Pereira was clearly beginning to assume the family business created by his father, Francis Pereira, and was building up his personal holdings of Bank stock over the course of the year. The remaining three – Cock, Houghton and Vandenenden – have only one thing in common: each became bankrupt after the collapse of the South Sea bubble. Of the three, Johanna Cock was the longest dealer in Bank stock as well as a leading merchant after taking over her husband's affairs in 1716. Houghton and Vandenenden appear to have been drawn in to dealing in Bank stock during the bubble year itself, and their inexperience must have contributed to their ultimate failures as stock-jobbers and merchants. The final group of individuals, the "Selling Traders," prospered, the result of judicious purchases of Bank stock when its price was low combined with sales when its price rose mid-year. Robert Westley, indeed, became the preeminent jobber in Bank stock in the following years.

The case of Johanna Cock is instructive in quite a different dimension, given the extent of her dealings with Dutch merchants. In her account in the Stock Ledger of the Bank of England, a slip of paper pasted in notes that she was declared bankrupt on November 12, 1720. (Commission of bankruptcy 2251) and of her remaining balance of £3000, "She consents by the following notarial declarations, [A n 32 & A n 27] that £1500 thereof shall be transferred to Paulus Schepers of Rotterdam, and £1500 more thereof Nicolas Kops of Haarlem, Ordered by Thomas Scawen, Deputy Governor."[v]

Like Sir Justus Beck, a much better known victim of the collapse of the South Sea bubble, Johanna's forward commitments to some of her Dutch customers fell due after the price of her holdings had fallen sharply and she was forced to default.

The Anglo-Dutch Connection

The role of the Dutch clientele in London's stock market rose sharply during the speculative surge of interest in English stocks during 1720, as evidenced in Johanna Cock's creditors, but it had been important from the beginning of the reign of William III. There can be no doubt that the Dutch advisors that came with William III had an important impact on shaping the financial innovations that followed in the course of his reign over the following thirteen years. Dickson, in his classic work on the English financial revolution, attributed much of the English success to having the Dutch examples before it. For example, the transfer and ledger books created for the use of the Bank of England were virtually identical with those already well established by the VOC in Amsterdam.[vi]

That said, the functions and governance of the Bank were clearly shaped by the peculiarities of London's financial community and its history of relationships with the Crown. Unlike the Bank of Amsterdam, the Bank of England was created not by a merchant guild or government but by the subscriptions of capital from a wide variety of persons already holding substantial quantities of short-term government debt. These included nobles wishing to maintain royal favor, goldsmith bankers who feared competition from the new bank, a larger number of small merchants and artisans in London presumably holding government paper as payment for services already rendered, and a number of Dutch individuals, both naturalized and foreign. The governance of the bank was determined by an elected, not appointed, court of directors, and each shareholder with £500 capital was entitled to vote for the Directors, Deputy-Governor, and Governor, whose terms of office were only two years, renewable once and who had to hold substantially greater amounts of stock. The Bank of England's corporate structure, therefore, made it far more responsive to the economic and financial demands of its customers and especially its shareholders than was the case for the Bank of Amsterdam or the Dutch East India Company, both of which were always subject to governance by the city authorities.

A further advantage of the corporate structure of the Bank of England, compared to that of the VOC in this case, was the concentration of its capital stock in one city, London, instead of divided up in fixed proportions determined by political considerations among the various port cities as was the capital stock of the VOC. In the long run, this meant that the Bank of England was fully capable of increasing its capital stock in order to enlarge its activities when that met the interests of the stockholders. The VOC, by contrast, never increased its capital stock throughout the eighteenth century, even as trade between Europe and Asia continued to grow.

Finally, the transfer books and stock ledgers of the Bank of England, modeled on those of the VOC, were kept available for transfers on all business days for the Bank. Those of the VOC, by contrast, were usually opened for transfers when dividends were to paid out. Consequently, trade in Bank of England shares (and later East India Company and South Sea Company shares) could be daily for spot transactions, while trade in VOC and WIC shares in Amsterdam had to be on a forward, time contract basis.

As in the case with Holland, William's demand for war finance in England included the issuance of lottery tickets. And as in the case of Holland, the provision of small-denomination tickets that could be further divided up among private parties as well greatly increased the number of government debt-holders. The large and diverse customer base for government debt as a result of the success of lottery schemes laid the basis for successful innovations in government finance later. The similarity of the lottery schemes between London and Amsterdam led to reciprocal holdings of lottery tickets by merchants in each city. Thomas Pitt, of diamond fame from his lengthy tour of duty as Governor of the Madras station for the English East India Company, held Lottery Tickets in London for the account of his Amsterdam correspondent, Romswinckel and Warin, while they in turn held Amsterdam lottery tickets on account for him.[vii]

The establishment of the South Sea Company in 1710, which imitated the earlier successes of the Bank of England and the New East India Company in refinancing depreciated wartime government debt, created more opportunities for cross-holdings. In 1712, the Scottish financier John Law, then resident in Amsterdam, bought shares in the South Sea Company through the agency of his friend and mentor, Lord Ilay, using the services of Ilay's goldsmith banker in London, George Middleton.[viii] By 1720, when more Dutch money came to London in pursuit of the speculative gains to be gained during the runup in price of South Sea stock, Dutch holdings in Bank of England stock amounted to nearly 20% of the new purchases of Bank stock from 1720 to 1725, a period when the Bank's stock increased by 50%.[ix]

The symbiosis of the two mercantile powers was most clearly evident in the field of government finance, especially in sustaining the remarkable rise of British national debt over the course of the eighteenth century. The Bank of England must have quickly outstripped the Bank of Amsterdam as a focal point for the international payments system of Europe after its success in withstanding the shock of the collapse of the South Sea scheme in the Fall of 1720.

The business of *actionistes* first described in cynical detail by Josef de la Vega[x] and then in admiring detail by Isaac de Pinto[xi] nearly a century later, gradually evolved from an active trade in shares of the VOC to much more active trade in the Three Per Cent Consols created by the British government in 1751. The root of this much maligned and misunderstood trade was twofold: first, the very size of the capital stock and the large number of shareholders with manifold motives for holding their shares created a large customer base for the services of the stock dealers; and, second, both Dutch and English joint-stock shares could be pledged as collateral for loans of varying length. Creditors accepting shares as collateral for their loans in case of future default naturally sought to protect their position by buying a put for future delivery of the shares at a price sufficient to maintain their value as collateral for the loan. Selling put options and offsetting the consequent risk by buying call options became the specialized business of stock jobbers.

The business of dealing in options on the securities available in Amsterdam and London was well understood and actively practiced in both cities by the end of the 17th century. De la Vega described it in his *Confusion de Confusiones* in terms of creating artificially smaller divisions of the shares of the VOC, termed *ducatons*, and de Pinto elaborated on the various strategies that options provided to the stock dealers in Amsterdam. He noted that a purchaser of £1000 Three Percent Consols for forward delivery in Amsterdam at the next *rescounter* (settling) date, had four possibilities when the contract came due.

First, he could pay then the agreed sum of money and have the full amount inscribed in his name in the books maintained by the Bank of England.

Second, if he anticipated a rise in the price, he could pay an *actioniste* a modest sum to prolong the settlement of the contract another three or more months.

Third, he could sell the contract to another individual and pocket the difference in price if the price of the Consol had risen in the meantime.

Fourth, he could pledge the £1000 Consol he had committed to purchase as collateral for a loan of cash to be used for another venture.[xii]

Pledging as collateral for a loan a security not yet paid for was something that de Pinto lamented could not be done with French *rentes*, and which he considered a fatal flaw for French finances. (As discussed below, it was illegal as well for British subjects, but with quite different consequences!) The origin of this restriction on French government debt dated back to the revulsion of French financiers to the innovations forced upon them by the Scottish genius, John Law, during the Regency of Philippe II, Duke of Orléans (1715-1723).

Law's System essentially combined what he saw as the best features of the successful financial sectors in London and Amsterdam, but with additional features that took advantage of the autarchic powers of the French monarchy. Instead of competing overseas companies as developed gradually in England and the Netherlands, Law combined all French overseas trade into one joint-stock corporation, the *Compagnie des Indes*. While it had begun as the *Compagnie de l'Occident*, formed to exploit the Mississippi River drainage from the base of New Orleans, Law quickly expanded its capital stock to include the trade with Africa, the East Indies trade, and the tobacco monopoly in France. The final coup, initiated in August 1719, was to absorb the *Compagnie des Fermes Générales*, which was responsible for collecting the major taxes owed to the monarchy.

On the monetary side, he financed the capital expansion of the *Compagnie des Indes* (referred to as the Mississippi Company even as its scope expanded to include all French overseas trade) with monetary accommodation provided by the *Banque Royale*, created in 1718 and replacing his *Banque Générale*, established in May 1716. When he found that the note issues of the *Banque Générale* were challenged by the independence of the various Royal mints, he expanded the capital of the *Compagnie des Indes* to include the mints as well. When foreign investors tried to realize their capital gains, the continued note expansion of the *Banque Royale* depreciated the value of the French currency on the foreign exchanges. Law countered this by first combining the *Compagnie des Indes* with the *Banque Royale* in February 1720, fixing the price of shares in the *Compagnie* at 9,000 *livres tournois* in terms of notes of the *Banque Royale.* This meant that investors in the shares of the *Compagnie* could only sell them to the *Banque*, which then opened an account for the seller. Effectively, all trade in shares was carried on by book transfer within the company's offices, eliminating the business of brokers and stock jobbers who had thronged to Paris in the previous months to cash in on the Mississippi Bubble. Meanwhile, the value of the *livre tournois* kept falling on the foreign exchanges. With no end in sight, the company was forced to declare bankruptcy in July 1720. By December, Law could no longer rely on the protection of the Regent and was forced to flee for his life, never to step foot in France again.

Over the next several years, the System was gradually broken up and the investors in the company paid off at substantial write-downs, amounting as much as 95 percent in the case of rich foreigners, such as Lord Londonderry. The *Banque Royale* was closed, and no public bank permitted thereafter in France until the *Banque de France* was created by Napoleon in 1801. The *Compagnie des Indes* was reduced to trading with the East Indies in competition with the more established companies of the Dutch and English, and eventually forced out altogether at the conclusion of the Seven Years War in 1763. More importantly, the idea of assigning real value to a claim on a financial asset, as explained by Isaac de Pinto in 1771, was eliminated by royal decree under Louis XV as a means of reassuring the remaining investors in French government debt.

Recently, Gelderblom and Jonker (2004) have shown conclusively that such pledging of shares of the VOC occurred almost immediately and enabled Amsterdam merchants to obtain loans from a wider range of sources at lower rates of interest.[xiii] Anne Murphy demonstrates that at least one broker, Charles Blunt, in London had created an active business in options during the stock market boom of the 1690s.[xiv] Stephen Quinn documented from the accounts of Stephen Evance, a major London goldsmith-banker at the turn of the eighteenth century, that Evance's accumulation of liquid, interest paying, government debt enabled him to lower the rate of interest he charged his borrowers, perhaps to meet the competition of other goldsmith-bankers.[xv]

The South Sea Bubble, however, disrupted this business for a few years (Charles Blunt became bankrupt and committed suicide!). Despite the efforts of the South Sea Company to sustain the level of their overpriced stock with the Bubble Act of June 1720, the bubble collapse and the South Sea Company was restructured under government supervision. Robert Walpole's government managed, with the self-interested help of the Bank of England, to restore the vitality of the London stock market by converting one-half of the South Sea stock into perpetual annuities offering 5% interest for five years, to be reduced then to 4% (and eventually to 3%). In this manner, Walpole salvaged the emerging capital market in London because at a stroke he created an enormous stock of homogenous, readily transferable, and fungible financial assets that were widely held by at least 35,000 individuals.[xvi]

While the remaining stock of the South Sea Company was gradually wound up due to the resistance of the Spanish Empire against allowing it to expand upon its monopoly of the slave trade, both the Bank of England and the East India Company periodically increased their capital stock. The business of the London stock market continued to be active and profitable for a growing number of specialist traders, despite the absence of volatility in the prices of the various securities. Meanwhile, the attention of *actionistes* in Amsterdam turned as well to the English securities, which now represented the largest mass of tradable securities available to European investors. The continued aversion to securities markets for government debt in France was to plague the monarchy's finances for the rest of the century.

Playing the Markets: the adventures of Lord Londonderry, the "money Pitt"

Evidence from a series of law suits revolving around the actions of Lord Londonderry during the rise and collapse of the Mississippi Bubble, at height of the South Sea bubble, and with some desperate efforts to restore his lost fortunes with dealings in the Amsterdam exchange highlights the differences in the internal architecture of each stock market and the contrasts in legal regimes. At the time, all three countries were military and political allies, as each was vitally interested in restraining the power of Philip V of Spain, while retaining the support of the Habsburg Emperor in Vienna. Londonderry's brother-in-law, James Stanhope was the English minister responsible for establishing and then sustaining the Quadruple Alliance. Londonderry's experiences as an eminent speculator on all three exchanges during the critical years of the financial booms and busts highlights nicely the issues that have motivated this conference on "Manufacturing Markets."

Londonderry, born Thomas Pitt, Junior, was the second son of Governor Thomas Pitt of diamond fame. Thanks to his skill in initiating and completing the sale of the Regent diamond to France in 1717, he became his father's business attorney and handled all the Pitt family's stock dealings. Many of these turned sour, the result of failed counterparties in each case, but the result was a series of law suits, some initiated by Londonderry against his defaulters and some initiated against him by disappointed partners, including eventually members of his own family, which included his nephew, William Pitt, the future Lord Chatham. We take up his misfortunes in France, then turn to his various successes and mishaps in London, concluding with a minor recoup of his affairs in Amsterdam.

Pitt's initial dealings in Exchange Alley in London began in 1714 with the stock brokers George Cradock and Nathaniel Shepherd. Most of his affairs dealt with the personal accounts of the Pitt family, reflecting the increasing trust his father was placing in him, but occasional glimpses of his future adventures in Paris and Amsterdam appear. In the account settled on June 5, 1714, Pitt is credited with a note under the hand of Joseph Edward Gage, Esq. amounting to £537:10:0. Gage and Pitt eventually became involved in much more serious affairs with each other as a consequence of the Mississippi and South Sea bubbles in 1719-20. Joseph Edward Gage was clearly in France, part of the Jacobite diaspora which was educated in France and committed to the Catholic faith. This is the first sign of what would become a major part of Londonderry's career, dealing with the stock market initiatives of John Law in France.

Indeed, an entry for October 14, 1715, shows Pitt, Jr. receiving £75:0:0 on a note on John Mead (goldsmith) sent by M. Law, the first evidence of contact with John Law, then recently arrived in Paris. In the same account, Pitt sells off £1000 each of South Sea stock and of Bank of England stock, South Sea not yet a par (96 ¾) and Bank falling from its previous high to 124 7/8. In the account settled May 15, 1716, he is credited with a note from George Middleton, already the London agent for the stock market affairs conducted by John Law from Paris. A note for £200 on May 31, 1716 was paid to Richard Cantillon and another note for £200 was paid to M. John Law on October 11, 1716. In the same account, Pitt was credited with £2000 by a note on George Middleton, Law's agent and banker in London.

The young Pitt's increasing dealings with France were a natural outgrowth of his brother-in-law's role as Secretary of State under George I in charge of Southern affairs. In 1716, he received an enthusiastic endorsement of John Law's recently opened *Banque Générale* in Paris from the British resident in Paris, Thomas Crawford:

> In the last letter I had the honour of from you, you desire me to let you know what Mr. Law's bank is a doing. All I can tell you in that matter, is that every body here thinks it will do well. The Credit of it is established and they do a vast deal of business every day. It has ruined all the Banquiers here for it discounts bills and gives and takes bills upon every foreign place at one per cent cheaper than any of them and by the force of their money and the

privileges it has, is already master of the Exchange with every country till trade force a change in that matter.

Letter to Londonderry from Thomas Crawford, Paris, 16 September 1716. **C108/418/10**

There is little evidence that Londonderry took up Crawford's recommendation to invest in Law's schemes at that time, but it is clear that Crawford's enthusiasm for Law's financial innovations in Paris persuaded Londonderry and his father, Thomas Pitt, to rely on Law's good reputation to pay for the exorbitant price they agreed on for the Pitt/Regent diamond in 1717. Payment of 2 million livres tournois was arranged in several installments from June 1717 through June 1719. At the time, this amounted to over £130,000, and the later payments all bore 5% annual interest as well. Londonderry clearly invested part of his commission in the Compagnie des Indes, and made a substantial gain over the next two years, reputedly becoming one of the new "millionaires" created by the Mississippi bubble. Just before the final surge of the price of Mississippi stock in late August 1719, Law and Londonderry entered into a huge forward contract in which Law promised to deliver a year hence £100,000 of English East India Company stock to Londonderry at 10 percent under its current price, namely at 180 percent of par. The details of this incredible contract require a separate paper, but the point to be made for this paper is that both Law and Londonderry deposited the equivalent of £30,000 as earnest money. Law appointed his agent in London, George Middleton, to make this sum available to Londonderry and Londonderry deposited his earnest money in Law's bank.

In January 1720, as the price of Mississippi stock was clearly going to fall, Londonderry made a hurried trip to Paris and entered into contracts with a number of speculators in Paris, mostly British expatriates, to sell his holdings at the end of May 1720. In buying both shares and options on new subscriptions in the Mississippi Company, Londonderry relied on the firm of E. Burgess and David Lyon. These were evidently experienced stockjobbers from London. Their commissions were regularly charged at 1/8 percent, the same as Londonderry paid to his stock brokers in London. Shortly after Londonderry's visit to Paris, however, Law carried his next maneuver to preserve his System. In February, he merged the *Compagnie des Indes* and the *Banque Royale* while requiring all stock dealings to be done through accounts in the bank. Londonderry made another trip to Paris in March and entered into a new round of private forward contracts to dispose of his holdings of Mississippi stock. No fewer than 25 separate contracts were copied out later for the benefit of his lawyers afterwards, because none of the private forward contracts made by Londonderry to cover his risks in Paris were completed. The failures of his contracts in Paris went beyond issues of idiosyncratic risk with his various counterparties. Although some of the counterparties were notorious for their brazen speculations such as Joseph Gage and Lady Mary Herbert, others were serious merchants and officials, including none other than Lord Stair, the British ambassador. Thanks to the bankruptcy of the *Banque Royale* in July, the subsequent recapitalization of the *Compagnie des Indes*, and the destruction of all documentation of the Visa when it was completed in 1723, there was no possibility left for Londonderry to salvage the remains of his French fortune. Ultimately, he cashed out in 1726, realizing only 5% of his original holdings.

While assessing the situation in Paris in March 1720, Londonderry turned to one of his father's merchant correspondents in Amsterdam, Bernard vanderGrift. Eventually, Londonderry was able to sell part of his East India Company stock to various Dutch and English investors lined up by VanderGrift at a substantial profit over the 180 percent of par promised by Law. In addition, Londonderry made a substantial gain on stock in the Dutch West Indies Company, although the sums involved in both transactions were small compared to his dealings in Paris and London. More interesting is that Londonderry was able to use vanderGrift as an agent for disposing of shipments of various goods he had consigned to vanderGrift in Amsterdam. These were clearly actions taken to realize some of the gains from his dealings in Mississippi stock, but by transferring the terms of his stock contracts into settlement by taking up delivery of various goods, including cascarilla from the Bahamas and tobacco from Virginia. VanderGrift was a capable agent for all Londonderry's dealings in Amsterdam, although his commission was ¼ percent on the stock deals, rather than the 1/8 percent Londonderry was accustomed to paying in both London and Paris. (At the final liquidation in Paris, however, his then French agent levied a full one percent commission, adding insult to injury.)

In his dealings on Exchange Alley in London, however, Londonderry made a substantial killing on the fresh issue of capital made by the Royal African Company at the beginning of 1720, won a huge bet with none other than John Law in August 1720 on the stock of the East India Company, sold out of South Sea stock at the height of that bubble. But then he had to deal with the bankruptcy claim of his final counterparty on South Sea stock, the goldsmith bank, Mitford & Merttins. Londonderry filed suit as one of the creditors against the bankrupt firm but that firm lodged a counter suit against Londonderry, accusing him of a usurious loan. The details of the case and its resolution give us more insights into the how and why the London stock market was able to recover from the collapse of the South Sea bubble, while the Paris market was essentially moribund for the next century.

The specifics of each case were laid out by Londonderry's lawyers with a list of the witnesses to be brought in on each side.

> My Lord Londonderry sold to Messrs. Mitford and Merttins as appears by a contract signed by the former on or about the 24th of August, 1720, £6000 SSea Stock at 540 pct. to be delivered and paid for on the 24th of October following. The said Mitford and Merttins become bankrupts between the said 24th of August and the said 24th of October, my Lord Londonderry attended on the said 24th of October at the transfer office of the South Sea company to have delivered the stock, but neither Mitford or Merttins or any one on their behalf appeared, so my Lord Londonderry had the said stock sold out by outcry by a broker to the best bidder in common form, and on the difference there was due from the said Mitford and Merttins about £18,000 as per the account.
>
> My Lord Londonderry apply'd to the Assignees or Commissioners of the Bankruptcy to prove his debt and pay his contribution money but they would not then admit him as a creditor by virtue of his contract, on pretense of its being a South Sea bargain, upon which he petitioned the Lord Chancellor, but on the Bankrupts affidavits, setting forth that the contract was contrived and framed as if stock had been sold and bought, only to avoid the statute of usury, but that the truth was that my Lord Londonderry lent them £30,000 on £6000 SoSea stock with the midsummer dividend and was to receive for the loan of it for 2 mos. £2400.[1] On which my Lord Chancellor dismissed the petition, and my Lord Londonderry brought his bill against the bankrupts, Commissioners and Assignees and pay'd his contribution money to which all

[1] Implying an annual interest rate of 48% at this moment of extreme credit stringency before the books of the South Sea were opened again, as indicated also by the forward premium implicit in the price of South Sea stock when the books were closed in June.

have put in their answers.

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Eventually Londonderry's lawyers were able to tell him that his claim on the estate of the bankrupt goldsmith bankers was admitted. The only remaining problem as it appeared to them was that the South Sea stock claimed to be in the possession of Lord Londonderry at the time of the contract was in fact not his, but rather in the name of his father (£2000) and his brother-in-law, James Earl Stanhope (£4,000). Any amount retrieved from the bankrupts' estates, therefore would have to be shared one-third to the estate of his deceased father and two-thirds to the estate of his deceased brother-in-law and sister. Londonderry protested that he had provided the Stanhope children and their mother with at least £4,000 from his own holdings upon the death of his brother-in-law in February 1721. Therefore he was entitled to at least two-thirds of the dividends to be received from the bankrupts' estates.

The case of Londonderry's claim against Mitford & Merttins is interesting in several dimensions. Mitford & Merttins was a prominent goldsmith bank in London that had been at the center of bubbles created during the year 1720. Throughout the bubble year of 1720, their name appeared regularly in the London newspapers as the agents designated to receive subscription moneys paid into various bubble companies — the Rose insurance company, a sail cloth company, a company to produce salt with a new invention, and a company to build ships for lease or freight. When subscribers demanded their moneys back, or the projectors wished to withdraw the money paid in, the bankers were clearly strapped for liquidity. If we accept the argument of the goldsmiths that they had borrowed £30,000 from Londonderry on such usurious terms, the first implication is that they were increasingly desperate for cash by the end of the summer of 1720.

Borrowing large sums of cash from a valued customer and an active participant in transactions of all kinds in Exchange Alley and then declaring bankruptcy may have served as an object lesson for London's stock jobbers thereafter. The rules of the London Stock Exchange throughout the nineteenth and twentieth centuries, until the "big bang" in October 1986, expressly forbid any of its members (or wives or immediate family) from having any formal business relationship with a bank.

Second, it appears that the practice of selling out when a buyer who had contracted to purchase a security failed to appear at the time specified for transfer of the security was clearly established at this early date. It took nearly a century before the procedures for "selling out" and "buying in" were written into the rules and regulations of the formal London Stock Exchange. Those rules, which persisted throughout the nineteenth century, required the disappointed seller or buyer to confirm the price at which he had been forced to sell or buy to the clerks of the Settling Room. Assuming that the seller had to sell at a lower price than agreed or the buyer had to buy at a higher price than contracted, the absent buyer or seller who had contracted to be present was then required to make good the difference in price. Later, when Londonderry's case had wound its way through the English legal system, his lawyers informed him that his claim in the bankruptcy case had been upheld, conforming under common law to the practices of Exchange Alley. The letter with this good news reached the Leeward Islands, unfortunately, only after Londonderry had died.

Third, an experienced trader, promoter, and speculator (i.e., a stock-jobber) such as Londonderry managed to accumulate such a complicated web of offsetting contracts and commitments during this first financial crisis of modern capitalism that it took a first-rate law firm decades to sort out. (The last time these exhibits were displayed in a Chancery hearing appears to have been 1752, while Londonderry died in September 1729.) Close examination of the scattered accounts that Londonderry maintained with various stock brokers over the period 1715 to 1721 reveals a variety of sophisticated techniques already available to the cognoscenti of Exchange Alley well before the bubble year of 1720.

After the collapse of the South Sea bubble, most of the dealings that Londonderry engaged in were tested through the English legal system to determine who owed how much and to whom from the myriad of broken forward contracts that were the immediate result of the collapse of securities prices and the short term credit crunch. The most dramatic intervention by the British government was to re-organize the South Sea Company by selling part of its joint stock to the Bank of England (which meant a 50 percent increase in the capital stock of the Bank) and splitting the remaining stock in half. The other half was paid out to stockholders, including Londonderry's family members, in the form of perpetual annuities bearing annual interest of 5 percent. On this basis, however, active negotiation of these useful securities resumed, with the market price of the annuities eventually and permanently rising above that of the remaining shares in the company's equity.

The most enduring, and ultimately most controversial, piece of legislation to arise in the eighteenth century was Barnard's Act (7 Geo. II, cap. 8). Parliament passed the act originally in 1733 for a period of three years to see what effect it might have, and then made it permanent in 1736 after it appeared that the limited number of securities available had not suffered any adverse effects of the act. Even when the government began issuing its 3 percent annuities to finance the War of the Austrian Succession, no effort was made to repeal or even amend Barnard's Act. The act was intended to eliminate time bargains in public securities altogether by requiring that the seller of government stock for a forward contract have possession of the stock at the time of the contract, essentially eliminating options business on forward contracts or the settlement of forward contracts by paying the cash difference between the forward price agreed and the spot price at the time agreed for completion of the contract. Sir John Barnard thought this would remove sudden movements in the prices of the various forms of government debt by eliminating the pernicious business of stock-jobbing. Of course, with no more major issues of government debt forthcoming, services of stock-jobbers were not needed. An often overlooked part of Barnard's Act, however, was to put into statutory law the protection of disappointed buyers or sellers on forward contracts by means of buying-in or selling-out. The example of Londonderry's claim against his defaulting counterparty on South Sea stock was thereafter enshrined in British statutory law.

Figure 1. Castaing's Course of the Exchange, January 1720.

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decompressor
are needed to see this picture.

Figure 2. Exchange Alley

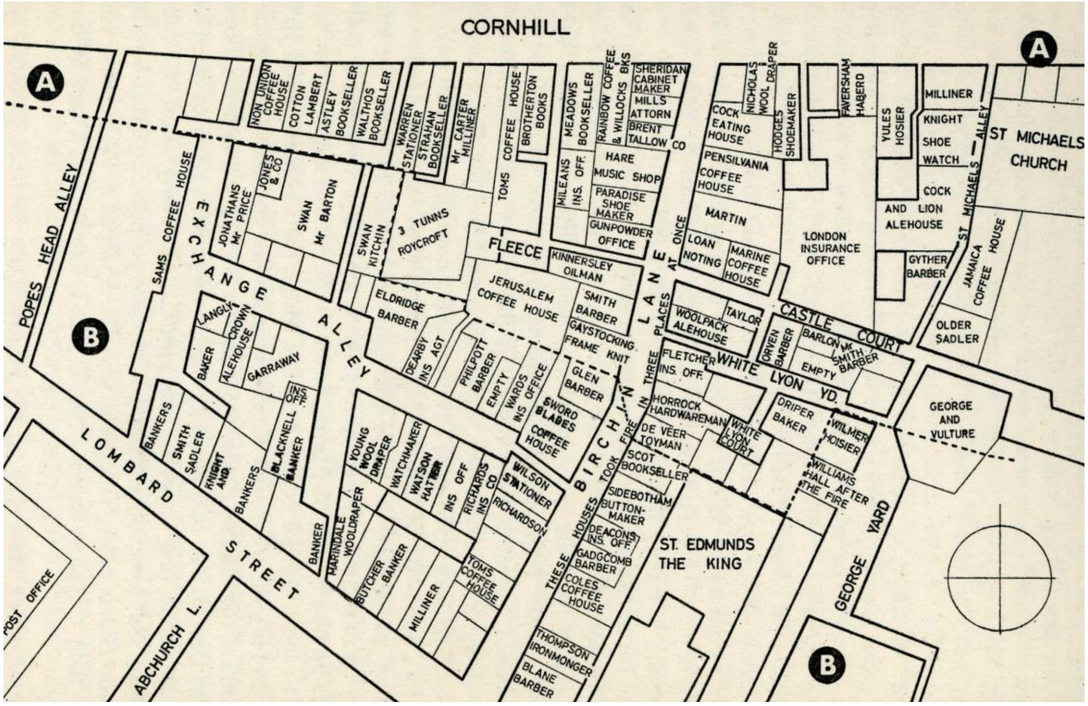
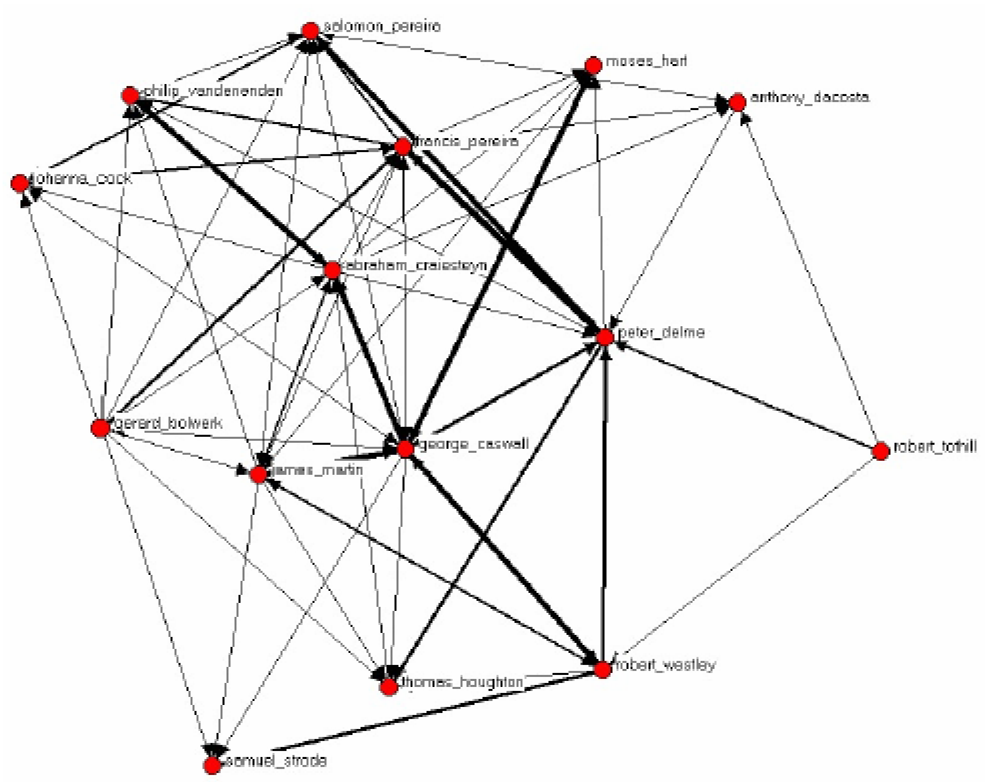


Figure 3. Network Relations Among the Top 15 Traders (weighted by frequency of interaction)



Footnotes

[i] Michel Morineau, *Incroyables gazettes et fabuleux métaux: les retours des trésors américains d'après les gazettes hollandaises (XVIe-XVIIIe siècles)*, London, New York: Cambridge University Press, 1985, and John McCusker and Cora Gravesteijn, *The beginnings of commercial and financial journalism: the commodity price currents, exchange rate currents, and money currents of early modern Europe*, Amsterdam: NEHA, 1991. Cf. Marc Flandreau, Christophe Galimard, Clemens Jobst, and Pilar Nogués-Marco, "Monetary Geography before the Industrial Revolution," *Cambridge Journal of Regions, Economy and Society*, 2009, 1-23.

[ii] Rik G. P. Frehen, William N. Goetzmann, and K. Geert Rouwenhorst, "New Evidence on the First Financial Bubble," Yale ICF Working Paper No. 09-04.

[iii] See Eugene White, "The Paris Bourse, 1724-1814," in Stanley L. Engerman, Philip T. Hoffman, Jean-Laurent Rosenthal, and Kenneth L. Sokoloff, eds., *Finance, Intermediaries and Economic Development*, Cambridge and New York: Cambridge

University Press, 2003.

[iv] Much of the work conducted to date on interconnection in the seventeenth and early eighteenth century has focused on the interconnections between commerce, merchants and government. In *Merchants and Revolution*, Brenner documents the role of the overseas trader in the process of commercial and political change. The politics of trade is highlighted by de Krey's analysis of party affiliation, while Gauci examines the dynamic role of the merchant in the formation of national policies. In his important and influential work, de Krey identified a sample of 1,339 'merchants' active in the 1690s but as a result of his focus on political association, he ultimately focused on less than half of the sample. Gauci constructed a different sample of 850 merchants from the City assessment for the poll taxes levied in the 1690s. His focus was on those who were delineated as "merchants" in the poll tax and thus involved in overseas trade. Both samples allowed the authors to explore relationships among a mercantile élite from political to geographical to family connections. de Krey, *Fractured Society*; Gauci, *Politics of Trade*, pp. 17-19.

[v] Bank of England Stock Transfer Ledger, AC27/434, f. 622.

[vi] P. G. M. Dickson, *The Financial Revolution in England: A Study in the Development of Public Credit, 1688-1756*, New York: St. Martin's Press, 1967, p. 459, fn. 6.

[vii] National Archives, C108/424/9, Governor Thomas Pitt's Out-Letters, 1714-24.

[viii] Coutts Archives, Ledger 1712-1714. Account of John Law and Lord Ilay.

[ix] Carlos, Ann M. and Larry Neal, "The Micro-foundations of the Early London Capital Market: Bank of England Shareholders during and after the South Sea Bubble, 1720-1725," *Economic History Review*, LIX 3 (2006), p. 523, Table 9.

These are but a few examples of the extensive dealings between London and Amsterdam that arose during the South Sea bubble, a phenomenon that led an early Dutch scholar, P. Groeneveld, to proclaim 1720 as the year that saw the creation of a cosmopolitan Dutch investor class. Charles Wilson's pathbreaking work (Wilson, 1941) documented extensively from Dutch notarial archives the interlacing of Dutch mercantile capital with British merchants, often intermediated through exchanges of English government stock. Alice Carter continued dredging out details of the extent of Dutch holdings in English government stock thereafter, work summarized in her book, *Getting, Spending, and Investing in Early Modern Times*. David Ormrod has explored the changing forms of mercantile organization that emerged in the eighteenth century in response to the increased size and scope of Anglo-Dutch trade, while James C. Riley has extolled the role of Dutch merchant bankers in providing government finances to the rest of Europe, especially the Hanseatic port cities and German principalities as well as Tsarist Russia and absolutist France.

[x] Joseph De la Vega, *Confusion de Confusiones*, tr. By Herman Kellenbenz. Amsterdam, 1688; reprinted Boston: Harvard Graduate School of Business, 1957.

[xi] De Pinto, *Traité*, 1771.

[xii] De Pinto, *Traité*, p. 299.

[xiii] Gelderblom and Jonker, "Completing a Financial Revolution," 2006.

[xiv] Anne Murphy, "Trading options before Black-Scholes: a study of the market in late-seventeenth-century London," *Economic History Review* (forthcoming).

[xv] Stephen Quinn, "The Glorious Revolution's Effect on English Private Finance: A Microhistory, 1680-1705," *Journal of Economic History*, 61 (2001), pp. 593-615.

[xvi] Ann M. Carlos, Larry Neal, and Kirsten Wandschneider, "Networks and Market Makers in Bank of England Shares, 1720," unpublished working paper, 2007.