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Author(s) L.O. Petram
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The world's first stock exchange

How the Amsterdam market for Dutch East India Company shares became a modern securities market, 1602-1700

Lodewijk Petram

Frontcover: Gerrit Adriaensz. Berckheyde, Town hall on Dam Square (1672), detail, Rijksmuseum Amsterdam

THE WORLD'S FIRST STOCK EXCHANGE

How the Amsterdam market for Dutch East India Company shares became a modern securities market, 1602-1700

ACADEMISCH PROEFSCHRIFT

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Lodewijk Otto Petram

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Promotor: prof. dr. L. Noordegraaf

Copromotor: dr. C.M. Lesger

Overige leden: dr. O.C. Gelderblom
dr. J. Goggin
dr. M.C. 't Hart
prof. dr. H.J. den Heijer
prof. dr. A. de Jong
em. prof. dr. L. Neal
prof. dr. H.F.K. van Nierop

Faculteit der Geesteswetenschappen

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BT	Bibliotheca Thysiana, Leyden
DAS	J.R. Bruijn, F.S. Gaastra and I. Schöffer, *Dutch-Asiatic shipping in the 17th and 18th centuries* (3 vols., The Hague 1979-87).
EIC	English East India Company
NA	Nationaal Archief, The Hague
PA	Persmuseum Amsterdam
PIG	Portugees-Israëlitische Gemeente
RAU	Het Utrechts Archief
SAA	Stadsarchief Amsterdam
VOC	Verenigde Oost-Indische Compagnie
WIC	West-Indische Compagnie

Note on currency

The Dutch currency, the guilder (*f*), was divided into 20 *stuivers*; each *stuiver* was sub-divided into 16 *penningen*. In addition to guilders, the Dutch also used pounds Flemish (pVl). The nominal value of VOC shares was, for example, often expressed in pounds Flemish. One pound Flemish equaled six guilders. To make currency figures more easily comprehensible, I have converted everything into guilders divided into 100 cents.

INTRODUCTION

'This little game could bring in more money than contracting charter parties for ships bound for England', wrote Rodrigo Dias Henriques to Manuel Levy Duarte on 1 November 1691.[1] Dias Henriques was referring to the 'game' of trading shares of the Dutch East India Company (Verenigde Oost-Indische Compagnie, VOC, founded 1602) and its derivatives* on the Amsterdam securities market. He acted as exchange agent for Levy Duarte and performed a high number of transactions on his account. The most notable feature of the exchange dealings of these Portuguese Jewish merchants was that they consisted solely of very swift trades; Dias Henriques made sure to always settle the transactions within a few days or a fortnight at most. He actively speculated on short-term share price* movements, while at the same time making sure that his portfolio did not become too risky – and, judging by his quote, he was rather good at it. Dias Henriques could perform these swift dealings because by the end of the seventeenth century, a very active secondary market* for securities existed in Amsterdam.

Modern securities markets have two functions: price discovery* and the provision of liquidity*. The interaction of traders in the marketplace, in other words, determines the price of the assets that are traded on the market. The liquidity function means that as a result of the concentration of traders in the marketplace, traders can easily buy or sell assets. Straightforward as these market functions may seem, they play a very important role for investors: they allow investors to reallocate their asset holdings at low cost, enabling them to manage their financial risks according to their personal preferences.[2] Securities markets thus provide major advantages to investors.

The secondary market for VOC shares became the first securities market in history that provided these advantages to investors. Hence it was in seventeenth-century Amsterdam that 'the global securities market began to take on its modern form'.[3] Using hitherto unexplored source material from the archives of the VOC, judicial institutions of the Dutch Republic and merchants who were active on the securities market,

[1] Dias Henriques to Levy Duarte, 1 November 1691, SAA, PIG, inv. nr. 677, pp. 897-8.
* Words market with an asterisk (*) are further explained in Appendix C – Glossary.
[2] Maureen O'Hara, 'Presidential address: Liquidity and price discovery', *Journal of finance* 58 (2003) 1335-1354, there 1335.
[3] Ranald C. Michie, *The global securities market: a history* (Oxford 2006) 26.

this book analyzes how the secondary market for VOC shares could develop into the world's first modern securities market.

Context, historiography and theory

How the secondary market for VOC shares started off in the first decade of the seventeenth century is well known.[4] In 1602, the States General of the Dutch Republic granted the VOC a charter for a period of 21 years, with the provision that an interim liquidation would follow after ten years.[5] Inhabitants of the Dutch Republic were called upon to invest in the new company. The VOC thus became a privately-owned company in which the authorities of the Dutch Republic had a large say. The capital subscription was a great success: in Amsterdam alone, 1143 investors signed up for *f*3,679,915.[6] According to a clause on the first page of the subscription book of the VOC, shareholders could transfer their shares to a third party. On this same page, the procedure for registering share transfers was laid down: the buyer and the seller should go to the East India house where the bookkeeper, after two company directors had approved the transfer, transferred the share from the seller's to the buyer's account in the capital book.[7]

These clear rules for ownership and transfer of ownership reduced investors' hesitancy about trading the valuable shares that existed only on paper. Secondary market trading therefore took a start immediately after the subscription books were closed.[8] However, the real incentive to trade shares emerged later. The directors of the VOC did not liquidate the company after ten years and at the end of the first charter, in 1623, they requested a prolongation of the charter, which the States General

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[4] See, particularly: Oscar Gelderblom and Joost Jonker, 'Completing a financial revolution: The finance of the Dutch East India trade and the rise of the Amsterdam capital market, 1595-1612', *The journal of economic history* 64 (2004) 641-672.

[5] For a general account of the founding of the VOC, see: J.A. van der Chijs, *Geschiedenis der stichting van de Vereenigde O.I. Compagnie en der maatregelen van de Nederlandsche regering betreffende de vaart op Oost-Indië, welke aan deze stichting voorafgingen* (Leyden 1857). This book also contains a transcription of the 1602 charter. The text of the first charter can also be found online: http://www.vocsite.nl/geschiedenis/octrooi.html An English translation is also online available:
http://www.australiaonthemap.org.au/content/view/50/59

[6] The total capital stock of the VOC amounted to *f*6,429,588; Middelburg contributed *f*1,300,405 (20%), Enkhuizen *f*540,000 (8%), Delft *f*469,400 (7%), Hoorn *f*266,868 (4%) and Rotterdam *f*173,000 (3%): Henk den Heijer, *De geoctrooieerde compagnie: de VOC en de WIC als voorlopers van de naamloze vennootschap* (Deventer 2005) 61. According to the historical purchasing power calculator of the International Institute of Social History in Amsterdam (see http://www.iisg.nl/hpw/calculate.php), the value of the 1602 subscription would amount to almost €100 million today.

[7] A facsimile and transcript of the first page of the subscription book can be found in: J.G. van Dillen, *Het oudste aandeelhoudersregister van de Kamer Amsterdam der Oost-Indische Compagnie* (The Hague 1958) 105-6.

[8] Gelderblom and Jonker, 'Completing'.

granted. Again, no intermediate liquidation took place. Consequently, the capital stock* of the VOC became *de facto* fixed.[9] In the end, the company would stay in business for almost two centuries and the capital stock remained fixed during the entire period. Since investors generally do not want their money to be locked up for that a long period of time, they used the secondary market to sell their shareholdings to a third party.

The fixed capital stock of the VOC was unique. Shipping companies in late-medieval Italy and, from the mid-sixteenth century onwards, also in England and the Low Countries were often equity*-financed, but these companies were always liquidated after a single expedition to the destination. The same went for the *Voorcompagnieën*, the predecessors of the VOC that had equipped expeditions to the East Indies from 1594 onwards. The proceeds of the liquidation were divided among the investors. In many cases, the company was reestablished immediately after liquidation and participants were given the opportunity to reinvest their money in the new partnership. Consequently, there was little need for secondary market trading, because after liquidation, investors could decide not to reinvest. Investors knew that they could always get their money back within a few years' time.[10] Likewise, it took until the end of the seventeenth century before a secondary market for shares emerged in England.[11] Before that time, there were no joint-stock companies with a sufficiently large fixed capital to get the development of a securities market going.[12] The capital stock of the English East India Company (EIC, founded 1600), for example, only became fixed in 1657. Before that time, the EIC repeatedly issued new stock to fund its fleets; the EIC was thus basically a series of separate companies that worked together as the EIC.[13]

Remarkably, already in the later Middle Ages, secondary markets for public debt had emerged in Italian city states. Venice, Genoa and Florence were the first

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[9] Den Heijer, *De geoctrooieerde compagnie*, 59, 63.

[10] Oscar Gelderblom, Abe de Jong and Joost Jonker, "An Admiralty for Asia. Isaac le Maire and conflicting conceptions about the corporate governance of the VOC', in: Jonathan G.S. Koppell (ed.), *The origins of shareholder advocacy* (Basingstoke, forthcoming 2011).

[11] Anne L. Murphy, *The origins of English financial markets. Investment and speculation before the South Sea Bubble* (Cambridge 2009).

[12] Ron Harris, *Industrializing English law: entrepreneurship and business organization, 1720-1844* (New York 2000) 117-8, 120-1, 127.

[13] The fixed capital stock of the EIC in 1657 amounted to £793,782. W.R. Scott, *The constitution and finance of English, Scottish and Irish joint-stock companies to 1720* II *Companies for foreign trade, colonization, fishing and mining* (Cambridge 1912) 129, 192. Michiel de Jongh, 'De ontwikkeling van zeggenschapsrechten van aandeelhouders in de 17e en 18e eeuw', *Working paper* (2009). At the exchange rate of 1654 (the 1657 rate is unavailable), £793,782 equaled approximately *f* 8,250,000: N.W. Posthumus, *Nederlandsche prijsgeschiedenis* I: *Goederenprijzen op de beurs van Amsterdam 1585-1914. Wisselkoersen te Amsterdam 1609-1914* (Leyden 1943) 592.

states to consolidate their public debt – a revolution in public finance, because it eased the process of underwriting new debt issues.[14] Venice, for example, consolidated all its outstanding debt in a so-called *monte* in 1262. The original obligations were converted into shares in the *monte* and investors could subsequently transfer the title to these shares by way of assignment. Secondary markets came into being, but these markets did not have the characteristics of a free market, since new loans were often forced loans. Hence, the decision to invest was not taken by the investors themselves. Moreover, the number of transfers typically rose when a new forced loan was announced, which indicates that some shareholders were forced to dump their shares on the secondary market to get the liquidity needed to pay for the upcoming debt issue.[15] This innovation in public finance failed to spread to other parts of Europe, however. In the Low Countries, the provinces kept issuing short-term debt and it would take until at least 1672 before secondary trade of any significance took place in government debt in the Dutch Republic.[16] The English government recognized the advantages of secondary market trading in the early eighteenth century. It started to use the secondary market to sell its debt in transferable annuity obligations in the 1720s.[17]

This short overview has identified the factors that led to the emergence of a secondary market for VOC shares in the Dutch Republic. Very little is known about the subsequent development of the market, however. Smith studied the trade in derivatives, focusing on official regulations and pamphlets that addressed the share trade, and Gelderblom and Jonker discussed the history of derivatives trading on the Amsterdam exchange from 1550 to 1650, mentioning the emergence of several types of derivatives and analyzing similarities and differences in the trade in equity derivatives and forward* contracts that were used in the grain trade.[18] Apart from these

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[14] See, particularly: Reinhold C. Mueller, *The Venetian money market: banks, panics, and the public debt, 1200-1500* (Baltimore 1997).

[15] Julius Kirshner, 'Encumbering private claims to public debt in renaissance Florence', in: Vito Piergiovanni (ed.), *The growth of the bank as institution and the development of money-business law* (Berlin 1993) 19-76. Meir Kohn, 'The capital market before 1600', *Dartmouth College working paper* nr. 99-06 (1999) 10-11.

[16] James D. Tracy, *A financial revolution in the Habsburg Netherlands: Renten and renteniers in the county of Holland, 1515-1565* (Berkeley 1985). Oscar Gelderblom and Joost Jonker, 'A conditional miracle. The market forces that shaped Holland's public debt management', *Working paper* (2010) 21, 24-7.

[17] Larry Neal, *The rise of financial capitalism: international capital markets in the Age of Reason* (Cambridge 1990) 10.

[18] M.F.J. Smith, *Tijd-affaires in effecten aan de Amsterdamsche beurs* (The Hague 1919). Oscar Gelderblom and Joost Jonker, 'Amsterdam as the cradle of modern futures and options trading, 1550-1650', in: William N. Goetzmann and K. Geert Rouwenhorst (eds.), *The origins of value: the financial innovations that created modern capital markets* (Oxford 2005) 189-205. The article 'Completing', by the same authors, has been mentioned above. This article focused on the funding of East India trade in the Dutch Republic

studies, most economic historians merely marveled at the sophistication of the market in the late seventeenth century. They used Josseph de la Vega's high-flown description of the share trade in *Confusión de confusiones,* the famous account of the share market dating from 1688[19], as a starting point for their work.[20] Others tried to catch the significance of the market in very general phrases. Barbour, for example, wrote that 'Amsterdam gave [existing financial instruments] more precise formulation, greater flexibility and extension, and used them effectively over a wider field.'[21] Braudel's interpretation of the financial developments in Amsterdam was that 'ce qui est nouveau à Amsterdam, c'est le volume, la fluidité, la publicité, la liberté speculative des transactions. Le jeu s'y mêle de façon frénétique, le jeu pour le jeu.'[22] Superficial as these observations may seem, they touch upon some very important aspects of the market. The flexibility and enhanced formulation of the financial instruments meant that investors could use them to manage their financial risks. Moreover, the market could fulfill its core functions price discovery and liquidity only because of the increase in trading activity. This raises the questions which factors led to the sophistication of financial instruments in Amsterdam? And what caused trading activity to increase on the Amsterdam market?

In this book, the development of the market will be examined from an institutional perspective. In the most widely used definition, institutions 'are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction.'[23] Institutions consist of formal and informal rules. Informal rules are not enforceable by law; they mostly depend on social sanctions for their enforcement. Formal institutions, such as laws and official regulations, are enforced by the

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and argued that the emergence of a secondary market for shares completed the financial revolution of the sixteenth century, as has been advanced by James D. Tracy: Tracy, *A financial revolution*.

[19] Dutch translation of De la Vega's work, with a good introduction by M.F.J. Smith: Josseph Penso de la Vega, *Confusión de confusiones* (1688), M.F.J. Smith (ed.) (The Hague 1939). The best English (abridged) edition: Josseph Penso de la Vega, *Confusion de confusiones by Joseph de la Vega 1688. Portions descriptive of the Amsterdam Stock Exchange* (1688) Hermann Kellenbenz ed. (Cambridge 1957).

[20] Jonathan Israel, amongst others, relies heavily on De la Vega, for example in: Jonathan I. Israel, 'Jews and the stock exchange: the Amsterdam financial crash of 1688', in: idem (ed.), *Diasporas within a diaspora: Jews, Crypto-Jews and the world maritime empires (1540-1740)* (Leyden 2002) 449-87. Also: Charles Wilson, *Anglo-Dutch commerce and finance in the eighteenth century* (Cambridge 1941, reprinted in 1966). Geoffrey Poitras, *The early history of financial economics, 1478-1776: from commercial arithmetic to life annuities and joint stocks* (Cheltenham 2000) 315, 385-7.

[21] Violet Barbour, *Capitalism in Amsterdam in the seventeenth century* (Baltimore 1950) 142.

[22] Fernand Braudel, *Les jeux de l'échange. Civilisation matérielle, économie et capitalisme, XVe-XVIIIe siècle* II (Paris 1979) 81-2.

[23] Douglass C. North, *Institutions, institutional change and economic performance* (Cambridge 1990) 3.

state. The institutional framework of markets generally consists of a combination of formal and informal institutions.

The theory of institutional economics argues that institutional innovation takes place because economic actors always search for ways to reduce transaction costs. Put another way, economic actors always search for ways to obtain benefits from economic interaction at the lowest transaction costs possible.[24] Acemoglu, Johnson and Robinson divide transactions costs into three categories: '1) those that increased the mobility of capital; 2) those that lowered information costs; and 3) those that spread risk.'[25] These three categories will be addressed in this study. I will show how the development of a sophisticated enforcement mechanism ensured traders that their transactions would be consummated by the market. Because traders had a high level of certainty that their trades would be completed, they were more inclined towards trading, which increased the mobility of capital. The market also lowered information costs. The use of intermediaries and particularly the creation of trading clubs, whose participants could easily monitor each other's behavior, meant that less effort was needed to check a possible counterparty's creditworthiness. Furthermore, as a result of the high trading activity, the share price was constantly updated to the beliefs of the trading populations.[26] This reduced the need for investors with long-term investment horizons to find price-relevant information; they could rely on the prices quoted on the exchange. Lastly, the range of derivative instruments available to the traders by the second half of the seventeenth century allowed them to mitigate the risk of their investment portfolios.

Scope and structure

The scope of this book is limited to the seventeenth-century Amsterdam market for VOC shares. The focus on the seventeenth century flows, in the first place, from the fact that it is widely known, mainly from De la Vega's work, that Amsterdam boasted

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[24] Sheilagh Ogilvie, '"Whatever is, is right"? Economic institutions in pre-industrial Europe', *Economic history review* 60 (2007) 649-684, there 656.

[25] North, *Institutions*, 125. Daron Acemoglu, Simon Johnson and James A. Robinson, 'Institutions as a fundamental cause of long-run growth', in: Philippe Aghion and Steven N. Durlauf (eds.), *Handbook of economic growth* (Amsterdam 2005) 385-472.

[26] According to Ross Levine, markets with high trading activity provide an incentive for traders to gather price-relevant information: 'Intuitively, with larger and more liquid markets, it is easier for an agent who has acquired information to disguise this private information and make money by trading in the market.' As a result, prices on liquid markets reveal relatively more information about the assets that are being traded. Ross Levine, 'Finance and growth: theory and evidence', in: Philippe Aghion and Steven N. Durlauf (eds.), *Handbook of economic growth* (Amsterdam 2005) 865-934, there 872.

a highly sophisticated securities market by the end of the seventeenth century, but the path of development towards becoming the first modern securities market has remained obscure. Secondly, a study on the seventeenth-century Amsterdam securities market provides new material for future research on the transfer of financial know-how from Amsterdam to London in the late seventeenth century. The London securities market started developing quickly from around 1688 onwards – shortly after the invasion and subsequent accession to the English throne of Dutch stadholder William III. Although Murphy has recently argued that the London market developed largely by itself, the timing of the stock market boom in London still suggests that the Dutch experience must have had some influence on the developments in England.[27] This book on the securities market in Amsterdam will aid new researchers in identifying to what extent the London financial markets profited from Dutch financial experience.

It is important to note that Amsterdam was not the only city in the seventeenth-century Dutch Republic where a secondary market for company equity existed. The organizational structure of the VOC, with six semi-independent chambers, resulted in the emergence of six separate markets. However, due to the smaller capital stock of the Middelburg, Enkhuizen, Hoorn, Delft and Rotterdam chambers, these peripheral markets experienced different development paths. Shares in these chambers were, of course, occasionally transferred, but what this study tries to unravel is how the transition took place from a market where company shares were occasionally transferred to a thriving securities market that provided its participants a range of financial services. This happened only in Amsterdam.[28] I will also pay some attention to Middelburg, however. The Middelburg chamber of the VOC had the second-largest capital stock and consequently, the development of the Middelburg market came closest to that of Amsterdam. As I will show in chapter 5, traders used the liquidity of the Middelburg market for arbitrage* purposes; they tried to be the first to use information available on the Amsterdam market for transactions on the Middelburg market and vice versa.[29] Finally, shares in the Dutch West India Company (WIC, founded 1623) were also traded on the secondary market. However, investors generally kept away from these shares. The disproportionately large government interference in the

[27] Murphy, *The origins of English financial markets*, 5.
[28] The development of the markets in equity of the smallest chambers stalled soon after the subscription of 1602. See chapter 2, section Divergent developments: Amsterdam and peripheral markets on page 68 ff.
[29] Cf. page 169 ff.

WIC made investors afraid that the company management would behave too opportunistically. Moreover, investors were well aware that the WIC was a financial disaster. I will therefore focus on the trade in VOC shares only.

My analysis of the development of the secondary market for VOC shares into the first modern securities market is structured in two parts. Part I treats the seventeenth-century history of the market in general. Part II explores in more detail how the market was organized.

Part I starts, in chapter 1, with a chronological overview of the key developments that shaped the market during the seventeenth century. Subsequently, chapter 2 analyzes long-term developments, such as the increase in trading activity on the market, the number of active traders, the dividend policy of the VOC and the diverging development of the Amsterdam market in comparison with the peripheral share markets in the Dutch Republic. The findings of part I show that after the important first decade of the century in which the market emerged, the Amsterdam market for VOC shares entered into a second stage of development in the period 1630-50; this stage brought about the transition into a modern securities market. The two principal developments during this period were a staggering increase in trading activity and the appearance of new groups of traders on the market.

Part II goes deeper into the developments that made the organization of risky financial transactions possible in a market that grew in size and became increasingly anonymous and hence answers the question how the market for VOC shares could develop into a modern securities market. Chapter 3 discusses the formal and informal institutions that guaranteed that traders lived up to their agreements. My argument is that the traders built a private enforcement mechanism on top of a formal legal framework. The private enforcement mechanism was needed because large parts of the forward trade were unenforceable by law. Because of the existence of a clear legal framework, which took shape through official regulations and court judgments in the first three decades of the seventeenth century, traders knew exactly which transactions were unenforceable by law. This awareness was key to the good functioning of the market: the traders recognized the risks of the forward trade and adjusted their dealings accordingly.

In chapter 4, I discuss how traders could use the market to manage and control their financial risks – this being the principal purpose of investors in modern financial markets. The chapter therefore explores the evolution of the various types of transactions that were available on the market. Using data from private records of traders, I first focus on the way in which traders could adjust the level of counterparty risk* of their transactions. Thereafter, I show how traders used derivatives to leverage or mitigate the risk of their portfolios. The possibilities for risk management and control really took off after the entry of a large pool of speculators on the market. These speculators were specialized in trading risks and hence also enabled other investors to manage and control their risks.

Chapter 5 focuses on information. Financial information about the VOC was hard to come by on the market – the company did not publish financial statements – but investors nevertheless put their money in VOC shares. This chapter explores, on the basis of share traders' correspondence, how shareholders obtained information needed for their investment decisions and how the share price reacted to new information. My analysis shows how the market changed over the course of the century. In the early decades, the information that was publicly available on the exchange sufficed for the predominantly long-term investment strategies of the traders. The shift to more speculative trade later in the seventeenth century, however, resulted in the need for speculators to be the first to obtain relevant information. Due to the competition between traders, only those traders with private information networks could make short-term profits on the market. As a result, trading activity became increasingly concentrated in the hands of a relatively small number of 'professional' traders – traders whose main occupation was trading shares. This reduced transaction costs (both search costs and the costs of possible litigation), because these traders knew that their counterparties were all specialized traders who were familiar with the rules and the customs of the trade; the chance that they would not live up to their agreements was very small. This situation resembles present-day stock exchanges*, where only authorized dealers are allowed to trade; private individuals cannot access the exchange, but give their trading orders to a stockbroker. The developments on the secondary market for VOC shares in the second half of the seventeenth century thus transformed the securities market into the world's first stock exchange.

Sources

The capital ledgers of the Amsterdam chamber of the VOC have formed the starting point of the archival research for this book. Every shareholder had his own account, specifying the nominal value of his investment in the VOC and the amount of dividend distributed on his share. Furthermore, the company bookkeeper registered all mutations (i.e. share transfers) on these accounts. The capital ledgers are available from 1628 onwards. For the first decade (1602-12), the transfer journal has survived, which together with the subscription book of 1602 yields the same data as the capital ledgers. I have taken five samples from the transfer data: 1609-11, 1636-41, 1664-7, 1672 and 1688.[30] The sample periods are geared to the availability of other sources, mostly from the archives of legal institutions. In these sources, data from years with a high number of share-trade-related conflicts are overrepresented. The last three sample periods witnessed large share price fluctuations and therefore also a relatively high number of conflicts. As a result of Isaac le Maire's attempts to bring the share price down, the period 1609-11 also yielded many legal data. Lastly, the period 1636-41 was chosen to bridge the gap between 1611 and 1664. Moreover, in this period, the share price rose steeply. The transfer ledgers allow for a check on whether this rise incited people to start participating in the market.

Even though the capital books list all share transfers that took place in the capital stock of the Amsterdam chamber of the VOC, they provide only a very limited picture of the secondary market for VOC shares as a whole. Share traders performed many transactions without ever going to the East India house to register a share transfer. In the first place, they tried to combine several spot transactions into a single share transfer. If, for example, trader A sold a share to B, and B sold a similar one to C, a single share transfer from A to C sufficed to settle both transactions. Trader B did not have to go to the East India house; he would only be involved in a money transfer with traders A and C. Another option for share traders was to contract a forward or option* transaction. These kinds of transactions could be settled without actually transferring a share. At or before the expiry date of the contract, the traders could come together to negotiate a money settlement or they could cancel out their contract with another contract. Hence, only part of the transactions on the market ended up in the official ledgers and the pairs of shareholders involved in a share transfer had not necessarily traded with each other.

The transfer data are nevertheless interesting. Firstly, they give information on the number of shareholders of the Amsterdam chamber of the VOC and the number of active shareholders (i.e. shareholders who occasionally transferred a share) in a

[30] Oscar Gelderblom and Joost Jonker moreover generously shared the transfer data (1602-11) they collected for their article 'Completing' with me. I have not used their data in this book, however.

given period. Secondly, the ledgers allow for an analysis of patterns in the trade. Even despite the shortcomings mentioned above, peaks in the number of share transfers will have coincided with peaks in the number of share transactions. Lastly, these capital ledgers are the only source that can be used to estimate the level of market activity. I will treat this issue in chapter 2.

To gain a more complete picture of the development of the market, I have supplemented the data from the capital ledgers with qualitative data from official institutions, Amsterdam notaries and judicial institutions, on the one side, and private archives on the other. The data from the notaries and the courts of law give information on all kinds of transactions performed on the market, but they must be treated cautiously. Traders went to a notary or started litigation only when their transaction went sour or when one of the parties feared that something could go wrong in the near future. In the case of lawsuits brought before one of the law courts of Holland, there was, of course, always a conflict of some kind. Consequently, the data from notarial deeds and court cases are biased; riskier transactions are more likely to be found in these sources. The data they yield are nonetheless very usable: they give information on the kinds of transactions performed on the market, the conditions of the contracts and the circumstances that could lead to conflicts. Additionally, the descriptions of the conflicts often give information on the number of traders involved in a single transaction and the way traders went about settling their contracts. Lastly, they usually mention the part played by intermediaries in negotiating the transaction.

I have focused my research in the notarial protocols on the same sample periods that were used for the capital ledgers. Almost all of the deeds dating from the first decade of the share trade were executed before notary Jan Fransz. Bruyningh, whose protocol happens to be very well represented in a notarial card index available in the Amsterdam City Archives. I have covered this period by solely using this card index. Naturally, I have also retrieved the cards for the rest of the seventeenth century. The card index thus also yielded the data for the periods 1636-41 and 1664-67. The selection criteria that were used in compiling this card index are unknown. As the representativeness of the cards in the index cannot be determined, the data the cards yield cannot be used as the basis for grand theses. This flaw does not stand in the way of my use of the card index, however. I have only collected circumstantial data from this source; mainly share prices and qualitative information on the kinds of transactions performed on the market.

The card index contains an increasingly smaller amount of data for the last thirty years of the seventeenth century. So, to complement these data, I have studied the entire protocol of one notary for the years 1672 and 1688: notary Adriaen Lock for 1672 and Dirk van der Groe for 1688. These notaries executed the bulk of the deeds related to the share trade.[31] This approach certainly does not cover all deeds relating to share transactions available in the protocols of Amsterdam's notaries, but it suffices for the purpose for which I use the data from this source.

For my research in courts' archives, I have used the name indices of the Court of Holland and the High Court. I have looked up court cases in which familiar names or Sephardic names appeared; familiar names being those names that also appear in notarial deeds or in the capital ledgers of the VOC. I have covered the Court of Holland's extended sentences for the entire seventeenth century and those of the High Court for the years before 1625 and after 1676 – thus covering the years in which most conflicts arose.[32] Using this approach, I am confident that I have seen the large majority of lawsuits concerning share transactions. The archives of the Court of Aldermen in Amsterdam have been lost, so it was not possible to study the cases that were brought only before this court. The extended sentences of the higher courts do give some information about the procedure before the local court, however, since litigants always mentioned how the court in Amsterdam had ruled in first instance.

Finally, I have used a number of private archives. Anthoine l'Empereur's papers in the Bibliotheca Thysiana in Leyden contain correspondence with his nephew in Amsterdam who informed him about the share trade and who performed transactions on his account. The Deutz family archive contains ledgers and journals of Joseph Deutz and his mother Elisabeth Coymans, who both participated actively in the share market. Joseph Deutz' great bookkeeping skills have provided insights in the more complicated transactions. Louis Trip's journals and ledgers have also survived. Jeronimus Velters kept letter books containing regular correspondence with share traders in Middelburg and informants from The Hague and overseas. Finally, the archives of the Portuguese-Jewish congregation in Amsterdam contain the papers of Jacob Athias and Manuel Levy Duarte, two Sephardic merchant jewelers. They kept

[31] I have, of course, also glanced over the protocols of several other notaries to arrive at this conclusion. Lock was no longer active as a notary in 1688. I have also gone through Van der Groe's protocol of 1672, but this yielded far less data than his 1688 protocol, indicating that he took over Lock's position as prime notary providing services to share traders after Lock quit his profession.
[32] Conflicts from 1672 would not have come up before the High Court before 1676.

ledgers of their activities in share trading clubs in the 1680s and Levy Duarte also saved his correspondence with his exchange agent Rodrigo Dias Henriques for some years in the 1690s.

These private individuals are not representative for the trading community as a whole. The wealth of traders like Deutz and Trip, for example, enabled them to frequently act as moneylenders in repo* transactions. As a result, their ledgers show a high level of activity on the share market, but their dealings are not typical for the average market participant. Moreover, it must be kept in mind that share traders' correspondence reveals the attitudes only of the individuals who wrote the letters. I will therefore once again be cautious about treating this data as being representative for the secondary market for VOC shares as a whole.

This book will end with an epilogue, in which I relate my findings to Josseph de la Vega's famous *Confusión de confusiones*. His, at first sight rather cryptic, remark 'sabed que ha traçado la necessidad hazér deste negocio juego'[33] ['please note that this trade became a game out of necessity'], in the first fictitious dialogue, turns out to encompass the main argument of this study.

[33] De la Vega, *Confusión de confusiones*, 4 (p. 21 in the 1688 edition).

PART I

TAKING THE MEASURE OF THE MARKET

1 A CHRONOLOGY OF THE MARKET

Introduction

The aim of this chapter is to give a general overview of the development of the secondary market for VOC shares. For that purpose, it discusses the main events that shaped the market in chronological order. Naturally, this overview starts with the subscription of 1602 and the basic rules for share transfers. Thereafter, the introduction of derivatives, the bear-trading* syndicate of Isaac le Maire, trading locations, the first dividend distributions, the relation between the company and its shareholders, the role of market makers and brokers, the growing participation of Portuguese Jews and the introduction of trading clubs will be discussed. This overview will show, and the long-term analysis of chapter 2 will corroborate this finding, that the development of the market gained momentum in the period 1630-50. In these two decades, new groups of investors started participating in the market and the market activity increased considerably. Investors now used the market because of the financial services it provided rather than because they were interested in the East India trade.

1602 – The subscription

The States General of the Dutch Republic granted the VOC its charter in March 1602.[1] The charter invited the inhabitants of the United Provinces to subscribe to the capital stock of the new company. The company's registers would be open for subscriptions from April 1 until August 31 in six different cities: Amsterdam, Enkhuizen, Hoorn, Delft and Rotterdam in the province of Holland and Middelburg in Zeeland, the seats of the six semi-independent chambers that together formed the VOC. The chambers were independent in the sense that each had its own management and fitted out its own ships, which sailed in combined fleets (i.e. together with the ships of the other chambers) to the East Indies and back. Once they had returned to the Dutch Republic, they went back to the chamber that had equipped them. Hence, each chamber received its own cargo and subsequently organized its own auction of the imported goods. The proceeds of the individual chambers, however, were added together and then allocated back to the chambers according to their share in the total

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[1] For more details on the founding of the VOC, see e.g. Van Dillen, *Aandeelhoudersregister*, 11-20.

company stock. Put another way, independent of the success of its own operations, each chamber always received a fixed share of the total profit.[2]

This somewhat complicated company structure influenced the organization of the secondary market for VOC shares. Investors subscribed their capital to one of the chambers and thereupon received a share in that particular chamber. Although these shares were intrinsically equal, they were not exchangeable. A share in the Delft chamber, for instance, could not be transferred in the books of the Amsterdam chamber. Hence, after the subscription books closed on 31 August 1602, six different company stocks had been formed.

The subscription was a big success – particularly in Amsterdam, where it took place in the private house of Dirck van Os, one of the company's founders and member of the first board of directors of the Amsterdam chamber.[3] The 1143 investors in the Amsterdam chamber signed up for slightly more than 57 percent of the company's total stock.[4] The first page of the subscription book informed the investors that they could transfer their shares. Investors who had agreed on a share transaction were to go to the East India house to ask the company bookkeeper to officially transfer the share from the seller's to the buyer's account in the company's capital ledgers. The bookkeeper executed the transfer only after two directors agreed on it.[5] The directors' role in this procedure was to check whether the traders had observed all the company's rules regarding share transfers. In practice, this came down to verifying whether the seller actually owned the share he was about to sell. An official transfer in the capital books involved transaction costs amounting to *f* 2.80: the bookkeeper charged *f* 0.60 per transaction and the stamp tax on the deed of transfer was *f* 2.20.[6]

Trading began almost immediately after the closing of the subscription books, even though the last installment of the subscription was due only in 1606. Hence before that time investors traded the right to invest rather than real shares. Gelderblom and Jonker have shown that peaks in the transfer register coincided with the periods in which subscribers had to pay their installments (spring 1603, December 1604, De-

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[2] A concise history of the VOC: Femme S. Gaastra, *De geschiedenis van de VOC* (Haarlem 1982; last revised edition Zutphen 2009). Gaastra's book has been translated into English as: Femme S. Gaastra, *The Dutch East India Company: expansion and decline* (Zutphen 2003). Van Dillen, *Aandeelhoudersregister*, 35.
[3] Van Dillen, *Aandeelhoudersregister*, 35-6.
[4] See footnote 6 on page 2.
[5] Transcript of this page: Van Dillen, *Aandeelhoudersregister*, 105-6.
[6] Pieter van Dam, *Beschryvinge van de Oostindische Compagnie* 1A (1701), F.W. Stapel (ed.) (The Hague 1927) 145.

cember 1605), which indicates that in these years share transfers were partly driven by subscribers being unable to pay an installment rather than by regular trade.[7]

The trade in VOC shares looked a bit different from today's share trading. There was no standard denomination for 'one VOC share', so share traders always had to mention the nominal value of the share they traded.[8] Therefore, the market value of shares was expressed as a percentage of nominal value. Moreover, the VOC never issued stock certificates – bearer shares did not exist. The only evidence of an investor's share ownership was a positive balance on the account under his name in the capital books of the VOC.

The East India house was therefore one of the locations in the city frequented by share traders. The actual trade, however, did not take place in the immediate vicinity of the East India house. Although there was as yet no designated place in the city for the dealings, traders grouped together at a few locations in Amsterdam. In the first decade of the seventeenth century, these centered on the Nieuwe Brug, the bridge crossing the Damrak by the harbor. Unsurprisingly, these were the same locations where commodities traders gathered; the same merchants also dominated the trade in financial securities.

Map 1.1 shows these locations. The Nieuwe Brug (1) had been the principal location for commercial trade in the city since 1561, when the city authorities instructed merchants to use that bridge for their trade.[9] Until that time, exchange dealings had taken place in Warmoesstraat, the main thoroughfare of the medieval part of the city, but this became problematic with the increasing economic activity in the city: the merchants clogged the street and shop entrances. The Nieuwe Brug, right by Amsterdam's harbor, was a good location for commercial dealings: ships from overseas delivered international mail at the 'Paelhuysgen' (2), a small building on the west side of the bridge. The merchants present on the bridge were thus quickly abreast of the latest commercial information. On rainy days, however, merchants still sought shelter under the porches of the Warmoesstraat shops (3), until in 1586, the city government allowed the merchants to use the nearby St. Olofs-chapel (4) and also, occasionally,

[7] Gelderblom and Jonker, 'Completing', 656. See for transaction data figure 3 in loc. cit.
[8] It is true, however, that shares with a nominal value of *f* 3,000 soon became the standard (see, for more details, section 1630s and 1640s – on page 36 ff.). Nevertheless, shares of other denominations could be transferred throughout the existence of the VOC.
[9] J.G. van Dillen, 'Termijnhandel te Amsterdam in de 16[de] en 17[de] eeuw', *De Economist* 76 (1927) 503-523, there 503.

the Old Church (5) during bad weather.[10] The office of the notary who executed most commercial and financial deeds, Jan Fransz. Bruyningh, was also close by: he held office in Heintje Hoekssteeg (6), within five minutes walking distance from the bridge.[11]

1607 – The emergence of a derivatives market

Soon after the founding of the VOC, traders also started to trade share derivatives – financial securities derived from shares, such as forwards, options and repos. These types of transactions had VOC shares as underlying assets; they allowed traders to participate in the share trade without necessarily having to pay the full value of the shares they traded.

Forward contracts, obligations to buy a share at a fixed price at a certain date in the future, start appearing frequently in the protocols of Amsterdam notaries in 1607. The Amsterdam merchant community was already familiar with forward contracting before the trade in VOC shares developed. Grain traders, predominantly from Antwerp, had frequently used forward contracts on the Amsterdam grain market from the mid-sixteenth century onwards.[12] The forward market became the most important part of the market for VOC shares in the second half of the seventeenth century; several stock jobbers had a large turnover of forwards without ever transferring a share in the capital books of the VOC.

It was still only a minor division of the market in 1607, but the most remarkable difference with the later seventeenth century was that traders registered their forward transactions with notaries. They were willing to pay the notary's fee, which amounted to at least *f* 1.20 (excluding stamp tax and additional fees for authentic copies), for a formal registration of their contracts.[13] Moreover, the contracts in the proto-

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[10] Clé Lesger, *Handel in Amsterdam ten tijde van de Opstand: kooplieden, commerciële expansie en verandering in de ruimtelijke economie van de Nederlanden ca. 1550-ca. 1630* (Hilversum 2001) 237. Van Dillen, 'Termijnhandel', 503. An example of a share transaction that was negotiated in the Old Church in April 1610 can be found in Haringcarspel *vs.* Meerhout, NA, Court of Holland, inv. nr. 632, nr. 1614-39.

[11] Lesger, *Handel in Amsterdam*, 238.

[12] See for the use of forward transactions in the grain trade in the 1550s and 1560s: Milja van Tielhof, *De Hollandse graanhandel, 1470-1570: koren op de Amsterdamse molen* (The Hague 1995) 215-219. Participation in forward share trade was far more widespread than in commodities trade. In early modern Antwerp and Amsterdam, only traders of a specific commodity traded the derivatives of that particular trade. In the case of the forward share trade, also non-specialized merchants participated: Gelderblom and Jonker, 'Amsterdam as the cradle', 194.

[13] Throughout the seventeenth century, notaries charged a fixed fee for standard deeds. A register of fees charged by public notary Dirck Danckerts: SAA, Notaries, inv. nr. 2856. A bill for notary's services (1686-1691): SAA, PIG, inv. nr. 678, nr. 476.

col of notary Jan Fransz. Bruyningh (25 in the first five months of 1607) show that traders made sure to officially register every step in the process of a forward transaction; they all came back to the notary's office to register contractual changes and, eventually, the contract's settlement.[14] Soon after 1607, however, hardly any forward contracts were registered with notaries; traders had turned to contracting these deals privately, thus lowering transaction costs.

The first forward share traders were probably wary of using private contracts, because they anticipated a resolution of the States General that would declare invalid those derivative share contracts that had not been executed by either a city's alderman or a notary. This resolution would also make it compulsory for share traders to inform the VOC bookkeeper and two directors of all transactions – even those that did not result in an actual share transfer. The States General passed this resolution on 13 June 1607, stating that the rule would shortly be publicly announced[15], but there is no trace that this resolution was ever publicly proclaimed. To be sure, by 1614, the provincial court of Holland had enforced several private forward contracts that had not been registered by any official institution[16], which indicates that this rule was very short-lived – if it had ever been in force at all.

These court rulings paved the way for the development of a market with very low transaction costs. From now on, the only requirement for a forward transaction was a written contract signed by the buyer and the seller. The large amounts of money at stake in the forward share trade created an incentive for forging these contracts, but the following procedure prevented this. When the contractors had come to an agreement on all the details of the contract, they drafted two handwritten contracts, or, in later years, filled out a standard printed form for forward transactions. Two standard forward contracts were printed on a single piece of paper, where three embellished letters (A, B and C) separated the two contracts (see Figure 1.1 for an example). After the traders had filled out the contracts, they separated the form by cutting through the letters, and they each received a signed copy. When they settled their contract, either through a transfer of the share and the money payable or through paying the price difference, the contractors exchanged their contracts and checked their authenticity. If

[14] Bruyningh was specialized in financial contracts. SAA, Notaries, inv. nrs. 105-8.
[15] Resolution of States General, 13 June 1607, N. Japikse and H.H.P. Rijperman (eds.), *Resolutiën der Staten-Generaal van 1576 tot 1609* XIV *1607-1609* (The Hague 1970), 306.
[16] See e.g. Hans van Loon *vs.* Isaac le Maire (4 July 1614), NA, Court of Holland, inv. nr. 633, nr. 1614-102; Dirck Semeij *vs.* Maerten de Meijere, NA, Court of Holland, inv. nr. 636, nr. 1615-138.

the letters did not fit perfectly, the traders knew that one of the parties had cheated. Once the transaction had been settled successfully, the traders tore up their contracts.

The judgments of the Court of Holland, moreover, were proof that the legal system of the Dutch Republic officially recognized the derivatives trade. This may seem all too obvious from a twenty-first-century perspective, but Banner has argued that transactions in which a good or a service was moved only in time (and not in place) were regularly deemed useless and not legally valid in the early modern era.[17] They were considered a form of usury: earning money by just moving it in time, rather than buying or building anything with it – putting it to use, in other words. Usury regulation certainly existed in the Dutch Republic; moneylenders were allowed to charge ordinary people 6% and merchants and shopkeepers – who were more familiar with money – 8%.[18] Some forwards definitely exceeded the usury limit[19], but neither the courts nor the traders themselves ever called upon usury regulation to declare a transaction null and void.

I contend that the courts regarded the forward share trade as a trade in which only well-to-do merchants could participate; there was therefore no risk that ordinary citizens would be directly affected by the transactions and the trade was therefore not usurious in the strictest sense. The high counterparty risk of forward contracts caused this market to be confined to well-to-do merchants. The contractors of a forward made no payments when they agreed on the transaction. Hence, large share price movements during the contract's term provided an incentive for either the buyer or the seller of the contract to renege rather than to comply with the contract – counterparty risk, in other words. If a trader chose to renege, the other party could start litigation in order to try to force his counterparty to comply with the contract, but this was a very costly procedure and traders generally tried to avoid going to court.[20] As a result of these characteristics of the forward market, forward traders entered into con-

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[17] Stuart Banner, *Anglo-American securities regulation. Cultural and political roots, 1690-1860* (Cambridge 1998) 15.

[18] Johannes Cloppenburch, *Christelijcke onderwijsinge van woecker, interessen, coop van renten, ende allerleye winsten met gelt* (Amsterdam 1637) 20-1. Hugo de Groot wrote in 1631 that the usury rate was set at 6% in the Dutch Republic, adding to this that the authorities tolerated interest rates up to 8%: Hugo de Groot, *Inleidinge tot de Hollandsche rechts-geleerdheid* (1631) I, S.J. Fockema Andreae ed. (Arnhem 1939) book III, part 10, §10, 140-2. The usury limit was cut back to 4% in 1655: Hugo de Groot, *Inleidinge tot de Hollandsche rechts-geleerdheid* (1631) II *Aantekeningen*, S.J. Fockema Andreae ed. (Arnhem 1939) 252.

[19] Nicolaas Muys van Holy, *Middelen en motiven om het kopen en verkopen van Oost- en West-Indische actien, die niet getransporteert werden,... te beswaren met een impost, ten behoeve van het gemeene land en de stad Amsterdam* (Amsterdam 1687) 7.

[20] See chapter 3.

tracts only with well-known traders with a high reputation, thus reducing the risk that the counterparty could be tempted to renege. Put another way, the forward market was accessible only for wealthy traders who regularly performed transactions on the exchange and who had a reputation that was known to other forward traders.[21]

It would take until the second half of the century before the forward market also became accessible to participants of lower standing. From around the 1660s onwards, trading clubs, where traders regularly gathered together to trade forwards, emerged (see section 1660s – Trading clubs and rescontre on page 45 ff.). Amongst the participants of these clubs, peer pressure took over the role of a reputation based on wealth or built up over a large number of transactions. Secondly, traders started using repo transactions. A repo replicated a forward by combining a share transfer and a loan (see chapter 4 for more details). The main advantage of a repo over a forward was that the lender received collateral* in the form of a share for the loan he granted to the borrower. This significantly reduced counterparty risk, for the lender could sell off the collateral in case of default and thus reduce his loss. Repos made the derivatives market accessible for a larger pool of traders from at least the late 1610s onwards – the earliest example I have found dates from June 1618[22] – but they were not suitable for the speculative trade of stock jobbers, for a single repo involved several share and money transfers, thus also involving higher transaction costs and more hassle.

Options, finally, which allow traders to insure their portfolios against price changes or to speculate on price changes at low cost[23], were widely used on the market in the second half of the seventeenth century. The earliest reference to an option contract I have found, in the financial records of Louis Trip, dates from January 1660.[24] It is possible, though, that traders adopted the use of this derivate at an earlier stage; if all option contracts were settled successfully, they left no traces in the notarial archives. It is definitely true, however, that neither Hans and Anthoni Thijs nor Elisabeth Coymans, whose financial records predate the Trip files, traded options. Also,

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[21] Cf. infra, chapter 1 section 1660s – Trading clubs on page 45 ff. and chapter 3 section Private enforcement mechanism on page 107 ff.
[22] BT, inv. nr. 113, fo. 47. Gelderblom and Jonker argue that repos were already used in the first decade of the seventeenth century, but I am not convinced that what they observed in the portfolio of Hans Thijs actually involved the use of repos: 'Completing'.
[23] See chapter 4, section Portfolio risk on page 134 ff.
[24] Journal entry 16 January 1660, SAA, Merchants' accounts, inv. nr. 50.

the official brokers' regulations mentioned a special tariff for options only in 1689.[25] I contend that this can be explained by the observation that the share trade became of speculative nature only in the second half of the seventeenth century. Forwards and repos were the perfect derivatives for investors who wanted to participate in the East India trade and be entitled to dividends without locking up a large amount of money in a share. These derivatives were thus already widely used in the first decades of the century. Options, on the other hand, are the most suitable derivative for risk seeking and risk mitigating purposes – but the share traders of the early seventeenth century were not yet interested in these issues.

1609-10 – Isaac le Maire

Apart from lowering transaction costs, the use of derivatives provided yet another advantage: they allowed traders to go short on shares. The VOC bookkeeper was of course not allowed to overdraft shareholders' accounts, but derivatives bypassed the company's capital books. On expiration of a forward short sale*, for example, there were two possibilities: either the contractors opted for money settlement, in which case the price difference between the forward price stipulated in the contract and the market price on the expiration date was paid, or they chose to actually transfer the share. In the latter case, of course, the seller had to make sure that he possessed a share to be able to transfer it to the buyer.

Short selling is often associated with speculators who seek to gain from intentionally bringing the price of a security down. This is of course objectionable behavior, but short selling is at the same time an indispensable financial technique, because it enables traders with a zero or small positive position in a certain stock to trade on negative information. On a market where short selling restrictions are in place, on the contrary, traders can choose only between buying a share and doing nothing. This could lead to a situation in which only optimistic traders will act when both positive and negative information become available, which could lead to overvaluation of the share – a price bubble.[26] The possibility to go short thus leads to a better pricing of securities.

[25] Gelderblom and Jonker, 'Amsterdam as the cradle',205. Smith, *Tijd-affaires*, 82.
[26] Edward M. Miller, 'Risk, uncertainty and divergence of opinion', *Journal of finance* 32 (1977) 1151-1168. Harrison Hong, José Scheinkman and Wei Xiong, 'Asset float and speculative bubbles', *Journal of finance* 61 (2006) 1073-1117.

True, however, as the Amsterdam share market experienced in 1609, short selling is indeed the preferred trading technique of traders who deliberately try to bring the price down. This induced the directors of the Amsterdam chamber to submit a petition to the States of Holland, requesting a ban on short selling of VOC shares.[27] The States ultimately acceded to their request. The discussion that preceded this first example of government intervention in the share market is worth examining closely, because it sheds light on the directors' attitude towards the share trade and on the relation between the shareholders and the directors.

The VOC directors explained in their petition to the States of Holland that a group of share traders had conspired to sell a large number of forward contracts. They had sold many times the value of the shares actually registered on their accounts in the company's capital books. When the agreed date of delivery approached, the sellers began to spread bad rumors about the company, thus bringing the share price down. Subsequently, this bear trading syndicate offered a small amount of stock for sale at a still lower price, thus reinforcing the downward motion of the share prices. Hence the short sellers could buy shares at far lower prices than agreed upon in the forward sales contracts and make a good profit.

The company directors argued that these practices were objectionable; innocent investors had become the victims of the bear traders. Widows and orphans, they wrote, could be harmed by the low share prices – they would be unable to wait until the share price recovered if they were in sudden need of liquidity. By stressing the vulnerable position of widows and orphans, the directors clearly tried to take advantage of the Christian morality of the members of the States of Holland; the Eighth Commandment, which treats theft and usury, states that harming the needy is to be highly condemned.[28]

The directors further argued that the presence of bear traders could discourage people from investing money in the VOC. Finally, they suspected the involvement of competing foreign East India Companies, which tried to weaken the Dutch company and the young Dutch Republic. They thus claimed that one could tell the well

[27] Petition published in J.G. van Dillen, 'Isaac Le Maire en de handel in actiën der Oost-Indische Compagnie', *Economisch Historisch jaarboek* 16 (1930) 1-165, there 31-2 (doc. nr. 2).
[28] Van Deursen has studied the position of the Ten Commandments in Dutch seventeenth-century society: A.Th. van Deursen, *Rust niet voordat gy ze van buiten kunt: de Tien Geboden in de 17e eeuw* (Kampen 2004). See for the Eighth Commandment pp. 180-94.

being of the Dutch Republic by looking at the VOC share price.[29] The directors asked the States to issue a decree that would force all forward traders to settle their contracts and register them in the capital books of the VOC within a month's time.

In their petition, the directors avoided mentioning the name of the leader of the bear-trading consortium. They tried to persuade the States of Holland to take measures, arguing that this was a problem that affected all participants of the market. In fact, however, it was rather a conflict between opposing directors. The syndicate's leader was Isaac le Maire (1558-1624) who had been one of the founding directors of the VOC in 1602.[30] He had subscribed a staggering *f*85,000 to the company's capital stock, but his important position in the VOC did not last long: he resigned from the board of directors in 1605. The immediate cause was probably a failure on the part of Le Maire to present his expense account of the equipment of a fleet – the directors were entitled to a percentage of the company expenditure for rigging out fleets – and thus Le Maire implicated himself in cheating. Le Maire and the directors were unable to solve this conflict and subsequently, out of resentment, Le Maire kept searching for ways to thwart the company.[31]

One of these ways was the bear-trading consortium[32], which failed to achieve its objectives. The consortium sold most of its forwards, with one- or two-year terms, between June 1609 and January 1610. Their sales seem to initially have brought the share price down[33], but the price started an upward trend after March 1610 – probably initiated by the first dividend distribution of 75% of the nominal value of the capi-

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29 Neil De Marchi and Paul Harrison, 'Trading "in the wind" and with guile: The troublesome matter of the short selling of shares in seventeenth-century Holland', in: Neil De Marchi and Mary S. Morgan (eds.), *Higgling: transactors and their markets in the history of economics* (Durham 1994) 47-65, there 51-2.

30 The following is based on Van Dillen, 'Isaac le Maire', 1-28.

31 He tried to by-pass the company's monopoly by finding a new sea route to the East Indies and was involved in the preparations of the founding of a French East India Company. The plan was called off when Henry IV died in 1610. A few years later, in 1614, Le Maire founded the Australian Company and equipped two ships to discover a passage south of the Strait of Magellan – by then the only known passage in South America, which also formed part of the charter of the VOC. This expedition, led by one of Isaac's sons Jacob, discovered Cape Horn and thus by-passed the company's monopoly. The States-General and Dutch courts of law, however, ruled that the route via Cape Horn was part of the Dutch West India Company's monopoly. Le Maire's efforts had been to no avail. See also Dirk Jan Barreveld, *Tegen de Heeren van de VOC. Isaac le Maire en de ontdekking van de Kaap Hoorn* (The Hague 2002) 16-32.

32 Le Maire himself participated for 4/15 in the consortium; Hans Bouwer had a 2½/15 share; Cornelis Ackersloot, Cornelis van Foreest, Willem Brasser, Jan Henrixcz. Rotgans, Jacques Damman and Marten de Meyere 1/15 each; Haermen Rosecrans and Steven Gerritsz. 1¼/15 each: Van Dillen, 'Isaac le Maire', 121.

33 From October 1609 until March 1610 the Amsterdam chamber shares traded at 125-129%: BT, inv. nr. 215, nrs. A4/12, B1/1. Van Dillen, 'Isaac le Maire', 58. SAA, Notaries, 119, fo. 23v.

tal stock in mace.[34] The price increase came too soon for the bear traders. They quickly tried to settle a large part of their contracts before things got even worse for them, but they nevertheless incurred substantial losses; Van Dillen estimated the consortium's total loss at *f* 45,000. Isaac le Maire fled the city of Amsterdam in 1611 and settled in Egmond aan den Hoef. Several other members of the consortium went bankrupt.

Although the share trading community generally condemned Le Maire's behavior[35], they were also ill-disposed towards a ban on short selling. A number of shareholders reacted to the directors' petition by also submitting one. They argued that the company itself was to blame for the recent decrease of the share price. To substantiate their argument, they explained meticulously how the share prices had reacted to the company's successes and failures in the East Indies. Additionally, they stressed that there would be no fear of a further decrease of the share price if the company were managed properly – focusing on profitable trade rather than spending large amounts of money on warfare. According to them, a curtailment of the share trade would be meaningless and would have the opposite result from the directors' intentions. They referred to the price of shares of the other five chambers of the VOC: they were cheaper than the Amsterdam chamber shares, which could only be attributed to the fact that the shares were more actively traded in Amsterdam. Curtailment would thus lead to a price decrease. Finally, the shareholders warned of the unintended consequences of the registration rule: the directors who watched over the registration would be fed with a constant stream of transaction information, providing them an information advantage that they could use in their own dealings.[36]

In addition to these petitions, a memorandum on the state of the share trade and the VOC in general was sent to Johan van Oldebarnevelt, the most influential Dutch politician of the time. This memo, attributed to Isaac le Maire, is considered to be the first manifestation of shareholder activism in history.[37] It did not have the desired effect, however; the States General followed the company directors' petition and

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[34] See section 1609-18 – First dividend distributions on page 28 ff.

[35] De Velaer, for example, called Le Maire's behavior 'objectionable' (*odieus*): De Velaer to l'Empereur, 8 January 1610, BT, inv. nr. 215, nr. B1/1.

[36] Petition shareholders to States of Holland, 1609: Van Dillen, 'Isaac le Maire', 34-8 (doc. nr. 3). See also doc. nrs. 4 and 9. De Marchi and Harrison, 'Trading "in the wind"', 52-3. Paul Frentrop, *A history of corporate governance, 1602-2002* (Brussels 2003) 74.

[37] Memorandum, 24 January 1609: Van Dillen, 'Isaac le Maire', 40-3 (doc. nr. 4). Frentrop, *Corporate governance*, 71-3.

issued a ban on short selling on 27 February 1610.[38] The ban stated that all forward transactions should be registered in the company's books within a month's time after the conclusion of the deal. The bookkeeper transferred shares that were the subject of a forward contract to a special 'time account' for the duration of the contract. This time account was linked to the 'normal' account of the seller – he still held the economic ownership* of the share. If the traders of a forward failed to register the transaction within a month's time, the buyer could let the transaction be declared null and void.

The States General never intended to declare the entire forward market illegal – probably understanding that this was an important and fully legitimate method of trade that had existed in the Netherlands in the commodities trade since the sixteenth century; they only ruled against short sales. The ban had far-reaching consequences for the development of the market. The traders generally ignored the ban; they knowingly continued drawing up short sale contracts that were unenforceable by the law. I will explain in chapter 3 how informal institutions guaranteed the functioning of the forward market.

1609-18 – First dividend distributions

The 1610 ban on short selling brought about a large number of *insinuaties** of forward buyers who feared that their counterparties were short sellers. Interestingly, moreover, these *insinuaties* show that the forward traders were not sure how to deal with dividend distributions. Due to inexperience with the forward share trade, many forward contracts did not stipulate whether the buyer or the seller should collect the dividend. It is important to arrange for possible interim dividends, for the forward price should be adjusted if the buyer collects the dividend and likewise the buyer should be compensated if the seller receives an interim dividend. To complicate matters, the first dividend distributions of the VOC were in kind. This led to conflicts between forward buyers and sellers about how the dividend should be valued.

Shareholders could collect their first dividend in April 1610: 75% of the nominal value of their share in mace.[39] In November of that same year, another 50% in

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[38] The full text of the ban can be found in: Cornelis Cau (et al.), *Groot placaet-boeck, vervattende de placaten, ordonnantien ende edicten van de... Staten Generael der Vereenighde Nederlanden, ende van de... Staten van Hollandt en West-Vrieslandt* I (The Hague 1658) 554-555. See also Smith, *Tijd-affaires,* 57-8.

[39] De Velaer to l'Empereur, 19 March 1610, BT, inv. nr. 215, nr. B1/5. G.C. Klerk de Reus mistakenly dated this dividend on August 30, 1610: G.C. Klerk de Reus, *Geschichtlicher Überblick der administrativen,*

pepper was distributed, together with 7.5% in cash – the latter distribution was only for those shareholders who had also collected the pepper. In March 1612, a distribution of 30% in nutmeg followed.[40] Shareholders who had collected all dividends in kind had received a total of 162.5% of the nominal value of their shares, but the market value of the spices proved to be significantly lower. Shareholders complained that the distributed dividends had a market value of only 125%[41]; the sudden abundance of spices on the market had brought the prices down.

The buyers of contracts without dividend stipulations argued that the sellers should collect the dividend and subtract the value determined by the VOC (plus interest over the remaining term) from the forward price. The sellers, for their part, argued that there was no obligation to collect the dividend. In their opinion, the buyers should simply wait until the contract expired and then decide for themselves whether to collect the dividend or not. Their position was stronger: in the absence of a special clause in the contract that specified the procedure in case of a dividend distribution, the seller could not be forced to collect the dividend. To prevent similar conflicts from arising again, a clause that stipulated how the contractors would go about dividend distributions during a contract's term became standard after this episode.

The first dividend distributions yielded yet another problem. Many of the shareholders did not collect the dividend. These shareholders probably did not know what to do with the spices and therefore chose not to collect them, but it is also possible that the company's warehouses contained an as yet insufficient quantity of spices to provide all shareholders with a dividend.[42] In any case, this resulted in a situation where different types of shares were in circulation: shares on which no dividend had been received and shares on which either mace, or pepper or nutmeg or combinations of these distributions had been received. This complicated the trade in shares, all the more so because the shareholders did not value the dividends in the same way as the

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rechtlichen und finanziellen Entwicklung der Niederländischen-Ostindischen Compagnie (The Hague 1894) Appendix VI. F.W. Stapel, the editor of Van Dam's *Beschryvinge*, already noticed this error: Van Dam, *Beschryvinge* 1A, 433.

[40] See Appendix B – Dividend distributions VOC, 1602-1700 for a list of all dividend distributions during the seventeenth century.

[41] Transcription of the *insinuatie* (16 December 1613): Van Dillen, *Aandeelhoudersregister*, 100-2. Names of the complaining shareholders: Pieter Gerritsz. Ruytenburgh, Pelgrom van Dronckelaer, Leonart Rans, Gerson Metsue, Andries Rijckaert, Symen Lodewijcks van Alteren, Pieter de Schilder, Jan van Wely, Balthasar Jacot, Maximiliaen van Geel, Michiel van Merbeeck, Daniel van Geel, Pieter Munnicx and Joan van Geel. See also Den Heijer, *De geoctrooieerde compagnie*, 88.

[42] Jacques de Velaer advised his uncle Anthoine l'Empereur to collect the mace and not to wait too long before collecting it. He expected that the mace would be readily disposed of: De Velaer to l'Empereur, 19 March 1610, BT, inv. nr. 215, nr. B1/5.

company did. Shareholders now traded shares of all conceivable denominations and with widely diverging rights on dividends, leading to complex negotiations over prices.

The VOC managed to bring this situation to an end. The company decided to distribute dividends in cash (57.5% in 1612, 42.5% in 1613 and 62.5% in 1618)[43] to those shareholders who had not collected the dividends in kind. So, after 1618, all shareholders had received 162.5% on their shares. Those shareholders who had collected the distributions in cash had the advantage that their dividend was actually worth 162.5%, but the shareholders who had collected the dividends in kind had the advantage that had they received the distributions earlier and hence earned interest on the proceeds of the dividends. In the end, both groups had received more or less the same. Most importantly, though, is that henceforth I have encountered no references to shares on which less than the total amount of dividends had been collected. So, after 1618, all dividend controversies had come to an end. The company did return to distributing dividends in kind (e.g. in 1623 and again twelve times between 1635 and 1644), but the dividend policy left no more room for discussion.[44]

1611 – Exchange building

As the trade in Amsterdam grew larger, it became clear that the Nieuwe Brug would have to be replaced with a more permanent trading location. The city government therefore ordered the building of an Exchange, after the example of the Antwerp Exchange, in 1607. Figure 1.2 shows the building, designed by Hendrick de Keyser, and officially opened on 1 August 1611.[45] Figure 1.3 gives an impression of the interior of the Exchange[46]. The building consisted of a covered stone passage around a large rectangular courtyard. Each commodity that was traded on the Exchange had its own designated location by one of the pillars that held the roof of the passage. The dealings in financial securities took place by one of the pillars at the back of the Exchange.

Five days before the opening of the Exchange, on July 26, the magistrate issued a bye-law on trade in the city. Trade was to take place only in the Exchange, every day of the week except Sundays, from 11 a.m. to noon and, during summer months (May-August), from 6.30 to 7.30 p.m. During winter, the Exchange was open

[43] See Appendix B – Dividend distributions VOC, 1602-1700.
[44] I will come back to the company's dividend policy in chapter 2, section Share price and dividends on page 65 ff.
[45] Van Dillen, 'Termijnhandel', 503.
[46] In this book, 'Exchange' (written with a capital E) refers to the Amsterdam Exchange, the building designed by Hendrick de Keyser; 'exchange' refers to the general meaning of the word.

during the last thirty minutes before the bells of the city gates rang.[47] The limited opening hours reveal that the city government was keen on concentrating the trade in a single location. This has several advantages: a concentration of traders increases a market's liquidity, because it makes it easier to find counterparties willing to trade. Moreover, interaction between traders also reveals information that can be valuable for other traders. In 1613, the magistrate issued another bye-law to press home their objective. This bye-law declared legally void those commercial transactions that had been concluded during exchange hours, but outside the Exchange. The city government made the regulations even more stringent in 1619; from now on, brokers were not allowed to linger around the Exchange or on Dam Square after exchange hours.[48]

The city magistrate's intentions seem laudable, but they could not prevent trade from also taking place outside the opening hours of the Exchange. The share traders, for example, frequently met on Dam Square.[49] In the second half of the century, moreover, the Kalverstraat inns were crowded with share traders at night. So, the opening of the Exchange did not result in a single location where all the trading in the city converged, but it did move the cluster of locations where share trading took place from the harbor front some six hundred meters south. I have plotted these locations on Map 1.2. The Exchange (1) was located just off Dam Square (2), which was also the site of the city hall that housed the Exchange bank (3), founded in 1609. The city hall on the map is the famous building (now royal palace) that opened its doors in 1655. The front cover of this book also shows Dam Square with the new town hall. Prior to that, the medieval city hall that stood at the same location had housed the Exchange bank. The notaries who specialized in commercial and financial deeds also moved their offices to the Dam Square area (4). They held office either in Beurssteeg, the street alongside the length of the Exchange, now called Rokin, or in Kromelleboogsteeg, the bent alley that connected the Exchange to Dam Square.[50] There were many inns in Kalverstraat, but the one called 'Plaetse Royael' (5) is the only one where

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[47] Smith, *Tijd-affaires,* 20.
[48] J.G. van Dillen, *Bronnen tot de geschiedenis van het bedrijfsleven en het gildewezen van Amsterdam* II (The Hague 1933) nrs. 114 and 570. Lesger, *Handel in Amsterdam*, 219.
[49] Jeronimus Velters, who started writing about share transactions to several correspondents in 1671, reported more often that he had been on Dam Square than in the Exchange: SAA, Velters, inv. nrs. 1-4.
[50] The offices of notaries Lock and Van der Groe, whose protocols I have studied extensively, were both in Beurssteeg. Information about the locations of notary's offices in Amsterdam can be found in: A.I. Bosma, *Repertorium van notarissen residerende in Amsterdam, Amstelland, ambachtsheerlijkheden en geannexeerde gemeenten* (Amsterdam 1998).

I am sure that share traders often gathered in the seventeenth century.[51] Finally, the East India house (6) was not far away either. If a share transaction led to an actual transfer, the traders could walk the short distance to the East India house to transfer the share in the VOC capital books and to the Exchange bank to deal with the money transfer.

1622 – The relation between the company and its shareholders

1622 saw the start of a debate about the corporate governance of the VOC, highlighting the relations between the company and its shareholders. A number of pamphlets expressed the shareholders' discontent with the company management. Interestingly, the debate followed a period of relatively uncomplicated relations between the company's stakeholders and its directors. The only utterance of friction took place in 1613, when a group of shareholders served an *insinuatie* on the directors of the Amsterdam chamber, claiming that the directors managed the company badly. According to them, the company was charged with too many warfare responsibilities whereas it would be more profitable if the company solely focused on trade.[52] This *insinuatie* did not impress the directors, however, probably because its authors did not gain large support for their cause. Additionally, it was simply a bad time to start shareholder activism: this was a period in which most of the shareholders were satisfied with the way things went. The company had started distributing dividends, shareholders calculated that the goods brought ashore so far already covered 80% of the initial investment and only positive news came from the East Indies.[53] The bearish atmosphere had faded away and the share price rose to 230% in early 1611 and around 270% in 1612-3.[54]

The relation between the company and its shareholders became subject of discussion in 1622 because this year marked the end of the VOC charter. The shareholders had awaited this moment for a long time: the company's balance would be prepared and the shareholders would finally get information about the financial state of the company – the VOC had not published any financial reports during the first charter – allowing the shareholders to monitor the performance of the company management. But the directors had other plans: they asked the States General to renew the

[51] See section 1660s – Trading clubs on page 45 ff.
[52] Transcription of the *insinuatie* (16 December 1613): Van Dillen, *Aandeelhoudersregister*, 100-2.
[53] De Velaer to l'Empereur, 30 September 1610, BT, inv. nr. 215, nr. B1/11.
[54] De Velaer to l'Empereur, 9 May 1611, BT, inv. nr. 215, nr. B2/5. BT, inv. nr. 112, nr. C1.

charter for another fifty years.[55] If the States General would follow up on this request, the current shareholders would not get any official information about the company they co-owned during their lifetimes.

It is no wonder, then, that the shareholders protested strongly against this request; 1622 saw the publication of a number of pamphlets directed against a continuation of the charter. These protests resulted in the States General granting only another 21-year charter. The new charter moreover allowed the shareholders a form of supervision of the company management: the VOC would give inspection of its financial records to a special commission of shareholders. Finally, it changed the rights and privileges of the company directors, to avoid the semblance of personal enrichment on their part.[56]

The pamphlets clearly show that the shareholders had their doubts about the good intentions of the company directors. They accused them of enriching themselves to the disadvantage of the shareholders by rigging out too many ships – thereby pocketing a percentage. They argued that the large number of ships that were still out on the seas at the end of the first charter proved their accusation; a company that was about to be liquidated should not equip new fleets. The directors merely tried to maximize their personal income rather than the company's.[57] Moreover, shareholders suspected the company directors of trying to profit from manipulating the share price. Directors were obliged to hold a considerable share capital (*f* 6,000 nominal for the Amsterdam directors) as a token of their commitment to the VOC. But according to the writers of the pamphlets, some of them traded actively on the secondary market, thus revealing that they tried to make short-term profits on their transactions. A sincere director, however, should try to maximize the company value over the long-term, securing the largest profits on his share capital by simply holding on to his possessions. Thus, or so the pamphlets suggested, the directors did not show the right commitment.[58]

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[55] Simon van Middelgeest, *Nootwendich discours oft vertooch aan de hooch-mogende heeren staten generaal van de participanten der Oost-Indische Compagnie tegens bewinthebbers* (s.l. 1622).
[56] Den Heijer, *De geoctrooieerde compagnie*, 65-7, 82-4. Frentrop, *Corporate governance*, 84-95.
[57] Van Middelgeest, *Nootwendich discours*. *Korte aenwysinghe der Bewinthebbers Regieringe* (s.l. 1622), fo. 3v. *Korte Aenwysinghe van de kleyne profijten die de Participanten vande tegenwoordige gheoctroyeerde Oost-Indische Compaignie dese 19. jaren hebben ghenoten, ende waer uyt 'tselve is gesproten op dat int nieuwe aenstaende Octroy dor de E.H.M. Heeren Staten Generael daer in mach werden versien* (s.l. 1622).
[58] Simon van Middelgeest, *Tweede noot-wendiger discovrs ofte vertooch aan alle lant-lievende, van de participanten der Oost-Indische Compagnie, tegens bewinthebbers: In 't jaar een-en twintich, der onghedane rekeninge* (s.l. 1622). *Korte aenwysinghe*, 4. *Vertooch aen de Ed. Ho. Mo. Heeren Staten Generael, aengaende de tegenwoordige Regeringe van de*

Although the States General declared the pamphlet *Nootwendich discours* libelous[59], they did give in to many of the shareholders' requests – on paper, at least. The pamphlets certainly contributed to persuading the States General to change the corporate governance of the VOC, but the most forceful demonstration of shareholder power was the refusal of many investors to subscribe to the West India Company's stock – the WIC was about to be granted a founding charter similar to the VOC charter of 1602. Thus they showed that the current charter was not the right framework for workable relations between a joint-stock company and its shareholders.[60]

The following changes with respect to shareholder relations were enacted in the new charter. First of all, it provided for the establishment of boards of so-called chief participants (*hooftparticipanten*). Chief participants were given several rights. They got permission to inspect the company's annual report and in later years, they were also allowed to be present when the company management read the letters from the East India branch and when they inspected the cargo of the return fleet. Finally, the chief participants could nominate a number of candidates for a vacant director's seat. To become a chief participant, the same requirements applied as to become eligible for a directorship: for shareholders of the Amsterdam chamber this implied a nominal position of at least *f* 6,000. The charter made two further changes to the corporate governance. It stipulated that henceforth directors would be appointed for only three years instead of for life; afterwards, they could be re-elected, but only after a three-year period outside the board of directors. Relatives could not have a seat in the same board. Secondly, the charter abolished the commission directors received on equipment costs, but they retained the right to receive a 1%-commission on the value of the return cargo – besides their fixed salary.[61]

Despite these promises, the shareholder activism of 1622 had little effect. Soon after the renewal of the charter, the chief participants evolved into deputy company directors, rather than the protectors of shareholders' interests. The omens were pointing this way already during the first chief participants' election. A large number of the

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Bewinthebbers van de Oost-Indische Compangie, ende hoeveel dat den Staedt van 't Landt daer aenghelegen is, dat de selve voortaen door goede Ordere beter mach geregeert worden (s.l. 1622).

[59] *Placcaet ieghens seecker fameus libel, geintituleert, Nootwendigh discours, ofte Vertoogh aende [...] Staten Generael, vande participanten der Oost-Indische Compagnie, tegen de bewinthebberen* (The Hague 1622).

[60] Frentrop, *Corporate governance*, 100. Den Heijer, *De geoctrooieerde compagnie*, 63.

[61] Frentrop, *Corporate governance*, 95. Interestingly, Irwin has suggested that the VOC achieved supremacy in the East India Trade through its managerial incentive scheme: Douglas A. Irwin, 'Mercantilism as strategic trade policy: The Anglo-Dutch rivalry for the East India trade', *The journal of political economy* 99 (1991) 1296-1314.

candidates and of the shareholders who had exerted themselves to go to the election were relatives of (former) company directors. Consequently, the boards of chief participants did not become the independent supervisory bodies the activist shareholders had probably hoped for.[62] In fact, the chief participants originated from the same clique that furnished the company directors.

The obedient behavior of the chief participants is a clear indication of their dependency on the company management. First of all, they were only very rarely given the opportunity to inspect the company's financial records, but they did not protest against this breach of the charter of 1623. They were allowed to take a look at the books in 1622, but the next inspection did not take place until 1647 – when the States General renewed the charter once again. Henceforth, the VOC presented its annual report to a commission of chief participants and a commission of members of the States General at four-year intervals. But the financial reporting did not take place 'with open doors and windows', as stated in the first renewal of the charter. It was, to the contrary, a closed meeting.[63] Moreover, the commissions of chief participants and members of the States General did not have to report on their findings to the regular shareholders. The latter were, according to the charter, not in a position to judge the management's decisions on their merits.[64]

Secondly, they had access to the correspondence between the branches of the VOC in the United Provinces and abroad and were allowed on the ships of the return fleet to examine the size and quality of the cargo, but they never opposed any of the decisions taken by the management. What is more, the information they had access to was confidential; they were not allowed to share it with the shareholders outside their committee of chief participants. Lastly, they did not make any effort to enforce the maximum term of the directors' appointments – it was in their personal interest to refrain from enforcing this rule too strictly, because their own appointment was subject to the same rule. Put another way, they could stay on for life themselves as long as they did not complain about the appointment term of the directors.[65]

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62 *Procedvren ghehouden over de verkiesinge der hooft-participanten, tot het opnemen van de een-en-twintichjarige reeckeninge der Oost-Indische Compagnye* (s.l. 1623).

63 Van Dam, *Beschryvinge* 1A, 367.

64 Van Dam, *Beschryvinge* 1A, 291-2. In Van Dam's words: '[…] dat die sake niet soude mogen werden gedivulgeert, nog overgegeven in handen van de particuliere participanten, die volgens 't octroy *geen qualiteyt hadden om kennisse daarvan te nemen*' [emphasis added].

65 Van Dam, *Beschryvinge* 1A, 302-8. Please note that the chief participants received a salary for their duty to look after the shareholders' interests (in 1622 set at *f* 200 per year): Den Heijer, *De geoctrooieerde compagnie*, 84.

The new charter did not provide any additional monitoring rights to the company's regular shareholders, nor were their interests properly looked after by the chief participants. Conversely, in the same period, the English East India Company granted many more rights to its shareholders. De Jongh has argued that this difference emanated from the different origins of the two companies. The EIC was originally a terminable joint-stock company, meaning that the company management had to make sure at regular intervals that there was sufficient support to continue the company. The best way to do this was to maintain good relations with its shareholders.[66] The VOC was not dependent on investors for new stock issues or continuation of the company. Furthermore, the dividend policy of the company kept shareholders satisfied; the VOC began to distribute dividends on a regular basis shortly after the start of the second charter – biennial dividends in the 1620s and first half of the 1630s, and from 1635 onwards every year. These dividends provided information about the financial state of the company to the shareholders.[67] Therefore, another corporate governance debate like the one of 1622 did not occur.

1630s and 1640s – Intermediation and a changing composition of the trading community

The best proof that the shareholders accepted their limited rights is the fact that trading activity on the secondary market increased rapidly during the 1630s and 1640s. This was a major development, because it suggests that investors increasingly used the market for purely financial purposes – they aimed increasingly at earning short-term profits rather than at holding a long-term position in the VOC to support the company and its trade with the East Indies. The increasing market activity coincided with the growing importance of intermediary services by brokers and market makers on the market. The brokers' guild had existed in Amsterdam long before the secondary market for VOC shares came into being and in the early seventeenth century a number of brokers specialized in share transactions. The service they provided was to bring traders together; brokers were not allowed to take a position in the stock themselves. The

[66] The VOC, however, was a merger of the *Voorcompagnieën*. Investors had not invested directly in these companies; the subscription took place via one of the directors. Hence, there was no direct relationship between the company and its shareholders; each director knew some of the shareholders personally and maintained the relations individually. This structure obstructed the evolution of shareholder rights. The VOC did not use the same method for subscribing money to the company stock, but it did copy the corporate governance structure of the *Voorcompagnieën*. In sum, the diverging shareholders' relations in early modern Western Europe were a matter of path dependency: De Jongh, 'Zeggenschapsrechten van aandeelhouders', *Working paper* (2009), 19-20, 72, 99-101.

[67] I will go deeper into this subject in chapter 5.

broker's commission on share transactions was 10 *stuivers* per *f* 100 nominal value (as of 1 January 1613) and this rate was reduced to 4 *stuivers* per *f* 100 nominal value in February 1647. Hence, from the late 1640s onwards, the total brokerage on the most frequently traded shares of *f* 3,000 amounted to *f* 6 (both the buyer and the seller paid *f* 3) – on average less than 0.05% of the money involved in a spot transaction.[68]

However, the part played by brokers was fairly small in the earliest decades of the development of the secondary market. Of all the transactions that took place in the period 1609-1612[69], for example, I have found only four that had been concluded through a sworn broker.[70] The rest of the transactions were no doubt concluded without intermediation of a broker; my data stem from legal documents and plaintiffs would certainly have mentioned the intermediation of a broker as this would only have made their argument stronger. Traders apparently held the opinion that they were perfectly able to prepare their transactions themselves.

Brokers did become more important later in the seventeenth century, but another group of intermediaries, market makers, were the first to start playing a significant role on the market. Market makers constantly hold a positive position in a certain share to make sure that they can always sell a share if a prospective buyer approaches them. At the same time, they are always willing to buy shares. Hence they simplify the process of finding a counterparty for both buyers and sellers. The advantage for share traders is that they can always turn to a market maker if they want to make a transaction, but they will, of course, be charged for the services they get from the market maker. In return for the liquidity they provide, market makers pay less than the market price for a purchase and ask more than the market price for a sale. The difference between these prices is called the bid/ask spread. This spread represents the fee for the market maker. Market makers thus try to earn money by trading as many shares as possible rather than by holding shares for capital gain.[71]

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[68] Hermannus Noordkerk (ed.), *Handvesten; ofte Privilegien ende octroyen : mitsgaders willekeuren, costuimen, ordonnantien en handelingen der stad Amstelredam: ... tot den eersten Febr. 1747 vervolgt. met verscheide stukken verm., mitsgaders in eene andere schikking gebragt / en met de nodige registers voorzien* II (Amsterdam 1748) 1063. Smith, *Tijd-affaires*, 65. In 1689, the broker's fee was changed again, but this measure was reversed shortly afterwards: Smith, *Tijd-affaires*, 81-2.

[69] Many sources are available for these years, since the activities of Le Maire's bear-trading syndicate and the first dividend distributions had led to quarrels between share traders.

[70] Names of the brokers: Isaac Florianus, Melchior van Dortmont, Balthasar Geerardtsz, References to the transactions that were concluded via a broker: BT, inv. nr. 215, nr. A3/6. BT, inv. nr. 112, nr. C2. Van Dillen, 'Isaac le Maire', 46 (doc. nr. 6). SAA, Notaries, inv. nr. 117, fo. 81.

[71] Ananth Madhavan, 'Market microstructure. A survey', *Journal of financial markets* 3 (2000) 205-258, there 212.

On the Amsterdam market for shares, market maker was not an official profession; the traders who started to provide these services to the market in the 1630s simply saw a possibility to earn a profit by providing liquidity to the market. Between 1626 and 1642, the Raphoen brothers, Christoffel and Jan, were the first to become market makers. They transferred an impressive amount of shares (both sales and purchases) on their joint account with the VOC. Table 1.1 summarizes their share transfers in this period. They performed a large number of transactions, especially in 1633, 1638 and 1641, which, incidentally, does not mean that they were market makers. There are convincing indications, however, that they were indeed market makers. Firstly, their invested nominal capital fluctuated around a relatively low average. In June 1630 they owned a nominal share capital of *f* 13,200. Their position grew to *f* 21,450 in October 1633 and then declined to *f* 3,000-4,000 between 1636 and 1641. Their share capital was thus very small relative to the amount of shares they transferred, which indicates that they did not either enlarge their capital because they expected the VOC to prosper in the future or reduce it because of an expected fall in the share price; they transferred shares because they made a profit just by trading.

	Nominal turnover (f)		*Number of transactions*	
	Sale	*Purchase*	*Sale*	*Purchase*
1626	0	4200	0	2
1627	9000	2100	3	3
1628	0	15900	0	6
1629	24000	21800	7	9
1630	39500	34500	14	11
1631	24000	27000	8	9
1632	24000	24000	7	8
1633	58650	67650	19	21
1634	47700	32700	15	12
1635	37800	31800	13	10
1636	22500	32413	8	10
1637	44800	36814	13	16
1638	60508	58831	19	25
1639	36628	41139	13	14
1640	29807	41785	13	17
1641	79000	83991	24	31
1642	18000	24000	4	8

Table 1.1 Spot transactions of Christoffel and Jan Raphoen, 1626-42
Source: NA, VOC, inv. nr. 7068, fo. 210, 249, 274, 281, 299, 310, 326, 344, 369, 387, 431, 474, 501.

Secondly, and most convincingly, they consistently bought small shares, i.e. shares smaller than *f* 3,000. At the same time, however, they mostly sold *f* 3,000 shares. By the 1630s, it had already become customary on the Amsterdam market to trade *f* 3,000 shares.[72] Forward transactions nearly always involved shares of *f* 3,000 or a multiple of this amount. But many people owned a share capital that did not amount to *f* 3,000 or an exact multiple. These 'non-standard' shares were less liquid than the 'standard' *f* 3,000 shares. They could, for example, generally not be used in forward contracts and clearing of multiple transactions in a single payment and share transfer also required shares of the same denomination. Over the years 1636-41 the Raphoen brothers bought 41 shares of denominations smaller than *f* 3,000, which means that they were involved in 11 percent of the total number of transferred shares of less than *f* 3,000.[73] In these same years, the average nominal value of a share bought by Christoffel and Jan Raphoen was *f* 2,613, while the average sale amounted to *f* 3,098. They sold significantly more *f* 3,000 shares than they bought. They thus provided liquidity to the market for awkward denominations and contributed to the standardization of the market for VOC shares.

Finally, the Raphoen brothers made the market more accessible for shareholders. Investors could always turn to them to buy or sell a share and it cannot have been difficult to find them: Christoffel lived on Nes, the main thoroughfare behind the Exchange.[74] They probably visited the Exchange on a daily basis.[75] By constantly being willing to trade, they helped to overcome the asynchronous timing of investor orders, a major problem of many markets.[76] The Raphoen brothers were the missing link between a trader willing to sell and a trader willing to buy, who happened to be not at the same place at the same time. Moreover, it seems that they specifically made the market more accessible for infrequent traders and traders who were inexperienced with exchange dealings in general. The VOC capital books do not allow for a social study of the people who traded with Christoffel and Jan Raphoen (only the names of traders are specified), but it is beyond doubt that the people who bought from the Ra-

[72] In 1610, slightly less than 30% of the share transfers registered in the capital books of the Amsterdam chamber involved shares with a nominal value of exactly *f* 3,000. Share transfers of exact multiples counted for an extra 2.5%: NA, VOC, inv. nr. 7066. The share of *f* 3,000 shares had grown to 82% in 1641 and 92.5% if multiples of *f* 3,000 are also taken into account: NA, VOC, inv. nr. 7068.

[73] Total number of shares transferred in the period 1636-1641: 3614, total number of share transfers <*f* 3,000: 363.

[74] J.G. Frederiks and P.J. Frederiks (eds.), *Kohier van den tweehonderdsten penning voor Amsterdam en onderhoorige plaatsen over 1631* (Amsterdam 1890) fo. 236. Christoffel Raphoen was a relatively wealthy man. His property was taxed at *f* 40,000 in 1631.

[75] Notarial deeds show that they were also commodity merchants, shipping goods to several places in Europe: SAA, notarial card index.

[76] Maureen O'Hara, 'Optimal microstructures', *European financial management* 13 (2007) 825-832, there 831.

phoen brothers were generally well-to-do merchants whose names appear frequently in the capital books and in any study on the economic history of seventeenth-century Amsterdam, whereas the traders who sold to them were relatively unknown and infrequent traders. This indicates that Christoffel and Jan Raphoen stood in-between the community of frequent traders and investors with limited access possibilities to the market.[77]

The Raphoen brothers were certainly not the only market makers active on the exchange throughout the seventeenth century, but the characteristics described above distinguish Christoffel and Jan Raphoen as market makers. Market makers who only provided liquidity for standard denominations can less clearly be identified, for a trader with a large turnover does not necessarily have to be a market maker. Anthony Lopes Suasso, for example, bought 41 and sold 47 shares in 1664[78], but this did not automatically make him a market maker. He rather acted as a banker, granting loans on the collateral of a share. These shares were temporarily transferred to his account, thus explaining the high turnover on his account. Incidentally, Lopes Suasso's role on the market was not unimportant either, but he did not provide services similar to those of Christoffel and Jan Raphoen.

The appearance of market makers coincided with a rapid increase in the share price and in trading activity on the securities market in Amsterdam. These three events were interrelated. The share price increase, mainly caused by a change in dividend policy of the VOC[79], gave long-time owners of shares – e.g. investors who had subscribed money in 1602 or who had inherited a share – a good opportunity to sell their shares with a considerable profit. The market makers made it easier for them to access the market. Hence, more shares became available for active traders, which enhanced trading possibilities. The result of this can be seen in Figure 2.2 (on page 77), which depicts the number and nominal value of share transfers in the records of the Amsterdam chamber for 1639. In this year, 713 share transfers were registered in the

[77] This bears resemblance to the findings of Ann Carlos, Larry Neal and Kirsten Wandschneider. Using a dataset of 6,844 Bank of England shares transactions performed in 1720, they conclude that the traders whom they designate as market makers were more often involved in large transactions and transactions in which women and/or investors from outside London were a contracting party. In other words: the market makers made the market more accessible for those traders with less information/access possibilities to the market (women and people from outside London) and for those who needed to sell off a large block of shares and were therefore in need of liquidity providers: Ann Carlos, Larry Neal and Kirsten Wandschneider, 'Networks and market makers in Bank of England shares: London 1720', *Working paper* (2007) 4, 12.
[78] NA, VOC, inv. nr. 7070.
[79] See chapter 2, section Share price on page 65 ff.

East India house – a marked increase in trading activity compared to the 365 share transfers of 1609 (see Figure 2.1 on page 76).

With so much more trade going on, it does not come as a surprise that the market participants increasingly used the services of brokers. The market became ever more complex, which made it harder for an individual trader to obtain all the information necessary to perform a transaction. It now paid to hire a broker who was specialized in collecting information about possible counterparties. The real upswing in the demand for brokerage services took place in the 1640s. This observation is corroborated by the member lists of the brokers' guild: almost all brokers who dealt frequently in share transactions became members of the guild during or after the 1640s.[80] Moreover, the Amsterdam city authorities justified their reduction of the brokerage fees in 1647 by pointing to the recent increase in market activity and demand for brokers' services.[81] But since the market had already started to expand significantly during the 1630s, the growing demand for brokers' services a decade later cannot be fully explained by market growth alone. I contend that a structural change in the composition of the trading community, with the appearance of Portuguese Jews as its most conspicuous feature, explains the growing demand for brokerage in the 1640s.

The sources do not allow for a comprehensive social analysis of the trading community in general and, more specifically, an analysis of who traded with whom, for the capital books of the VOC and the records from several judicial institutions give only the names of the traders. And even these names must be treated with caution, because it is always possible that people performed transactions on the accounts of others – the names that turn up in the registers do not have to be the names of the actual parties to a specific transaction. Still, a simple analysis of the trading commu-

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[80] Membership list of the brokers' guild: SAA, Brokers' guild, inv. nrs. 1071, 1115. Inv. nr. 1115 lists the Jewish members. These registers do not specify the goods or services in which a particular broker specialized. I have therefore looked up names of brokers that are mentioned in other sources.
In addition to the official brokers, there were also interlopers – *bijlopers*, persons who performed brokerage activities without being members of the brokers' guild – active on the market. Their names were never mentioned in official documents, since transfers that had been contracted through an interloper were legally void and the traders involved liable to a fine. The files of the arbitration board of the brokers' guild indicate that interlopers' involvement in the share trade was limited: only a very small part of the disputes over interlopers concerned the share trade. Swetschinski, who focused on Jewish interlopers, counted only two cases concerning the trade in VOC shares over the period 1641-82. By way of comparison: in the same period, there were 57 conflicts over interlopers concerning bills of exchange: SAA, Brokers' guild, inv. nr. 1289. Daniel Swetschinski, *Reluctant cosmopolitans: the Portuguese Jews of seventeenth-century Amsterdam* (London 2000) 145.
[81] Noordkerk, *Handvesten* II, 1063. Smith, *Tijd-affaires*, 65.The justification gives the impression that the city authorities reasoned that brokers would still be able to make a living if they only earned *f* 6 per transaction.

nity is possible, using the names of all the people that transferred a share at the East India house in a certain year as a proxy for that year's trading community. In the first decade of the seventeenth century, shares were mostly traded by the wealthiest Amsterdam merchants, many of whom were of South Netherlandish descent and/or member of the board of directors. This changed from the 1630s onwards. From now on, also lesser-known merchants participated in the trade and the market makers such as Christoffel and Jan Raphoen allowed people who were inexperienced with exchange dealings to occasionally trade a share.

The most far-reaching change in composition of the trading community started in the 1640s, however. In that decade, Portuguese Jews began to become involved in the trade in VOC shares and they soon dominated the market. The start of Portuguese Jewish participation in the market coincided with the onset of their great commercial success in Amsterdam. A large number of Portuguese Jewish merchants had been active in commerce in the Dutch Republic during the Twelve Years' Truce (1609-21) in the war between Spain and the Dutch Republic. During the truce, trade restrictions with the Iberian Peninsula were lifted, allowing the Portuguese Jewish merchants to benefit from their strong trading networks in that part of Europe. When the truce came to an end, and trade restrictions were again implemented, a large part of Amsterdam's Jewish population left for Hamburg and later also for Dutch Brazil – the Dutch colony where governor John Maurice of Nassau-Siegen granted a high level of religious freedom to Jews. During the 1640s several circumstances again provided an incentive for Portuguese Jews to settle in Amsterdam. John Maurice was forced to come back to the Netherlands and a little later the Dutch lost control over Dutch Brazil. Moreover, Portugal gained independence from Spain in 1640, which made trade with Portugal from the Dutch Republic possible. Finally, peace with Spain was signed in 1648, after which the Portuguese Jews could again exploit their trading networks on the entire Iberian Peninsula.[82] Their strong participation in commerce is visible in the number of Portuguese Jewish accountholders in the Amsterdam Exchange Bank, which more than doubled during the 1640s.[83]

It did not take long before they invested their newly gained wealth in shares of the VOC and from the 1660s onwards, they dominated the trade. The Portuguese-

[82] Swetschinski, *Reluctant cosmopolitans*, 109-13.
[83] J.G. van Dillen, 'De economische positie en betekenis der Joden in de Republiek en in de Nederlandse koloniale wereld', in: H. Brugmans and A. Frank (eds.), *Geschiedenis der Joden in Nederland* (Amsterdam 1940) 561-616, there 564.

Jewish synagogue responded with amazing speed to these developments: in 1641, it imposed a community *imposta* on the trade in shares and in 1662 the congregation's board of directors decided to halve the tax, because the number of transactions performed by Jews had grown significantly.[84] Portuguese-Jewish share traders often traded within their community. This is not surprising, for the simple fact that there were so many Portuguese-Jewish share traders. Moreover, they met each other regularly: they tended to live in the same neighborhood where they sometimes traded when they encountered each other in the street[85] and sources give evidence that they also traded shares when they attended the weekly service in the synagogue.[86] Finally, the trading clubs (to which I will turn in the next section) were almost fully Jewish.

All this does not mean that transactions between Jewish and Christian share traders never occurred, however. The capital books give proof of frequent share transfers between members of the two religious groups, but to conclude from this that both groups of share traders were fully integrated would stretch the truth. Notarial deeds from 1672 suggest that Jewish and Christian traders preferred to conclude forward transactions, the transactions involving the highest risk, within their own community. Intercommunal transactions occurred more often for less risky deals: repo and spot transactions occurred frequently between the two religious groups.[87]

It is plausible that this diversification of the trading community resulted in an increase in the demand for brokerage services. The traders who dominated the share trade in the earliest decades of the seventeenth century all belonged to the Christian merchant community; they met each other regularly in the Exchange and were often even connected through marriage. The interconnectedness of the traders and the small number of active traders made it easy to get information on possible counterparties for a transaction. Moreover, the traders could easily obtain information about a

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[84] Swetschinski, *Reluctant cosmopolitans*, 145.

[85] Several notarial deeds give evidence that Portuguese-Jewish share traders regularly traded on the streets of the Jewish quarter. An attestation dated 13 September 1688, for example, gives information about a transaction that had been concluded on Jodenbreestraat, in the heart of the Jewish quarter. Four Portuguese Jews (Jacob da Costa Athias, Isaack de Jacob Belmonte, Isaack Gabaij Henriques and Guillelmo Vega) and one Portuguese-Jewish broker (Samuel Perero) were involved in this transaction: SAA, Notaries, inv. nr. 3704, fo. 448.
An anonymous English description of the stock exchange postulates that shares were traded daily 'at eight in the morning in the Jewes-street', but I have no evidence that confirms this. *A Description of Holland, with some necessary directions for such as intend to travel through the Province of Holland* (London 1691) 40. Cited in: Israel, 'The Amsterdam financial crash of 1688', 454.

[86] In 1677, when it had been forbidden for some time already for brokers to talk business before or after prayers in the synagogue, the Mahamad also prohibited shares being traded on the patio of the synagogue or in its immediate vicinity: Swetschinski, *Reluctant cosmopolitans*, 208.

[87] SAA, Notaries, inv. nrs. 2238-40.

possible counterparty's reputation – particularly important for transactions with high counterparty risk such as forward transactions. Moreover, reputation mattered greatly to members of the merchant community, because loss of reputation (e.g. after reneging on a forward) would severely hamper a merchant's career.[88] The entry of new groups of participants on the secondary market for VOC shares made the market more complex and thus significantly raised the cost of information, which created possibilities for brokers to expand their activity on the market: the brokers specialized in gathering information, both about supply and demand of shares on the market, but also about the reputation of traders.[89]

Various sources give evidence that the part played by brokers had become very important by the last quarter of the century. Jeronimus Velters, for example, kept a register of share transactions (December 1691 – August 1692) in which he noted which broker had negotiated the transaction. The word 'sonder', meaning that he had concluded the transaction without intermediation of a broker, appears only very rarely in his register.[90] The brokers' bills in the business papers of Manuel Levy Duarte, dating mainly from the 1680s, show that the same held for the traders who belonged to the Sephardic community.[91] Furthermore, when a conflict arose over a share transfer, plaintiffs almost without exception mentioned the name of the broker who had negotiated the deal. The large number of brokers attesting before a notary in cases relating to the share trade also indicates their important position.[92]

[88] This is based on the concept 'learning'. It has been shown traders could enter into high-risk transactions after successfully completing a number of lower-risk transactions. The trading community 'learned' about a trader's creditworthiness in the course of completing these lower-risk transactions. Conversely, contract non-compliance in a certain transaction would also have influenced a trader's ability to enter into transactions on other markets. Peter Temin, 'Financial intermediation in the early Roman Empire', *The journal of economic history* 64 (2004) 705-733, there 710. Ann M. Carlos, Jennifer Key and Jill L. Dupree, 'Learning and the creation of stock-market institutions: evidence from the Royal African and Hudson's Bay Companies, 1670-1700', *The journal of economic history* 58 (1998) 318-344, passim.

[89] Broker Cornelis de Bruijn, who intermediated in a transaction between Philips de Bacher and Willem Muijlman in September 1644, for example, first approached De Bacher on the Exchange, asking him whether he was interested in buying a *f* 3,000 share. De Bacher answered that his willingness to buy a share depended on the price and the counterparty. De Bruijn then made the first bid and assured De Bacher that his client was 'a very good man': Philips de Bacher *vs.* Willem Muijlman (1650), NA, Case files, IIB274.

[90] These registers can be found in Velters' letter book: SAA, Velters, inv. nr. 4.

[91] The bills are scattered throughout his papers. Most of them can be found in: SAA, PIG, inv. nr. 685a-b.

[92] Attestations were often registered before a public notary in preparation of a civil lawsuit: Aries van Meeteren, *Op hoop van akkoord: instrumenteel forumgebruik bij geschilbeslechting in Leiden in de zeventiende eeuw* (Hilversum 2006) 172.

The intermediation by brokers in the late seventeenth century went beyond simply bringing together a trader willing to buy a share and a trader willing to sell one. Traders often only learnt who their counterparty was after the deal was made.[93] Put another way, brokers took care of the entire negotiations and the traders themselves only needed to sign the contract.[94] Brokers thus evolved from intermediaries into business partners. The 1672 notarial data indicate that traders fully trusted the information provided by brokers as long as the risk involved in the transaction was not too high. In the case of forward contracts, where the incentive to renege was considerably higher, they wanted to know their counterparty personally and therefore relied more strongly on community ties.

1660s – Trading clubs and rescontre

The emergence of trading clubs in the second half of the seventeenth century created sub-markets with very strong internal ties. The basics of these clubs can be explained in a single sentence: a delimited group of traders met on fixed dates in an inn or coffeehouse to trade shares. The importance of the clubs, however, was far-reaching and needs further elaboration. There were several closely connected advantages of trading on one of the sub-markets. Firstly, all members traded frequently. Hence they formed a community of active traders, who were all very experienced with the rules and customs of the share trade. Secondly, because they traded frequently, their reputation mattered greatly to them. It is easy to see why: for traders who only traded once, it did not matter if they got a bad name, because they never intended to return to the market in the first place. Frequent traders, on the contrary, were dependent on their good reputation to be able to keep participating in the trade. As a result, in a community that consisted solely of frequent traders, the chances that a trader would renege were smaller than on the market as a whole. Moreover, the confined community size enabled its members to monitor each other; peer pressure made sure that everybody obeyed the rules. This was very different from the secondary market for VOC shares as a whole: contrary to today's stock markets, there were no membership requirements

[93] E.g. attestation 29 December 1672, SAA, Notaries, inv. nr. 2240, fo. 892. *Insinuatie* 15 June 1688, SAA, Notaries, inv. nr. 4133.

[94] The brokers' ordinance of 1693 indicates that by that time it had become customary for brokers to conclude a deal and only then hand it over to their clients. The ordinance decreed that brokers should always report to their clients within 24 hours' time and that they were not allowed to sign in the name of their clients: Smith, *Tijd-affaires*, 83.

for entering the Exchange building, let alone formal requirements to participate in the market on the streets.[95]

The literature suggests that there existed separate Jewish trading clubs. The sharp price fall of August 1688, for example, would have been initiated in Jewish clubs.[96] However, I have not found any evidence in the sources of exclusively Jewish trading clubs. The documents of the Portuguese-Jewish share traders Jacob Athias and Manuel Levy Duarte show that they frequented trading clubs, but these clubs were not attended solely by members of the Jewish community. True, however, most participants of these particular meetings were Portuguese Jews.[97]

I have found direct evidence of one trading club: the *Collegie vande Actionisten*, which existed from at least 1672 until 1678. The club's name – meaning corporation of share traders (*actionist* is derived from *actie*, the seventeenth-century Dutch word for share) – was official, for traders mentioned it in a court case.[98] The traders gathered in the inn De Plaetse Royael on Kalverstraat in the evening. The inn stood at the corner of Kalverstraat and Papenbroekssteeg (nr. 5 on Map 1.2), the latter named after the family who owned the inn in the seventeenth century. The inn had the perfect location to attract the stock exchange crowd: it stood exactly halfway between the Exchange and Dam Square. In 1747, the owner of De Plaetse Royael expanded the inn (which had been transformed into a coffeehouse) and customers could now also enter via Beurssteeg, the bent street that directly connected the Exchange to Dam Square – the favorite location of several notaries who specialized in trade-related deeds. The inn was thus located at the very heart of Amsterdam's financial district.[99]

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[95] The Paris Bourse was the first to impose a type of access restrictions. From the 1720s onwards, the Paris Bourse was publicly accessible (albeit for men only), but only the official *agents de change* were allowed to perform transactions: Eugene N. White, 'The Paris Bourse, 1724-1814: Experiments in microstructure', in: Stanley L. Engerman et al. (eds.), *Finance, intermediaries, and economic development* (Cambridge 2003) 34-74, there 42. The London Stock Exchange set up membership requirements on its foundation in 1801. In the preceding years, people already had to pay a fee to enter the exchange building: Ranald C. Michie, *The London stock exchange. A history* (Oxford 1999) 35.

[96] Israel, 'The Amsterdam financial crash of 1688', 472-4. Israel bases his argument on De la Vega's *Confusión de confusiones*.

[97] Jacob Athias and Manuel Levy Duarte kept ledgers of their dealings in trading clubs: SAA, PIG, inv. nrs. 687-8.

[98] Cf. footnote 101.

[99] Jaap Verseput at the Amsterdam City Archives helped me find the exact location of De Plaetse Royael. Information on the expansion of the inn and its proprietors: transcript of a deed in the register of discharges (27 January 1747), SAA, Registers of discharges, book 121, fo. 196v-7v.

There are few direct references to these trading sessions in the sources.[100] Anthony Alvares Machado and Hubertus Pollius made a deal there on a Monday night in early August 1678. They described the inn, in a court case that arose from a conflict over the contingency claim in their contract, as a place where a lot of trading in VOC shares took place.[101] Jeronimus Velters wrote to one of his correspondents that he had visited De Plaetse Royael on 26 February 1672 to trade shares. Interestingly, he had also been in the Exchange and on Dam Square to trade shares that very same day.[102] It could well be that this was the same trading club where Athias and Levy Duarte regularly traded shares; the names of Velters and Machado also turn up in the ledger they kept of the trading sessions. If this is true, then the *Collegie* was a predominantly Jewish affair; the names in the ledger are largely of Sephardic origin. The fact that Velters went to De Plaetse Royael on a Friday night is inconsistent with this line of reasoning, however. The Jewish Sabbath starts from sundown on Friday night, which must have happened too early in February for the Jews to attend the trading session. It is also possible that the trading sessions took place every night; I have not been able to discern a pattern in the dates of the sessions that would contradict this. The Friday night sessions would then have differed from the sessions on other nights by there being no Jews present.

The scarcity of references to the nightly trading sessions might indicate that there was some kind of private regulatory mechanism in place. The word *collegie* implies that the meetings had an official character, with some kind of committee that organized and chaired the meetings. It could well be that this committee also adjudicated conflicts. This point takes up a large part of chapter 3, but it is important to stress at this point that peer pressure and easy monitoring reduced the chances of reneging and hence of costly litigation. If peer pressure alone could not prevent a conflict from arising, the presence of the board could prevent the necessity of filing an official lawsuit. Moreover, the high concentration of information in the *collegie* –

[100] Apart from the two examples in the text, I have found only an attestation before a notary public that mentioned De Plaetse Royael as the place where two traders had met: attestation Samuel Pereira (25 October 1672), SAA, Notaries, inv. nr. 2240, p. 400.

[101] Anthony Alvares Machado and Hubertus Pollius had agreed in the *collegie* on a forward deal that led to a conflict. This deal was contingent on a possible peace treaty between the Dutch Republic and France (and its allies) in the Franco-Dutch War (1672-8), but dissension arose between them over the definition of peace: Anthony Alvares Machado *vs.* Engelbert de Geyselaar (guardian of Pollius' heirs), NA, Court of Holland, inv. nr. 816, nr. 1681-55.

[102] Velters to Buijsero, 26 February 1672, SAA, Velters, inv. nr. 1, fo. 252. Velters also regularly went to Dam Square in the evenings, which suggests that there must have been parallel evening trading sessions.

brought together by all its members – reduced the traders' search costs. There was less need for individual traders to gather as much information as possible, for the transactions during the trading sessions would disclose the available information. Lastly, the concentration of traders made it easier to find a counterparty willing to trade. Brokerage services were simply redundant within the *collegie*. The advantages of trading clubs such as the *collegie* can thus all be translated into transaction-cost benefits: information costs were lower and chance that enforcement of a deal would require costly litigation was smaller within the trading club.

Besides the *collegie*, and possibly similar trading clubs, there existed another gathering of share traders: the monthly *rescontre**. Every holder of a forward contract that was due on the first day of the next month could participate in the *rescontre*; traders came together in the *rescontre* to mutually settle their forward contracts. It was of course also possible to negotiate a rollover for a forward during the meetings and, since there were many traders present, it is also likely that traders made all kinds of other deals. Still, however, the *rescontre* was principally a meeting for settling contracts, rather than a sub-market in its own right, such as the trading clubs.

To understand the *rescontre*, it is important to trace the evolution of the use of the word throughout the seventeenth century. The general meaning of *rescontre* is 'meeting'.[103] Merchants gave the word a more specific meaning, using it mainly to describe the meeting of two traders on the expiration date of a contract to settle the contract or even more specifically to cancel out a transaction with another transaction. The earliest mention of the word *rescontre* in connection with the share trade, dating from 1610, had the latter meaning: Franchoijs Alewijnsen informed his counterparty that he wanted to settle their contract; if they would not come to an agreement, he would try to resell his contract or cancel it out by making an opposite transaction, which he called *rescontreren*.[104] From around the 1660s onwards, *rescontre* gained yet a different meaning. It was now also used metonymically to refer to the meeting where share traders gathered to settle their contracts. So it was no longer a meeting between

[103] In seventeenth-century Dutch, the word *rescontre* (*riscontro* in Italian; *rescontre* seems to be a gallicized loan word) was often used in the description of battles – the place where two armies meet.
[104] Alewijnsen had bought a forward. He could cancel it out by selling a similar forward to a third party. *Insinuatie* Franchois Alewijnsen (28 April 1610): SAA, Notaries, inv. nr. 120, fo. 9v. See also Van Dillen, 'Isaac le Maire', 87 (doc. nr. 29).

two traders who had a contract between them; sources now refer to *the rescontre* – monthly meetings that took place on the last Thursday of each month.[105]

The settlement procedure of the *rescontre* had its roots in late medieval trading: there were settlement meetings for merchants with bills of exchange during the Champagne fairs. At that time, however, the *rescontre* was a quarterly event. The merchants met in February, May, August and November; unsurprisingly, these were the exact same months in which the *rescontre* of the Amsterdam share trade took place in the eighteenth century when the frequency had been decreased to quarterly *rescontre* days.[106] The system of fixed settlement dates had been very advantageous to late medieval trading: it simplified international payments because a large number of merchants from all parts of Europe came together at the same location, all holding payment orders that were due in the same month. Continuous trading, which first appeared in sixteenth-century Antwerp, technically rendered the settlement dates superfluous. Nevertheless, they stayed in existence, mainly because the concentration of trade provided advantages.[107]

This was also true for the share trade. It was advantageous to have many contracts that were due on the same day, because this made it easier to settle them by cancelling out two contracts, which only required a relatively small money payment. But to get a high number of contracts that were due on the same date, the forward trade first needed to become standardized. Signs of a process of standardization are visible in the printed contracts used in the trade. On the earliest printed forward contract that has survived until today, dating from 1629, only the standard forward transaction clauses appear pre-printed, stipulating for example that the seller could deduct any interim dividend from the forward price. There were open spaces for the contractors to enter their names, the forward price, the interest rate on the possible dividend deduction and the term of the contract. The settlement date was thus calculated as the contract date plus a certain term.[108] A printed forward contract from 1644 shows that traders could now choose to specify the contract's term or its exact settlement date (see

[105] E.g. 28 October and 30 December 1683: SAA, PIG, inv. nr. 688, fo. 7, 15. 21 August 1687: SAA, Velters, inv. nr. 4, fo. 62. 26 August 1688: SAA, Notaries, inv. nr. 3704, fo. 448. 27 January 1698: Dias Henriques to Levy Duarte, 27 January 1698, SAA, PIG, inv. nr. 681b, pp. 162-3. It is unknown where the *rescontre* meetings took place. It is possible that the *rescontre* traders met in the Exchange, but since this was a very crowded place, it is more plausible that they met in a separate room of an inn.
[106] Smith, *Tijd-affaires*, 130.
[107] Interestingly, in a sense, the *rescontre* days have survived until today; around the world, option contracts expire on the third Friday of the month.
[108] A picture of this contract can be found in: Gelderblom and Jonker, 'Amsterdam as the cradle', 199.

Figure 1.1).[109] From at least 1683 onwards, however, the settlement date was always the first day of the month: *primo* was pre-printed, followed by an empty space where the contractors could write down the month.[110] Between 1683 and 1688, a clause was added to the bottom of the printed forward contracts in order to make sure that the *rescontre* proceeded smoothly. It specified the terms of delivery and payment of a share. A transaction should always be completed (i.e. transferred, rolled over*, cancelled out or paid for the price difference) 20 days after the original expiration date. This enabled the traders to submit the share or the rollover* to the next *rescontre* meeting.[111]

The printed contracts are a usable indication for the changing customs on the forward market, but it was of course not the book printer responsible for printing and selling these contracts, Aart Dirksz. Oossaan (whose shop was located right by the Exchange building on the corner of Dam Square and Beurssteeg) or the city authorities that initiated these changes. On the contrary, the developments in printed contracts followed on developments in trading customs. Notarial deeds show that the forward trade became standardized from the 1660s onwards, when forward trades had almost without exception the first day of a month as settlement date.[112] The standardization of the 1660s paved the way for *rescontre* meetings.

Data from the transfer registers from the Amsterdam chamber of the VOC corroborate this dating. I will elaborate further on this in chapter 2, but a quick glance at Figure 2.3 (page 78) reveals my point: the first days of March, May, September and November of 1667 witnessed a higher than average number of share transfers. The November peak is particularly interesting: the return fleet had arrived in the previous month, generating a lot of information relevant to the share trade.[113] However, share

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109 Contract between Willem Muijlman and Philips de Bacher (2 September 1644), NA, Case files, inv. nr. IIB274.

110 Contract between Vincent van Bronckhorst and Sebastiaen Cotinho (25 June 1683), NA, Case files, inv. nr. IIK98. Please note that the dates mentioned are not (necessarily) the dates when the new forms started to appear. Since very few forward contracts have survived, I am not able to date these events more precisely.
As a result of two bye-laws of 1689, the local courts of Amsterdam refused to judge in conflicts where no official printed contracts existed. The city authorities wanted to oblige the traders to use the official contracts, for they had just imposed a tax on share transactions and the most workable way to collect this tax was to put a levy on the contracts. Consequently, this forced the traders to pick the first day of the month as settlement date for their transactions. Noordkerk, *Handvesten* II, 1071.

111 Contract between David Abraham Cardoso and Jan Schott (14 June 1688), SAA, PIG, inv. nr. 654.

112 SAA, Notaries, Card index. Please note that the original contracts were not registered with a notary. These data stem from so-called *insinuaties*, where one of the contracting parties summons the other party to perform a certain action.

113 Exact arrival dates: October 9th (3), 10th (1), 21 (1), 22 (1), 25 (4): Data about all VOC voyages can be found in: J.R. Bruijn, F.S. Gaastra and I. Schöffer, *Dutch-Asiatic shipping in the 17th and 18th centuries* (3

traders did not react to the new information in the spot market; they bought forwards that were due on November 1. This enabled them to trade on the information with low transaction costs: chances were high that they would find somebody in the *rescontre* to settle their contract with. However, it could occur that transactions could not be cleared or that traders could not find a counterparty to roll over their contracts. Consequently, the impact of the *rescontre* on the number of share transfers is visible in the number of share transfers around the first days of the month. A similar pattern of transfer peaks during the first days of a month is not visible in, for example, the graph of 1639 (Figure 2.2, page 77), which gives evidence for my argument that the *rescontre* did not exist yet in that year.

The concentration of traders in the *rescontre* provided liquidity to the forward market. Forward price data show that share traders recognized this advantage and they were willing to pay a liquidity premium for participating in the forward market. Over the period 1675-94, the premium on forwards that were due in one or two months' time, converted into a yearly rate, ranged from 3 to 8 percent, whereas forwards due within two weeks' time had premiums of between 15 and 20 percent.[114] This difference can have been caused only by a liquidity premium. The liquidity premium was similar for short- and longer-term contracts, but it had a relatively larger weight in the short-term contracts.[115]

The *rescontre* thus yielded much the same advantages as the *collegie*. It provided liquidity and the deals that were made during the meetings revealed information to other participants. The *rescontre* meetings thus reduced transaction costs. However, because the *rescontre* was not a sub-market, brokers' services were still needed for the forward deals that were concluded outside the meeting. In the case of the *collegie*, on the other hand, brokers' services were redundant; there was no need for intermediaries to bring parties together nor was it necessary to buy information about a possible counterparty's creditworthiness – the structure of the trading club made sure that

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vols., The Hague 1979-87). I will hereafter refer to this source as 'DAS'. The data can also be accessed online: http://www.inghist.nl/Onderzoek/Projecten/DAS

[114] On 25 July 1687, for example, the spot price was 485.5 and the price for a forward due on August 1st, 6 days later, 487. The forward premium, converted into a yearly rate, is 18.8 percent. The data can be found in Velters' letter books: SAA, Velters archive (2), inv. nos. 1-4.

[115] This becomes clear by writing the price of a forward contract in an equation. The price of a forward that is due at a future time *T* can be written as follows: $F_{t,T} = S_t e^{r(T-t)}$, where S_t is the spot price of the share at time *t* and *r* is the interest rate. If a liquidity premium *l* is added, the pricing equation becomes: $F_{t,T}{}^* = S_t(1 + e^{r(T-t)})$. This equation clearly shows that the liquidity premium *l* has a relatively larger weight in short term contracts, where *(T-t)* is small. (I owe this point to Peter Koudijs.)

traders would live up to their agreements. I have not found indications of access restrictions – other than holding one or several forward contracts – to the *rescontre* meetings. There is evidence, however, that in the eighteenth century a distinction was made between 'qualified' and 'non-qualified' *rescontre* participants[116], which suggests that the *rescontre* traders also recognized the advantages of an admission policy that created better monitoring possibilities. Interestingly, the developments of both the *Collegie vande Actionisten* and the monthly *rescontre* meetings therefore trace the origins of modern stock exchanges where entrance is restricted to professional traders who are affiliated to financial institutions that pay fees to be allowed to trade on the exchange.[117]

Conclusions

This chapter has discussed the main developments that shaped the market in the seventeenth century. After a first formative stage in the first decades of the seventeenth century, the market entered into a second stage of development in the period 1630-50. New participants entered the market, where brokers and market makers stood ready to assist them in contracting a deal. In the years thereafter, the trading clubs enabled the market to process the increasingly complex nature of the trade.

It is interesting to remark that the share traders themselves initiated all developments that took shape after 1610. The corporate governance debate of the 1620s could have resulted in greater involvement in the share market on the part of the company, but it seems as if the outcome of the debate was rather a state of mutual disregard. The shareholders, for their part, were highly interested in the company's dividend distributions, but it hardly mattered to them that they did not have a say in the company management, nor that they only received scattered bits of information about the financial state of the company. After the period 1630-50, investors were

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[116] Smith, *Tijd-affaires*, 135-8.

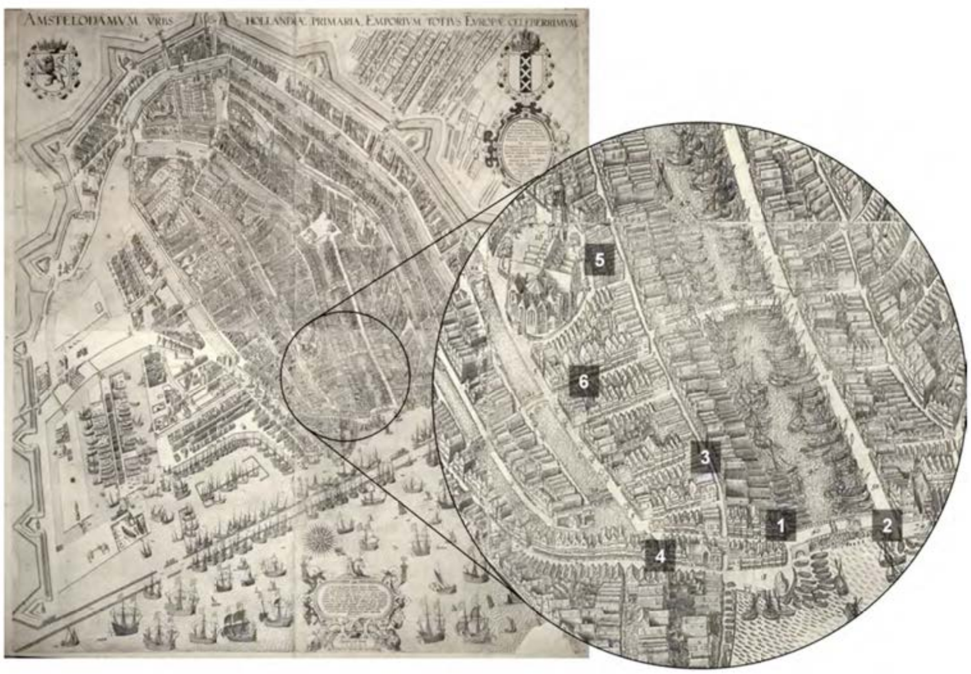
[117] Several authors have stressed the importance of the emergence, in 1683, of trade in *ducaton* VOC shares – shares with a nominal value of *f* 300 instead of *f* 3,000 – that was also organized in a club-like environment. This development would have attracted new participants to the market: Israel, 'The financial crash', 464. Swetschinski, *Reluctant cosmopolitans*, 145-6. Van Dillen, 'Termijnhandel', 520. Their information is based on De la Vega, *Confusión de confusiones*, 203. See also: Smith, *Tijd-affaires*, 94. The trade in *ducaton* shares did not differ substantially from the trade in trading clubs. It was not a structural development, but merely a convention to trade smaller shares, which might incidentally have lowered barriers to entry in the market: Gelderblom and Jonker, 'Amsterdam as the cradle', 199. Moreover, the *ducaton* trade vanished as a result of the 1688 price crash (De la Vega, *Confusión de confusiones*, 288) and seems to have hardly impacted the trade in the years before – I have found only one reference to *ducaton* trade in the sources: attestation (23 March 1688), SAA, Notaries, inv. nr. 4132.

primarily interested in the financial services the secondary market provided, rather than in the East India trade itself.

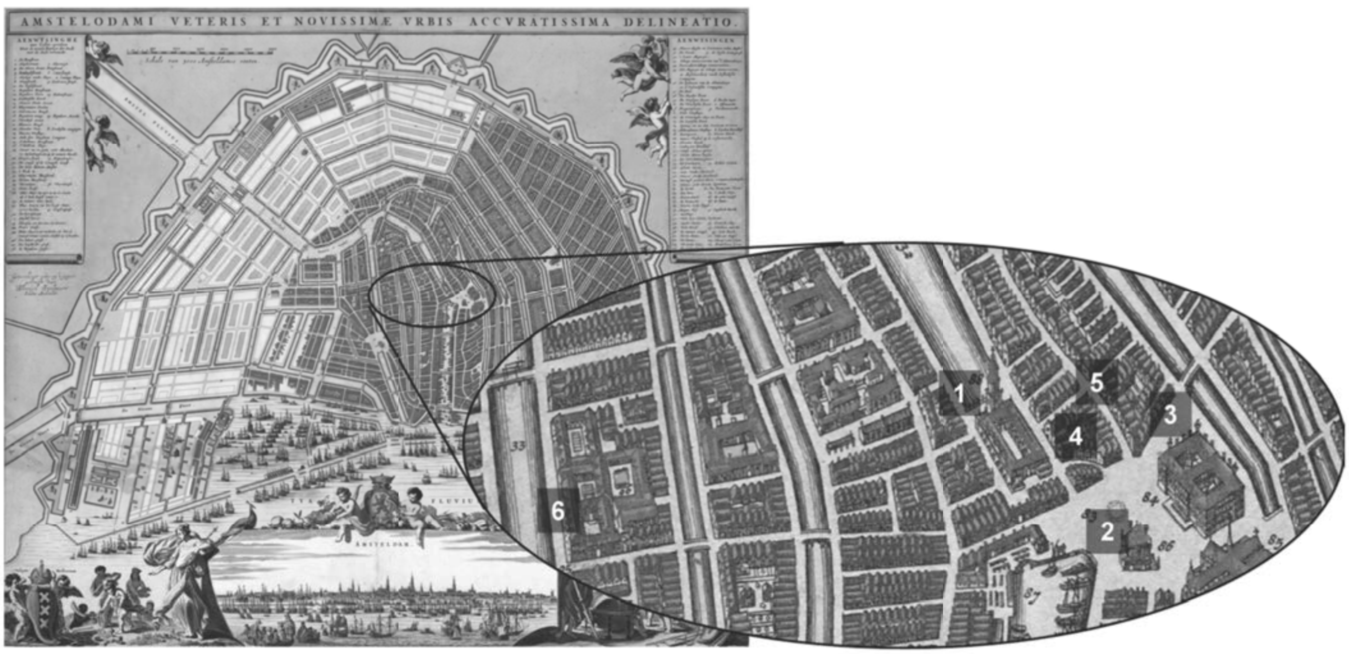
Figure 1.1 Forward contract used in a transaction between Willem Muijlman and Philips de Bacher, 2 September 1644
Nationaal Archief, The Hague, Case files, IIB274

Figure 1.2 Amsterdam Exchange of Hendrick de Keyser, etching by C.J. Visscher (1612) Stadsarchief Amsterdam, Drawings and etchings collection

Figure 1.3 Amsterdam Exchange of Hendrick de Keyser, interior, painting by Job Adriaensz. Berckheyde (between 1670 and 1690)
Amsterdams Historisch Museum, Amsterdam



Map 1.1 Main share trade locations in the first decade of the seventeenth century
1) exchange dealings on Nieuwe Brug (east side); 2) Paelhuysgen – international postal services; 3) exchange dealings in Warmoesstraat; 4) St. Olofs-chapel; 5) Old Church; 6) notary Jan Fransz. Bruyning's office. Map used: Pieter Bast, Map of Amsterdam (2nd ed. 1599), Kunstsammlungen der Veste Coburg, Coburg, inv. nr. VIII, 512, 1



Map 1.2 Main share trade locations after the opening of the Exchange (1611)
1) Exchange; 2) Dam Square; 3) Exchange Bank; 4) principal notaries' offices; 5) Kalverstraat inns; 6) East India house. Map used: Daniel Stalpaert, Amstelodami veteris et novissimae urbis accuratissima delineatio (1662), Cartographic collection, University Library, University of Amsterdam

2 LONG-TERM DEVELOPMENTS

Introduction

The discussion of the development of the market of the previous chapter will be complemented in this chapter using long-term data. Using transfer, price and dividend data, I will show that the Amsterdam market entered a second stage of development in the 1630s and 1640s. The data suggest that during these decades the market transformed from a place where traders occasionally transferred a share, into a full-fledged financial market, characterized by a high level of market activity and a growing share of speculative transactions with short-term investment horizons. The last section of this chapter will use price data from the shares in the smaller chambers of the VOC to show that by 1650, the transformation of the Amsterdam market had become indisputable.

Market activity

For a large part of the seventeenth century, the capital books of the Amsterdam chamber of the VOC have survived.[1] Despite their shortcomings, which I have discussed in the Introduction (see section Sources on page 9 ff.), this source can still be used for two purposes. Firstly, the data from the capital books allow for a – albeit incomplete – comparison of market activity in several years during the seventeenth century. If more shares were transferred in, say, 1667 than in 1639, this indicates that market activity had increased. The absolute growth cannot be determined, and the higher number of transfers could merely be a sign that share traders had shifted from spots to repos, leading to a higher number of share transfers – a single repo transaction required at least two transfers. Secondly, and more accurately, the capital books yield data on the dates when transfers were registered in the East India house. Peaks in the share transfer register are an important indication of the character of the share trade, because the primary motivations for transactions can be deduced from them. Several checks throughout the seventeenth century have shown that the entry dates in the company records never differed by more than three days from the dates in shareholders' private records. And if the dates differed, the VOC register generally predated

[1] For the period 1602-12, only the transaction ledger has survived, listing all share transfers chronologically. From 1628 onwards, only capital books, containing the accounts of all shareholders, are available: NA, VOC, inv. nrs. 7066-72. The shareholder records of the years 1613-28 have not survived.

the merchants' own accounts, suggesting that the company bookkeeper registered the correct date, whereas shareholders procrastinated over updating their records.[2]

Figures 2.1-5 depict the share transfer patterns for 1609, 1639, 1667, 1672 and 1688, respectively.[3] The columns (left-hand scale) show the number of transfers and the line (right-hand scale) the nominal value of these transfers. I have split up the years in five-day periods, because one of the purposes of these graphs was to trace when the *rescontre* meetings started to convene and what their impact on the share market was. For that reason, it is necessary to always discern the last and first days of a month in a separate column: all contracts entered into the *rescontre* were due on the first day of the next month, so it is to be expected that the effects of the *rescontre* are visible in the first few days of the month, but not necessarily on the first day. The disadvantage of five-day periods, on the other hand, is that some include a Sunday, when the East India house was closed, while others do not. This does not render the data useless, however, because the trade nevertheless continued on Sundays. The Sunday trades were probably entered into the capital ledger on the following Monday. So, only for the five-day periods including a Sunday, that did not also include a Monday (one out of five of the five-day periods), the number of transactions is probably too low. This issue notwithstanding, five-day periods are still preferable over seven-day ones, because they are more suitable to capture the first days of a month in a separate period. Choosing seven-day periods would imply a monthly residual category of either three or four days – except for February. I have therefore decided to split up the months in six five-day periods, or five five-day and one six-day, or, in the case of February, five five-day and one three- or four-day period.

Comparing Figures 2.1-5 yields a number of results. First of all, market activity increased considerably over the seventeenth century. More specifically, the number of share transfers doubled between 1609 and 1639 and again doubled between 1667 and 1672. In 1609, the bookkeeper registered on average five share transfers per five-day

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[2] E.g. the share purchase by Jacques de Velaer, mentioned in a letter to his uncle on 13 January 1609, was registered in the VOC books on 12 January: BT, 215, A2/9 and NA, VOC, inv. nr. 7066, fo. 148. Louis Trip's journal entry of 5 March 1664 lists a number of share transactions of the previous months. Trip registered his purchase of a *f* 3,000 share from Arnout de Raet on 3 March, whereas it appears in the capital book on 29 February: SAA, Merchants' accounts, inv. nr. 50, 5 March 1664 and NA, VOC, inv. nr. 7070. The dates of the share transactions of Joseph Deutz, finally, never differ by more than one day. His sale to Guilliam de Vicq and purchase from Jan Looten are listed on 12 February 1672 in the company register and on 13 February in his private records. On 16 February, he bought a share from Gerrit Bode and sold one to Balthasar da Cunha. Both are registered on the same date in both the company books and his ledger: SAA, Deutz, 293, fo. 31 and NA, VOC, inv. nr. 7070.

[3] See the Introduction for a discussion on the choice of these sample years.

period. By 1639, this number had increased to almost ten per five-day period, while in the next thirty years, the average number of share transfers per five-day period saw only a small increase, to almost 13 in 1667. Only five years later, in 1672, this number had almost doubled to more than 22.25 transfers per five-day period. In 1688, on average 18.75 share transfers were registered per five-day period. Secondly, the pattern of share transfers over the year changed. This is related to the growing importance of the forward market and the monthly *rescontre*. Finally, with the exception of 1672, in all these sample years the summer months saw less activity in the transfer registers. This is remarkable, as the VOC return fleets generally arrived in the Dutch Republic during the summer months.[4] Possible explanations could be that commodity trade demanded more efforts from the merchants during these months, or that the wealthiest share traders spent the summer outside Amsterdam. War and political unrest in 1672 explain the remarkably high number of transfers in that year's summer.

The increase in number of share transfers in the periods 1609-39 and 1667-72 needs to be explained. Clearly, the 1609-39 increase is less sensational than the 1667-72 one: the period during which the number of share transfers doubled was six times longer. The 1609-39 increase followed from the regular dividend distributions that started in the 1620s. Around 1630, moreover, a clear legal framework took away any legal doubts that traders could have about the share trade, which encouraged new participants to enter the market.[5] The 1667-72 increase, on the other hand, partly reflects the stock market boom of 1671 (the share price reached its highest point during the seventeenth century in early July 1671: 566%[6]) and the subsequent shock that the year 1672 brought about. The wars and political unrest of 1672 influenced investors' expectations regarding the price of VOC shares, which led to increased trading activity since not all investors interpreted the news in the same way.

However, there was yet another reason, directly linked to that year's large price movement, why the number of share transfers increased so much in 1672. The high price volatility made forward traders aware of the counterparty risk of their transactions. They therefore shifted part of their activity to the repo trade.[7] Each repo required two share transfers and hence the price fluctuations of 1672 led to a marked

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[4] Gaastra, *De geschiedenis van de VOC*, 101.
[5] See, for the legal framework, chapter 3, section The legal framework on page 97 ff.
[6] SAA, Velters, inv. nr. 1, fo. 212. The share price reached this peak once more on 13 March 1688: SAA, Velters, inv. nr. 4, fo. 78.
[7] See chapter 4, section Counterparty risk on page 120 ff.

increase in share transfers. In 1688, the share price made sharp movements only from late August until the end of October, which explains the slightly lower number of transfers in that year.

Focusing on the peaks in these graphs, it is clear that two five-day periods in 1609 (July 1–5 and August 11–15) were characterized by higher than average trade. These peaks were caused by the first news about the return fleet and its subsequent safe arrival in the Netherlands, respectively.[8] Apparently, news about return fleets, the main indication of the company's well-being, heavily influenced investment decisions. This indicates that the traders used the secondary market for long-term investments. 1639 saw increased activity in the transfer registers from January 21–25 and June 21–25. The high number of trades in January was probably due to the departure of ten ships destined for the East Indies a week earlier. The June peak may reflect the arrival of the first pieces of information about the return fleet that was expected to return to the Dutch Republic a month later.[9] To be sure, I do not argue that information influencing the long-term outlook of the company was the only driving force behind transactions in VOC shares, but Figure 2.1 and Figure 2.2 clearly show that the arrival of news about the return fleet induced investors to trade more frequently than in other periods.

By 1667, however, this situation had changed, as can be seen from the rather different transfer pattern in Figure 2.3. This graph clearly shows that more shares than average were transferred in the first five-day period of each month. Especially the first days of March, May, September and November of this year witnessed a high number of share transfers. The peak in the number of share transfers in the first five days of November is particularly interesting. In the preceding month, ten ships from the East Indies had arrived safely in the Dutch Republic.[10] However, the reaction of the share traders on the arrival of the return fleet is visible only in the first days of November. This means that the traders traded on the new information in the forward market. It also indicates that the *rescontre*, where transactions that were due on the first day of the next month were settled, was in full force by 1667 and that it had a considerable impact on the number of share transfers – even though the lion's share of the deals the

[8] Letters De Velaer to l'Empereur, 23 July 1609, BT, inv. nr. 215, nr. A4/1; 1 August 1609, BT, inv. nr. 215, nr. A4/2; 6 August 1609, BT, inv. nr. 215, nr. A4/4; 15 August 1609, BT, inv. nr. 215, nr. A4/5. Four ships arrived on 7 and 9 August 1609: DAS.

[9] DAS.

[10] Exact arrival dates: October 9th (3), 10th (1), 21 (1), 22 (1), 25 (4): DAS.

rescontre traders made never ended up in the transfer registers. Put another way, the forward market had surpassed the spot market in importance.

The graphs depicting the share transfers in 1672 and 1688 (Figure 2.4 and Figure 2.5) must be interpreted differently. Both years witnessed major price falls, caused by war (in 1672) and rumors about an imminent invasion of England (in 1688).[11] In these years, the peaks in the number of share transfers can be linked to political and military events. The peak in March was a reaction to the start of the war with England; in early April, France declared war on the Netherlands; on June 12, foreign armies entered the Dutch Republic near the village of Lobith; and finally, the peak that occurred in the five-day period of 16-20 August 1672 (49 share transfers) coincided with the murder of Johan and Cornelis de Witt.[12] The share traders were fully focused on political events; the arrival of the return fleet on 3 August is not visible in the transfer data, even though this must have been a relief to everyone with an interest in the East India trade, for England had of course intended to attack the VOC return fleet.[13]

The high number of share transfers between the end of August and mid-October 1688 reflects the turmoil on the secondary market for VOC shares caused by rumors about Stadholder William III's plans to invade England. These were only rumors; the preparations for the invasion had started as a private undertaking of William; only a few insiders knew about it. Interestingly, the transfer register data also clearly show that the rumors became confirmed information directly after William had presented his plans to several political bodies for support. The States of Holland approved the recruitment of foreign troops on 22 September and the Amsterdam city magistrate gave its assent to William's plans on the 26th.[14] This immediately led to increased trading activity.

The analysis of the capital ledgers of the Amsterdam chamber of the VOC has thus yielded two results. Firstly, market activity increased markedly between 1610 and 1640, caused by regular dividend distributions and legal certainty, and again between 1667 and 1672, caused by a speculative boom and a growing preference for repo transactions. Secondly, the transfer data indicate that trading activity during *rescontre*

[11] See chapter 5, section Market reactions to information on page 156 ff.
[12] Jonathan I. Israel, *The Dutch republic: its rise, greatness, and fall 1477-1806* (Oxford 1995) chapter 31.
[13] 14 ships arrived safely in Eems: DAS.
[14] Petra Dreiskämper, *Aan de vooravond van de overtocht naar Engeland: een onderzoek naar de verhouding tussen Willem III en Amsterdam in de Staten van Holland, 1685-1688*, Utrechtse historische cahiers 17, nr. 4 (1996) 66-7.

meetings had become very high by 1667. Clearly, the bulk of the share trade now took place on the more speculative and short-term horizon forward market. Investors no longer bought a share to hold on to it for a prolonged period of time, but actively traded short-term transactions on the financial market.

Number of traders

The capital books can also be used to estimate the number of active traders in a certain year. Again, the actual number of traders who participated in the secondary market for VOC shares was probably much higher than the number of traders who were involved in one or several share transfers – traders who managed to settle all their derivatives contracts through money settlement do not appear in the transfer registers – but the transfer data allow for the best possible estimation.

Year	*Number of accounts*	*Number of active accounts*	*Number of share transfers*
1602	1143		
1609		276	368
1639		264	713
1667		347	934
1672		521	1604
1688		436	1350
1679 -1695	1770		

Table 2.1 Total number of shareholders' accounts, Amsterdam chamber VOC, 1602 and 1679-1695; number of active accounts and share transfers, 1609, 1639, 1667, 1672 and 1688
Sources: Van Dillen, *Aandeelhoudersregister*. NA, VOC, inv. nrs. 7066, 7068, 7070-2.

Table 2.1 lists the data I have collected about the total number of shareholders' accounts and the number of active accounts for several years throughout the seventeenth century. In 1602, 1143 investors subscribed to the capital stock of the Amsterdam chamber. The number of shareholders increased over the seventeenth century to 1770 in the period 1679-95. Each year, only part of the shareholders transferred a share in the capital books. In 1609, 276 shareholders transferred at least one share. This number decreased to 264 in 1639, went up to 347 and 521 in 1667 and 1672, respectively, and fell back to 436 in 1688.

The increase between 1639 and 1667 equals the increase in the number of share transfers. The increase in the number of active accounts between 1667 and 1672 was relatively smaller than the growth in the number of share transfers, which can be explained by the fact that traders shifted to repo transactions, requiring relatively more share transfers. The difference between 1672 and 1688 can again be explained by a decreasing number of share transfers. The number of transfers per shareholder thus stayed more or less the same over this period.

So, what really needs to be explained is the difference between 1609 and 1639. In 1609, 276 shareholders transferred 368 shares, whereas 264 shareholders transferred 713 shares in 1639; fewer shareholders transferred almost twice as many shares. From the 1630s onwards, a small number of shareholders accounted for a large proportion of the total number of share transfers. In 1641, for example, the thirteen most active shareholders (with at least ten sales and ten purchases registered on their accounts) were involved in almost a third of all share transfers. In 1664, the fourteen most active shareholders (with at least fifteen sales and fifteen purchases) were involved in almost 40% of all share transfers.[15] In 1609, however, the distinction between active shareholders and less active shareholders was almost non-existent; there are a few accounts with frequent purchases and others listing frequent sales, but nobody both purchased and sold more than five shares.

These findings corroborate my view on the changing character of the share trade starting around 1630. In the earliest years of the secondary market for VOC shares, shareholders occasionally transferred their shares. Some shareholders either purchased or sold a higher number of shares, indicating that they expected the share price to rise in the future or that liquidity constraints or negative trading sentiment prompted them to liquidate large part of their share capital. From the 1630s onwards, however, certain shareholders started to both buy and sell large amounts of shares in the same year. Investors with short-term investment horizons had begun to dominate the market.

Share price and dividends

Figure 2.6 and Figure 2.7 depict the monthly price of voc shares in the Amsterdam chamber throughout the seventeenth century, which are also listed in Appendix A.

[15] NA, VOC, inv. nr. 7068, 7070. In an earlier stage of my research, I made these laborious calculations using 1641 and 1664 data. 1639 and 1667 are likely to yield similar results.

For months with multiple observations, I have calculated the average share price.[16] In Figure 2.6, missing values have been derived from linear interpolation; Figure 2.7 does not use interpolation, it shows how my observations are spread over the century. The dataset consists of 851 observations of spot prices. Figure 2.8 gives an impression of the variation in the share price. This graph shows the yearly high, low and average price.

The prices used to draw these graphs and listed in Appendix A are *ex*-dividend prices. So, for example in February 1688, the market price for shares on which 1449 1/6% of the nominal value of the shares had been collected as dividend since the first distribution in 1610 was 563.5%. On 15 April 1688, the company distributed another 33 1/3%. It took a while, of course, before all shareholders had collected their dividend, so for a period of two or three months, there were two kinds of shares in circulation: those on which 1449 1/6% dividend had been collected and shares on which 1482.5% had been received. Obviously, the price difference between these two kinds of shares amounted to 33 1/3%, which explains why share traders always mentioned the amount of dividend received on a certain share. The *ex*-dividend price did not always fall by exactly the size of the dividend, however. Dividend distributions also had an informational value – they informed investors for instance about the profitability of the company[17] – to which the market reacted.

The share price equals the present value* of all future dividends. Put another way, the share price reflects the market's expectations of dividends. Hence, Figure 2.6, showing the VOC share price 1602-98, reflects how the shareholders valued remaining dividends at any point in time during the seventeenth century. It cannot exactly be reconstructed how shareholders formed their expectations on remaining dividends, but previous dividends were undoubtedly a major factor in determining the expected size of dividends. These previous dividends (1620-99) are depicted in Figure 2.9. In this graph, dividends are expressed as a percentage of the nominal value of the capital stock. In 1625, for example, the VOC announced a dividend of 20% of the nominal value of the company stock. A shareholder who owned a share with a nominal value of *f* 3,000 could thus collect a dividend of *f* 600.

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[16] For high-volatility periods (1664-5, 1672 and 1688), minimum and maximum instead of average monthly prices have been used to make the size of the price fluctuation visible in the graph. In August 1688, for example, the price dropped from 546.66% to 460%. The average price of my observations in this month is 493.73%, but I have used the 460% observation to make this month's price drop visible.

[17] See chapter 5, section Market reactions to information on page 156 ff.

At first sight, the dividends distributed by the VOC are impressive: a 60% dividend in 1671, for example, seems enormous. However, dividends expressed as a percentage of the nominal value of the shares do not reveal much about the actual impact of the dividend distribution. Dividend as a percentage of the market price is a better measure, because it allows for a comparison of the company's dividend distributions over time. Figure 2.10 depicts the dividends of the VOC as a percentage of the market price of the Amsterdam shares (1620-97). This graph clearly shows that the 37.5% dividend of 1620 was the largest in relative terms. The sequential dividend distributions of 1633, 1635, 1636 and 1637, moreover, are striking in size. These distributions coincided with the remarkable share price increase of the 1630s (see Figure 2.6); they clearly induced shareholders to update their expectations regarding dividends and hence about the share price.

Figure 2.11 takes the analysis one step further. It shows to what extent historical dividends determined the value of the VOC shares. The two lines of the graph are a ten-year moving average of the real dividend (dividend as a percentage of the market value of the shares) on the left-hand scale and the average yearly share price of the Amsterdam chamber VOC shares on the right-hand scale. The ten-year moving average real dividend is calculated by dividing the average nominal dividend over the previous ten years by the market price of the VOC shares in a given year. The value for 1670, for example, is calculated by dividing the average nominal dividend over the period 1661-70 by the market price of the VOC shares in 1670.

If shareholders indeed based their expectations of dividends in future years on the dividend they received in previous years, the share price and ten-year average of real dividends should move in tandem. Figure 2.11 shows that this was only partially the case for the seventeenth-century market for VOC shares. In the second half of the 1660s and the first years of the 1670s, for example, the average real dividend over the preceding ten years was very low (around 3% annually), but the share price did not make a downward correction until 1672 – a year in which the Dutch Republic was at war. The shareholders were apparently optimistic that the shares would yield a good return even if high dividend payments failed to occur. The data are inadequate to make firm statements, but it does seem that the VOC shares were overvalued shortly before the 1672 price crash.

On the whole, however, the share price adjusted with a short lag to fluctuations in the average real dividend over the preceding ten years. The share price rose upwards around 1637, when the ten-year real dividend reached 6.6%. When the ten-year real dividend dropped back to around 5% from 1646 onwards, the share price followed with a similar movement in the next few years. Finally, focusing on the periods 1630-35, 1648-63 and 1689-98 reveals that the shareholders of the VOC made a downward adjustment of the discount rate* during the seventeenth century. During these three periods, the average dividend over the preceding ten years fluctuated around 5% annually, whilst the share price fluctuated around 200%, 400% and 500% in 1630-35, 1648-63 and 1689-98, respectively. Assuming that shareholders expected the real dividend to stay constant, these share price differences can only be explained by a change in the discount rate.[18] The development of interest rates charged on the Amsterdam capital market provides an explanation for the downward adjustment of the discount rate: the interest rate on private obligations declined from around 8% in the early seventeenth century to as low as 2.5-3% in the 1680s.[19] As money became cheaper, shareholders also required a lower return on their investment. The price pattern of VOC shares over the seventeenth century can thus partly be explained by the declining interest rate.

Divergent developments: Amsterdam and peripheral markets

The previous sections have shown that the periods before and after 1640 are separate stages in the development of the secondary market for VOC shares. This section will show that the development of the peripheral markets for shares in the five smaller chambers of the VOC kept up with Amsterdam until about the same time – 1640. Thereafter, however, the development of the Amsterdam market entered a second stage, whereas the smaller markets stayed behind.

The markets developed in tandem in the first years of the seventeenth century. In the period 1604-8, for example, about 30% of the capital stock of the Enkhuizen chamber was transferred. These figures are comparable to those of Amsterdam.[20]

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[18] See, for the relation between dividends, the discount rate and the share price, the formula in footnote 31 on page 71.

[19] De Velaer to l'Empereur, 13 January 1609, BT, inv. nr. 215, nr. A2/9. SAA, Deutz, inv. nrs. 288, 291-5. See also, Gelderblom and Jonker, 'A conditional miracle'.

[20] René Th.H. Willemsen, 'Beleggers in een nieuwe compagnie: het aandeelhoudersregister van de Kamer Enkhuizen der VOC', in: Roelof van Gelder, Jan Parmentier and Vibeke Roeper, *Souffrir pour parvenir: de wereld van Jan Huygen van Linschoten* (Haarlem 1998) 65-79, there 77. Gelderblom and Jonker, 'Completing', 658.

Soon thereafter, however, the Amsterdam market started to develop relatively faster.[21] The Amsterdam stock was of course by far the largest, which naturally resulted in a larger market, but Amsterdam merchants also seem to have been more inclined to trade on the secondary market; Amsterdam merchants had initiated more than half of the transfers in the Enkhuizen chamber stock between 1604 and 1608.[22]

The higher trading activity in Amsterdam led to price differences between the shares in the Amsterdam chamber and shares of the smaller chambers. The share traders who petitioned against the proposed ban on short selling in January 1610 mentioned that the price of shares in the Amsterdam and Zeeland chambers was on average between 3 and 5 percentage points higher than the price of the shares in the other chambers.[23] A year and a half later, in September 1611, shares in Middelburg and Enkhuizen traded at 220%; about 4 percentage points lower than in Amsterdam. From that time onwards, Amsterdam shares would remain the most expensive.[24]

The price differences became remarkably big in the second half of the seventeenth century, as can be seen from Table 2.2 (on page 75), which lists the available price data for the Middelburg, Enkhuizen and Hoorn chambers, to which Amsterdam prices for the same months are added. The last column lists the relative difference between the price quoted in Amsterdam and the other chambers. I have not found any price data for the Rotterdam and Delft chambers. Figure 2.12 gives a graphic representation of these data. It clearly shows how the share prices started diverging after about 1650. Before that year, the relative price difference fluctuated between 1 and 3.5%. After 1650, however, the Enkhuizen and Hoorn shares were on average around 17% cheaper. The price difference with shares of the Middelburg chamber was even larger: 21% in 1660 and increasing to 33% after 1672.

The price gap between Amsterdam and Middelburg is especially remarkable. The Zeeland chamber had the second largest capital stock and its share price had kept up with Amsterdam in the first decade of the seventeenth century. The anonymous author of the 1688 pamphlet *De actionisten voor en tegengesproken* gave an explanation for the diverging prices. According to him, a tax on share capital, levied in Zeeland from

[21] Petition, 19 January 1610, published in: Van Dillen, 'Isaac le Maire', 54 (doc. nr. 9). Van Dillen, 'Termijnhandel', 513.
[22] Gelderblom and Jonker, 'Completing', 658.
[23] Petition, 19 January 1610, published in: Van Dillen, 'Isaac le Maire', 54 (doc. nr. 9). Van Dillen, 'Termijnhandel', 513.
[24] BT, inv. nr. 112 C2, fo. 7; inv. nr. 113, fo. 1.

1672 onwards, had caused the relative price fall of the Zeeland shares.[25] The Zeeland tax was a capital levy of 0.5%.[26] The company bookkeeper was responsible for the tax recovery; shareholders were taxed for the amount of shares registered under their name in the company's capital books.[27] VOC shares were taxed at 400% of their nominal value, so the tax burden was 2% on the nominal value of the share capital.

The other five chambers were located in the province of Holland, where a similar tax was not levied, but share capital in Holland was not exempt from capital levies either.[28] For certain years, the tax burden was even higher in Holland than in Zeeland, but what set the Zeeland tax apart was its structural character.[29] This induced shareholders to adjust their expectations on future returns and hence it brought the share price down. The authorities of Holland, on the other hand, announced the provincial capital levies irregularly – they levied a tax when they needed the money.

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[25] *De actionisten voor en tegengesproken. Consideratien tot wederlegginge van de voorstellingen door de Heer Mr. Nicolaas Muys van Holy, opgestelt in zyne Memorie, om de Negotie van Oost en West-Indische Actien te beswaren met een Impost, ende in zijn nader geschrift van oplossinge van de difficulteiten, die hy segt by eenige gemaakt te zyn, tegens de selve Memorie* (Amsterdam 1688) 7.

[26] A so-called *tweehonderdste penning*: out of every two hundred pennies, one had to be paid as a tax to the provincial government (0.5%).

[27] This means that the tax applied to the total capital stock of the Middelburg chamber, hence shareholders from outside the province of Zeeland were also liable to pay the tax.

[28] In Holland, the following taxes were levied on share capital in the period 1672-88:

Announcement date	*Tax rate*	*Tax burden on nominal value*
15 VI 73	1%	4%
8 X 73	0.5%	2%
22 XII 73	0.5%	2%
20 XII 75	1%	> 4% - this tax was levied on the pre-1672 share price (i.e. > 400%)
19 III 1677	1%	> 4% - idem
30 VII 1677	0.5%	> 2% - idem
22 XII 1677	0.5%	> 2% - idem
20 VIII 1678	0.5%	> 2% - idem
29 III 1679	0.5%	> 2% - idem
31 V 1680	0.5%	2%
11 XII 1681	0.25%	1%
21 VI 1687	0.5%	2%

Source: Cornelis Cau (et al.), *Groot placaet-boeck, vervattende de placaten, ordonnantien ende edicten van de... Staten Generael der Vereenighde Nederlanden, ende van de... Staten van Hollandt en West-Vrieslandt* III (The Hague 1683) 1054-85; Cornelis Cau (et al.), *Groot placaet-boeck, vervattende de placaten, ordonnantien ende edicten van de... Staten Generael der Vereenighde Nederlanden, ende van de... Staten van Hollandt en West-Vrieslandt* IV (The Hague 1705) 921-2.

Until 1680, the tax was assessed on the basis of so-called *personele kohieren*, registers that listed the assessed wealth of taxable citizens. Hence, taxes were paid on the basis of the estimated value of shares and other property owned. In May 1680, the States General ruled that the real share capital should be taxed, so from now on shareholders were liable to pay tax on the basis of the amount of shares registered on their account in the capital books of the VOC. This instantly led to protests by moneylenders on whose accounts shares pledged as collateral were registered, but the States General did not make an exception for these shares R. Liesker and W. Fritschy, *Gewestelijke financiën ten tijde van de Republiek der Verenigde Nederlanden* IV *Holland (1572-1795)* (The Hague 2004) 224, 367. Van Dam, *Beschryvinge* 1A, 145. Cau, *Groot placaet-boeck* III, 1081-2.

[29] Wietse Veenstra, *Gewestelijke financiën ten tijde van de Republiek der Verenigde Nederlanden* VII *Zeeland (1573-1795)* (The Hague 2009) 188-9.

These unexpected capital levies decreased the value of an individual's current stock holdings, but they did not directly influence all future cash flows. So, in hindsight, although the tax burden on shareholders in Zeeland and Holland did not differ much, diverging expectations caused the price difference between Holland and Zeeland.

The following calculation, using 1681 data, will show the effect of a yearly recurring 2% capital tax can on the share price. 1681 is a good year to check for the price impact of the tax, because by that time, the Franco-Dutch war had ended and political unrest no longer caused sudden price changes. Furthermore, I have a relatively large number of price observations for both the Amsterdam and Middelburg chambers in these years (see Table 2.2), which makes a comparison of the prices more convincing.

In the decade preceding 1681, VOC shares had earned on average a yearly 15% dividend on nominal value. It could be assumed that shareholders expected to earn this rate in the future as well. Using a discount rate of 4.5%[30] leads to a share price of 348%.[31] A yearly tax of 2% on share capital meant that the yearly return on the share decreased by about 2%, hence this tax can be considered as a 2-percentage-point dividend cut. Shareholders would now adjust their expectations on dividends from 15% to 13% per year. Consequently, the share price would fall to just over 300%. Hence, in this example, a 2% capital tax would have resulted in a relative price fall of 13 1/3%. VOC shares in the Amsterdam chamber quoted on average 438.5% in January and February 1681. Extrapolation the data from Table 2.2 would yield a pre-tax Middelburg price of 345% (the Middelburg chamber shares quoted on average 21% lower[32]), which almost equals the price for a share that earns 15% dividend per year. On the Middelburg market, however, shareholders paid 290.5-292%.[33] This is slightly more than 2.5% less than predicted by my calculation, but the tax still provides a plausible explanation for the increased price difference after 1672.

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[30] A discount rate of 4.5% may seem low, but this was about the same rate merchants charged each other on loans where no collateral was pledged – an investment that could be considered equally risky as VOC shares. See for interest rates: SAA, Deutz, inv. nrs. 291-5.

[31] The price of a share today equals the sum of the present value of all future dividends. This is written as $P_0 = \sum_{t=1}^{\infty} \frac{DIV_t}{(1+r)^t}$, where P_0 is the share price today, r is the discount rate (the expected return on securities in the same risk class), DIV is the dividend, t the year and ∞ infinity. For an explanation on how this formula is derived, see e.g. Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance* (6th ed., Boston 2000), 64-6.

[32] Cf. Table 2.2.

[33] SAA, PIG, inv. nr. 858, fo. 174.

The pamphlet's anonymous author also gave an explanation for the high share price in Amsterdam relative to the other four Holland chambers. According to him, the different levels of trading activity on the markets caused this. He wrote this pamphlet in 1688, shortly after the publication of a proposal to levy a tax on derivative transactions on the Amsterdam market that did not ultimately result in a share transfer. The author of this proposal, Nicolaas Muys van Holy, argued that the tax would limit speculative trades and hence protect less wily participants of the market.[34] *De actionisten voor en tegengesproken*, on the other hand, reasoned that a thriving secondary market for shares did not harm anybody and that a comparison between the six share markets in the Netherlands immediately revealed that more active trade led to higher prices. Hence, widows and orphans were not victims of the flourishing derivatives trade; on the contrary, they profited from the higher price resulting from the trading activity.[35]

The anonymous author did not elaborate on his explanations, but it is very well possible that these two factors accounted for the price differences within the province of Holland. Seventeenth-century investors, just like their present-day counterparts, preferred to invest in liquid assets, for this allowed them to quickly sell off the share if they needed cash. Additionally, they did not want their trades to have too much price impact; a sale on an illiquid market, for instance, could very well lead to a significant price decrease. Hence, shareholders were willing to pay a liquidity premium. I have no data on the liquidity of the markets for shares in the smaller chamber of the VOC, but Catharina Pieterson's efforts to sell her *f*3,000 share in the Delft chamber reveal quite a bit of information about trading activity on the smallest markets. In March 1689, she asked Harmen van den Honert to sell her share. Van den Honert passed the order on to Johan de Hertoghe, a lawyer of the States of Holland. The reason why he did this becomes clear from the action taken by De Hertoghe: he ordered the Amsterdam broker Gerrit Loot, specialized in the share trade, to sell the share.[36] There were probably no buyers at all on the Delft market, so Van den Honert

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[34] Muys van Holy, *Middelen en motiven*, 1. Muys van Holy proposed a *f*6 tax on forwards. Option buyers should pay 10% of the premium, with a minimum of *f*6. The tax would be refunded if the derivative transaction led to a share transfer. Ibidem, 3-5.

[35] *De actionisten voor en tegengesproken*, 7.

[36] Manuel Mendes Flores *vs.* Johan de Hertoghe, NA, Court of Holland, inv. nr. 857, nr. 1695-58. This case came up before the Court of Holland in first instance. Broker Loot managed to sell the share in Amsterdam to Manuel Mendes Flores, but the share was never transferred to him, because De Hertoghe had inadvertently also sold the share in The Hague – probably to an acquaintance of his, for there was no sizable share market in The Hague.

needed someone with good connections in Amsterdam to sell the share there. Shares in the smaller chambers thus gained liquidity by using the size of the Amsterdam market. It could be possible – but this single example cannot prove it convincingly – that the secondary markets for shares in the smallest chambers of the VOC gradually dissolved in the Amsterdam market, rendering the smaller markets redundant.

Apart from a liquidity premium, short-selling restrictions would also have had an effect on the price. On markets with short-sale constraints, pessimistic investors can sell the shares they currently own, but they cannot get a short position*. Optimistic investors, on the other hand, have no limitations of the amount of shares they can buy. Hence, their beliefs have a disproportionate influence on the share price.[37] Short-sale constraints were in force on the market for VOC shares, but they were generally ignored. However, these constraints could still have had an effect on the share price, for there was a bias in the courts' behavior in favor of buyers. As I will show in chapter 3, buyers of forward short sales could always ask the court to declare their transaction null and void. The seller would then not only forgo the profit from the transaction, but he would also incur a fine. Buyers of forward short sales seldom went to court, but sellers nonetheless knew that they ran a risk that the contract would be declared null and void. Put another way, the *a priori* risk of a forward seller was higher than that of the buyer. This could have resulted in more buyers than sellers among the traders willing to participate in the forward market, leading to a higher price, and it could also have induced forward sellers to demand slightly higher prices as a compensation for the extra risk they ran. Although short-sale constraints were in force in all the cities with VOC chambers, I contend that the restrictions had a greater influence on the price in Amsterdam than in any of the other cities, because of the simple fact that the Amsterdam forward market was much larger.

The increasing price difference after 1650 was thus a direct result of the fact that the development of the Amsterdam market outpaced that of the peripheral markets. Participants of the Amsterdam market were willing to pay a liquidity premium and the increase in speculative trading activity led to higher prices for shares in the Amsterdam chamber.

[37] Several economists have tried to model the effects of short-sale constraints on share prices. E.g. Hong Scheinkman and Xiong, 'Asset float'.

Conclusions

The data presented in this chapter corroborate the findings of chapter 1. During the 1630s and 1640s, the secondary market for VOC shares transformed into a modern financial market. Market activity, both on the spot and forward markets, increased sharply during these decades. The growing price difference between shares in the Amsterdam chamber and shares in the peripheral chambers from 1650 onwards shows that the development of the smaller markets could not keep pace with Amsterdam. The data also provide evidence for my hypothesis that the trading clubs began to play a significant part only from the 1660s onwards. The explanation for the fact that the emergence of the trading clubs lagged behind the other developments on the market must be that by 1660, the market had grown too large for its original structure; trading clubs were needed to handle the complexity of the market.

Date (month-year)	*Middelburg*	*Enkhuizen*	*Hoorn*	*Amsterdam*	*Relative difference*
IX-1611	220	220		225	2.2%
XI-1611		216		218	0.9%
VII-1616		254.5		262	2.9%
III-1617		260		265	1.9%
VI-1617		264		267	1.1%
XII-1618		310.5		314.5	1.3%
IX-1649		520		539	3.5%
XII-1650		490		527.5	7.1%
XI-1652		363-6		438	16.4%
VIII-1659		280-90		340	17.6%
IV-1660		350-2		412	15.0%
VI-1660	350			443	21.0%
VII-1667		350		422.5	17.2%
VIII-1671	460			535	14%
X-1671	470			517	9.1%
II-1672	330-40			406-13	17.7-18.7%
IV-1672	255			311	18%
XI-1672	280-290			378	23.3-25.9%
XI-1680	300			447.5	33.0%
I-1681	290.5-292			438.5	33.4-33.8%
II-1681	292			438.5	33.4%
XI-1681			357	439	18.7%
VI-1685		382.5		464.5	17.7%

Table 2.2 Share price data of the Middelburg, Enkhuizen, and Hoorn chambers of the VOC
No data available for the Rotterdam and Delft chambers. Sources: SAA, Velters, inv. nr. 1; SAA, Deutz, inv. nrs. 276, 294-5; SAA, PIG, inv. nr. 858; SAA, Merchants' accounts, inv. nr. 39; SAA, Notaries, inv. nr. 1133, fo. 18, inv. nr. 2207, fo. 255, 739; BT, inv. nr. 112 C2, fo. 7; inv. nr. 113, fo. 1, 38, 40, 42, 49.
Please note that for the period 1611-1617, the prices in this table do not correspond to those depicted in Figure 2.6. The account books of Anthoni Thijs yielded the observations (for both the Amsterdam and Enkhuizen chambers) for these years. Thijs quoted the prices *cum*-dividend (57.5%). I do not know the *ex*-dividend values – part of this dividend had been distributed in kind and the shareholders did not value it at exactly 57.5%. Therefore, I have chosen to omit them in the dataset containing the prices of the Amsterdam chamber for the entire seventeenth century. However, these price observations are useable for a comparison between the Amsterdam and Enkhuizen chamber prices, for Thijs had collected the same amount of dividend in both chambers.

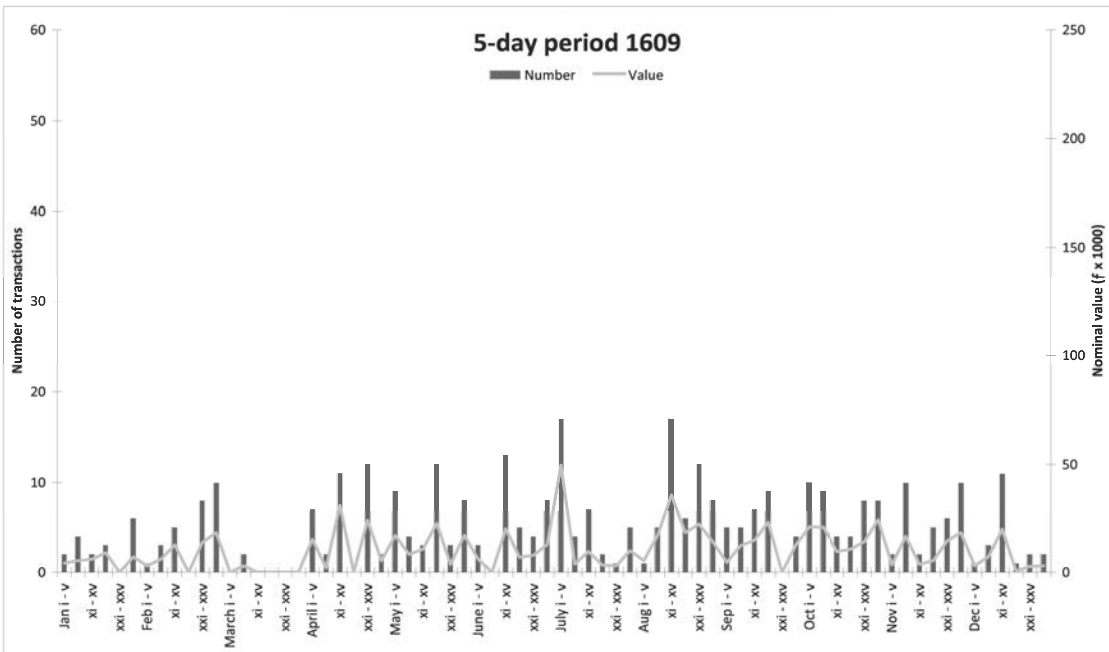

Figure 2.1 5-day period share transfers, VOC Amsterdam chamber, 1609
Total number of share transfers: 368. Total nominal value of share transfers: *f*785,690. Source: NA, VOC, inv. nr. 7066.

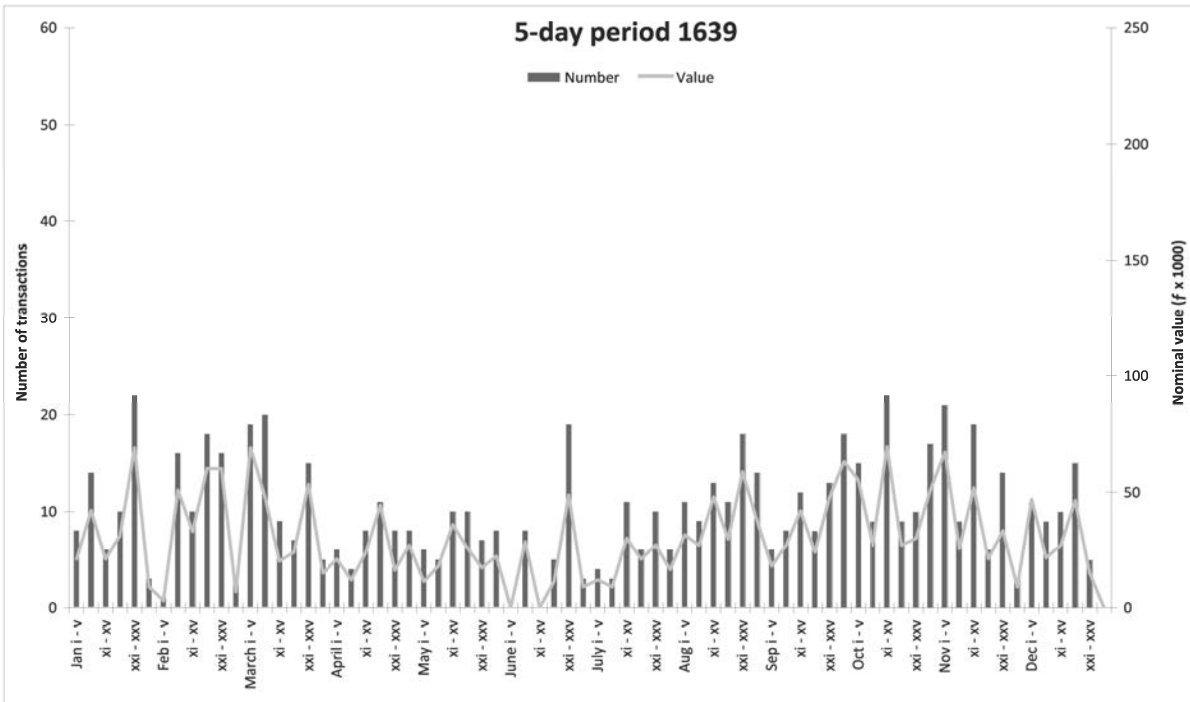

Figure 2.2 5-day period share transfers, VOC Amsterdam chamber, 1639
Total number of share transfers: 713. Total nominal value of share transfers: *f*2,205,330. Source: NA, VOC, inv. nr. 7068.

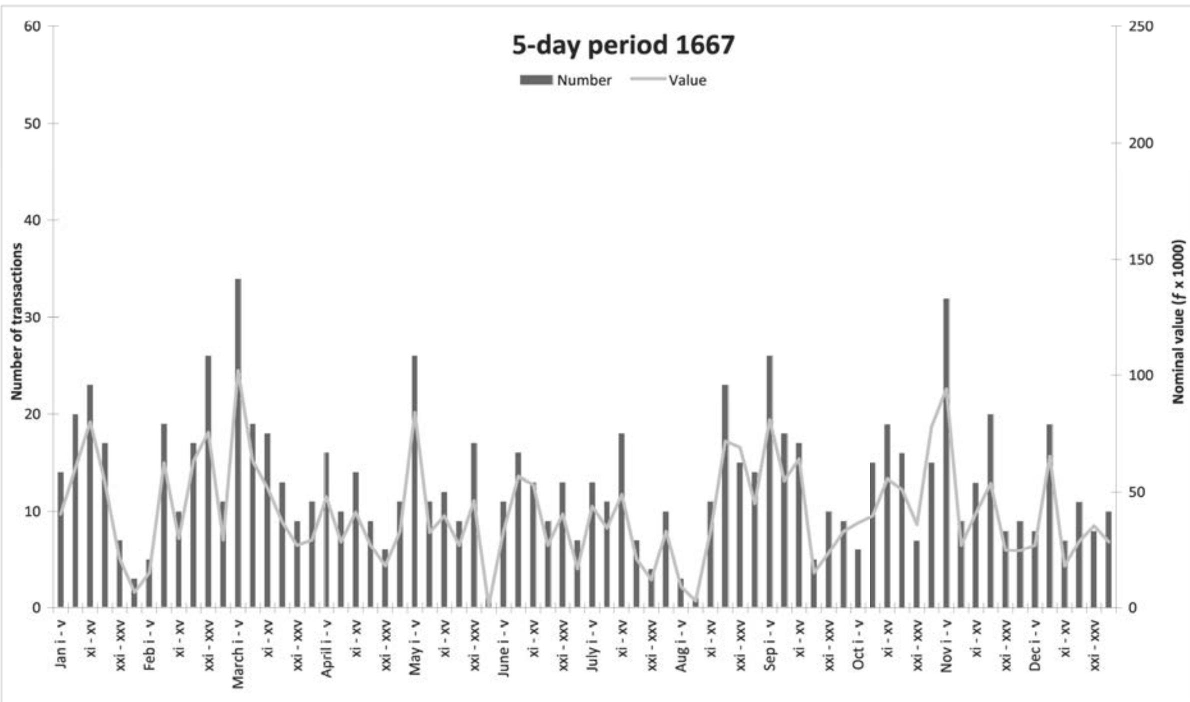

Figure 2.3 5-day period share transfers, VOC Amsterdam chamber, 1667
Total number of share transfers: 934. Total nominal value of share transfers: ƒ2,960,910. Source: NA, VOC, inv. nr. 7070.

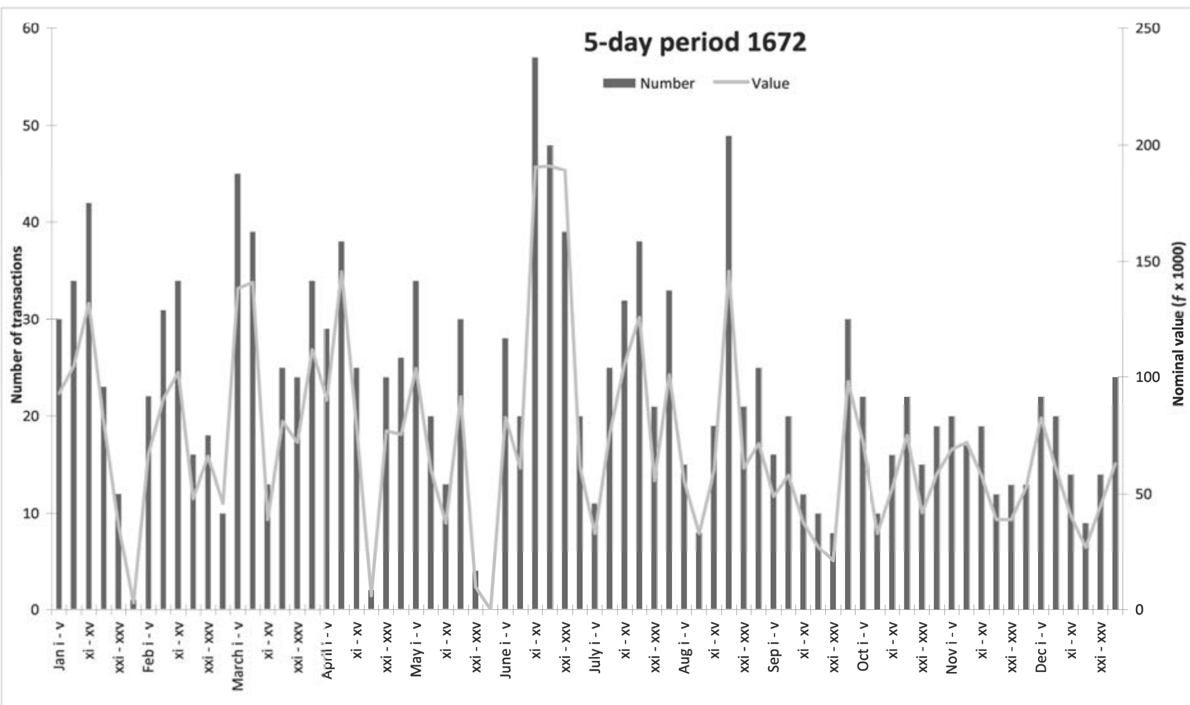

Figure 2.4 5-day period share transfers, VOC Amsterdam chamber, 1672
Total number of share transfers: 1604. Total nominal value of share transfers: *ƒ*5,200,497. Source: NA, VOC, inv. nr. 7070-1.

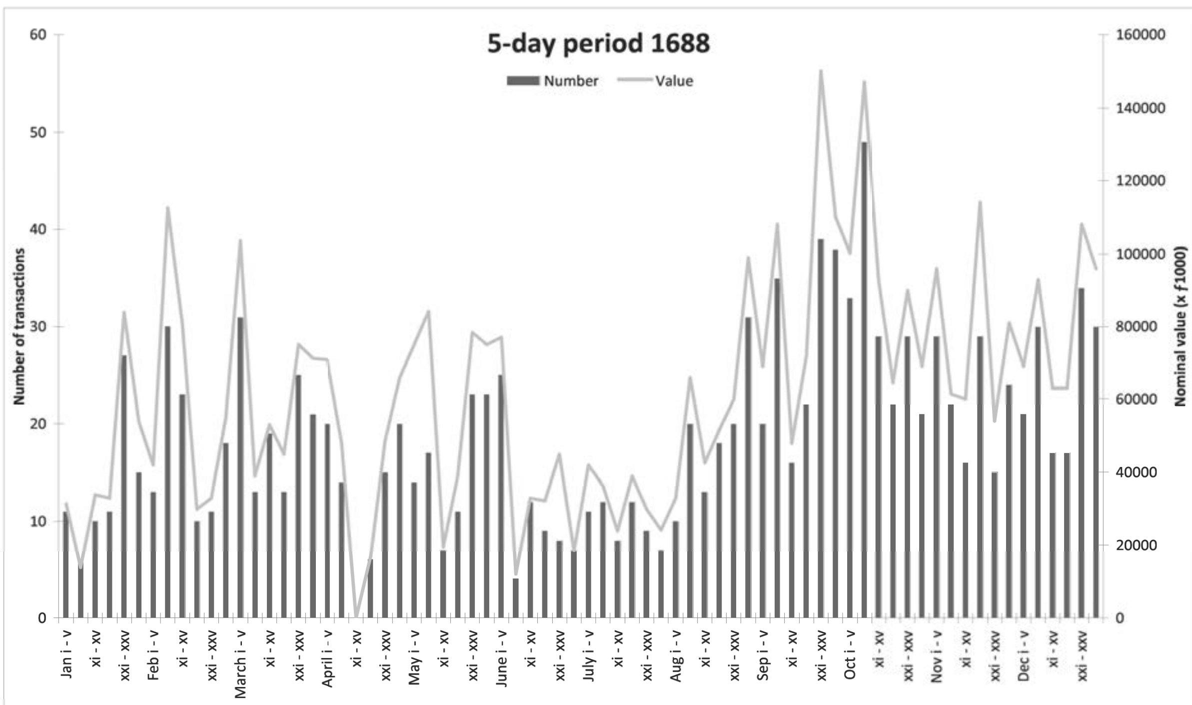

Figure 2.5 5-day period share transfers, VOC Amsterdam chamber, 1688
Total number of share transfers: 1350. Total nominal value of share transfers: *ƒ*4,456,446. Source: NA, VOC, inv. nr. 7072.

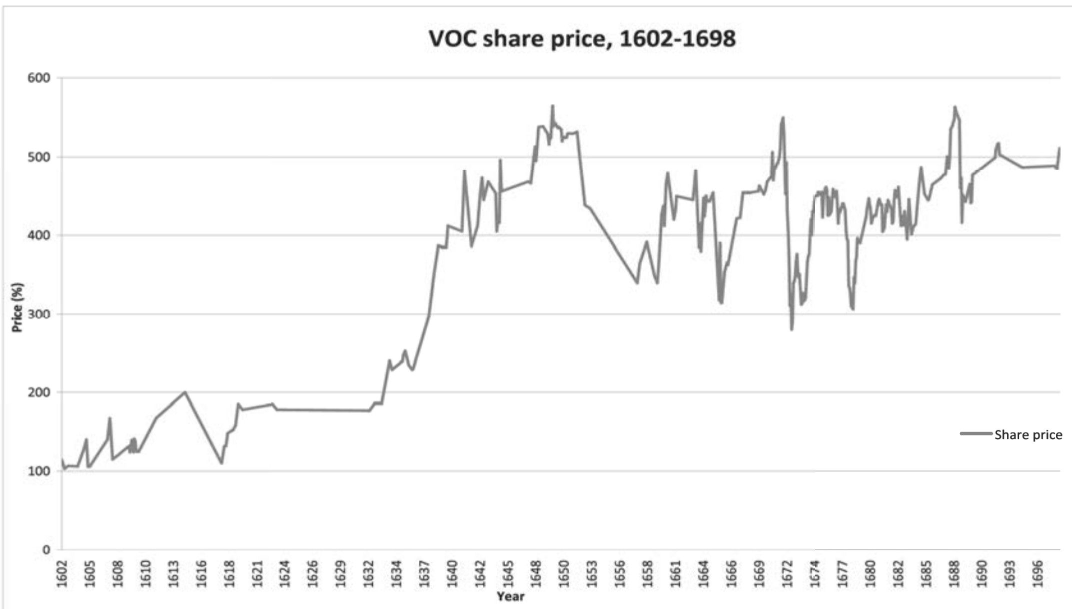

Figure 2.6 Monthly VOC share price, Amsterdam chamber, September 1602 – February 1698. Missing values derived from linear interpolation.
Number of observations: 851. Sources: SAA, Velters, inv. nrs. 1-4; SAA, Deutz, inv. nrs. 275-6, 291-5, 301; SAA, Merchants' accounts, inv. nrs. 39-40; SAA, PIG, inv. nr. 858; SAA, Notaries, Card index; SAA, Notaries, inv. nrs. 2238-40, 4131-6; BT, inv. nrs. 112-3, 119K, 119N, 215; PA, Microfilms SP 119/36, SP 119/38.

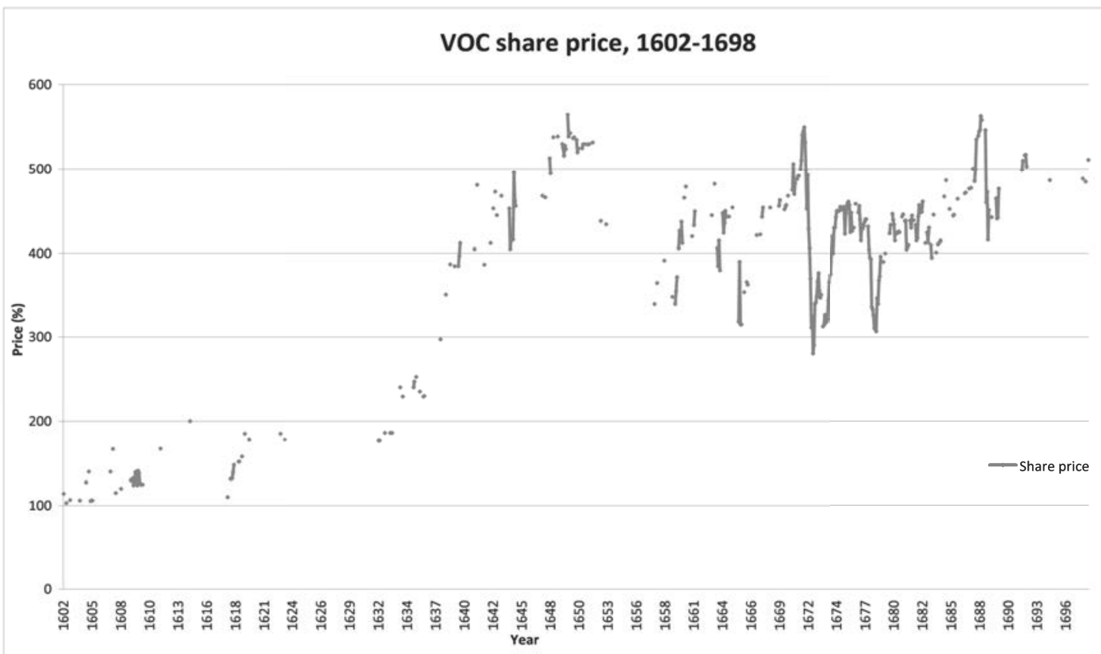

Figure 2.7 Monthly VOC share price, Amsterdam chamber, September 1602 – February 1698

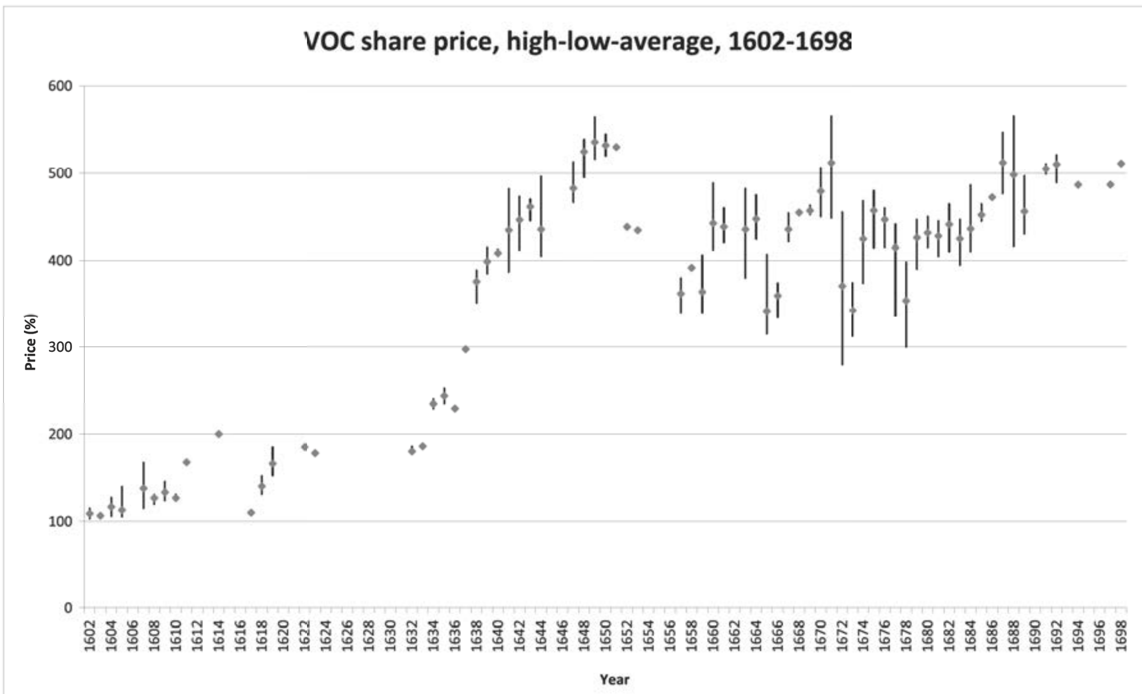

Figure 2.8 Yearly high-low-average VOC share price, Amsterdam chamber, 1602-1698
The markers show the average share price in a given year; the vertical lines connect the highest and lowest shares prices in a given year.

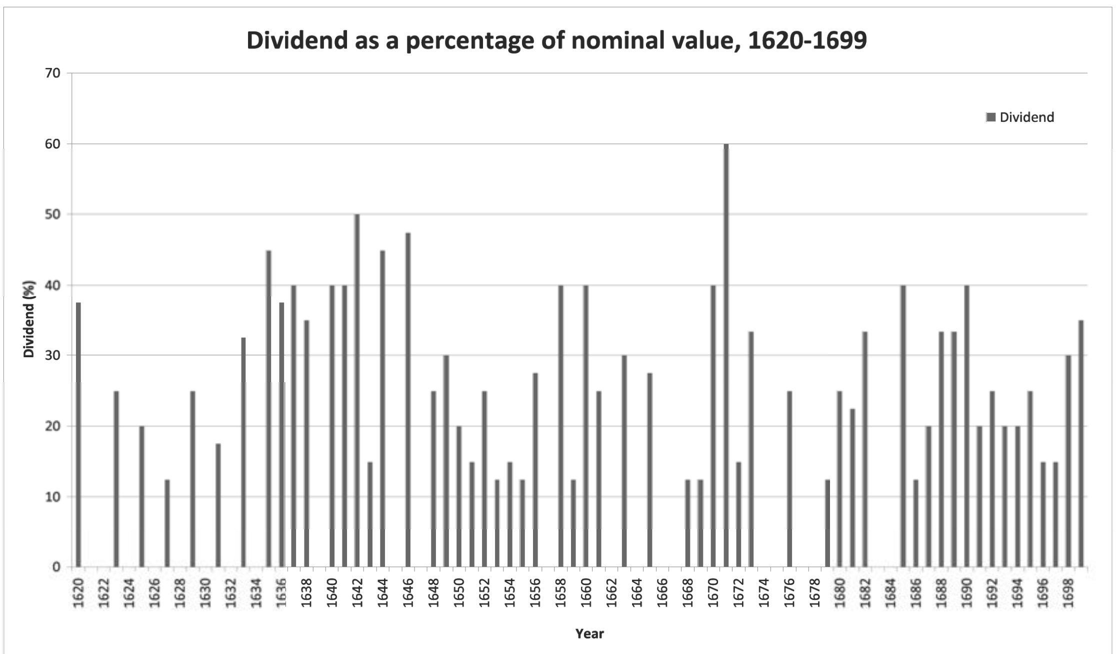

Figure 2.9 Yearly dividends as a percentage of the nominal value of VOC shares, 1620-1699
Sources: Klerk de Reus, *Geschichtlicher Überblick,* Appendix VI. Van Dam, *Beschryvinge* 1A, 433-436. De Korte, *De jaarlijke financiële*.

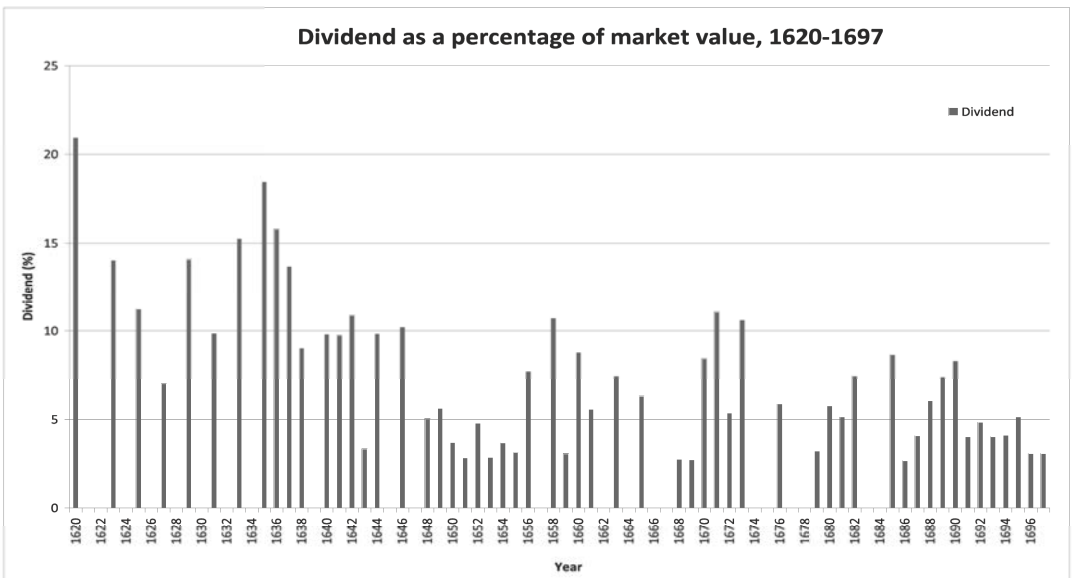

Figure 2.10 Dividend as a percentage of market value, 1620-1697
Dividend as a percentage of market value is calculated by dividing the dividend per share by the market price per share. Please note that for the periods 1624-31, 1645-6 and 1654-7, the market prices are based on interpolated data.

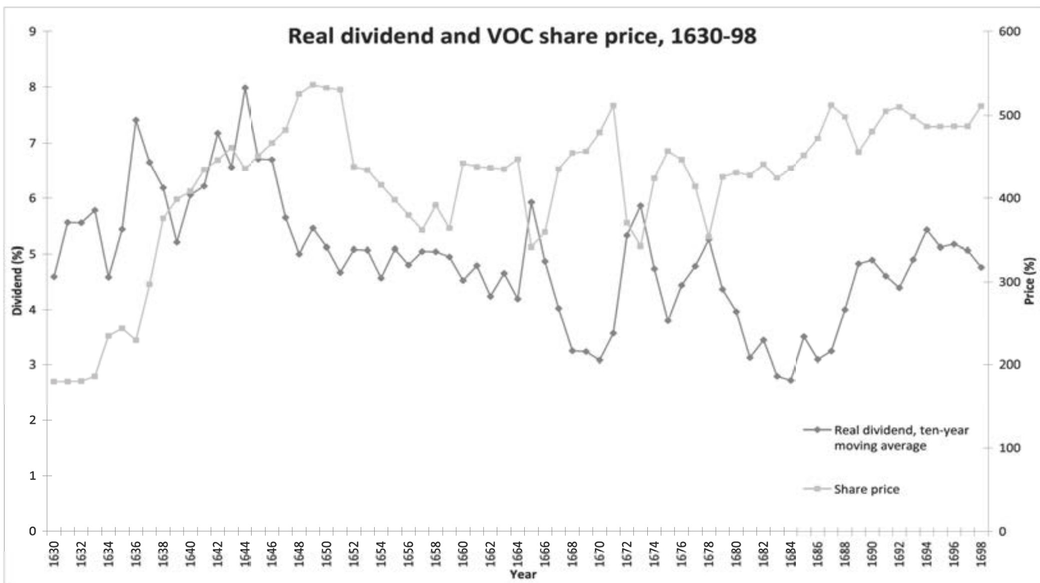

Figure 2.11 Real dividend and VOC share price, 1630-98
The dark grey line depicts a ten-year backward moving average of real dividend on Amsterdam chamber VOC shares (left-hand scale). The value for 1630, for example, is calculated by dividing the average yearly nominal dividend over the period 1621-30 by the average share price of 1630. The light grey line depicts the average yearly share price of Amsterdam chamber VOC shares (right-hand scale). Missing values in the share price series have been derived from linear interpolation.

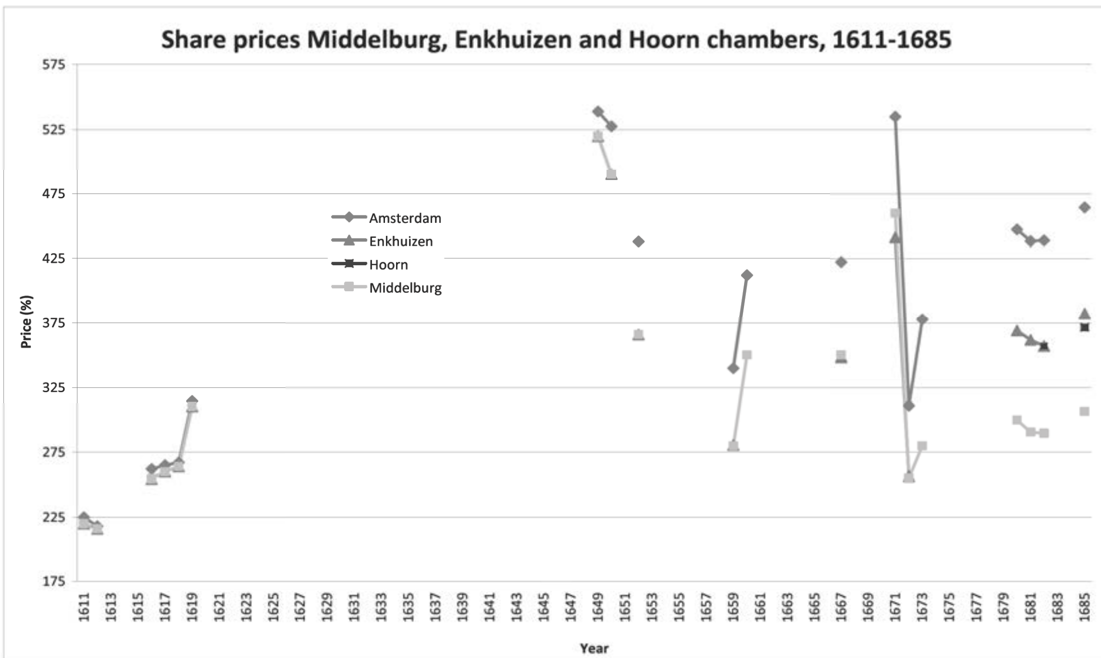

Figure 2.12 Share price data of the Amsterdam, Middelburg, Enkhuizen and Hoorn chambers of the VOC, 1611-1685
Source: Table 2.2.

Part II

The organization of the market