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Origins of the New York Stock Exchange

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The New York Stock Exchange, measured by the market capitalization of the securities listed and traded on it, is the world's largest organized securities market. At the end of the year 2001, the market cap of the NYSE was more than \$12.5 trillion, of which \$11.7 trillion consisted of 2,567 common stock issues. Including other stocks and warrants, the NYSE at that date listed nearly 3,000 issues of 2,800 companies.¹ In rough terms, the NYSE market cap at the start of the twenty-first century is four to five times larger than the next largest stock market, that in London.

The pre-eminent position of the NYSE among world markets is the result mainly of its being the leading securities market of the United States. The United States is the world's largest national economy, a majority of the world's largest corporations are U.S.-based, and most of these large corporations list their shares on the NYSE. This has been the case since the latter half of the nineteenth century, when large corporations became numerous in the United States, more so than anywhere else, and the United States surpassed the United Kingdom to become the largest economy.

We live now in a new era of economic and financial globalization, in some ways like the earlier one that arose in the period 1870-1914. Now, as then, securities are listed and traded in international markets. The NYSE is listing more and more securities of

¹ NYSE Factbook, 2002., 42.

firms headquartered in other countries. Despite that, it is still primarily an American market. London and other markets are more “international” than the NYSE. That is the way it has been since the late eighteenth century, the period to which the stock exchanges of both London and New York trace their origins.

This essay addresses the origins of the world’s pre-eminent stock exchange, the NYSE, including how it emerged as the central securities market of the United States, and what economic, business and financial advantages the country gained from having such a central market place. The focus is on the first half-century of the country’s experience after the federal government under the Constitution seated itself in 1789, in the area of New York’s Wall Street. Interestingly, that half-century is essentially coterminous with the NYSE’s early history. The NYSE traces its origins to 1792, and within a few decades it became the central U.S. securities market. The United States and the NYSE, as it were, grew up together, to such an extent it can almost be said that the history of one cannot be understood without reference to that of the other.

New Amsterdam and New York

Most people are aware that for virtually its entire history the NYSE has specialized in the trading of common stock. Fewer know that the city in which it is located owes its origins to the innovation of common stock. Financial historians contend that the Dutch East India Company issued the first tradable equity share in 1609.² That very year, the company commissioned an expedition led by Henry Hudson, an English explorer, who sailed into what eventually became known as New York harbor on September 3rd. Hudson explored the river that now bears his name and reported back to

² Larry Neal, *The Rise of Financial Capitalism: International Capital Markets in the Age of Reason* (Cambridge: Cambridge University Press, 1990), 8-9.

the company on the economic potential of the region. This information led the company to sponsor additional expeditions and establish a few settlements, including Fort Orange near the present-day Albany, but not one at the mouth of the Hudson. Credit for that goes to another company, the Dutch West India Company chartered in 1621, which also issued tradable equity shares. That company established a small settlement on present-day Governors Island in New York harbor in 1624. Some of these settlers moved the short distance to Manhattan Island in 1625, and in 1626, Peter Minuit, a company official, bought Manhattan from the local Indians for a variety of goods valued at 60 guilders, or \$24.

In 1653, the Dutch built a defensive wall from the Hudson to the East Rivers at the northern border of their Manhattan colony, which they had named New Amsterdam. The wagon road running along the wall would later be called Wall Street.

The English, who by 1664 had planted colonies to the north and south of New Amsterdam, considered control of New Amsterdam by the Dutch, their great rivals of that era, a potential threat to their North American colonies. In March 1664, English monarch Charles II granted the Dutch territory to his brother James, Duke of York (later king James II). In August, James sent a fleet of four warships and several hundred soldiers into the harbor to assert his claim to New Amsterdam. In early September, after considering armed resistance, the Dutch peacefully surrendered the colony to the English, who renamed it New York City. Treaties of 1667 and 1674, ending the second and third Anglo-Dutch wars, formalized English control of New York. In 1688, the English in the Glorious Revolution deposed James II, replacing him with the Dutch leader Willem of Orange, the husband of James's daughter Mary, who became William III of England.

For potential as a future American and world financial center, New York City could not have been more fortunate in its dual national origins. Dutch power in the seventeenth century derived in great part from a financial revolution that occurred in the Dutch Republic at the beginning of that century. The innovation of tradable equity shares in 1609, mentioned above, was but one element of the Dutch financial revolution. Even earlier, the Dutch had established a public debt market, which the Republic used to finance its long war of independence from Spain, as well as the later wars with England. The year 1609 brought another innovation, the Bank of Amsterdam, or *Wisselbank*, a central banking institution that discounted foreign and domestic bills of exchange and did much to stabilize the value of the Dutch guilder. With a public debt market in place, it proved simple for the Dutch to add to it trading in the equity shares of the Bank and the Dutch East and West India Companies. Other, lesser banks and insurance markets arose at the time to complete the Dutch financial revolution, transforming the small republic into a major world power. Shortly thereafter followed the Dutch golden age, “the embarrassment of riches,” and, of course, the tulip mania.

In 1688, when Willem of Orange became William III of England, he brought Dutch financiers with a long heritage of financial expertise with him to his new country. The Glorious Revolution made England a constitutional monarchy and transferred the power of the purse from the king to Parliament. An English public debt market like that of the Dutch Republic soon emerged, as in 1694 did the Bank of England, which lent to the government and discounted merchants’ bills of exchange. Each of these institutions proved as useful to the English in their wars with France and the United States as their Dutch counterparts had been to the Dutch Republic in its wars with the Spain and

England. The pound sterling, like the Dutch guilder earlier, became a more stable currency. Before 1688, the English already had a number of private bankers, some of goldsmith origins, most of them in London and its environs. Many more were founded during and after the English financial revolution, and banking began to spread to the English countryside, a development that gained momentum during the eighteenth century. Tradable equity shares in the Bank of England, the English East India Company, the South Sea Company, insurance companies, and other lesser enterprises completed England's financial revolution.³ In its wake, Great Britain won most of its wars, built a great empire, launched the first industrial revolution, and, of course, had the South Sea bubble of 1720 and many other financial crises.

England's North American colonies were a part of an expanding British empire. Although most of them had been founded before the Glorious Revolution and the financial revolution it unleashed, they were still quite small and unimportant parts of the empire at the start of the eighteenth century. But their populations were growing rapidly through natural increase, immigration from Europe, and the slave trade.

Colonial and Revolutionary Finance

A question that arises in a consideration of America's colonial history is why nothing resembling a modern financial system like those that appeared in the Dutch and English financial revolutions occurred there. A possible answer is that it was not needed. Almost all Americans were farmers of one sort or another, many of them self-sufficient with limited market orientation. The main financial need for the rapidly growing American population and its economy was an expanding medium of exchange. That

³ P. G. M. Dickson, *The Financial Revolution in England: A Study in the Development of Public Credit, 1688-1756* (London: Macmillan, 1967).

need was met by a financial innovation, a distinctly American one, fiat paper money issued by colonial governments. Fiat paper money took the form of bills of credit, akin to tax anticipation notes, and public loan-office issues that accommodated borrowers, usually on landed security, while furnishing an interest income for colonial governments. Fiat paper issues supplemented precious-metal coins of other countries that the colonies earned through trade. Colonial bills of credit and loan-office bills provided a convenient solution to the problem of finding an expandable medium of exchange.

A more obvious answer to the question of why colonial America had no financial revolution is that colonial Americans as British subjects had the access they needed to Britain's modern financial system. They were part of the empire and connected to its financial networks. Short- and intermediate-term credit was the main financial demand of colonial merchants and planters, the small class of Americans dealing in the international economy. The trading partners of American merchants and planters in Britain, who were more directly and immediately tied into the home country's financial networks, were more than willing to supply the credits the Americans needed.

What made the colonial merchant and American patriot Robert Morris so valuable to the United States after it declared its independence was that he was one of the few Americans with a good understanding of how the international credit system operated. Morris was thoroughly tied into it. Born in England before migrating to America in his youth and proceeding to become one of America's most successful merchants, Morris understood the advantages of credit money convertible into a metallic base, and how it differed from the fiat paper issues of America. Morris also knew how English securities markets worked, although few Americans used them because they saw their best

investment opportunities in American lands rather than English securities. Morris's financial experience accounts for his successes, first as a financial adviser to the Continental Congress and then as the Congress's Superintendent of Finance in the period 1776-1784. But Morris's accomplishments as a public financier were limited because most members of the Continental Congress and the first state legislatures had nothing like Morris's experience in modern finance. These politicians disliked taxation, preferring to finance governmental spending by means of fiat paper issues. They and most other Americans then used fiat paper money, foreign coins, and specie, as media of exchange and account settlement. With a few exceptions, Morris's attempts in the 1780s to modernize the financial system of the new nation and to deal with its large financial burdens left over from the successful war of independence fell upon deaf ears. In 1784, the superintendent resigned in disgust and returned full-time to his business career.

What were the new nation's financial burdens and problems? The main burden was a large national debt, both domestic and foreign, and the main problem was that there was almost no means of paying it, or even the interest due on it, because Congress lacked powers of taxation. The states also had debts incurred for war purposes. Since states had tax and money-issuing powers, they could pay interest on their own debts. Some states even paid interest on national debts owed to state citizens.

The new United States also borrowed abroad. France provided substantial loans to the United States during revolutionary war. After its outcome of the war was clear, loans from Dutch bankers enabled the Confederation government of the 1780s to pay some of its obligations to Europeans, including the interest on previous loans.

The domestic national debt was essentially unserviced. So-called indents, representing arrearages of interest, were issued to Confederation-era creditors in lieu of the interest that was due. Securities representing the domestic debt of the United States changed hands at 10 to 20 percent of par value. Some of the states used fiat paper money issues and inflation taxes to reduce the burdens of state and private debts. Others raised taxes to pay debts, provoking taxpayer resistance and even the armed rebellion of the Shaysites Rebellion in Massachusetts in 1786-1787. Depressed economic conditions also led some states to put duties on imports from other states, provoking retaliatory actions. In the view of more than a few, the American experiment in its initial phases did not seem to be working.

Such realizations led to the drafting in 1781 of a new constitution that enlarged the powers of a new federal government. Ratification of the Constitution came in 1788. The new federal government took over in 1789. Spearheading the movement for a stronger federal government were leaders who began to call themselves Federalists. These leaders of the new government launched a financial revolution for the United States that in its essential aspects was very much like the Dutch financial revolution two centuries earlier and the English financial revolution a century earlier. In 1792, the forerunner of the New York Stock Exchange appeared and became a part of the securities-market component of the Federalists' financial revolution.

The Federalist Financial Revolution, 1789-1795

When he became the new federal government's Secretary of the Treasury in 1789, Alexander Hamilton was the right man, at the right place, at the right time. During the revolution, Colonel Hamilton had been the most trusted aide of General Washington, the

new president, who appointed him Treasury Secretary and supported his financial initiatives. With many lulls in the protracted fighting of the Revolution, Hamilton read widely, absorbing many lessons of history. Grasping the advantages of Dutch and British finance, as well as the weaknesses of French finance, Hamilton realized that the war dragged on as long as it did not because of any military weaknesses of the American revolutionaries on their home ground, but rather because their political and financial arrangements were fundamentally flawed. Both during and after the war, Hamilton shared these realizations in essay after essay, letter after letter, forum after forum, until the Constitution was written and ratified. Along the way, Hamilton became a close confidante of Robert Morris, sharing in Morris's frustrations. He also worked with James Madison in the Confederation Congress, at the Constitutional Convention, and in writing the Federalist Papers explaining and defending the Constitution during the ratification debates.

On becoming Treasury Secretary, Hamilton worked with Congress and other members of the executive branch to implement three key components of a modern financial system. First and foremost, it was necessary to implement a federal revenue system, and use its proceeds to pay government expenses and interest on a restructured public debt. Congress responded to the challenge with the tariff act of July 1789. Hamilton then formulated his debt-restructuring plan and presented it to Congress in January 1790. Congress approved the plan in July. Later in 1790, as old evidences of debt were exchanged for them, three new federal debt issues—a 6%, a deferred 6% (a “zero” for 10 years, after which it paid 6%), and a 3% began to appear in the markets. A year later, \$31 million of the new securities were outstanding, and two years after that, at

the end of 1793, \$58 million of an eventual \$64.5 million of the new securities represented the restructured domestic national debt had been issued. The new debt paid interest quarterly in specie or specie equivalents. Its appearance energized the securities markets of New York, Philadelphia and Boston.

Next, in December 1790, Hamilton reported to Congress his plan for a Bank of the United States. Congress adopted the plan in February 1791. The initial public offering of bank stock took place on July 4 of that year, and within hours it was oversubscribed. The Bank's capitalization was \$10 million, of which the federal government by the plan's design would take \$2 million. The government paid for its shares with a loan from the Bank.

Private investors absorbed the remaining \$8 million of Bank stock. They could pay for it over two years in specie--\$2 million--in the new federal debt issues--\$6 million. Hamilton had designed his grand plan so that the debt and the Bank would support each other, and the advent of them would align the interests of investors with those of the fledgling federal government. Bank scripts (rights to subscribe to \$400 full shares) issued in the IPO at \$25 in July 1791 immediately became an object of intense speculation. They rose to more than \$280 at New York in barely a month, before settling down to a \$130 to \$200 dollar range later in the year.

The Bank of the United States opened its doors at Philadelphia, the temporary seat of the federal government, in December 1791, and began to open branches in other cities in the Spring of 1792. States, not wanting to cede banking to federal bank dominance, responded to the new federal banking presence with more state charters for banking corporations. Although the Constitution had removed the rights of states to issue fiat

paper money, the states could still charter banks and tie them to state fiscal interests. Therefore, the loss of state fiscal prerogatives was not great.

In January 1791, Hamilton sent Congress his report on a mint, which Congress adopted later that year. The main significance of the report is that it defined the new U.S. dollar in terms of gold and silver as the nation's unit of account, making the U.S. monetary base like that of the leading European nations. Gradually the old state fiat paper issues were paid in to and retired by state governments. The convertible U.S. dollar joined the world's leading currencies. Among its advantages, it helped make American securities, public and private, more attractive to both domestic and foreign investors.

Thus during 1789-1791, in barely two years time, three key elements of a modern financial system—sound public finances and public debt management, a central banking institution, and a stable currency—were installed in the United States. And Alexander Hamilton's bold vision and implementation of his grand plan had induced the states to charter more banks and furnished the securities markets with tens of millions of dollars worth of high-quality securities, both debt and equity. Historians of the United States have tended to dwell on all the political controversies that accompanied this financial Big Bang. This has led them and their readers to miss out on the really important point, namely that the Federalist financial revolution was a giant step toward modernity in American economic life.

Why? It is essentially for the same reasons that the Dutch and English financial revolutions earlier energized those two economies, and later financial revolutions, in Meiji Japan for example, would propel still other economies toward higher economic

growth trajectories. Modern financial systems provide better payments mechanisms. They pool financial resources and subdivide shares and debts into units attractive to investors. They mobilize capital and allocate it with greater efficiency than pre-modern ones. They provide ways of managing and reducing risks. And they create a lot of useful economic information—prices, for example—and use it as they perform all their other functions.⁴

In the U.S. case, nearly two centuries of colonial development, despite a tremendous expansion of the population, yielded very little in economic growth of the modern variety. Colonial Americans lived quite well compared to people elsewhere in the world, mostly because they had a lot of land and other natural resources with which to work. But the colonial economy was short of capital—that is why interest rates were higher than in England—and it also was short of financial liquidity except insofar as a tiny minority of merchants and planters could tap into the British financial system at its margins. These problems were painfully realized during and immediately after the war of independence, which cut off access of Americans to the British financial system. Fortunately, the Federalist financial revolution made the problems go away, and the U.S. economy was quite different after 1790 from what it had been before. It moved onto a higher growth trajectory, becoming during the century thereafter the world's largest and most cutting-edge economy.

The New York Securities Market and the 1792 Buttonwood Agreement

Modern U.S. securities markets had their genesis in the rather frenzied trading and speculation that arose in 1790 when Hamilton's debt-restructuring proposals were

⁴ See Dwight Crane, et al., *The Global Financial System: A Functional Perspective* (Boston: Harvard Business School Press, 1995) for a full discussion of financial system functions, which complements the institutional approach of this essay.

enacted by Congress, followed in 1791 by similar action on his proposal for a Bank of the United States. Together these measures introduced between \$60 and \$70 million of new securities during the early 1790s, as old public debt was voluntarily converted into the new 6s, deferred 6s, and 3s, and as investors made payments for shares of the Bank of the United States. Price histories for the three new U.S. debt issues in the New York market from 1791 to 1820 are presented in an accompanying figure. A similar figure shows the price histories in New York of four equity issues, including that of the Bank of the United States, for the same period.⁵ There are some gaps in the data, indicating either an absence of data sources or an absence of quoting or trading in a particular issue. But the figures do show that the earliest years of the United States contain a rich history of securities markets. That history is one result of the Federalist financial revolution.

U.S. securities-market history is by no means confined to New York. Philadelphia and Boston also had securities markets, and the data are there to produce similar figures for those markets. All three cities quoted and traded the three federal debt issues and Bank stock. These were the national-market securities of the 1790s and early 1800s. Allowing for communications lags—it took a day or two for information to travel between New York and Philadelphia, and several days to a week between New York and Boston—there is ample evidence in the price histories and contemporary archival records that arbitrage operations took place amongst the three markets. Prices of national-market securities were similar, and moved similarly, in all markets. The financial revolution created efficient capital allocation mechanisms.

⁵ The weekly data underlying the figures have been collected from contemporary newspapers by Jack W. Wilson, Robert E. Wright, and the author, with support from the National Science Foundation through a grant to the National Bureau of Economic Research. They are part of a much larger database of early U.S. securities prices in several U.S. city markets and in London from the late 1780s to the 1840s. This database is nearly complete and will be made available to other researchers.

There is also evidence that from the 1790 on, New York was the leading market. In April 1790, Philadelphia broker Clement Biddle wrote a correspondent that securities prices “are and will be for some time governed by New York,” and in June 1791, Boston merchant Stephen Higginson wrote his New York correspondents that Boston securities prices “will depend chiefly on the course of the York market.”⁶ From the first years of active American securities trading in the early 1790s, New Yorkers appear to have been more speculative and risk-taking market participants than their counterparts in Boston and Philadelphia, and they had an apparent advantage over the other cities in that most foreign purchases and sales of American securities were executed in New York. It appears, therefore, that New York from the start had the highest volume of trading of the three cities, and the most active and liquid market. For reasons to be discussed below, that initial advantage of New York grew over time.

The enlarged volume of securities trading born of Hamilton’s debt and Bank measures undoubtedly drew new participants—auctioneers, brokers, dealers, and investors—into the markets. Increased trading and more participants created new problems of trust and the honoring of contracts. Since the securities business was relatively new, its legal status was unclear. In the circumstances, groups of participants searched for ways to regulate themselves. A group of dealers met at a coffee house on September 1, 1791, and “agreed to be governed” by a set of 14 rules that were published

⁶ Quoted with citations by Robert E. Wright, *The Wealth of Nations Rediscovered: Integration and Expansion in American Financial Markets, 1780-1850* (Cambridge: Cambridge University Press, 2002), 83. For another contention that New York was the trend-setting securities market from the early 1790s on, see Walter Werner and Stephen T. Smith, *Wall Street* (New York: Columbia University Press, 1991), 43-46.

in a broadside. Some were attempts to cartelize the business, while others dealt with contract enforcement and provided sanctions for defaulters on contracts.⁷

As the two figures showing early New York securities prices indicate, trading in late 1791 and early 1792 drove prices to lofty levels. Then, in February and March 1792, Wall Street suffered its first crash. The mayhem spread quickly via arbitrage to Boston and Philadelphia. An oft-repeated explanation of the crash is that a cabal of speculators and brokers led by William Duer, who earlier had worked at the Confederation Treasury Board and stayed on for some months at the new Treasury Department under Hamilton, hatched a plan late in 1791 to corner some of the new securities issues. Duer and his associates used their own wealth and whatever they could borrow from others to go long, and then they were wiped out when prices declined and they could not meet their engagements to repay their loans. Duer defaulted on his debts in March 1792, and went to jail, setting off a chain reaction of panic selling.

A more recent interpretation of the 1792 bubble-crash scenario is that the Bank of the United States, immediately on opening for business in December 1791, flooded the channels of trade and investment with its banknotes, and then--perhaps at the suggestion of Hamilton who sensed the bubble building up and called upon banks *gradually* to contract credit--the Bank of the United States stepped *hard* on the brakes, precipitating the crash.⁸ The two interpretations are not inconsistent; indeed, they may reinforce one

⁷ The broadside is discussed by Werner and Smith, *Wall Street*, and reproduced in their appendix C, 190-191. It is also said to be the first evidence of self-regulation by U.S. securities traders by Stuart Banner, *Anglo-American Securities Regulation: Cultural and Political Roots, 1690-1860* (Cambridge: Cambridge University Press, 1998), 250-51.

⁸ Both interpretations are discussed by David Jack Cowen, *The Origins and Economic Impact of the First Bank of the United States, 1791-1797* (New York & London: Garland, 2000), chap. 3. Cowen's research is the source of the new interpretation.

another in accounting for the magnitude both of the bubble and its bursting. Whatever the case, the New York investment community was devastated.

Amidst the devastation, the record shows that another group of “Merchants and Dealers in Stocks in the City of New York” met on March 21, 1792, and appointed a committee “to provide a proper room for them to assemble in after April 21, and to report such regulations relative to the mode of transacting business, as in their opinion may be proper.”⁹ Before the committee of this group could report, the New York legislature, in response to the crash, on April 10 passed “An Act to Prevent the Pernicious Practice of Stock-Jobbing, and for Regulating Sales at Public Auction.” The act banned public auctions of securities, and also made contracts unenforceable for sales, transfers, or wagers (sometimes called time bargains) on the future price of government debt and company equity shares, unless the securities in question were actually owned by the seller or wagerer.¹⁰

On the face of it, this legislation represented a major setback to New York securities brokers, dealers, and auctioneers. It undercut the basis of most of their business and threatened them with sanctions if they went on as before in their securities dealings. What were these securities professionals to do to stay in business? A group comprised of 24 of them, mostly individuals but a few partnerships as well, met according to legend under a buttonwood tree in Wall Street on May 17, 1792, and made a simple, one-sentence agreement to give preference to each other in their dealings, and to fix brokerage commissions at a minimum of one-quarter percent. In other words, the group of 24 had formed a club to do privately what the law no longer allowed them to do

⁹ Quoted by Werner and Smith, *Wall Street*, 24.

¹⁰ The act is reproduced in Werner and Smith, *Wall Street*, Appendix F, and is discussed in Banner, *Anglo-American Securities Regulation*, Chap. 5.

in public. Ten of the signers identified themselves as merchants, nine as brokers, and the remaining five were identified as insurance brokers, auctioneer and broker, insurance and stock broker, stock brokers and auctioneers, and warden of the port.¹¹

Around the same time, the New York Tontine Coffee House Company was chartered to provide a Merchants Exchange, and among its 203 subscribers were members of the club formed under the buttonwood tree. The Tontine Coffee House was completed in 1793, and it likely became the meeting place for the club.

The New York Stock Exchange and many writers claim that the exchange grew out of the 1792 agreement under the buttonwood tree. Others deny this on grounds that the evidence in favor of it is at best circumstantial and that in any case securities trading in New York dwindled after the crash of 1792 and did not revive to any great extent until after the War of 1812.¹²

The latter contention appears to be refuted by the weekly data presented in two figures here indicating that government debt and corporate stocks were regularly traded in New York throughout at most times from 1791 to 1820. The New York securities market operated continuously after the crash of 1792. The buttonwood club was by no means the only group meeting to trade securities in New York City in that period. Even today, of course, the NYSE is not the only securities exchange in the city.

Moreover, when the New York Stock & Exchange Board, which all agree later became the NYSE simply by altering its name, emerged in 1817, four of its twenty-some original members were among the 24 who had signed the buttonwood agreement twenty-

¹¹ Edmund Clarence Stedman, ed., *The New York Stock Exchange* (1905; reprinted New York: Greenwood Press, 1969), 36.

¹² See Peter Eisenstadt, "How the Buttonwood Tree Grew: The Making of a New York Stock Exchange Legend," *Prospects: An Annual of American Cultural Studies* 19 (1994).

five years earlier.¹³ Careers and life expectancies were shorter two centuries ago. Given the passage of time, which could have allowed many of the original buttonwood signers to move away, change occupations, retire, or pass on, this evidence, along with that showing fairly continuous trading activity after 1792, would appear to make it more than circumstantial that the buttonwood agreement in fact constituted the origin of the NYSE.

The New York Stock & Exchange Board

In February 1817, twenty-four brokers met at the office of Samuel Beebe, one of the four of those present who had signed the buttonwood agreement 25 years earlier, and resolved that it was “desirable to constitute a Board or Association of Brokers in this city for the transaction of business at their Board.” They appointed three of their number to draw up articles of association. The minutes listed members present and absent, indicating that the group was not a new one. It may have been the successor group to the buttonwood signers of 1792. In a fortnight, the articles of association were drawn and adopted.¹⁴ The association adopted the name New York Stock and Exchange Board, and the articles were a set of 19 rules that all the members were to observe.

It is likely that there were two broad motivations for a more formal organization of brokers. First, a growing list of securities and increased trading volumes meant that the club would find it advantageous to admit new members. But that would increase the settlement risks faced by each member—a negative network externality—in the absence of rules for settling disputes. Second, the New York law of 1792 remained on the books, meaning that the brokers could not have reliable recourse to the courts for resolving

¹³ Werner and Smith, *Wall Street*, endnote 18, 218.

¹⁴ Werner and Smith, *Wall Street*, 28. Their Appendix D reproduces the 1817 articles and subsequent resolutions adopted by the NYS&EB in 1817.

disputes except in cases involving simple transactions. To carry on their expanding business, the brokers thus required more self-regulation by the club, and that is what the formal rules made possible. The NYS&EB rules continued the 1792 tradition of fixing transactions costs, that is, minimum commission rates.

That the list of securities traded in New York, as reported in contemporary newspapers, expanded with time can be seen in Table 1, showing the lists in five benchmark years from 1797 to 1832. The lists report the largest and most actively traded issues, the sorts of securities the NYSE has specialized on for two centuries. Many other issues were too small or too inactively traded to make it into either newspaper quotations or the NYSE official listings. The list that was reported expanded in the years after 1817, so the New York brokers were probably wise in that year to make the rules of their exchange more formal.

Brokers who wanted to join the exchange had to be vetted, and they had to pay a membership fee for their seats. But as the legal historian Stuart Banner notes, there were substantial benefits to membership. A member had access to orderly price-discovery procedures, numerous other brokers, and low transactions costs. Since potential members were vetted, a member could have some confidence in the reliability and creditworthiness of other members, as well as rule-governed procedures for settling disputes between members. There was contract enforcement. And, since the members trusted each other, their reputation for fair dealing was helpful in attracting outside customers to the exchange. A well-run stock exchange can become a trusted brand. Finally, members of

the exchange had access to current securities price information before anyone else did. That had value to them.¹⁵

Within a decade after the formal exchange organized in 1817, it began to reap another long-term advantage from its location. Because New York was the leading port of the United States, demand for New York funds expanded throughout the country. Banks in other cities and the interior began to keep balances in New York banks to meet their clients' demands. New York banks needed to be liquid to meet potential demands for these balances, as they constantly flowed into and out of the banks. The banks discovered a near-ideal employment of outside bankers' balances, one that would be liquid and yet profitable. They began to make call loans on securities collateral.¹⁶ Call loans on securities were generally a safe use for bank reserves because, if a loan to a securities investor or dealer had to be called, the borrower could rolled it over into another call loan or liquidate the securities collateral at the exchange to meet the call. Since securities-market participants paid interest on call loans, the banks could pay interest to outside banks making deposits in New York. Payment of interest on bankers' balances drew still more funds from banks outside of New York to the New York money market.

The New York exchange by the 1820s most likely was already the dominant U.S. securities market, and it may have been that from the 1790s. During and after the 1820s, as New York banks became more numerous and larger, they attracted more bankers' balances than any other city, and they employed these funds to finance securities trading.

¹⁵ Banner, *Anglo-American Securities Regulation*, Chap. 8.

¹⁶ The development of the call loan market and its relation to securities markets is described in Joseph E. Hedges, *Commercial Banking and the Stock Market Before 1863* (Baltimore: The Johns Hopkins Press, 1938). See also Margaret G. Myers, *The New York Money Market: Vol. 1: Origins and Development* (New York: Columbia University Press, 1931).

This enhanced the liquidity of New York securities trading, and helped the NYS&EB to solidify its lead over other city securities markets. By mid-nineteenth century, the other securities markets were either local markets or vassals of the New York exchange.

At the same time, the presence of the largest U.S. stock exchange was a boon to the banks of New York. They could reap the spread between call loan rates and the rates they paid on bankers' balances flowing into New York through the expanding U.S. banking system. The New York banks, the U.S. banking system, and the NYSE were thus bound together in a synergistic relationship that, apart from financial crises, redounded to the benefit of all of them.

Conclusion

Why did the New York securities market and the NYSE become the dominant ones of the United States, and eventually the largest in the world? If, as some evidence suggests, it was true from the beginnings of the modern markets in the early 1790s, then it must have been the result of the city's combined Dutch and British heritages of financial innovation and entrepreneurship, and the advantages of New York as a port in comparison with other seaboard cities.

If New York's dominance in securities trading did not come until the 1820s or 1830s, other developments become relevant to explaining why it happened then. The Erie Canal, begun in 1817 with bond funding and completed in 1825, contributed greatly to both the city's trade in commodities and in securities. The New York innovation of scheduled packet shipping lines in 1817 regularized and shortened communications times between U.S. and European markets, including securities markets. Reforms of New York's auction rules in 1817 guaranteed that high bidders would always get the goods in

New York, which they could not count on in other cities' auction markets. Adding in bankers' balances and the call-loan mechanism, two innovations also introduced at that time, it becomes apparent why the New York exchange increasingly outdistanced its rivals.

The contention of some historians that New York shot ahead of other cities' securities markets only after Andrew Jackson in the 1830s vetoed renewal of the federal charter of the Philadelphia-headquartered second Bank of the United States and distributed government deposits to state banks in the 1830s does not seem plausible. For a host of other reasons, New York already had become the dominant securities market before that happened, and demands for large-scale securities and bank financing emerged in subsequent decades, New York was in the best position to meet them.

