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U.S. Securities Markets and the Banking System, 1790-1840

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A fact underappreciated about the rise of the United States in the world economy is that a modern, "world class" financial system—by the standards of the time—emerged virtually at the beginning of the nation's history and provided a solid underpinning for the country's subsequent growth and development. This paper explores the emergence of that financial system. It emphasizes the mutual support between the banking system, which has been well studied by financial historians, and securities markets, which have been relatively neglected. Distinctive features of the U.S. banking system depended on the existence of securities markets, and before long, distinctive features of U.S. money and securities markets depended on developments in the banking system.

BANKING SYSTEMS AND FINANCIAL SYSTEMS

The "Anglo-American" or "Anglo-Saxon" pattern of financial organization features a functional division of labor and a balance among three main, interrelated sectors: the banking system, the money market, and the securities market. This pattern is often contrasted with the "Continental European" or "German" pattern, in which banks dominate the financial system while the money and securities markets are relegated to minor, secondary roles. The advantages and disadvantages of each pattern of organization relative to the other are much studied and debated. Also discussed are the questions of whether today's globalization of finance (which is less unprecedented than many believe) will bring about a convergence of financial systems and, if so, in what direction. Financial historians have become interested in an additional question: why the two different patterns of financial organization emerged in history. Thus far, however, they have only scratched the surface in attempts to answer it.

A reason for the limited progress in understanding why systemic differences emerged in history is that, while Anglo-Saxon and German systems may compete with each other in the real world, in the world of financial historians—be it the Anglo-Saxon, the Continental European, or any other division—the German model seemingly has carried the day. This is not meant to imply that financial historians have weighed the evidence and decided that the German bank-based pattern of financial organization is best, although some on both sides of the Atlantic would agree with such a contention.[1] Rather, it is meant to suggest that banks everywhere have received the lion's share of attention from financial historians. I would hazard the guess, based on some years of experience, that there are 25 or 50 dissertations, articles, and books on the history of banks and banking for each one on the history of money and securities markets.

No doubt there are many reasons for the overwhelming attention financial historians devote to banks and banking. Among them is the obvious one that, in Continental Europe, banks were by far the dominant financial institutions during the past two centuries, so that other components of financial organization merited less study. But why is the emphasis on banking history much the same among Anglo-American scholars? Here I think an explanation would include several points. One is that, even in Great Britain and the United States,

[1] For a "pro–German bank" view from the American side of the Atlantic, see Calomiris (1995). German universal banks, closely involved with the firms they finance, are thought to have done a better job of monitoring firm managements than "arms-length" Anglo-Saxon banks, and to have raised capital for firms at lower costs than those experienced in Anglo-Saxon systems in which commercial and investment banking often were separated.

banks were important—perhaps even very important—sources of finance in the early stages of economic modernization during the late eighteenth and early nineteenth centuries. Another is that banknote and deposit liabilities served most of the functions of money, so that governments—regarding control over money as an element of sovereignty—had both political and economic reasons to become concerned with licensing and regulating banks and their money creation.

A by-product of governmental concern with banking had an obvious role in drawing the attention of scholars: Banks left many tracks in the public documents that are the grist of historians' mills. Moreover, since the governments overseeing banking were many, and banks as organizations were even more numerous, there were manifold topics for research, from the history of banking in country, region, or state A, B, or C, to the history of the bank of X, Y, or Z.

Securities markets have not attracted so much interest from historians. Although organizations—including banks—participate in them, and some of these organizations (such as the New York Stock Exchange) came to symbolize them, securities markets are not particular organizations but fundamental institutions or economic processes. Governments were therefore less concerned in the past with their supervision. Apart from instances of public borrowing and the debt management it entailed, government documents report little about securities markets in comparison to the voluminous records concerning banks and banking. One can get a sense of why capital markets have been neglected by historians by imagining what banking history would be like if banking were mentioned in historical records only when a government took out or paid back a bank loan. Gone would be discussions of the politics of bank chartering, of the periodic need to reform the banking system, of the need or lack of need for a central bank, of the monetary and macroeconomic effects of the expansion and contraction of bank credit.[2] Gone, in short, would be much if not most of banking history. The balance of financial historiography is, however, being righted. Securities markets do have a recorded history, but one that usually is not well documented in public records. Information is one of the most important inputs and outputs of these capital markets, but historically it was of far more use to day-to-day participants in the markets than to governments. Therefore, it appeared for the most part in newspapers and other private periodicals rather than in the government documents that have been so conveniently collected and placed in numerous libraries for the use of scholars and others. Decades ago, a few historians culled information on capital market activity from such private periodical sources to study particular eras, usually in conjunction with research on business cycles (e.g., Smith and Cole, 1935). And there are some landmark studies distinguished for shedding light on the breadth and depth of securities market history over long periods of past history. In the latter category, there is work of Cowles (1939) on U.S. stock prices from the 1870s to the 1930s—the forerunner of comprehensive modern stock price averages and the progenitor of much subsequent work on the historical behavior of stock prices. There is also the work of Macaulay (1938) on U.S. interest rates, bond yields, and stock prices back to 1856. More recently there is the work of Neal (1990) on the rich but neglected quantitative history of British and Dutch capital markets from the late seventeenth to the early nineteenth century, and that of Davis and Cull (1994) on international financial flows to and from the United States in the century before 1914.

United States securities markets had a rich quantitative history before 1856 and 1871, the dates when Macaulay and Cowles began to document and analyze it. Smith and Cole (1935) drew attention to this history from the 1790s to 1860, in developing stock and bond price series and indexes of prices back almost to the start of the government under the Constitution. During the past decade or so, these have been used by scholars to study U.S. stock and bond returns over two centuries. Smith and

[2] There is a good example in American banking history. Until the twentieth century, many "private" (unincorporated) banks existed in the United States, but we know little else about them in the aggregate. See, for example, Sylla (1975, 1976).

Cole, however, treated the financial-markets aspect of their work almost as a curiosity because they doubted the early financial series had much to do with business conditions and because the newspapers they studied published far fewer financial asset prices than commodity prices.

Perkins (1994) was more circumspect. His study of the development of American public finance and the financial services sector during the eighteenth and early nineteenth centuries led him to the conclusion that by the time of the War of 1812, the United States possessed a complex, articulated financial organization—centered in a banking system and other capital market institutions. Perkins did not compare the U.S. system to those of other countries, but his account, placed in context, suggests that the early U.S. financial system rivaled that of any other country at the time. Given that barely three decades earlier there were almost no U.S. banks or organized domestic securities markets, this was a considerable achievement, one that Perkins himself rather underemphasized.

The establishment of a modern financial system at the start of U.S. history is also important for understanding the country's rapid growth throughout the nineteenth century. Historians have long regarded the drivers of that growth as being manufacturing technologies, transportation innovations, and the opening of the trans-Appalachian west for settlement and integration into the national and world economies. But each of these developments, which emerged mostly after 1815, relied in important ways on the financial system established earlier. Manufacturing technologies, transportation innovations, and extensive lands to be settled were available in many parts of the world in the early nineteenth century. But nowhere were they exploited as early and as well as in the United States. The telling economic difference circa 1820 between the United States and, say, Canada, Mexico, Brazil, or Argentina was in financial organization, where the Americans were way ahead. Earlier, around 1780, when the Americans had no banks or organized securities markets and were awash in nearly worthless paper money, financial differences between the United States and its new world neighbors were less noticeable. In finance as in political organization, key changes occurred in the United States between 1780 and 1820, and the political and financial changes were very much related to one another.

THE FEDERALIST FINANCIAL REVOLUTION

During the 1780s, merchant groups organized three banks—the first ones in the United States—in Philadelphia, New York, and Boston. Two received corporate charters from their state legislatures, but New York's bank waited until 1791 for this privilege. These were isolated, local banks; there was no banking system. States serviced the debts they had incurred in the War of Independence, sometimes by raising taxes and sometimes by printing bills of credit, fiat paper money that had long colonial-era precedents. The domestic U.S. debts incurred by Congress during the war were essentially unserviced "junk" bonds, with interest payments due settled by issuing more IOUs because the Confederation Congress lacked the power to raise revenue through taxation. Foreign debts were serviced by means of new loans from European investors, who had an interest in rolling over their previous American loans and probably hoped for a favorable turn in the new nation's finances.

Adoption of a new constitution in 1788 laid the basis for reforming the financial system. The new framework of American government was mainly the work of Nationalists who, because they built up financial and other powers of the new federal government while reducing those of states, came to be called Federalists. In the new arrangement, the states lost, among other powers, the right to print fiat paper money. But they did not lose the right, which they already had exercised in two instances, to charter banks that could issue paper money and deposit credits convertible into a monetary base of specie. And charter banks is

Table 1

U.S. State-Chartered Banks:
Numbers and Authorized Capital, by Region and Total, 1790-1835

(Capital in millions of dollars)

Year	New England		Mid-Atlantic		South		West		United States	
	No.	Capital	No.	Capital	No.	Capital	No.	Capital	No.	Capital
1790	1	0.8	2	2.3					3	3.1
1795	11	4.1	9	9.4					20	13.5
1800	17	5.5	11	11.9					28	17.4
1805	45	13.2	19	21.7	6	3.5	1	0.5	71	38.9
1810	52	15.5	32	29.4	13	9.1	5	2.2	102	56.2
1815	71	24.5	107	67.1	22	17.2	12	6.4	212	115.2
1820	97	28.3	125	74.2	25	28.6	80	28.4	327	159.6
1825	159	42.2	122	71.2	32	33.3	17	9.4	330	156.6
1830	186	48.8	140	73.8	35	37.3	20	10.5	381	170.4
1835	285	71.5	189	90.2	63	111.6	47	35.0	584	308.4

SOURCE: J. Van Fenstemaker, *The Development of American Commercial Banking, 1782-1837.* Capital data are rounded, so components may not add to total. Kent State University Press, 1965, Tables 4, 12, 13, 14, 16, 17, and A-1.

what the states did. From three such banks in 1790, their numbers rose to 28 in 1800, 102 in 1810, 327 by 1820, and 584 by 1835. During the 1790s, all of these banks were in the New England and Middle Atlantic states; in 1835, more than 80 percent of the state banks were in this same northeastern region (see Table 1).

Equally remarkable financial developments came at the federal level, or were prompted by federal actions. During George Washington's first presidential administration, 1789-93, Treasury Secretary Alexander Hamilton proposed, and the Federalist-dominated Congress enacted, a comprehensive program of financial reforms. Federal authority was exercised in 1789-90 to raise revenue from customs duties and domestic excise taxes. This revenue was pledged to pay interest in hard money on national and assumed state debts that were restructured in 1790 into three new issues of Treasury securities—6 percent and 3 percent issues that paid interest immediately, and a deferred 6 percent issue that would pay interest commencing after 10 years. These issues funded some $65 million of domestic debt; the $12 million of additional debts owed to foreigners, chiefly the French government and Dutch investors, was provided for separately. For perspective, the total national debt of about $77 million was approximately 40 percent of estimated GNP at the time.

Two more measures of 1791 rounded out the program of financial reform. Congress enacted Hamilton's proposal for a Bank of the United States to aid federal financial operations and exercise leadership in developing a U.S. banking system. Whereas the few state banks then existing were capitalized at $1 million or less, the Bank of the United States was capitalized at $10 million (25,000 shares of $400 each), one-fifth of which was subscribed by the federal government and four-fifths by private investors. The latter could use the new Treasury securities to pay for up to three-fourths of their bank shares, with the other fourth to be paid in specie. By design, the federal debt supported the bank, and the bank the debt. Headquartered at Philadelphia, the capital from 1790 to 1800, the bank was authorized to open branches in other cities throughout the nation, and it quickly did. This prompted state leaders to charter more banks, lest the new federal government co-opt the banking business.[3] The last major reform measure was enacted in 1791 to establish a mint for coining gold and silver into a dollar-denominated monetary base.

Most accounts of the Federalist financial program concentrate on public finance and politics. The credit of the national government, which was essentially bankrupt under the confederation, rocketed in the estimation of investors after 1791. Whereas evidences of public debt sold in 1788 for 10 to 20 cents on the dollar in sporadic, unorganized transactions before ratification of the Constitution, as the new federal government began to organize itself and adopted Hamilton's plans, the restructured debts rose toward par, and even above par for the 6 percent-coupon securities, by 1791-92 (Ferguson 1961, chpts. 12, 15). The consolidation of political and financial power at the federal level was troubling to anti-Federalists and even a few nationalists, notably James Madison. Agrarian in outlook and state-oriented in politics, the anti-Federalists had little use or respect for commercial elites, banks, factories, stockjobbers, and securities speculators (in contrast to land speculators). Under Thomas Jefferson's leadership, they formed a political opposition to the Federalists that styled itself as "Republican" or "Democratic Republican."

The Federalists, led by Hamilton, had a different vision. Based on their experience of the 1780s, they viewed state governments as parochial and divisive of the nation. The states were as likely to interfere with as to promote a unifying national government and diversified, nationwide economic development. The Federalists' goal was to overcome state parochialism, to build a national government that would command the respect of Americans and foreign nations, and to use that government to foster energetic national economic development. Their means was to give Americans, and possibly foreigners, a recognizable stake in the new government's success. Long ago the great historian Charles Beard (1915, p. 131) summed up what he saw as Hamilton's insights and statecraft:

> Hamilton's measures were primarily capitalistic in character as opposed to agrarian . . . and constituted a distinct bid to the financial, commercial, and industrial classes to give their confidence and support to the government in return for a policy well calculated to advance their interests. He knew that the government could not stand if its sole basis was the platonic support of genial well wishers. He knew that it had been created in response to interested demands and not out of any fine spun theories of political science. Therein he displayed that penetrating wisdom which placed him among the great statesmen of all time.

The anti-Federalist and Republican opposition, however, saw Hamilton's measures as a sell-out to a relatively wealthy commercial minority living in cities at a time when most citizens of the country were tillers of the soil. Thus the contours of American political life—states' rights vs. federal authority, agrarians vs. capitalists, the ordinary people vs. the business elites—that have persisted to the present day were born in the lines of battle drawn up over the Federalist financial program.

The effects of the Federalist program involved more, however, than public finance and politics. Directly and indirectly, as financial historians and other students of the era have noted, it promoted the development of the U.S. banking system. Less noted have been its effects on securities market development. As old evidences of Revolutionary War debt were exchanged for some $65 million of new, interest-paying federal securities starting in late 1790 (to which was added $10 million stock in the Bank of the United States a year later), active and regularized trading markets for these "national market" issues emerged in major cities, particularly New York, Philadelphia, and Boston. They were joined as time went on by more and more local issues. Securities market prices began to be reported regularly, usually at weekly intervals, in the newspapers of the day. Using these sources,

[3] The Bank of New York was founded by Hamilton and others in 1784, but its requests for a charter were rebuffed by the New York legislature, controlled by anti-Federalists, until 1791, when the Bank of the United States came into being and "threatened" to open a branch in New York City. The anti-Federalist legislature quickly countered the threat by grant-ing a state charter to the Bank of New York, thereby insuring that at least some part of banking in the state would be under its control. See Wright (1996).

two collaborators and I gathered a database of end-of-month prices of U.S. debt securities from 1790 to the 1830s and analyzed the data in a recent working paper (Sylla, Wilson, and Wright 1997). Here, as background for exploring interactions of the securities markets with the emerging U.S. banking system, I summarize four key findings of that working paper that are derived from analysis of monthly securities prices covering four decades.

Domestic Intermarket Arbitrage

The New York, Philadelphia, and Boston securities markets showed evidence of pricing efficiency and intermarket integration from the beginning, despite slow communication times (one to two days between New York and Philadelphia, roughly a week between New York and Boston) and varying intercity exchange rates. In 1791 and 1792, as the markets were in their infancy, prices of the same security were about the same in each city, and they moved up and down together from month to month. The data give a strong impression of intermarket arbitrage, a point confirmed by archival evidence we and others uncovered.[4] Although the capital was in Philadelphia, which was the nation's largest city and considered to be its leading financial center, New York even then appeared to have the most active securities market. New York market participants, some of whom likely were acting as agents of European investors, had their own agents in Philadelphia and Boston who bought and sold securities for them whenever those markets appeared to offer an advantage over New York prices. Judging by these findings, the U.S. securities markets were capable of allocating capital with a high degree of efficiency as early as the 1790s, when they first emerged to provide organized trading in federally sponsored securities issues.

Efficient Pricing of Hybrid Securities

Hamilton's 6 percent coupon-deferred security was something like a zero-coupon bond for the 10 years between 1791 and 1800. If the securities markets priced efficiently, the difference between its market price and the market price of the 6 percent coupon issue that paid interest throughout the period would be the present value of the stream-of-interest payments promised by the 6 percent coupon issue but not the deferred 6 percent security. Lacking a market rate of interest to calculate present values, we "backed out" an internal rate-of-return series that equated each month's price difference between 6 percent coupon and deferred securities to the remaining stream-of-interest payments that the 6 percent coupon security had promised up to 1801, when the two issues became equivalent. This series, although it is an implicit short-term rate, tracks fairly well the yields of the interest-paying 6 percent coupons. Implicit yields of the zero-coupon deferreds were in the 5 percent to 10 percent range, in keeping with other American yields during the 1790s. The infant U.S. securities market could price a hybrid, zero-coupon security with efficiency.

Encouraging Capital Inflows from Overseas

As Hamilton forecasted in the 1790 Report on Public Credit that outlined his proposals for funding U.S. debts, the new securities that resulted from Congress' adoption of his plan proved attractive to overseas investors, and, in buying them, the overseas investors transferred capital to the United States. Blodget (1806), relying on Treasury and other data, estimated that by 1803 more than half of the debt of $81 million (which included $11.25 million in U.S. securities paid to France that year for the Louisiana Purchase) was held in Europe, mostly by English and Dutch investors. Blodget also found that more than three-fifths of the stock of the Bank of the United States had found its way to European hands. It seems clear that one attraction of American securities to European investors was the ready markets they commanded in U.S. cities. Parallel markets in U.S. issues

[4] A collection of surviving letters from Stephen Higginson, a prominent Boston businessman, to Leroy & Bayard, New York merchants, shows that from 1790 to 1794, Higginson acted as the latters' agent, buying securities for them at Boston when they could be obtained on more favorable terms than at New York. The letters are in the Gratz Collection at the Pennsylvania Historical Society. Werner and Smith (1991, pp. 43 and 226n) cite similar evidence showing that other New Yorkers had agents doing the same thing at Philadelphia.

developed in London and Amsterdam, and newspapers on both sides of the Atlantic began to report on the "latest" (usually two months earlier) prices of the same securities across the sea. U.S. securities-market development during the 1790s thus paved the way for a flow of capital from Europe to America that would reach huge proportions in the internal improvement era of the 1820s and 1830s, and in the railroad age that followed.

Parity in International Capital Markets

Yield levels and fluctuations of U.S. 3 percent securities, the majority of which were owned by European investors in 1803, and those of a similar British security, the famous "consol 3s," were very similar for much of the period from 1800 to 1830. An exception to this yield similarity came during the War of 1812, when the British issue rose to a price premium over the similar U.S. issue. Although Britain had its own financial problems during the Napoleonic War era, problems in the United States during the War of 1812 were even worse. States' rights and state banking forces conspired in 1811 to prevent recharter of the Bank of the United States, an action that crippled federal financial management when war came the following year. Banks suspended specie payments outside of New England, and the Treasury was forced into printing near money and borrowing on onerous terms. Despite the financial chaos of suspension years 1814-17, we found that the securities markets priced with efficiency, adjusting prices in Boston, New York, and Philadelphia to reflect prevailing exchange rates between the local currencies of these cities. The larger lesson remains, however, that the debt of the United States, an "emerging market" of the 1790s, apparently could compete on close to equal terms in the eyes of investors with "established" British government debt by the first decades of the nineteenth century. If so, the United States was perhaps the most successful emerging market in the long history of international capital markets.

The banking system and securities markets that grew out of the Federalist financial revolution did not sit easy among their opponents, who took charge of national affairs after 1800. They were widely attacked and sometimes undone (as in the case of the First Bank), but were eventually accepted or reinstituted (as in the case of the Second Bank, founded in 1816 and then undone by Andrew Jackson in the 1830s, necessitating some decades later the "Third Bank" of the United States, which is known more familiarly to us as the Federal Reserve System). Acceptance of the Federalist financial program, even if halting, was predicated on utility. President Jefferson, for example, was among the first to discover the utility of his opponent Hamilton's financial architecture when he found France eager to accept Treasury paper in return for the Louisiana Territory. United States credit had become so good that Napoleon's government could easily raise cash by selling U.S. securities to European private investors. Beard was right: The institutions that sprang up out of Federalist financial policies were well calculated to serve the interests of ever-growing numbers of Americans, including Thomas Jefferson.

BANKS AND THE SECURITIES MARKETS

Apart from government itself, the sector that benefited most from early U.S. securities markets was banking. Banks in the United States, unlike most banks in other countries at the time, were corporations that raised their banking capital by issuing equity securities, which were made all the more attractive to investors by the emergence of active trading markets in the 1790s. Moreover, almost as soon as these markets emerged, securities—both government debt and corporate stock—became useful as collateral for bank loans and objects of bank investment. Early in 1790, for example, the Massachusetts Bank accepted illiquid state securities and old U.S. securities as collateral for bank loans at only 25 percent of par value. When the new 6 percent securities appeared later that year, they could be collateralized at 50 percent of par. A year later, their collateral value had risen to 90 percent of par, and

Table 2

Corporate Stock as Percentage of Financial Assets: Four Countries, 1800-50

Period	USA	Great Britain	France	Germany
1800-15	10	3	0	n.a.
1850	18	11 (est.)	6	3

SOURCE: Raymond W. Goldsmith, *Comparative National Balance Sheets,* University of Chicago Press, 1985, Appendix A. For Great Britain in 1850, Goldsmith reports a combined percentage for corporate bonds and stock. I make an estimate of the stock share based on his 1895 and 1913 data for Britain, which give separate corporate bond and stock shares.

by mid-1792 they were accepted at par value as loan collateral (Davis 1917, vol. 2, p. 65). Colonial and Confederation America had not solved the problem of illiquidity in investment, most of which took the form of real and tangible personal property. The synergies of banks and securities markets released in the Federalist financial revolution led to an outpouring of liquid financial assets and in short order made this long-standing drag on U.S. economic potential disappear.

Corporate stock, like government debt, became a bankable asset. In his study of comparative national balance sheets, Goldsmith (1985) relied entirely on the amount of bank stock for his estimate of U.S. corporate stock in the early years of the nineteenth century. There were, of course, other forms of corporate stock—insurance, transportation, and even manufacturing company stocks—at the time. But banks were undoubtedly the largest component of the early U.S. stock market. Despite their limitations, Goldsmith's national balance sheet data for the first half of the nineteenth century are, in a comparative context, revealing. One can derive from them various ratios, including the ratios of corporate stock to financial assets for various countries at roughly the same dates. Table 2 presents that ratio for the United States, Great Britain, France, and Germany at the beginning and midpoints of the century. Somewhat surprisingly, at both dates the United States led the world in the proportion of financial assets held in the form of corporate stock. This is another indication of the impact of the Federalist revolution on the financial habits of Americans.

Aggregated data such as Goldsmith's are suggestive, but newspaper sources, with a more micro perspective, provide a more detailed (if still far from complete) picture of the extent of U.S. securities market development, including the market for corporate stock, in the early decades of the republic. Table 3 shows the newspaper listings of securities regularly quoted in leading U.S. markets from 1797 to 1817, the year the New York Stock Exchange was formally organized. New York provides the two-decade chronology in the table, with glimpses of the market there in 1797, 1801, 1811, and 1817. The New York, Boston, Philadelphia, and Baltimore listings in mid-1811 give a cross-section of securities-market development in leading cities by that year. All the listings are taken from one New York newspaper, which indicates that New Yorkers even then were rather interested in what was going on in markets other than their own. Such regularly published newspaper lists are, of course, the tip of the iceberg of U.S. securities-market development. Many more companies formed and issued stocks that did not make it into the weekly quotation lists of newspapers, presumably because the stocks were closely held or inactively traded compared to listed securities, or perhaps because the papers, which consisted of just a few pages—largely paid ads—could not afford to publish too much free material.

In New York, the list of state banks rose from one to eight from 1797 to 1817; all were New York City banks. In 1811, there were five listed state banks in New York, three in Boston, four in Philadelphia,

Table 3

Securities Listed and Quoted in Leading U.S. Markets, 1797-1817

New York, 1797
U.S. 6 percent bonds
U.S. 3 percent bonds
U.S. Deferred 6 percent bonds
Bank of United States
Bank of New York

New York, 1801
U.S. 6 percent bonds
U.S. 3 percent bonds
U.S. Navy 6 percent bonds
U.S. 8 percent bonds
Bank of United States
Bank of New York
Manhattan Bank
New York Insurance Co.
Columbian Insurance Co.
United Insurance Co.

New York, 1811
U.S. 6 percent bonds
U.S. 3 percent bonds
Bank of United States
Bank of New York
Manhattan Co. Bank
Merchants Bank
Union Bank
Mechanics Bank
New York Insurance
Columbian Insurance
United Insurance
Marine Insurance
Commercial Insurance
Phoenix Insurance
Eagle Insurance
Mutual Insurance
Ocean Insurance
New York Firemen Insurance

Boston, 1811
U.S. 6 percent bonds
U.S. 3 percent bonds
Massachusetts Bank
Union Bank
Boston Bank bond
Late Bank of U.S.
Boston Marine Insurance
Fire and Marine Insurance
State Notes

Philadelphia, 1811
U.S. 6 percent bonds
U.S. 3 percent bonds
Louisiana 6 percent bonds
Bank of U.S.
Bank of Pennsylvania
Bank of North America
Bank of Philadelphia
Farmers & Mechanics Bank
Ins. Co. of Pennsylvania
Ins. Co. of North America
Union Insurance
Phoenix Insurance
Delaware Insurance
Marine Insurance
United States Insurance
Lancaster & Susqueh'a Insurance
American Fire Insurance
Schuylkill Bridge shares
Delaware Bridge shares
Lancaster Turnpike shares
Germantown Turnpike shares
Cheltenham & Willow Grove Tpk shares
Chestnut Hill & Springhse Tav'n shares
Frankford Turnpike shares
Water Loan
City Loan
Masonic Loan

Baltimore, 1811
U.S. 6 percent bonds
U.S. 3 percent bonds
Louisiana 6 percent bonds
Bank of U.S.
Maryland Bank
Baltimore Bank
Union Bank of Baltimore
Mechanics Bank
Farmers Bank
Columbia Bank
Potowmac Bank
Farmers & Merchants Bank
Commercial & Farmers Bank
Franklin Bank
Marine Bank
Baltimore Insurance shares
Maryland Insurance shares
Marine Insurance shares
Chesapeake Insurance shares
Union Insurance shares
Fire Insurance
Reistertown Road stock
Fredericktown stock
York stock
Falls stock
Union Manufacturing
Water stock

New York, 1817
U.S. 6 percent bonds
U.S. 3 percent bonds
Louisiana 6 percent bonds
U.S. 7 percent bonds
Yazoo/Mississippi (U.S.)
NY State 6 percent bonds
NY State 7 percent bonds
Corporation 6 percent bonds (NYC)
Bank of U.S.
Bank of New York
Manhattan Co. Bank
Merchants Bank
Mechanics Bank
Union Bank
Bank of America
City Bank
Phoenix Bank
United Insurance
New York Insurance
Fireman Insurance
Ocean Insurance
Phoenix Insurance
American Insurance
Pacific Insurance
Mutual Insurance
Washington Insurance
Eagle Insurance
Globe Insurance
National Insurance
Spanish Dollars
Doubloons

NOTE: Securites quotations usually accompanied by quotations for inland and foreign exchange. Also gold and silver coins when specie payments were suspended.

SOURCE: *New York Price Current*, issues of Jan. 2, 1797; Feb. 28, 1801; June 29, 1811 (for four cities), and Dec. 24, 1817.

and no less than 11 in Baltimore, although two of these banks—Columbia and Potowmac—were chartered by the District of Columbia. The American separation of financial and political centers likely arose because the country had securities markets before it established its permanent capital.

Having active stock markets encouraged investors to own bank stocks. The other side of this coin was that it made it easier for corporate banks to form and to raise equity capital. Starting from next to nothing in 1790, the United States experienced, mostly under the auspices of state-chartered banking corporations, the most rapid spread of banking institutions of any country over the next decades. Table 1, which is based on the painstaking archival and documentary research of Fenstermaker (1965), presents by regions the number and authorized capital of state-chartered banks at five-year intervals from 1790 to 1835. State-chartered banks increased from three to 584 during the 45-year period, while authorized capital increased from $3 million to $308 million. Some increases in authorized capital should be treated with skepticism, for two reasons. First, the table itself indicates unusually large increases between 1830 and 1835, particularly in the South and West. Visionary schemes there, coupled with the ease of access to European capital that was a product of the very capital market developments under discussion, made it possible for the states of Louisiana, Mississippi, and Tennessee, and the territories of Florida and Michigan to raise large sums for banking improvements by selling state-guaranteed bonds to foreign investors. In less than a decade, the bubbles burst and many states defaulted on, some even repudiating, their debts. The New England and Middle Atlantic states, where even as late as 1835 more than four out of five state banks were located, provide an indication of steadier, more orderly banking development.

A second reason for skepticism is that authorized capital was seldom the same as capital paid in. Banks requested more capital in their charters than they intended to start with, to avoid political complications that might arise from petitioning state legislatures for increases. For the earlier dates in Table 1 there is precious little information on capital actually paid in. By 1825, 1830, and 1835, Fenstermaker (1965, Table 10) was able to gather balance-sheet information for a majority of the banks. His data indicate that, for these banks alone, paid-in capital was 50 to 70 percent of the total authorized capital for all U.S. state-chartered banks. A recent history of banking in New York state reproduces a table giving the paid-in capital of 11 city and 11 country banks in 1828 (Hubbard 1995, p. 72); together these were about half of the banks the state had chartered. By matching the banks with Fenstermaker's Appendix A giving the authorized capital of the same banks, I found that the country banks had paid in 59 percent of their authorizations, and city banks 67 percent. Since the latter were substantially larger, for all 22 banks the ratio of paid-in to authorized capital was nearly the same, 66 percent. Interestingly, three of the New York City banks had paid-in capitals larger than the amounts authorized in their original charters; as their banking businesses grew, they found it prudent to increase their capitalizations.

Pending more analysis, a conservative estimate of the ratio of paid-in to authorized capital for the U.S. banking system in its early decades would appear to be about 0.6. Applying that factor to Table 1's authorized bank capital in 1800 gives $10.4 million for the 28 state banks then in existence (and $20.4 million by adding the capital of the First Bank, all of which was paid in). In 1825, the corresponding figure is $93.7 million for 330 state banks (and $128.7 million adding the $35 million in capital of the Second Bank).

I chose the dates 1800 and 1825 because there are corresponding estimates of the banking capital of England and Wales in those years. Cameron (1967, pp. 32-33) estimates that England and Wales in 1800 had £5.5 million ($25.9 million) of capital invested in banks, not counting the "Rest," or surplus capital available for banking, of the Bank of England, and £9.8 million ($46.1 million) if the Bank of England is included. Comparing the two countries, we can conclude that by 1800 the United States, whose banking system was barely a decade old, had nearly half the banking capital of England and Wales, roughly on the order of its population in relation to that of England and Wales. The Federalists had effected rapid change. Given their fate, one wonders whether it might have been too rapid for their political fortunes.

To avoid possible misunderstanding, let me make clear that I do not mean to imply that either banking capital or the number of banks is the best or even appropriate measure of the importance of banks to a country's economy. My point is simply that for earlier periods of financial history, such as the one discussed here, such measures are the only ones currently available for making cross-national comparisons.

Carrying the comparison to 1825, Cameron gives the banking capital figures for England and Wales in that year as £8.5 million ($40 million) without the "Rest," and £11.4 million ($53.6 million) if the "Rest" of the Bank of England is included. The corresponding U.S. figures for 1825, it will be recalled, are $93.7 million and, including the Second Bank, $128.7 million. This comparison may come as a surprise to historians who were brought up on the stylized facts of Britain as the world's banking and financial leader of the early (and later) nineteenth century, and the United States as a new country attempting, in halting ways, to establish an orderly banking and financial system. To my knowledge, no one before has drawn attention to the point that leaps out of the comparative data, namely that as early as 1825 the United States, with a population approaching that of that of England and Wales, apparently had 2.4 times the latter's banking capital.

The comparison lends some perspective to the effects of the Federalist financial revolution on early U.S. economic development. England, to be sure, was a wealthy, rapidly modernizing country, but in 1825 it still had quite restrictive laws limiting banks to six partners and not limiting their liability. Of banks in England and Wales, only the Bank of England possessed a corporate charter and limited liability. The United States in most senses was less wealthy than England, but it grew economically even more rapidly by leveraging what wealth it had, in large part by means of corporate banks with limited liability.[5] That is part of the point, of course: The United States obviously was more liberal than England in its approach to banking. Some fraction of U.S. banking capital in 1825, to be sure, was supplied by British investors, but it is unlikely to have exceeded 10 percent of the total.[6] If those securities had been repatriated and the proceeds invested in English banks, the United States, with a similar population in 1825, would still have had about twice the banking capital of England and Wales.

The comparison can be carried still further. Table 4 gives the authorized banking capital, 1790-1835, of the four cities—Boston, New York, Philadelphia, and Baltimore—identified in Table 3 as having active securities markets in 1811. In 1825 the 50 state-chartered banks of the four cities had fully a third of the authorized capital of the 330 state banks then existing, $53.5 million of $156.1 million. Applying the 0.6 factor, which likely is too conservative, yields an estimated paid-in capital of $32.1 million in the four cities. The state banks of the four cities thus had 60 percent of all the banking capital of England and Wales in 1825. If the $35 million of capital of the Second Bank, which did a considerable part of its business in the four cities, is added to the four-city banking capital, the total, $67.1 million, considerably exceeds the England and Wales figure of $53.6 million.

These comparisons suggest that something quite significant for future economic development occurred in the first decades of U.S. history. An effective, efficient securities market emerged immediately as the Federalists transformed the national debt from junk paper to high-grade securities and established a large national bank. The presence of the securities market and the Bank of the United States then encouraged states to charter banks and other corporate enterprises with increasing liberality as

[5] By the 1830s, writers in England and America were debating which nation had the better banking system. For a discussion of the issues and the respective views, see Sylla (1985).

[6] In the late 1820s, foreign investors held about a fourth of the stock of the Bank of the United States, which was capitalized at $35 million. President Jackson used foreign ownership for xenophobic effect in his battle with the bank, even though foreign stockholders could not vote their shares. But it is unlikely that foreigners held much stock in state-chartered banks. The 1830s demonstrated that foreign investors were willing to purchase state debt issued to establish banks, but not, it seems, stock in the banks themselves.

Table 4

State Banks and Authorized Bank Capital in Boston, New York, Philadelphia, and Baltimore, 1790-1835

Year	Boston		New York		Philadelphia		Baltimore	
	No.	Capital	No.	Capital	No.	Capital	No.	Capital
1790	1	0.8	1	1.0	1	2.0	1	0.3
1795	2	1.6	1	1.0	2	5.0	2	1.5
1800	2	1.6	2	3.0	2	5.0	2	1.5
1805	3	2.8	3	4.3	3	7.0	3	4.5
1810	3	4.8	4	6.3	4	8.3	8	8.2
1815	6	7.9	8	15.8	8	11.8	9	9.7
1820	8	8.9	9	16.3	8	11.8	10	10.2
1825	16	13.2	16	20.4	8	11.8	10	10.2
1830	23	17.3	21	22.6	9	12.0	8	8.2
1835	34	23.5	26	24.6	12	17.6	10	11.2

SOURCE: Derived from J. Van Fenstermaker, *The Development of American Commercial Banking, 1792-1837*, Kent State University Press, 1965, Appendix A.

time went on. The inherent appeal of the corporate form, particularly its limitation of stockholders' liability, and the liquidity the securities markets gave to corporate stock, encouraged domestic investors to take up the ever-growing stock offerings.

Banking corporations in the New England and Middle Atlantic regions were the leading sector of this development. Because American wealth at the time of the Federalist financial revolution was illiquid—tied up in real estate, slaves, commercial ventures, and the like—the first banks, in addition to financing domestic and international commercial expansion, also provided accommodation loans to purchase stock, both in themselves and in other enterprises. The emergence of domestic securities markets gave liquidity to such stock. International markets for U.S. securities also helped to fund early U.S. banks. For if Samuel Blodget (1806) was roughly correct in his estimate that in 1803 nearly half of U.S. securities, mostly federal debt and Bank of the United States stock, had been sold to foreign investors, then it is likely that a great deal of the funds that went into early state-bank and other corporate stock offerings came from the proceeds of those sales. With their successful emerging market, Americans were able to sell large amounts of their highest-quality securities to overseas investors and as a result to gain funding for domestic investments. These banking-securities market interactions provide an explanation for the rapid spread of banking in the American Northeast. By 1830, the New England and Middle Atlantic regions, which then contained 43 percent of U.S. population, had—according to the estimates of Table 1—fully 86 percent of the nation's banks and 72 percent of its banking capital. By the third and fourth decades of the nineteenth century, there was probably no place in the world as "well banked" and "security marketed" as the northeastern United States. Banks and securities markets complemented each other, of course, and it is probable that they had much to do with the Northeast's rapid transportation and manufacturing developments.

Lamoreaux's recent analysis of banking development in New England, where the business developed extensively in the early decades of the nineteenth century, describes the bank-capital market interaction in full sway:

> By securing a charter for a bank, [entrepreneurs] obtained a vehicle that, almost if by magic, could assist them in raising funds. First, the incorporators subscribed for a controlling

> interest in the new bank's stock; then, when payment for the stock became due, they borrowed the requisite sum from another institution. Such loans were not difficult to obtain, because they were essentially riskless. As soon as the state's examiners had satisfied themselves that the new bank's capital had actually been deposited, the investors could borrow back the money they had tendered for their stock (using the stock itself as security for the loan) and repay the original debt.
>
> . . . The main source of funding for banks during this era was the sale of bank stock, for which savings institutions, insurance companies, charitable associations, and private individuals proved willing purchasers. Thanks to this market, the original investors were usually able to sell off some of their share holdings once their bank had been in operation for a few years. They could then use the proceeds from these sales to repay their stock loans at the bank . . . . Over time, as the bank established a market for its securities, the proprietors could raise additional funds by increasing the bank's capitalization and selling new shares (Lamoreaux 1994, pp. 19-20).

As New England's banks proliferated and became intimately bound up with banker-entrepreneurs' industrial ventures, a process Lamoreaux documents in detail, New England led the way in U.S. industrial development. The financial system that sprang up out of Federalist measures in the 1790s quickly became an essential underpinning of the country's modernization and growth.

BANKS AND STATE FINANCES

A securities market standing ready to finance bank IPOs was not the only reason U.S. banks proliferated. Another reason state-chartered banks grew rapidly in numbers is that states derived considerable revenues from banks. Initially, these revenues came from investment in bank stock. When banks were chartered, states commonly reserved the right to subscribe at par to bank stock, and as banks proved profitable, the states exercised these rights. They thus obtained dividend revenues that, given their limited budgets, allowed broad-based property taxes to be kept low or even to be eliminated. States also demanded and received bonus payments at the time charters were granted or renewed (Sylla, Legler, and Wallis, 1987).

The practice of making the state an investor in banks presented something of a dilemma. On the one hand, more bank charters with bonus payments and stock reserved for the state could lead to increased revenues. On the other hand, if a large number of banks were chartered and competed with each other, then bank profits and dividend rates might fall (Schwartz 1947; Wallis, Sylla, and Legler, 1994). States that remained investors resolved the dilemma by not chartering "too many" banks. In this they were heartily encouraged by the banks they had already chartered, who had an interest in limiting competition in their business.

This was the solution in most states during the two decades after 1790, which likely accounts for the steady but moderate spread of banking in those decades. Many requests for charters in these years were rejected or delayed. Hence, private (unincorporated) banking flourished, and states attempted to restrict this "unauthorized" competition for their chartered institutions by passing restraining laws, usually to ban private-banknote issues (Sylla, 1976). Outside of New England, this pattern continued into the 1810s and 1820s, and even later, and it led to a certain amount of legislative corruption and political cronyism, as might be expected when the demand for bank charters greatly exceeded the supply. New York, Pennsylvania, and Maryland banking were especially vulnerable to problems of this sort. New York's free-banking law of 1838, marking the end of legislative chartering of individual banks in the state, was a reform measure designed to stop corruption and cronyism by opening up banking to any and all who met legally prescribed rules. It became a model for other states and, in 1863, for the federal government's National Banking System.

The New England states, beginning with Massachusetts in 1812, hit upon another solution that had the effect of reconciling state financial interests in banks with the excess demand for charters. Massachusetts ended its practice of investing in bank stock and replaced it with a tax on bank capital. Under this system, the more bank capital there was, the greater were state tax revenues, so the Massachusetts legislature, followed by other New England states, began routinely to grant charters whenever they were requested. That is a major reason why, as Table 1 indicates, in New England the numbers of banks and, to a lesser extent, the amount of capital invested in them outpaced banking growth elsewhere. Because it was in the fiscal interest of New England state governments to charter more banks, the region effectively had free banking through the liberal use of legislative chartering well before free banking by means of administratively granted charters arrived in New York in 1838.

New England's experience is indicative of what might have happened elsewhere had there been a better alignment of incentives among legislators and bankers. It is evident that the capital markets stood ready to supply more capital for banks—many bank IPOs were oversubscribed throughout the era. The U.S. banking system did develop rapidly in its first decades, but it could have developed even more rapidly than it did in states where legislators and bankers sometimes had a mutual interest in limiting bank entry.

INCREASING FINANCIAL SYNERGIES: BANKS AND SECURITIES-MARKET LOANS

Myers, the historian of the New York money market, long ago drew attention to one aspect of the intimate connection of banks and securities markets that grew up early in U.S. history:

> The most distinctive feature of the present-day money market in New York is the call loan . . . . The demand loan secured by stocks and bonds is a peculiarly American product, and it is important not only by reason of that fact, but also because it has always been closely linked with other parts of the money market. Upon the supply side it has been intimately connected with the reserves upon which the entire banking structure of the nation rested, so that banks were dependent upon the call loan market for funds in times of crisis. On the demand side, it formed the basis for the investment market, securing the funds with which it operated through the medium of call loans and building up the technique of stock trading around them . . . . [I]ts relation to bank reserves was not assailed until the passage of the Federal Reserve Act in 1913, and its position in the speculative transactions of the Stock Exchange is still untouched (Myers 1931, p. 126).

Myers was not certain when the call-loan innovation developed, although she notes that it was well established under that name in the 1840s. In the 1830s, New York City newspapers published rates for temporary loans on stocks (Myers, chpt. VII). By the 1820s at the latest, New York City banks were holding substantial net balances of out-of-town banks, for purposes of banknote redemption and to provide New York City exchange for their customers, and the City's banks reported loans on securities collateral to a near-identical amount (Myers, p. 128). It is likely that the practice of out-of-town banks keeping balances in New York City was nearly as old as the banking system. Wright (1996, p. 321) reports that almost as soon as it was organized in 1803, Albany's New York State Bank deposited $40,000, a substantial chunk of its resources, in two New York City banks to provide for note redemption. It is likely that other country banks of New

York State did so, too, and for the same reason—to give their notes greater currency.

By the first years of the nineteenth century, New York was emerging as America's leading port city. Imports arriving there were distributed throughout the country, which meant that out-of-town merchants needed New York exchange to pay for the goods. That is why banknotes were routed to New York City, why out-of-town banks found it convenient to keep redemption funds there, and why out-of-town bankers' balances in the city in excess of what was needed to redeem country bank notes were useful in providing bank customers with drafts payable in New York.

Another attraction was that New York banks were able to pay interest to bankers on balances held with them. Here the presence of the nation's most active securities market was critically important. The securities market, as Myers noted, became a source of demand for loans to carry investments in stocks and bonds, which served as liquid collateral for loans from the city's banks. If a city bank needed to, it could call in securities market loans, and the borrower could either arrange a new loan or dispose of securities on the market to meet the call. Since New York City banks could lend out-of-town bankers' balances on liquid securities collateral, they could afford to pay interest on them, which made keeping balances in New York City banks attractive to out-of-town banks. Such balances became still more attractive when some states (and in 1863, the United States, for National Banks) enacted reserve requirements and allowed banks to count New York City balances as reserves.

With the development of securities trading, which was funded with growing amounts of bankers' balances, the U.S. banking system in a sense returned a favor. When banks were first becoming established, the securities market funded them by providing capital.[7] Then, as banks concentrated their reserves in money centers, particularly in New York City, money-center banks found that short-term loans and call loans on securities collateral were a good use of those funds because of the liquidity the securities market imparted to the collateral. These synergies of American banks and securities markets were well established by the 1840s but were being established throughout the previous four decades.

CONCLUSIONS

Historical and policy conclusions emerge from the foregoing account of banking and securities market interactions from the first years of U.S. history. Economic historians of the United States have known for some time now that the American economy was growing at modern rates by 1840, as well as that such modern rates of increase in per capita product were not evident before 1790. In the intervening five decades, something—or some things—happened to accelerate U.S. economic growth. Lingering obsessions with "the industrial revolution" and "the transportation revolution" made factories, canals, and railroads among the candidates for things that happened to accelerate U.S. growth. Sometime earlier, cotton and cotton exports had had their day, too, but they had been found wanting and dismissed from the list of things. It is worth noting, however, that factories came mainly after 1815, as did canals, and that railroads were not a factor until the 1830s, and perhaps not a significant factor until the 1840s and 1850s when, we now know, U.S. growth rates already had become modern. Could it be, then, that financial change was the jump-starter of economic change? It is a strong possibility, it seems, because the other candidates—factories, canals, railroads, even cotton—all relied on modern financing methods. Those financing methods were not present until the 1790s, well before the other candidates came on stream. It remains to be seen whether further analysis of the Federalist financial revolution and its impacts on American economic life will persuade others that U.S. economic growth was "finance-led."

Since this is a policy conference, the main policy lesson I would derive from early U.S. financial experience is the impor-

[7] A by-product of bank access to securities market capital in early U.S. banking was that capital accounts were larger items relative to deposit and note liabilities than was common in other countries and, later, in U.S. bank liability structures.

tance of taking a broad view of financial development and paying attention to the manifold ways in which components of a financial system, such as banks and securities markets, can complement and reinforce one another. Banks are important, but they are hardly the whole story, as historians have sometimes implied, of modern-era financial development. Applying the lessons from U.S. history of the emerging market of two centuries ago, we might conclude that governments need to get their own finances in order, to turn national debts into national blessings (as Hamilton in 1781 presciently argued they might be), to establish solid monetary and payments systems and a central bank to oversee them, and to align the public and private interests in fostering the development of private financial institutions and markets. Since all these things were fairly well done in the United States two centuries ago—and many, perhaps, even earlier in the Dutch Republic and Britain—without the help of a World Bank and an IMF, it ought not be so difficult to do them now, given the political will and the presence of such dedicated international institutions. History, at least, offers encouraging examples.

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