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ABSTRACT

Contemporary bank governance is criticized for manager-dominated (insider) boards of directors, but from the beginning of the nineteenth century, bank presidents appear also to have operated as chairmen of the boards of directors. However, the managers were constrained by a variety of rules that tended to align the interests of management, shareholders and other stakeholders until the mid-twentieth century. We trace this development through New York banking law and new data on banks chartered by the State of New York.

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In December 1826 the board of the Franklin Bank of New York City asked Samuel Leggett, a former president of the bank, to reassume his previous position. The bank was in trouble and the board was hopeful that his experience and oversight might help in its recovery. By his own account, Leggett accepted the task reluctantly, and his worse fears were soon realized. During his first week back, he pored over the bank's records, which revealed "*mismanagement, improvident* loans, *irregular* transactions, *false* books … [the] total disregard to the fundamental rules of Banking … was frightfully apparent every where [sic]" (Leggett 1831, 10). When he pieced the puzzle together, what Leggett found was a bank undercapitalized by directors having borrowed against surrendered shareholdings, insufficient specie reserves due to an ill-advised banknote redemption agreement with the New Jersey Manufacturing and Banking Company, and a massively overdrawn account of the Hoboken Bank. Leggett proposed a restructuring of the board, a recapitalization effort, and closing the accounts of the New Jersey banks. The board refused to adopt any of his recommendations. Shortly thereafter New York's other banks refused to accept and redeem the Franklin Bank's notes. When he was told that local merchants no longer accepted the bank's notes, Leggett personally appeared before Chancellor Kent, requested an injunction closing the bank, and handed the Chancellor the keys to the bank.[1]

The magnitude of the losses following from the failure of the Franklin Bank pale in comparison to the losses incurred in the 2008 crisis. But the basic features are much the same. A speculative period in the mid-1820s was followed by the Wall Street crash of 1826. The resulting liquidity scramble revealed uncovered counterparty risks, financial innovations undertaken without a full understanding of the downside risks, tunneling, fraud, interlocking directorates, and a near complete breakdown of effective corporate governance. Hilt (2009) documents populist anger at the "swindles" perpetrated by "scoundrels," and the press's characterization of the episode as a "bold, well-combined, and far reaching system of deception." Criminal indictments were brought against directors and shareholders brought civil suits, but current law provided little relief.

In the next session the legislature enacted a number of reforms designed to improve corporate governance. The new law introduced financial reporting rules and requirements,

[1] There is some confusion in Leggett's discussion. The text claims that he appeared before Chancellor William Kent, but William Kent was never Chancellor, and his father retired from that position in 1823. William Kent was James Kent's son and a New York circuit court judge. Under colonial law New York established both courts of law and courts of equity (or chancery). The Chancellor was the highest judicial officer of equity and would be (roughly) equivalent to the state's chief justice.

changed the rules governing the election of directors, regulated capital contributions, and created new legal responsibilities for directors (Hilt 2008). Although the 1828 revisions were amended and modified over time, they laid out a set of basic rules for corporate governance over the long term. Banks chartered under New York's Safety Fund system (1829-1837) were subject to it, as were banks organized during the Free Banking era (1838-1863).

Despite the centrality of corporate governance in capitalist finance and the growth of enterprise in America, relatively little is known about the development of corporate governance in the early stages of economic modernity despite the fundamental contributions of several recent studies (Lamoreaux and Rosenthal 2006; Lamoreaux 2009; Hilt 2008; and Hilt 2015). In this article, we examine several aspects of the development of corporate governance in the century following New York's establishment of a new regime in 1828 . We situate our discussion of the evolution of banking law within the context of the modern economic literature on corporate governance. Much of our attention is focused on New York State, given its long history as a financial center and wealth of archival materials and published records. Using newly collected data, we provide a sketch of how the banks' boards of directors changed over time and analyze how they may have affected bank performance. We find that from the early charters of the nineteenth century to first decades of the twentieth century, there was considerable continuity in the corporate governance of banks. At the outset the basic rules were set down, and over the course of a century, they were refined and detailed; but the key features constraining risk-taking and expropriation of returns by management were largely retained. Only after the New Deal did state legislation begin to change and alter the set of rules that had long governed state banking institutions.

There are a multitude of issues discussed in the modern corporate governance literature that would benefit from historical perspective, but we focus on two issues specific to boards of directors: (1) the separation of ownership and control; and, (2) the number of directors on bank boards. Consistent with discussions in Hilt (2008), Freeman, Pearson and Taylor (2012) and Hansmann and Parglender (2012), New York bank directors were heavily invested in the firms they managed. On average, the combined shareholdings of board members represented more than one-half the total outstanding shares of early banks. The fraction of shares held by the directors was smaller in larger banks, but it was rarely a trivial fraction. Our finding is consistent with Hilt's (2015) finding reported in this volume. He, too, finds that corporate ownership was

highly concentrated in the nineteenth century and that managerial ownership declined in manufacturing firm size. Together, our article reveal a general patterns of corporate ownership and control in the early stages of development.

Our second notable finding is that the size of bank boards of directors changes over time as regulatory regimes changed. Prior to the 1860s, the average bank board had 12 to 13 members. Although it only directly affected the federally-chartered national banks, the passage of the National Bank Act of 1864 altered the rules of the game by setting a new regulatory standard, with national banks competing with state-chartered banks. During the so-called National Banking Era (1864-1913), the average bank board for state-chartered banks declined in size by about two members. From the establishment of the Federal Reserve System in 1914 through the New Deal era, beginning in 1934, the average bank board declined by a further two members. Thus, the average board of directors at a New York bank in the mid-twentieth century had about half as many members as a century earlier. It remains unclear how much of the decline was an endogenous response to the changing nature of banking practice and governance and how much was a response to regulatory regime change. It also remains unclear whether declining board size was an endogenous movement toward more effective governance. If large boards slowed decision making and encouraged shirking, smaller boards many have streamlined internal governance. If, on the other hand, larger boards brought more diverse points of view and improved the capacity of the board to oversee management, the decline in board size may have had detrimental consequences for governance. Our exploration does not directly address this issue, which remains a fundamental issue for future research.

Corporate Governance and New York State Banking Law

In contemporary analysis, corporate governance is treated as an agency problem arising from the separation of ownership and control of the firm.[2] The problem facing owners who provide the capital for the firm is that they cannot to write a complete contract to specify how managers will behave in all circumstances. Consequently, managers have substantial residual control rights, which they may use to expropriate returns that would otherwise be received by the

[2] We draw heavily on Shleifer and Vishny's (1997) survey of the literature on corporate governance.

owners. Because managers exercise some control over the firm, investment decisions and the consequent long-term risk-return profile may differ from that desired by shareholders.

Agency problem would be less severe if the markets for the firm's inputs and outputs were perfectly competitive. Managers would be forced to rent labor and capital in spot markets at competitive prices. But, if firm capital is highly specific and sunk, it will become difficult to prevent managers from expropriating part of the return from the sunk capital. This simple insight is important for understanding the nature of the agency problem for the beginnings of banking in the United States. While one might imagine that many industries in nineteenth century America were highly competitive with little sunk capital, banking was different. For firms wishing to make loans, take deposits and issue banknotes, state legislatures controlled the process of chartering limited liability corporations, first by requiring prospective bankers to obtain a charter by special legislative act and then later in most states to meet the requirements of a general incorporation act for banks. This process controlled the location of the bank and a bank's initial capital---the geography and minimum size of banks was thus determined; and various studies have shown that although financial markets might have been integrated early, banks' often had some local monopolistic power for good portion of the nineteenth century (Davis 1966, James 1976, Bodenhorn 1992). The potential for economic profits increased the potential for expropriation by managers.

Pre- 1838 Chartering Acts

In New York State, from Independence until the Free Banking Act of 1838, the state legislature controlled the issue of banking charters.[3] Bodenhorn (2006) chronicles the struggles of hopeful bankers to secure a charter. Of the hundreds of legislative petitions asking for a charter, only a few successfully wended their way through the committee process to be reported out as bills; and, then, only a small fraction of the reported bills resulted in chartering acts. The presence of considerable bribery suggests not only considerable unsatisfied demand for banking services but also that once a charter was received, the new institution would be earning infra-marginal rents. Bribery provided legislators with their share.

Although the charters presented before the legislature could be individually crafted, they shared many features that became standard in nineteenth century American banking law. To

[3] For the development of chartered banking in Philadelphia, another financial center, see Schwartz (1947).

take a typical example, the 1828 act incorporating the Canal Bank of Albany, established a one share-one vote regime (New York 1828, Ch.353). A prominent feature of this and other charters was the regulations governing the board of directors who were expected to oversee the operation of the bank on behalf of the shareholders between annual meetings when their election was specified. The "stock, property, affairs, and concerns" of the bank fell under the management of 15 directors, each of whom was required to own at least 50 shares and be a citizen of the state of New York. Alert to the potential for manipulation of elections, the charter required the appointment of independent inspectors to administer the elections on the second Tuesday each July, thus strengthening the legal protection given by the voting rights to shareholders.[4] To ensure that the directors continued to have a significant financial interest, Article 17 of the charter noted that if a director reduced his holdings below 50 shares or moved out of the state, his seat would be declared vacant and a replacement elected by the board for the remainder of his term. In a feature that would become common in American banking law, Article 18 required that president be elected from among the board of directors, and it empowered the board to appoint the cashier and any other officers. It further ceded to the board the power to draft bylaws and other rules "as shall be needful."

In terms of the theory of modern corporate governance, the charter for the Canal Bank had many features that reduced agency problems. By requiring the president to be a member of the board, there was little separation of ownership and management. Directors who were delegated to oversee the operations of the bank on behalf of the shareholders were required to be at least modest minority shareholders. A share capital of $300,000 was set, divided into 15,000 shares of $20 denomination. At 50 shares, each director was required to invest $1000 in the bank and collectively they held a minimum of $15,000 or 5 percent of the bank's capital.[5] As Shleifer and Vishny (1997) note, this concentration mitigates the free rider problem with many small shareholders, and provides directors with incentives to closely monitor the president and other officers. The power granted by the board to draw up bylaws as needed provided directors with authority to amend their contract with the officers of the banks. Given that directors met

[4] This concern continues today. During the proxy vote on whether the CEO of JPMorgan Chase should give up the chairmanship of the board of directors, the shareholders proposing the change complained that the independent firm handling the vote count was only reporting tallies to the management (Craig and Silver-Greenberg 2013).

[5] According the conversions available on EH.net, the $1,000 minimum director investment in 1828 is the equivalent of $25,000 in "real price" terms in 2012. It is the equivalent of $700,000 in "economic status" value. By either metric, it was a nontrivial investment for all but the very wealthiest families in 1828.

frequently, they could respond to most any contingency and closely monitor the president, cashier and others. The danger, of course, was that larger shareholder-directors might use their position of privileged information, perhaps in collusion with the president-director, to expropriate the resources of the firm at the expense of the smaller shareholders. On these possibilities, the Canal Bank charter was silent.[6]

It is important to note that bank directors from the beginning well into the twentieth century were much more deeply engaged in the firm's daily operations than many modern directors. Board meetings to consider loan requests were sometimes held several times each week. It was not until 1904, for example, that the board of the Philadelphia National Bank reduced the frequency of its meetings from twice to once each week (Wainwright 1953, 168). Board meetings were usually weekly affairs at smaller banks. At the typical board meeting the cashier provided a list of loan applicants, the amounts requested, and whether the applicant "kept a good, middling, or small account" at the bank (Wainwright 1953, 19). Boards might ration credit based on each applicant's account balances and reputation, as well as macroeconomic considerations. Some bank bylaws required unanimous consent of a quorum of the board; some instituted black ball systems to preserve anonymity in loan approvals; some allowed the cashier to make small, run-of-the-mill loans and reserved for themselves prior approval of large loans or loans to unfamiliar applicants, a procedure became more common over time. In addition to their regular duties, board committees were regularly appointed to inspect the books, count the money in the vault, and meet with representatives from other banks to discuss such wide-ranging topics as the value at which foreign coins and banknotes would be accepted, how to prosecute counterfeiting, and the terms under which new entrants would be invited to enter into joint clearing arrangements. Bank directors actively participated in the development and implementation of short- and long-term corporate policy and strategy.

Given the responsibilities of shareholders to other stakeholders -- banknote holders, deposits and other creditors -- the act of incorporation put them under the public gaze.

[6] Early American legislators and investors were aware of the potential for majority shareholder expropriation and they devised methods to limit its extent. The 1784 articles of association written by Alexander Hamilton for the Bank of New York, for example, attempted to limit majority shareholder domination by limiting the number of votes that they could cast at shareholder meetings. These so-called "graduated voting" rules appear to have allayed at least some fears, as banks in states that imposed these rules had many more shareholders than banks in one share-one vote regimes. Why New York chose to abandon graduated voting in favor of one share-one vote rules remains an unresolved issue. On the economics of majority shareholder expropriation see Shleifer and Vishny (1997); and on the economics of graduated voting see Hilt (2008) and Bodenhorn (2014).

Stakeholders knew (or could know) who the shareholders were and if any notable changes in ownership had occurred. The law required that a register of stock transfers be kept by the directors, which "shall at all reasonable house of transacting business, be open to the examination of any person having in his possession any note, bill, or other evidence of debt issued by such corporation, the payment of which shall have been refused"(New York State 1829). If an employee or officer refused to produce the book, they were fined $250, which would be paid to the person refused.[7]

If a regulatory regime is judged by how well it protected the banks' minority shareholders and other stakeholders, the verdict on New York's chartering regime is unclear. On one hand, a majority of the banks chartered between 1790 and 1828 survived into the late antebellum period and beyond; many reorganized as free banks after 1838 and then again as national banks after 1864. But there were notable failures that imposed large losses on depositors, noteholders and the state's taxpayers. The failure of the Safety Fund system, New York's first attempt at bank liability insurance, is well documented (Calomiris 1990; Bodenhorn 2003), but was attributable more to the regulatory authority's failure to mitigate moral hazard than to poor corporate governance systems. Most of the banks that failed, in fact, were very close corporations in which the owners-managers exploited the subsidy to risk taking at the taxpayers' expense more than at the minority shareholders' expense.

Still, the period was not without its corporate governance failures. The 1848 collapse of the aforementioned Canal Bank of Albany brought to light the potential for insider self-dealing. New York's comptroller, Millard Fillmore, appointed two receivers to take control of the bank and report on its activities. The receivers, Andrew White and Thomas McMullen, returned a scathing report. In the report's opening paragraphs, the receivers stated that "the funds of the bank for a period of time, have been used for speculating purposes, and that abuses of a criminal and aggravated nature have been perpetrated for a number of years upon the stockholders and creditors of the institution" (New York State Comptroller's Office 1848, 1). The receivers uncovered several abuses by the directors, the cashier and other bank employees, but what brought the bank to failure was the directors' practice of allowing each other to discount notes

[7] Although New York did not enact such a law, some states required banks to provide an annual list of current shareholders and their shareholdings to clerk of the county court in which the bank was situated. The clerk was then charged with entering this information into the public record for easy inspection. New Hampshire's bank commissioners, for example, sometimes noted in their annual reports when a bank had failed to submit the required list to the clerk of the court.

far in excess of the limits prescribed in the bank's bylaws. The bank's charter and its bylaws included provisions for good corporate governance, but there was apparently no effective supervisory mechanism capable of enforcing good practice, absent effective shareholder oversight.

The New York Free Banking Act of 1838

After the legislature had provided relatively detailed special charters, the New York free banking act of 1838 -- a model for other states and the National Bank Act of 1864 -- provided very little guidance in terms of corporate governance.[8] The only mention of directors in the 1838 act was that individuals associating in a bank were obliged "to choose one of their number as president of such association, and to appoint a cashier, and such other officers and agents as their business may require" (Barnard 1838). The only rule imposed on directors was set by an amendment in the Act of March 4, 1863, which set a quorum of five for directors meetings if the articles of association did not define a quorum. Neither the free banking act, nor any other statute we found, established board size minima or maxima. The choice appears to have been left to the discretion of the bank's organizers to be included in the articles of association. The minimalist nature of this act may have reflected continued satisfaction with the rules imposed in the 1828 revised statutes and a political desire to leave the rules of the bank to the organizers and shareholders. Nevertheless, in all cases that we have examined, the articles of association of the banks bore an uncanny resemblance to the pre-1838 charters of incorporation, perhaps reflecting the advice given by the attorneys drafting the articles, who used charter conditions as models for articles. For example, the articles of association for the Oneida Valley Bank, organized in 1852, included in Article 3, Section 1 a statement that "all the powers and privileges of the associates [shareholders] … shall be exercised by a board of directors," which was to consist of between two and ten persons.[9] In addition, there was one share-one vote by ballot or proxy, annual election of directors was prescribed for on the first Tuesday in June, managed by independent inspectors, minimum share ownership for directors, the power to fill director vacancies, a quorum for meetings of the board of directors, and the power for directors to appoint officers.

[8] The law required a minimum capital of $100,000, but was later amended to allow five or fewer owners to associate and form banks with just $25,000 in paid-in capital.
[9] New York State Archives, Series 14272, Box 43, Number 85.

Of course, a key feature of the New York free banks was they had a bond-secured issue of banknote; and loans by a bank were made out of a mix of capital, note issue, and deposits. As Shleifer and Vishny (1997) note, the use of debt (banknotes and/or deposits for banks) to finance a firm presents another dimension to the agency problem when a firm is financed by other than capital alone. Debt represents a contract with a specific repayment promise, and if the firm defaults, the creditor has certain rights to its assets. Given that holders of banknotes and deposits are likely not to be concentrated, there is a strong free rider problem. Depositors, holders of banknotes and other creditors also have limited information relative to that of large shareholders, as well as directors presidents and other managers with an ownership stake who may have incentives to take on risk since they share in the upside while other investors and creditors bear the costs of failure" (Shliefer and Vishny 1997; Jensen and Meckling 1976). In this situation, creditors might be enticed to provide funds if the bank invests in reputation (Gorton 1996). Of course, reputation is fragile in banking where banknotes and deposits are convertible into coin on demand. Bad news concerning a bank may lead to a run and perhaps its failure.

The problem was that unless a shareholder, banknote holder or depositor was also a director they faced a sizeable information asymmetry compared to the board and president. The directors or a subset of the board might expropriate the other stakeholders by a variety of means. They could increase salaries and other perks, they could take advantage of announcements to make strategic purchases or sales of stock, or, as at the Canal Bank, they could arrange for advantageous loans for themselves or other firms in which they had an interest. By the time such practices were uncovered, the malefactors could have effectively looted the bank.

The free banking act, however, provided a strong legal protection for banknote holders. Before issuing banknotes, banks were required to buy specified bonds and deposit them with the state. In the event of a failure, the bonds would be sold and the banknote holders made whole. Rules governing the selection and conservation of bonds were detailed. The other creditors -- primarily depositors had no such protection until the 1838 act was amended by the Act of April 5, 1849, which specified that if there was a default in the payment of any debt after January 1, 1850, by any bank issuing bank notes, the shareholders would be individually responsible, equally and ratably, to the extent of their shares (Cleaveland and Hutchinson 1864).[10] Beyond

[10]The language of the act does not make it clear whether this is double liability or a more extended liability, though later legal scholar considered it to be a double liability, or possible assessments by a receiver up to the original par

the assets of the bank, depositors now had a limited legal claim on the personal wealth of shareholders. This extended liability would presumably provide an incentive for the shareholders and directors to control risk-taking. As this protection depended on the shareholders being available and having sufficient wealth, a further amendment to the 1838 act, the Act of April 15, 1859 required that a book of shareholders with names, addresses and holdings be available and open for inspection during the business hours of the bank. Failure to do so would lead to a fine of $100 in first instance; for subsequent failures a fine plus imprisonment for term not exceeding 6 months for the responsible officer was imposed. For this time period, the law allowed shareholders to be monitored relatively carefully.

Given the incentives provided by the law, it is perhaps not surprising that free banking in New York was reasonably safe and sound. Rockoff (1974) effectively debunks the myth of the wildcat bank and Rolnick and Weber (1983) find that failure rates among New York's free banks were relatively low, just 34 of 449 free banks failed between 1838 and 1863. King (1983) also shows that banknote losses were low. After 1843 the expected redemption value of a typical New York banknote approached 99 cents on the dollar. Clearly, the success of New York free banking was not entirely attributable to the quality of corporate governance imposed by statute; effectively, there were no corporate governance standards imposed by statute. However, it is not unreasonable to speculate that the era was one in which bank promoters and bank shareholders negotiated contractual agreements, as outlined in each bank's articles of association, and developed oversight mechanisms capable of limiting managerial self-dealing and poor corporate governance.

The National Bank Act of 1864

The National Bank Act of 1864 introduced an abrupt shift in the American banking regime. By creating a federal free banking system and imposing a 10 percent tax on state banknotes, most state banks shifted to a federal charter, leaving few under the supervision of Albany's superintendent of banks. The new federal law, which established the Office of the Comptroller of the Currency, headed by the Comptroller and staffed with bank examiners, as the

value of the shares (Cleaveland and Huchinson 1864; Leonard 1940). It should be noted that this only applies to banks of issue.

supervisory agency, also set a standard for the future, either to be imitated or undermined by the state legislatures.

While later legal writers would claim that the New York Act of 1838 provided the basis for the National Bank Act of 1864, the latter provided much more detailed rules concerning the governance and management of national banks compared to their New York free bank precursors, although what it prescribed reflected much of the standard practice as embodied in the New York banks' articles of association (Bankers' Magazine 1864). The protections afforded shareholders and the constraints imposed on management were thus very similar. While the 1838 New York Act did not set a minimum number of initial shareholders, the 1864 act set a minimum of five. Each shareholder had one vote per share in the elections for directors, and though they were permitted to have proxies, no officer or employee of the bank could act as a proxy.

The 1864 act specified that the affairs of the bank should be managed by not less than five directors, one of whom should be the president, selected by the board. All directors had to be citizens of the United States and three-fourths of them had to be residents of the state or territory in which the bank was located at least one year prior to election. One year was set for a director's term, with a day in January set for the election in the bank's bylaws.

One innovation was the oath that directors, including the president, were required to take. Every national bank director was required to take an oath that he would "diligently and honestly administer the affairs of such Association, and will not knowingly violate or willingly permit to be violated, any of the provisions of the this Act, and that he is the *bona fide* owner in his own right, of the number of shares of stock required by this Act, subscribed by him, or standing in his name on the books of the Association, and that the same is not hypothecated or in any way pledged, as security for any loan or debt." If any of the provisions of the act are violated and the Comptroller of the Currency brought a suit in federal court, the directors were personally and individually liable for damages. In the literature on corporate governance, oaths are considered one of the legal protections offered to shareholders, however, Shleifer and Vishny (1997) are somewhat skeptical about oaths: "it is difficult to describe exactly what this duty obligates managers to do."[11]

[11]One possibility is that the oath prevents ex post bargaining, whereby managers are bribed by owners to give up some of their expropriation. On the other hand, it may be simply removing the possibility of constant threats by management.

The incentives for directors were influenced by the rules for capital and their stock ownership. Every national bank director was required to own at least ten shares of stock in the bank. A minimum capital for national banks $50,000 was set for towns with a population of under 6,000, $100,000 for towns between 6,000 and 50,000 and $200,000 for larger towns.[12] If there were the minimum of five directors for a bank with an initial capital of $50,000 and each had to hold 10 shares with a par value of $100, the five directors would hold $5,000 or 10 percent of the bank's capital with potential extended liability of another $5,000. For the largest banks with a capital of $200,000, five directors would have had a smaller liability with their $5,000 initial investment representing only 2.5 percent of the bank's capital. Directors and the director-president may well have held more than the minimum number of shares, but modern empirical studies find that firm value increases when large shareholders increase their holdings up to 5 percent of the total, though value decreases thereafter (Morck, Shleifer and Vishny 1988). Such a nonlinear relationship in board ownership and firm value points to the tradeoff between directors holding a sufficiently large stake to encourage monitoring and holding a large enough stakes to take control and direct the firm's resources to their own use.

The large shareholders, as represented by the board had control and monitored the bank's officers. Boards had power to appoint the vice-president, cashier and other officers, define their duties, and require bonds and fix penalties. Requiring surety bonds may well have been another federal innovation. Based upon our brief inspection of late nineteenth century national bank examiner reports, the devise of using a security bond was fairly common.[13] Some banks forced

[12] The Act of 1864 required that half of the capital be paid in before the bank opened for operations and the remainder could be paid in installments of at least 10 percent a year.

[13] There is little systematic evidence on officers tendering performance bonds prior to the National Banking Act, but it appears to have been common practice. Bank charters allowed directors to ask for a bond from cashiers, but did not require it. Most New York bank charters between 1805 and 1836 contained a clause similar to that appearing in the charter of the Merchants' Bank of New York City: "directors … have power to appoint so many officers, clerks and servants for carrying on the said business, and with such salaries and allowances as to them shall seem meet" (New York. State. 1806, Ch. XLIII, p. 64). The 1833 charter of the Chemung Canal Bank, which was typical included the following paragraph: "The directors of the said corporation shall have power, from time to time, to appoint so many officers, clerks and servants, for carrying on the business of the corporation, and with such compensation as to them shall seem meet" (Laws of New York 1833, Ch.132, p. 150). Compare this to the charter of the Farmers' and Mechanics' Bank of Philadelphia (1809), which stated: "it shall be the duty of said board to take of bond of the cashier, with two or more sufficient sureties … for sum not less than forty thousand dollars" (Farmers' and Mechanics Bank 1849, p.20). In 1824 Pennsylavnia passed an act applicable to all banks, which included the same language less the specific dollar amount. Few state bank commissioners consistently reported information about surety bonds in their annual reports. One known exception is New Hampshire. In 1845, 60 percent of New Hampshire's 15 reporting banks provided the value of the cashier's surety bond. The average value was $21,667 (New Hampshire 1845). In 1865, the bank commissioners' reported an average $24,000 surety bond at 88 percent of

every employee, except the president and manual laborers, to have a bond; and the amounts were typically some multiple of their annual salary. The effect of these bonds was to add some down side risk to bank officer defalcations. The surety bond requirement may have been designed to reduce the incentive for risk-taking that would increase expropriable returns.

Banknote holders and depositors were given protections similar to those provided by state law in the new federal legislation. Like the 1838 New York act, the Act of 1864 permitted banks to issue a bond-backed currency, but the use of U.S. government bonds, valuation, and tight controls prevented any expropriation and yielded a safe and stable currency. Depositors who were most exposed benefitted most from the law's provision for double liability; if the bank were insolvent, shareholders would be liable for up to the par value of their stock. The bank was charged with maintaining a list of the shareholders, their addresses and shareholdings, which were open to inspection and would facilitate the assessment of double liability if needed.

In sum, the Act of 1864 may be viewed as a tougher version of the Act of 1838. It ensured that there were some substantial shareholders on the board of directors and strengthened a variety of protections for all who had supplied funding---shareholders, banknote holders and depositors. Although there are no studies that have examined whether these changes improved bank performance, if one simply considers small losses to various stakeholders from national bank insolvencies, the law appears to have prevented excessive risk-taking. Between 1865 and 1913, there were 501 national bank insolvencies, their share capital totaled $86.8 million, or an average of $160,000 (White 2013). This was a small fraction of total national bank share capital, which stood in August 1913 at $1,056.3 million at the 10,457 banks organized since 1863 (Comptroller of the Currency 1913, pp. 6, 104).[14] The 7,488 banks in operation in August 1913 also had $5,761.8 million in individual deposits. Proven claims of the insolvent 501 banks totaled $191.0 million. Receivers recouped $146.9 million, obtaining $183.9 million from the sales of assets and $22.5 million in assessment from shareholders. The total losses to depositors and creditors were $44 million or a payout of 76.9 percent for this 50 year period. At under $1 million in losses per year (a few cents per capita), it appears that regulations that set the incentives for corporate governance and the behavior of management constrained them from taking large risks to increase the appropriable returns.

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the state's 49 banks (New Hampshire 1865). In a study of 200 national banks' examination reports from the early 1890s Calomiris and Carlson (2013) find that 57 percent of bank cashiers were bonded.

[14]

The Revival of State-Chartered Banking and the Rise of the Trust Companies

There appears to have been little state bank legislation of any importance in New York until a comprehensive revision of the law was undertaken in the Act of 1882 (New York 1882; Hilt 2009). The intent of the law was to enable state banks to compete with national banks. Its provisions were a blend of the Act of 1838 and the National Bank Act of 1864. Once again, any number of persons could associate to form a bank, but minimum capital rules were set lower than for national banks and graded according to population. A minimum of $100,000 was set unless the town where the bank would be opened had a population under 30,000, in which case, a minimum of $50,000 was required. If the population of the town was under 6,000, then only $25,000 of capital was required to open a bank. A true and correct public list of shareholders had to be maintained; and shareholders of note-issuing banks faced the same extended liability. The members of the association were to choose one of their number as president.

A more complete revision was attempted in 1891. The Commissioners of Statutory Revision submitted the new legislation to the state legislature, which became law on May 18, 1892 (Groesbeck and Dickinson 1892; Hall 1895). A minimum of five individuals was required to organize a bank and five was set as the minimum number of directors. For banks with a capital of $50,000 or more, a director had to own shares worth at least $1,000 (market value) in his own right or if the bank has a capital less than $50,000, directors must hold stock worth a minimum of $500. Directors were required to be citizens of the United States and three-quarters of the directors were required to be residents of the State of New York. One of the directors was to be chosen by the board to serve as president. If the certificate of incorporation or by-laws did not prescribe the number of directors for a quorum, the directors were allowed to fix a number necessary for transaction of business, with a minimum of five. Directors were required to take an oath that they would "diligently and honestly administer the affairs of such corporation, and will not knowingly violate or willingly permit to be violated, any of the provisions of the law applicable to such corporation, and that he is the owner in good faith and in his own right, of the number of shares of stock required by this chapter, subscribed by him or standing in his name on the books of the corporation and that the same is not hypothecated, or in any way pledged as security for any loan or debt." The Act of 1892 required some rotation of directors with an annual election of at least one of its directors. The number of directors could be changed by first

securing the permission of the New York superintendent of banking and then by gaining a majority of shareholders votes. Directors were forbidden to declare dividends except from profits; and if dividends impaired capital, the directors were jointly and severally liable. Formerly, only shareholders of banks issuing circulating notes were ratably responsible for the debts (liabilities) of the bank; but in recognition that this was a dead letter as only national banks issued banknotes, this liability was now extended to all banks' stockholders so that they now had the same liability as the shareholders of national banks.

In most respects, the New York code governing state banks appear to be very similar to the federal laws governing national banks. But state banking law was then extended to a new financial intermediary. The Act 1892 now also included regulation of trust companies, which began to compete with national banks and the remaining state banks. The rules for directors of trusts differed significantly. A minimum of thirteen could form a trust company and the board of directors was to have not less than 13 nor more than 24 members, one of whom would be selected as president. The directors were divided into three classes for a three year rotation of elections. Directors were required to hold at least ten shares in the trust company. To begin a trust company a minimum capital of $500,000 was required if the town in which it had its office had a population above 250,000; $200,000 if the population was between 100,000 and 250,000; $150,000 if the population was between 100,000 and 25,000; $100,000 if was under 25,000. Shareholders were subject to the same extended liability as state banks.

The Era of the Federal Reserve

State banking law changed little following the Federal Reserve Act of 1913. The rules set in 1892 were largely retained but directors' obligations had become much more explicit. With an apparent awareness that not all directors would be intimately involved or knowledgeable about a bank's operations, the law allowed for the creation of an executive committee of the board (Morgan and Amasa, 1914). The board of directors was required to meet once a month, where an officer would present a written statement of all purchases and sales of securities and of every discount, loan or advance including overdrafts and renewals since the last meeting, describing the collateral, excluding items under $1000. Twice a year, March-April and September-October, the board of directors or a committee of at least three members, with

assistants if needed, was obligated to conduct a thorough and complete examination of the books, papers and affairs of the bank.

Any loans or discounts made to officers or directors or to any corporations of which such officers or directors were also officers or directors and had a beneficial interest merited particular scrutiny had to be identified. Although insider loans had been an issue throughout the nineteenth century, it is striking that regulation did not formally address this issue until the era of the "Money Trust." The law now explicitly acknowledged that those controlling the bank might use it to their particular benefit. This information would be passed on to the New York Superintendent of Banks. If the bank was a member of the Federal Reserve or the New York Clearing House and was subject to at least one examination per year by either, the bank "on account of such liability to such examination … may omit the latter of the two examinations." Still, the bank was required to tender the Federal Reserve or New York Clearinghouse report to the superintendent of banks. As for the other stakeholders, national banknotes were to be phased out and replaced by Federal Reserve notes, but deposits, which had become much more important in banks' balance sheets still had the protection of double liability.

For purposes of this study, we consider New York State to have had the following regulatory/supervisory regimes: (1) Chartered banking 1789-1837 (2) Free Banking 1838-1863, (3) the National Banking System, 1864-1913, (4) the Early Federal Reserve, 1914-1933, and (5) New Deal Banking, 1934-1970s. A central question is whether these regulatory regimes changed the character and incentives for boards of directors or whether banking followed its own internal technological dynamic.

The "Optimum" Board of Directors

Given the essential role of the board of directors in serving as the agent of shareholders' interests its composition and structure are keys to enhancing its performance. In this paper, we focus on two key dimensions of the board---the ownership stakes of board members and the number of board members. Boards are presumed to monitor management and act on behalf of shareholders who cannot do so directly because of the collective action problem. But, because of their very modest ownership stakes, directors have weak incentives to exert themselves to exercise effective control and ensure that management pursues policies that maximize firm

value. Shareholders, wrote Berle and Means (1932, 114), are "most emphatically … not served by a profit seeking controlling group."

The diminished incentives to control managers may lead to agency problems of two types: *managerialism* and *debt-agency* (John and Senbet 1998). Managerialism refers to the potential for managers to act in self-serving fashion at the expense of shareholders (Jensen and Meckling 1976). Managers consume perks rather than maximize firm value perhaps augmenting leverage to take more risks to increase the potential returns that they can expropriate. On the other hand, when there is a debt-agency problem for managers, they may take too few risks in order to protect their investments in firm-specific human capital. In this scenario, the management-controlled firm operates on lower leverage ratios than value maximization to avoid bankruptcy. While the second case is a possibility, the concern for most of American banking history has been about excessive risk-taking and managerialism, perhaps because banking skills are transferable from one bank to another.

To master these agency problems the structure and composition of the board matters, and there may be some optimum mix of concentration of ownership and the number of directors. In terms of concentration of ownership, if one moves from inattentive directors who own insignificant shares of firm equity to a single controlling shareholder, that shareholder will have a greater incentive to monitor management. However, the presence of one or even a few controlling shareholders creates an alternative agency problem; the controlling shareholder(s) may exercise his (their) voting power to install a board committed to maximizing the value of the firm to the controlling shareholder(s) (Easterbrook and Fischel 1983; Shleifer and Vishny 1997; Freeman et al 2012; Hansmann and Parglender 2012). Determining the optimum concentration is an empirical issue. One study (Morck, Shleifer and Vishny, 1988) found that as directors' ownership rises from zero to five percent firm value increases, but value declines beyond the five-percent threshold. Further studies confirm that at high levels of concentrated director ownership, firm values are lower, suggesting that directors may engage in behavior detrimental to small shareholders (Morck et al 1998; Liu and Tan 2012; Bae et al 2013; Bodenhorn 2013).

The agency problem is also affected by the size of a bank's board of directors: too many directors may lead to a free rider problem on the board, while too few may open the door for the few directors to expropriate. There is no general model of equilibrium board size, but there is consensus in the literature that its optimal size is based on the costs and benefits of the board's

monitoring and advising roles (Pathan and Skully 2010). Given the many duties expected of its members, a larger board might divide its member's labor in a way that leads to greater specialization and effectiveness (Klein 1995). Yet, following Yermack (1996), a host of studies finds that, ceteris paribus, larger boards are less effective than smaller one, an insight offered a century ago by Conyngton (1913), who was concerned mostly with how promptly a large board might act.[15] Modern scholars contend that, compared to smaller ones, large boards may be subject to more shirking, face greater coordination costs, provide less timely advice, monitor less effectively, or become dysfunctional in other dimensions. But smaller is not always better. Complex firms, large firms, and those with greater debt-equity ratios place greater advising demands on directors and may be better served by larger, more diverse boards. Coles, Daniel and Naveen (2008) find that smaller boards are associated with higher firm value for small, simple firms, but larger boards enhance value for large, complex firms.[16]

This paper is part of a larger research agenda on the connection between board composition, board diversity, board size and firm performance. The task at hand is basic, namely to establish some facts about bank boards. Very little is currently known about the historical corporate board and we begin by exploring two basic features: the separation of ownership and control and trends in the number of directors. One important question is whether changes in the bank regulatory/supervisory regime altered the structure and composition of the board of directors and hence corporate governance. We offer some preliminary evidence that board size responded to different regimes.

Data

Sources of the data are provided in the appendix, but fall into one of three broad types. The principal sources of information were annual reports of the New York Bank Superintendent. The office of the superintendent, or its predecessor, collected quarterly bank balance sheets after passage of the state's 1838 free banking act. Details about the boards of the reporting banks do not appear until the mid-1880s, after which the annual reports provide a list of each bank's directors. Our study makes use of the 1887, 1900, 1920, 1935, 1940 and 1950 annual reports.

[15] Conyngton (1913, 81) wrote: "For all ordinary corporations a small board is most convenient, and, as a rule, most effective."

[16] Adams, Hermalin and Weisbach (2010) provide a parsimonious model, which shows that the Coles, Daniel and Naveen (2008) result emerges under fairly general conditions.

With the exception of 1940 and 1950, all data appearing in the annual reports for each bank with a name beginning with letters A through H (including all banks with name starting with "Bank of …") were transcribed into machine-readable form.[17] Because the number of state-chartered banks declines after the Great Depression, all banks appearing in the 1940 and 1950 annual reports are included. The annual reports provide quarterly balance sheets, but only the late September or early October reports of condition are transcribed.

These post-1887 data constitute an unbalanced panel: some banks appear in as many as five years; some banks, especially in the later years, appear only once. In the subsequent analysis, we mostly estimate pooled cross-section specifications, but exploit the panel nature of the data to empirically estimate fixed-effects specifications of board size.[18] Although this approach is sometimes used in the modern literature (e.g., Lehn, Patro and Zhou 2009), it is important to note that fixed-effects estimates rely on time-series (more than cross-section) variation for identification of causal effects. Fixed effects estimates are also problematic if the fixed effects themselves account for most of the variation in the dependent variable. Although board size, as we demonstrate below, evolves only slowly over time, our results generate reasonable results. Still it is important not to read too much into these preliminary results: neither the OLS nor the fixed effects estimates are likely to reveal true causal effects. Thus, we approach our results cautiously and consider them preliminary explorations of interesting correlations.

A second important source of information on bank directors for the earlier era is the New York State Archives, which holds the records of the New York State Banking Department between 1838 and 1967. The archive consists of 125 boxes, and each bank is allotted a separate folder in one of the boxes. All surviving correspondence between the bank and state regulators are included in each folder. Up to 1851 banks organized under the 1838 free banking act filed their articles of association with the Secretary of State, along with a list of bonds and mortgages to secure their circulation with the state Comptroller. Articles of association defined shareholder voting rights, board size, residency and shareholding requirements for directors, the time and place of shareholder meetings, and other governance features of the bank, in addition to a complete list of subscribing shareholders and the names of the original directors. During a three-

[17] The A through H selection rule includes more than one-half of all banks operating at each date.

[18] Hausman and Taylor (1981) show that fixed-effects estimates control for omitted variable bias in panel data sets, but Angrist and Pischke (2009) show that instrumental variables estimates are more likely to produce causal estimates when a good instrument can be identified. We have not been able to identify a valid instrument.

day visit to the archives in June 2013, 127 bank files were randomly chosen and photographed. These records were used to construct board size and director share ownership. Autumn or early winter balance sheet information for the pre-Civil War banks included in the sample was matched, when possible, to bank balance sheets available at an online archive maintained by Weber (2011).

Post-Civil War files at the archive tended to include a certificate of organization, rather than the more detailed articles; certificates only provided information on a bank's corporate name, the city in which its business was to be located, its capital, and its subscribing shareholders. Directors were not regularly identified in the certificates, though director lists could sometimes be recovered from other correspondence between a bank and the superintendent. Petitions to the Superintendent for permission to increase a bank's capital, to move to a new banking office, or to change the number of members of the board, among other actions often included the names of the directors and this information was used to construct board size at dates other than the bank's organization. September balance sheet information was matched to the banks when a superintendent's report for the relevant year could be located.

The third broad source of information on bank boards was city directories published in New York City, Albany, Buffalo and Rochester. The directories often included a list of banks and a complete roster of their directors. Detailed director lists regularly appeared in the 1850s, and we transcribe four years of lists for New York City (1851, 1857, 1859, and 1860) and three years of lists for Albany (1844, 1850, and 1853). Banks with director lists were then matched to bank balance sheets for the autumn of the year preceding publication of the list. Publication lags imply that a list published in, say, May 1851 was likely collected in late 1850 and the data matching accounts for those lags.

Drawing data from so many and such different sources sometimes makes comparisons across regimes problematic. Our greatest concern is with the changing nature of the bank balance sheet information. In the Free Banking era, accounting standards were rudimentary and auditing nonexistent. The balance sheets provided in Weber (2011) were originally reported in annual legislative documents and were voluntarily tendered by the banks, though each bank's cashier and/or president attested to their accuracy and the statements were notarized. One reason for concern is that a few balance sheets did not balance (assets do not equal liabilities), which may have been due to failure to report some otherwise important aspect of bank activity, though a

more likely explanation is omission. With the professionalization of accounting and improved reporting practice, it is likely that the accuracy of the data improved over time. But, so far as we can determine, none of the balance sheets were audited. Balance sheets were produced in-house, notarized and submitted to the bank commissioners with an oath sworn by the bank president and cashier that they were accurate. There is no reason to think that the quality of information on the number of directors improved over time because board sizes were determined by simply counting the names of the directors serving at the time the statements were forward to the bank commissioners.

The balance sheets between the late 1830s and circa 1900 demonstrate a great deal of reporting continuity. The basic balance sheet categories did not change dramatically, until after 1920. In the New Deal era, new categories were included in the balance sheets, most notably in reporting deposits. Up to 1920, balance sheets tended to report "Deposits" and "Deposits of Other Banks," which sometimes included deposits by local savings banks. After 1920, deposits were separated into demand deposits, time deposits, deposits by governmental agencies, and deposits of other banks. For this project, we combined the many post-1920 deposit categories into the pre-1920 categories, namely "Deposits" and "Deposits of Other Banks." In the regression analysis, the only relevant categories are Capital and Total (real) Assets. While reporting surely improved over the century considered here, our reliance on the two most easily measured features – capital (= shares outstanding * par value) and total assets – provides us with some assurance that the results do not turn on changing reporting procedures.

The changing nature of banking, too, might give pause. While banks' adherence to its strictures was a source of constant comment, the foundational principal from the Free Banking through the Early Fed regimes was the "real-bills" doctrine (Bodenhorn 2003, Lamoreaux 1996, Meltzer 2004). Strict adherence to real bills placed severe limits on bank lending: advances on short-term, self-liquidating commercial paper. The two sources of real bills were mercantile activities (borrowing to move goods, such as cotton, across space with the loan collateralized with the goods in transit) or goods in process (borrowing working capital to finance inventories). Statistics reported in Table 1 reveal that the real-bills convention was relaxed over time. Mortgage lending, which represented about 5 percent of reported assets in the Free Banking, National Banking and Early Fed eras increased to more than 11 percent during the New Deal. It was not uncommon for banks to maintain the real-bills fiction by hiding mortgage and other

long-term lending as short-term loans constantly renewed, but the reported values reveal a certain constancy of practice over time.

Although securities holdings appear to increase over time, the actual change was much smaller than the statistics in Table 1 suggest. During the Free Banking era, banks were required to buy state bonds, tender them to the state comptroller and receive banknotes in return. Banks rarely reported these bond holdings, but most banks' securities holdings were approximately equal to their paid-in capital. Securities holdings, thus, were markedly lower in the National Banking than in other eras. The tax on state bank notes made circulation unprofitable, which freed state banks from holding collateral securities. In the twentieth century, securities holdings may have increased as increased liquidity in securities markets reduced the risks of holding corporate and government-issued debt.

The most significant changes in banking over the century occurred on the liability side of the balance sheet. Bank leverage, measured as the inverse of the ratio of capital to total assets, increased dramatically. In the Free Banking era, the average bank's capital represented more than 40 percent of its total liabilities (assets). In the National Banking era, the ratio declined by half; it decline by a further three-quarters in the Early Fed era. Leverage matters because it provides on measure of a bank's capacity to absorb losses before becoming bankrupt. Banks might have countered the bankruptcy risk by accumulating retained earnings (surplus) to further insulate themselves from bankruptcy, but the available evidence does not provide any evidence that banks did so. Over the century considered here, banks worked on thinner capital margins, which increased their bankruptcy risk.

Evidence on Bank Boards

The Separation of Ownership and Control and Ownership Concentration

Ownership statistics that come from data collected at the New York State bank superintendent archives are presented in Table 2. The data span only two of the regulatory eras discussed above, namely, the Free Banking (1838-1864) and National Banking (1865-1913) eras. Because the files are not complete, there are a different number of observations in each cell, which represents bank-year averages. Bank boards were about one member larger during free

than national banking, though the difference is statistically significant only at the 10 percent level.

The value of the archival data is that it shows, consistent with the findings of Freeman, Pearson and Taylor (2012) and Hansmann and Parglender (2012), that ownership and control were not separated in early incorporated banks. Articles of association for the sample of free banks included here mandated that directors own, at a minimum, between five and 100 shares. Free bank directors, on average, owned 18 shares with an average par value of $85, for an average value of $1,530 ($47,900 in 2012 dollars in "real price" terms or $838,000 in "economic status" value). Directors' actual shareholdings exceeded the minimum by a wide margin. The typical bank director owned more than 75 shares, for a total investment of $6,375 (2012 "real price" equivalent of $200,000). Directors were heavily invested in their banks; they collectively owned nearly 60 percent of their bank's outstanding shares.

The national era did not bring great changes in director ownership. Articles of association required potential directors to own between 10 and 50 shares before they could serve, but they owned, on average, nearly 71 shares with an average par value of $84. In the national banking era, directors continued to own more than one-half of their bank's shares. Evidence on share ownership is consistent with recent interpretations of the historical corporation: it was not owned by atomistic, fully diversified investors; rather, it was not managed by individuals with, at most, a trivial ownership stake; it was a close corporation with owner-managers whose investments most likely represented a substantial fraction of their overall portfolios.

Archival data found in the New York bank superintendent's archives also affords a rare opportunity to investigate the distribution of shareholdings among directors at a sample of 23 New York banks observed between 1839 and 1908. In certain communications with the superintendent, banks provided complete lists of directors and shareholders and those data are tabulated to better understand director shareholdings. Table 3 reports the fraction of shares owned by the five directors with the largest shareholdings among the directors. The data are informative because they span much of the period of interest and include small and large banks, as well as city and country banks. The mean board in the sample had 12.2 directors and the largest proportional director shareholding ranged from 0.9% to 50.0% of all outstanding shares, with a mean of 13.8%; the fifth largest director holdings varied from 0.0% to 12.5%, with a mean of 4.0%.

Concerns with separation of ownership and control do not appear to be particularly relevant to early banks. Not only did many bank bylaws or articles of association impose minimum shareholdings for men and women standing for election to the board, actual shareholdings tended to exceed the mandated minima and represented not insignificant investments for most households. At New York City's Park Bank, for example, the largest fractional director shareholding represented just 0.9% of the bank's existing shares, or 200 shares. With a par value of $100, William P. Earle's and R. W. Howe's $20,000 investments in the bank were surely sizeable personal investments. Besides being the Park Bank's president, Howe was a wholesale shoe dealer; Earle owned a hotel at the corner of Park Row and Sixth Avenue (*Trow's* 1856).

Except at the smallest banks, which were very close corporations, the directors' fractional shareholdings also allay concerns with majority shareholder tunneling or other behaviors that might expropriate from minority shareholders. Holding less than 14%, on average, of these bank's shares, the largest shareholder generally did not own enough shares to unilaterally impose his will. He might, of course, form a coalition with other directors, but in most cases even the five largest shareholding directors failed to command a majority of a bank's shares. Without detailed information about a bank's lending practices and its customers, it is impossible to offer definitive statements about large shareholder control, but the statistics reported in Table 3 are not consistent with large shareholders controlling the firm.

Evidence on the Size of Bank Boards

Table 4 reports board size by year and location. The top row reports averages for New York banks taken from all sources that reported board size. Due to the small number of banks reporting in the early years, averages are calculated for banks reporting in several years surrounding the report date: circa 1840 includes all banks reporting between 1835 and 1845; circa 1860 includes 1855 to 1865, except New York City, which reports values only for 1859; circa 1885 reports values for 1887, which was the first year the superintendent's annual reports include a director list; the values for 1900 through 1950 include data dawn from only from those years' annual reports.

There is a discernible decrease in the average number of directors over time, and across the evolving regulatory and supervisory regimes. For the entire sample, the average number of

directors declines from approximately 13 in the pre-Civil War era, to about ten between the 1880s and the 1920s. The average number further declines to approximately eight in the period after 1935. The regulatory regimes may be represented by the following groupings: the Free Banking Era, Columns (1) and (2), the National Banking Era, Columns (3) and (4), the Early Federal Reserve, Column (5), the New Deal Era, Columns (6), (7) and (8). Given the standard deviations, the Free Banking and National Banking era may not be distinguishable nor the National Banking, Early Fed and New Deal Eras. The trend is unmistakable, however; the Free Banking and New Deal eras are strikingly different.

The downward trend in average board size for the entire sample is also evident in sub-samples of New York City banks, at which the average board size declines from 13 to 9; at country banks average board size declines from approximately 12 to 7 directors. Few observations at banks in other cities – Albany, Binghamton, Buffalo, Rochester and Syracuse – make inference problematic, but it appears that board size declined at these banks, as well.

Figure 1 presents a kernel density plot of board size for three regimes (Free Banking, National Banking and New Deal) to further investigate changes in board size over time. Like the averages reported in Table 4, the diagram reveals the decline in mean board size. More importantly, however, the density plots reveal that the entire distributions of board size changed over the century. Not only do the mean values decline, the distributions themselves become more peaked, especially after 1900. Two-way Kolmogorov-Smirnov (KS) tests for equality of distributions, a nonparametric test that is sensitive to both the center and shape of distributions, reject the null of equality; the two-way p-values in all cases are 0.00. Regardless of how it is parsed, the data point toward markedly declining board size over time.

Table 5 parses the data by bank age and regulatory regime. Board size declines from 12 or 13 members for new banks at birth (zero years of age) in the pre-New Deal era to 7 members for the one bank in our sample that opened in the New Deal era. The sample sizes for more seasoned banks (6 years and older) all point toward a distinct change in board size in the New Deal era. National and Early Fed-era banks in their second decade had boards with about 11 directors; equally seasoned banks in the New Deal era had just over eight directors. A comparable decline in board size occurs for banks 21 years of age and older.

Although the conjecture deserves a larger study, the evidence is consistent with Gorton's (1996) study of free banking in which he demonstrates that it requires several years for new

banks to develop reputations for safety and soundness. New banks might accelerate the reputation-formation process by electing a relatively large board of well-known men and women. As the bank ages and its reputation is established, board sizes decline. At the same time, it may be that founding shareholders be more involved in the daily management of young banks than later, passive investors. There is evidence among modern nonfinancial firms that the market value of young, post-IPO firms is higher for founder-controlled than professional manager-controlled firms (Nelson 2003). It is not clear how this result would translate to the historical financial firm, but it points toward an important role for founders as board members. The existing literature specifically on bank board size is largely silent on the association between bank age and board size. Pathan and Skully (2010) and Adusei (2012) include bank size as a proxy measure of "scope of operations," or that banks engage in more or more complex functions over time and will endogenously respond with larger boards populated by members more capable of monitoring complex activities. In neither case does the data bear out the hypothesis. Board size tends to increase in firm size among modern firms, and the same is true for historical banks.

It is widely believed that board size responds endogenously to features of the firm and the market in which it operates (Hermalin and Weisbach 1998; Hermalin and Weisbach 2001). Evidence for banks operating in New York between the mid-nineteenth and mid-twentieth century are consistent with that belief. Not only did mean board size respond predictably to bank age, bank location and bank size. The distributions of board size vary systematically across age, location and size.

Multivariate analysis of bank board size

In this section, we use regression analysis to investigate the relative magnitudes of the several features of the firm and its market thought to influence board size. The regressions account for firm size, firm age and market size, in addition to other features that firms are believed to endogenously respond to. Thus, the regressions do not identify causal effects; rather, they are provided to offer insights into how bank boards responded to its other strategic choices and other features of the banks' environments.

Modern studies of board size and structure have generated three hypotheses to explain board size: (1) the scope of operations hypothesis; (2) the monitoring hypothesis; and (3) the

negotiation hypothesis (Boone et al 2007). The scope of operations hypothesis treats firm size and complexity as the principal determinants of board size. Larger and more complex firms tend to have larger boards, which affords the opportunity to include directors with specialist knowledge of certain features of the firm's activities. The monitoring hypothesis holds that board size and structure are driven by the corporation's competitive and informational environment. High-growth and/or innovative firms will have smaller boards because the cost of monitoring is high and outside board members are typically poorly positioned to offer meaningful advice (Lehn et al 2005; Coles et al 2007). The monitoring hypothesis does not directly relate board size and firm performance; rather, it implies that the net benefits of alternative board sizes are dependent on a firm's competitive position, which is commonly measured by a market concentration measure, and research and development expenditures, among other firm and market features. The negotiation hypothesis proposes that board size and structure results from negotiations between an influential CEO and outside directors. CEO's capable of generating firm value use their influence with outside board members to capture some fraction of their incremental product for themselves (Hermalin and Weisbach 1998). Because we cannot account for the number of outside directors on bank boards, we cannot analyze whether or the extent which the negotiation approach applies to banks in our sample.

The choice of independent variables to include in the regressions is informed by the "scope" and "monitoring" hypotheses. A polynomial in age is included to account for the observation that board size decreases in age. We also include a polynomial in total assets to investigate how board size changes with bank size. Unless managerial capacity is subject to increasing returns, board size is expected to increase in firm size. Larger firms simply require more oversight, which demands more directors. Two measures are constructed to control for bank "scope" effects. First, *leverage* is measured as the ratio of total assets to capital and is included to capture a bank's overall riskiness. Capital provides a buffer against loan losses or the decline in the market value of other assets in a bank's portfolio. The greater the leverage, the smaller the buffer relative to its at-risk portfolio and the more likely a bank is to becoming bankrupt. Second, *correspondent* is a dummy variable equal to one if the bank's "due to other banks" account in the balance sheet exceeds 15 percent of its total assets.[19] As is well known,

[19] The variable was alternatively specified as 10 percent and 20 percent. The results are not substantially different and, since we have no strong prior concerning the true percentage for city banks that acted as country bank correspondents, we report results for the intermediate value.

New York City served as central reserve city during the National Bank era, a role it assumed before the Civil War. Some Albany banks, too, provided correspondent services to country banks, especially in the antebellum era. Acting as a correspondent increased the demands on a bank's board because correspondents held large interbank balances. Banks paid interest on these accounts and funneled them into profitable investments. It is also well known, that correspondent accounts were subject to unanticipated withdrawals and exposed banks to short-term liquidity problems, particularly during seasonal peak demands for credit and credit crunches during cyclical downturns (Calomiris and Gorton 1991). Providing correspondent services complicated a bank's operations and may have required additional director oversight, which may have prompted banks to employ larger boards of directors.

Lacking information on national banks in New York, we cannot directly account for the banks' competitive environment. City and year fixed effects are used to (imperfectly) account for each bank's local competitive environment. Davis (1966), Sylla (1969), and James (1978) characterize urban banking markets as monopolistically competitive and rural markets as (near) monopolies. Thus, we include dummy variables for New York City and the state's other cities with several state banks. The excluded category is smaller towns and rural places, where a lone state bank is typical.

Table 6 report summary statistics of the dependent and independent variables (Column (1)), as well as four regression specifications. For the first four regressions, we use OLS and for the last specification we use a negative binomial regression that takes into account the fact that the dependent variable consists of positive integers.[20] Only two coefficients do not have the expected signs---those for leverage and correspondent banking. These are difficult to explain as it might be thought that a highly leveraged bank or one engaged in correspondent banking would require more directors because they are more complex. However, without further information on the structure of their portfolios, complexity is difficult to judge and a highly leveraged bank might be focusing carefully on a very few activities, as might a correspondent bank.

For the remainder of the variables, the coefficients conform fairly closely with the hypotheses. Coefficients on age and its square in the baseline regression (Column 1) imply that, in the reference year (1900), board size is minimized at 85 years, which is well out on the right

[20] Mroz (2012) offers a set of flexible tests for regressions with count data dependent variables. After some experimentation with alternative specifications, we use the negative binomial specification because it is easily interpreted and accounts for over- or under-dispersion in the dependent variable, relative to a Poisson specification.

tail of the age distribution. The maximum age observed in the sample is 136 years (Manhattan Bank in 1935). The coefficients on assets and its square imply that board size was maximized for banks with total real assets between $131 million and $171 million, which are larger values than for all but the Manhattan Bank. Older banks have smaller boards and larger banks have larger boards, which is consistent with findings for modern boards for financial and nonfinancial firms. It is not evident, as least by our observable measures, that banks that took on more risk or interacted with other banks relied on larger boards of directors. Coefficients on the city variables are consistent with monitoring hypothesis. New York and other cities were notably more competitive markets than small towns, and banks adopted larger boards in response.

One feature of note is that early bank board size declined over time. Using the estimates in the baseline regression (Column 2), for example, bank boards circa 1840 had nearly 3 more members than in the reference year of 1900. When we control for Age X Era effects (Column 3), boards circa 1840 were larger by 3.3 members; and when controlling for Age X Era and Real Assets X Era effects (Column 4), boards circa 1840 were nearly 5 members larger than in 1900. Relative to 1900, boards in 1950 were between one-half and one member smaller. With estimated averages around 10 members, the estimated era effects are notable. Early in the Free Banking Era, bank boards were about 40 percent larger than national banks; late in the New Deal era, bank boards were about 10 percent smaller.

In Column (6) of Table 6, we take advantage of the panel nature of the post-1860 data and estimate the model using bank fixed effects. It is an unbalanced panel in which banks appear between one and six times. The results are consistent with our pooled cross-sectional results. The so-called within estimates imply that board size increased in bank size, decreased in age and bank leverage, and declined in size after 1900.

Boards, as the modern literature suggests, serve several functions, principally monitoring of and advice to management. By 1950, bank managers were trained professionals – there were university programs, such as the one at Rutgers that specialized in training bankers – and directors, who remained substantial investors, mostly monitored and advised. In the 1840s, bankers were not trained professionals; they tended to be merchants who brought their general human capital to the enterprise. Given the lack of professionalism, bank boards provided a vital monitoring and advising role and were, by all accounts, much more involved in the day-to-day operations of the banks they directed. It is also important to recall that finance is about reputation

and it took time for a bank to establish a reputation for soundness and stability. Gorton (1996) shows that reputation was established slowly. One way to accelerate the process was for a bank to have a large board of local notables. There is evidence that such was the case, but a systematic investigation of board members is the subject of future research.

Conclusions

Our survey of New York banking law suggests that directors were closely bound to the rest of the owners and stakeholders in a bank, being given incentives to closer monitor management to push for maximizing firm value. From the early years of the nineteenth century through the early years of the Fed, legislation did no change in essence but appears to have tightened the rules. Only with the onset of the New Deal, some of the incentives for directors weaken. From the limited empirical evidence on stock ownership of directors---who for the first century of banking were often directly involved in management---it appears that management and ownership were hardly separable. The ownership stakes of directors bound them closely to the interests of their fellow shareholders. Older banks may have shed inexperienced directors and kept a competent core of directors; but larger banks tended to retain larger boards. In addition, over time boards tended to shrink in size. Whether the last features were due to increasing bank sophistication from experience individually or in terms of the experience of the whole banking system or from movement to a regulatory/supervisory regime that allowed a small number of directors to capture a bank with management for their benefit are subjects of further research.

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Table 1
Bank operating ratios in four eras

	Free Banking	National Banking	Early Fed	New Deal
Loan/Assets	0.685	0.668	0.439	0.362
	(0.182)	(0.138)	(0.165)	(0.174)
Mortgages/Assets	0.049	0.046	0.054	0.113
	(0.109)	(0.268)	(0.048)	(0.093)
Securities/Assets	na	0.028	0.314	0.308
		(0.053)	(0.156)	(0.259)
Capital/Liabilities	0.414	0.191	.055	0.075
	(0.158)	(0.153)	(0.039)	(0.087)
Surplus/Liabilities	na	0.064	na	0.054
		(0.056)		(0.031)
Circulation/Liabilities	0.128	na	na	na
	(0.107)			
Deposits/Liabilities	0.323	0.696	na	0.305
	(0.162)	(0.163)		(0.173)
Real Assets ($m 1900)	2.325	2.236	3.271	2.125
	(2.895)	(3.455)	(10.292)	(17.563)
Observations	84	62	129	235

Sources: see Data Appendix and text

Table 2
Bank director share ownership in two eras

	Free banks 1838-1864	National banks 1865-1908
Number of directors	11.39	10.23
	(3.58)	(5.06)
	[38]	[83]
Shares required to serve	18.04	15.00
	(19.64)	(14.14)
	[23]	[8]
Average director shareholding	75.34	70.71
	(55.74)	(58.21)
	[22]	[17]
Fraction of shares owned by directors	0.58	0.53
	(0.30)	(0.36)
	[24]	[15]
Number of shareholders	83.15	48.22
	(102.84)	(59.16)
	[61]	[41]
Capital ($000)	278.14	376.61
	(450.29)	(929.01)
	[66]	[91]

Notes: bank-year observations.
Standard deviation in parentheses; observations in brackets
Source: New York State Archives, Record Group 14272.

Table 3

Ownership share by five largest shareholding directors

Bank Name	Place	Year	Share-holders	Directors	Fraction of shares held by: largest director	second-largest director	third-largest director	fourth-largest director	fifth-largest director
			#	#	%	%	%	%	%
Agricultural Bank	Herkimer	1839	58	13	9.8	7.8	4.9	4.9	2.9
Bank of Brockport	Brockport	1838	57	15	16.7	13.3	4.4	2.0	1.7
Farmers & Mechanics Bank	Batavia	1838	8	8	12.5	12.5	12.5	12.5	12.5
Commercial Bank	Albany	1847	148	12	6.0	5.1	4.9	1.4	1.3
Buffalo City Bank	Buffalo	1853	11	7	15.0	15.0	10.0	10.0	5.0
Spraker Bank	Canajoharie	1853	21	15	15.2	15.2	15.2	12.7	5.1
Bank of Albany	Albany	1854	161	12	8.2	3.5	2.9	1.9	1.4
Onondaga Bank	Syracuse	1854	20	11	23.3	8.6	8.6	8.6	8.6
Park Bank	New York City	1856	451	22	0.9	0.9	0.7	0.7	0.7
Market Bank	Troy	1859	107	14	3.2	2.9	2.9	2.9	2.5
Bank of Otego	Ostego	1861	4	5	50.0	40.0	7.0	3.0	0.0
Ulster County Bank	Kingston	1861	63	11	5.0	4.7	2.2	1.0	0.7
Central Bank	Rome	1865	119	16	3.2	3.0	2.2	1.9	1.6
Cuba Bank	Cuba	1865	36	13	29.3	13.2	6.0	5.4	5.2
Genesee River Bank	Mount Morris	1865	12	8	26.5	25.1	20.8	6.3	5.0
Fulton County Bank	Gloversville	1865	32	15	12.3	11.2	9.4	9.2	6.3
Ulster County Bank	Kingston	1865	69	11	5.6	5.0	2.5	1.4	1.0
Dry Goods Bank	New York City	1871	174	20	1.0	1.0	1.0	1.0	1.0
Brewers & Grocers Bank	New York City	1876	13	10	14.6	14.6	14.6	9.8	9.8
Bank of Long Island	Jamaica	1902	8	8	20.0	20.0	20.0	10.0	10.0
Bank of Metropolis	New York City	1903	22	15	11.1	7.4	3.9	3.4	3.4
Bank of Angola	Angola	1905	61	9	5.4	5.4	4.3	3.3	2.7

Bank of Corfu	Corfu	1908	11	10	22.0	20.0	20.0	4.0	4.0
Free banking (1838-184) average			92.4	12.1	13.8	10.8	6.4	5.1	3.5
National banking (1865-1908) average			50.6	12.3	13.7	11.4	9.5	5.1	4.5

Source: See Table 1

Table 4

Mean number of bank directors by era and bank location

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Free Banking		National Banking		Early Fed	New Deal		
	ca.1840	ca.1860	ca.1885	1900	1920	1935	1940	1950
All banks	13.15	12.53	10.65	10.46	10.73	8.47	7.41	7.40
	(5.08)	(3.41)	(3.84)	(3.89)	(4.22)	(2.80)	(2.12)	(2.24)
	[20]	[64]	[60]	[145]	[146]	[107]	[127]	[67]
New York City banks	17.00	13.11	12.03	12.51	12.94	11.90	10.29	8.75
	(na)	(3.07)	(3.60)	(4.26)	(4.65)	(2.77)	(3.59)	(3.92)
	[1]	[51]	[36]	[54]	[31]	[10]	[7]	[8]
Other city banks	13.55	9.17	8.63	10.56	15.78	5.00	5.00	5.00
	(6.07)	(3.97)	(2.26)	(2.82)	(5.85)	(na)	(na)	(na)
	[11]	[6]	[8]	[27]	[9]	[1]	[1]	[1]
Country banks	12.13	11.14	8.56	8.69	9.66	8.16	7.26	7.26
	(3.68)	(3.72)	(3.76)	(3.01)	(3.35)	(2.56)	(1.89)	(1.88)
	[8]	[7]	[16]	[64]	[106]	[96]	[119]	[58]

Notes: New York City includes boroughs of Manhattan, Brooklyn and Bronx

Other cities includes Albany, Binghamton, Buffalo and Rochester

(standard deviation) [observations]

Sources: see data appendix.

Table 5
Mean number of directors by bank age and era

	(1) Free Banking	(2) National Banking	(3) Early Fed	(4) New Deal
New Banks	12.86	11.5	12.00	7.00
	(6.14)	(4.64)	(1.73)	(na)
	[14]	[6]	[3]	[1]
1-5 years	11.2	10.13	11.20	9.00
	(4.85)	(3.73)	(5.20)	(5.29)
	[10]	[32]	[25]	[3]
6-10 years	13.44	11.53	9.76	10.40
	(3.19)	(4.18)	(2.63)	(3.44)
	[27]	[45]	[17]	[15]
11-20 years	13.25	10.61	11.03	8.18
	(2.63)	(4.08)	(3.81)	(2.60)
	[4]	[77]	[31]	[76]
21+ years	12.07	9.49	10.61	7.42
	(2.46)	(2.90)	(4.42)	(2.12)
	[27]	[45]	[70]	[213]

Notes: see Table 3
Sources: see Table 3

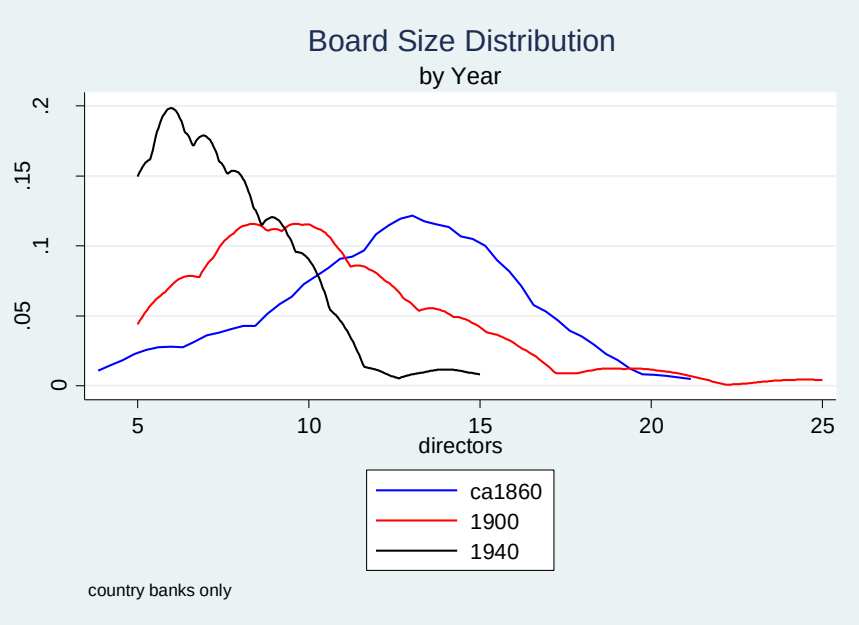
Table 6
Determinants of bank board size

	(1) Mean (std dev)	(2) OLS	(3) OLS	(4) OLS	(5) Negative Binomial	(6) Fixed Effects
Age	24.3	-0.06	-0.089	-0.11	-0.01	-0.029
	[17.83]	[0.022]**	[0.025]**	[0.029]**	[0.003]**	[0.123]
Age squared	907.95	0	0	0	0	-0.001
	[1389.55]	[0.000]	[0.000]	[0.000]	[0.000]	[0.007]
Assets ($mil)	2.43	0.154	0.183	0.262	0.023	0.31
	[12.55]	[0.042]**	[0.053]**	[0.089]**	[0.007]**	[0.074]**
Assets squared	163.24	0	-0.001	-0.001	0	0
	[3493.06]	[0.000]**	[0.000]**	[0.001]	[0.000]*	[0.000]
Leverage	16.03	-0.013	-0.015	-0.022	-0.002	-0.044
	[13.28]	[0.012]	[0.012]	[0.012]	[0.001]	[0.015]**
Correspondent	0.048	-1.824	-1.661	-2.215	-0.175	0.309
	[0.21]	[0.783]*	[0.788]*	[0.791]**	[0.068]*	[1.121]
New York City	0.27	2.992	3.128	3.024	0.285	
	[0.45]	[0.471]**	[0.475]**	[0.500]**	[0.045]**	
Albany	0.02	1.795	1.913	1.782	0.173	
	[0.13]	[1.464]	[1.327]	[1.428]	[0.125]	
Buffalo	0.04	0.766	1.01	1.023	0.104	
	[0.19]	[0.820]	[0.805]	[0.826]	[0.081]	
Rochester	0.02	3.521	3.581	3.548	0.316	
	[0.13]	[1.584]*	[1.521]*	[1.504]*	[0.111]**	
Binghamton	0	4.586	4.429	4.375	0.372	
	[0.07]	[0.569]**	[0.623]**	[0.659]**	[0.051]**	
Syracuse	0.01	-1.055	-0.851	-0.697	-0.087	
	[0.07]	[1.743]	[1.690]	[1.624]	[0.189]	
1840	0.02	2.967	2.369	1.959	0.156	
	[0.14]	[1.924]	[2.210]	[2.317]	[0.171]	
1860	0.08	1.235	0.517	-0.141	-0.02	
	[0.28]	[0.584]*	[0.788]	[0.839]	[0.070]	
1885	0.08	-0.519	-0.773	-0.822	-0.082	0.443
	[0.28]	[0.512]	[0.780]	[0.810]	[0.073]	[1.250]
1900			reference year			
1920	0.18	1.015	0.299	0.007	0.005	-2.11
	[0.39]	[0.441]*	[0.691]	[0.692]	[0.063]	[4.835]

1935	0.14	-0.318	-1.225	-1.228	-0.113	-8.084
	[0.35]	[0.443]	[0.720]	[0.746]	[0.074]	[12.275]
1940	0.18	-1.022	-2.144	-2.725	-0.303	-10.171
	[0.38]	[0.449]*	[0.688]**	[0.707]**	[0.079]**	[15.392]
1950	0.1	-0.722	-3.209	-3.16	-0.385	-12.671
	[0.30]	[0.582]	[1.053]**	[1.101]**	[0.129]**	[23.043]
Age * 1840			0.037	0.037	0.004	
			[0.046]	[0.050]	[0.004]	
Age * 1860			0.038	0.031	0.004	
			[0.027]	[0.032]	[0.003]	
Age * 1885			0.011	0.021	0.002	-0.084
			[0.027]	[0.035]	[0.003]	[0.202]
Age * 1920			0.045	0.077	0.007	0.139
			[0.026]	[0.030]*	[0.003]**	[0.291]
Age * 1935			0.054	0.059	0.004	0.229
			[0.025]*	[0.029]*	[0.003]	[0.506]
Age * 1940			0.06	0.072	0.006	0.25
			[0.024]*	[0.027]**	[0.003]*	[0.578]
Age * 1950			0.091	0.099	0.01	0.291
			[0.030]**	[0.032]**	[0.003]**	[0.722]
Assets * 1840				0.828	0.057	
				[1.202]	[0.093]	
Assets * 1860				0.265	0.013	
				[0.161]	[0.012]	
Assets * 1885				-0.064	-0.006	0.452
				[0.110]	[0.009]	[0.125]**
Assets * 1920				-0.11	-0.011	-0.203
				[0.096]	[0.008]	[0.077]**
Assets * 1935				0.068	0.007	-0.212
				[0.189]	[0.013]	[0.084]*
Assets * 1940				0.588	0.069	-0.145
				[0.208]**	[0.019]**	[0.202]
Assets * 1950				0.052	0.014	-0.203
				[0.136]	[0.012]	[0.151]
Constant		9.749	10.224	10.462	2.339	11.738
		[0.403]**	[0.494]**	[0.520]**	[0.049]**	[2.672]**
Observations		711	711	711	711	637
R-squared		0.38	0.39	0.4		0.29
F statistic/Wald Chi sq		33.87	24.48	31.54	967.3	

Robust standard errors in brackets

* significant at 5%; ** significant at 1%



Source: See data appendix and text for discussion.