Silverback bankers

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Abstract: Despite a large literature concerning the nature and effects of boards of directors, relatively little is known about the length of board service (tenure) and its consequences for firm behavior. This paper investigates board tenure at US banks in the nineteenth and early twentieth century. The paper first introduces a new data set of director service and characteristics. It then uses those data to explore three issues: (1) how a director's personal and professional characteristics are related to length of service; (2) whether the replacement of board members is correlated with bank contemporaneous performance; and (3) whether long-term service affects bank profitability and risk taking. I find that occupation and outside board service are strong predictors of tenure; director spells are more likely to end when dividend distributions are lower; and longer tenure increases bank profitability and risk taking. The evidence points to the importance of a previously overlooked characteristic of boards for corporate behavior.

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1. Introduction

In March 2016 the *Wall Street Journal* reported that 36% of directors who then served on the boards of S&P500 companies had served for at least 10 years (Francis and Lublin 2016). More than 400 directors of the country's largest firms were initially elected more than 20 years earlier, and three directors more than 50 years earlier.[1] In 2016 a majority of directors at nearly one-fourth of S&P500 companies served for ten years or more, a marked increase over the 11% of companies with decade-plus majorities in 2005. There are similar movements toward longer service among chief executive officers (CEOs) and chief financial officers (CFOs) at the largest US companies. Average CEO service at S&P500 companies increased from 7.2 to 9.9 years between 2007 and 2016 (Feintzeig 2017) and average CFO service increased from 4.7 to 5.7 years between 2005 and 2016 (Lublin 2017).

Corporate observers and activist investors doubt whether the trend will continue. Although long-tenured directors retain institutional memory and bring experience to board deliberations, it may be that long-term directors are too cozy with top management, grow complacent, pursue shareholder value less vigorously, and are less likely to offer fresh insights than new directors. Some asset managers, such as BlackRock Inc. and State Street Advisors, and some proxy advisory companies oppose the reelection of long-term directors over concerns with their effectiveness. Some firms, in response, have placed shareholder proposals to limit tenure on the ballot, but none have been approved (Francis and Lublin 2016). Even the board at General Electric, which traditionally appoints CEOs with an expectation that they will serve for 20 years, is reconsidering its approach. The firm's board has reportedly discussed shortening the expected tenure to between 10 and 15 years (Lublin, Mann, and Linebaugh 2014). But other prominent firms appear to be pushing back. In July 2016 thirteen prominent CEOs, including Warren Buffet (Berkshire Hathaway Inc.), James Dimon (JPMorgan Chase), and Jeffrey Immelt (General Electric), took out a full-page advertisement in the *Wall Street Journal* in which they endorsed a set of corporate governance practices, including a statement

[1] The longest currently serving director, Leonard Alan Lauder, Chairman Emeritus at Estée Lauder Companies Inc., has served continuously between 1958 and 2017 (Estée Lauder Companies 2017).

that "diverse boards make better decisions," and that diversity includes a mixture of experience and tenure (Armour et al 2016).

Bank historians, too, have expressed concerns with the effectiveness of older, long-tenured directors. Lewis (1882, pp. 93-94), for example, argues that by the early 1830s the Bank of North America's lending policies had failed to keep up with changing economic conditions, which reduced the bank's competitiveness and profitability. According to Lewis (1882), a post-1830 turnaround occurred following the resignation or death of several older, long-tenured directors. While it is the case that Daniel Smith (33 years), George McCallmont (15 years), and Charles McAlester (13 years) left the board between 1830 and 1836 – along with six directors each with less than six years of service – the bank did not become noticeably more profitable following their departures. Dividends-to-equity averaged 4.3% in the five years prior to 1830 and 4.8% in the five years after 1835, and dividends-to-assets increased from 2.5% to 2.7%, but neither difference is statistically significant. Thus, despite long-standing concerns with the potentially detrimental effects of long-term board service, the available anecdotal evidence does not provide much insight into its consequences.

This paper investigates board tenure at US banks in the nineteenth and early twentieth century. The paper first introduces a new data set of director service and characteristics. It then uses those data to explore three issues: (1) how a director's personal and professional characteristics are related to length of service; (2) whether the replacement of board members is correlated with bank contemporaneous performance; and (3) whether long-term service affects bank profitability and risk taking.

Using a Cox proportional hazard approach to address the first issue, the results reveal that the most important predictor of long bank board service is the extent of outside board service. Bank directors elected to more outside boards tended to serve longer terms. One half of bank directors not elected to any outside are not still serving at year six, whereas one half of directors elected to seven or more outside boards are still serving at year 25. The result is consistent with the Fama and Jensen's (1983) monitoring hypothesis, namely, that directors with reputations for monitoring skills are sought after in the director market. The Cox estimates also

generate lower hazards for merchants and bankers, which is consistent with contemporary beliefs that merchants were attuned to the credit needs of fellow merchants and to current credit market conditions. These results are consistent with Alcorn's (1908, 11) admonition that directors should be drawn from two classes; prominent, successful businessmen (yes, all the directors in this era were men); and men, who, although not wealthy, are "good substantial citizens" ready to take an active part in their banks' success.

An evaluation of the second issue employs a discrete-time hazard model to determine whether contemporaneous bank performance predicts the replacement of sitting directors. Information on the service of individual directors is linked to annual bank balance sheet and dividend distribution data. The results reveal that the odds of a director being replaced increases with declines in dividend distributions. The odds of a director being replaced are lower at larger banks, which is consistent with the Berle and Means (1933) separation of ownership and control hypothesis. Larger banks typically had more shareholders, which reduced incentives to monitor and punish under-performing directors.

Finally, the paper turns to the question of whether long service affects bank profitability or performance. Using average director tenure and maximum director tenure by bank-year as alternative measures of board service the analysis reveals that banks with longer serving directors are more profitable and operate on higher leverage (assets/equity) ratios. The results also reveal a tension between long-serving bank presidents and long-serving directors. Controlling for board tenure, leverage ratios decline in bank president tenure. This result, too, is consistent with the separation of ownership and control hypothesis. Long-serving bank presidents, presumably, have much firm-specific human capital and prefer to not place it at risk through leverage. Diversified shareholder/directors, on the other hand, prefer more risk, all else constant.

2. Nineteenth-century bank directors in theory and practice

Principal-agent theory predicts that a firm's managers may not act in the shareholders' best interests and information asymmetries make it costly for shareholders to monitor managers (Jensen and Meckling 1976). Absent effective

monitoring managers can use the firm's resources for their own benefits. At the same time, managers may prefer that the firms they control take on less risk than that preferred by well-diversified owners. Long-time managers have undiversifiable, firm-specific human capital that is unrecoverable in the event of firm bankruptcy or if shareholders terminate the managers' employment, so managers will avoid activities that risk bankruptcy or involuntary termination even if such activities enhance shareholder value.

Investor-shareholders have several available tools to discipline and direct managers. First, investors can concentrate ownership, which increases the incentives for investors to monitor, though concentrated ownership simply pushes the monitoring problem back one step. How are minority shareholders to ensure that controlling shareholders do not expropriate the minority (Shleifer and Vishny 1986)?[2] Second, they can link executive compensation with firm performance, a strategy with a long pedigree (Frydman and Sachs 2010). But the connection between CEO compensation and firm performance tends to be weaker at firms with less effective boards (Core, Holthausen, and Larcker 1999) and compensation can be as much a reflection of the agency problem as a correction for it (Bebchuk and Fried 2003). Third, investors can rely on the market for corporate control, though bank mergers were relatively rare before the twentieth century (Fama and Jensen 1983; White 1985). Fourth, investors can control the size and composition of the board of directors, which oversees management. These four tools are open to all types of firms, but each may operate differently for banks and other financial institutions than for nonfinancial firms. Banks tend to be subject to more and different regulations than nonfinancial firms. Bank capital structure, especially leverage, differs from nonfinancial firms. Bank assets tend to be more opaque and complex than those held by nonfinancial firms. Moreover, the banking system's role in the payments system introduces depositors as an important third class of stakeholders. Nonfinancial firms have creditors, but demandable debt creates distinct incentives for debt holders (Calomiris and Kahn 1991). Effective governance of banks aligns the managers'

[2] Hilt (2008) and Bodenhorn (2014) find that graduated voting rights (the marginal number of votes per share decreases in the number of shares held) may mitigate the expropriation potential of concentrated ownership. They find that graduated voting rights are associated with more dispersed ownership.

incentives with those of shareholders *and* depositors (Acharya et al 2009; de Haan and Vlahu 2016).

This paper investigates the fourth option, namely the nature – specifically tenure -- of the board of directors. In discussing the issues that troubled his contemporaries, William O. Douglas (1934, p.1307), future Chairman of the Securities and Exchange Commission and Associate Justice of the Supreme Court of the United States, wrote that "...some method must be devised to mobilize scattered and disorganized stockholders and other investors into an active and powerful group so that there may be a competent and respectable patrol of the field of finance." Directors were charged with this role, but Douglas doubted whether they were up to the task.

Douglas' statement is a thoroughly modern statement of the problem, though he was of an age to have observed that bank shareholders had not always been scattered and disorganized. The corporation was not born of the separation of ownership and control (Hilt 2008). In many early corporations shareholders directed and directors were involved in the firm's daily operations. But even when (at least some) shareholders directed, mechanisms were needed to align the interests of managers, directing shareholders, and non-directing shareholders.

The appointment of a board provides shareholders with an instrument to monitor managers and align managerial choices with investor incentives. The two most important roles of the board are monitoring managerial actions and providing advice concerning short- and long-term strategic decisions. A large literature provides insights into the connection between the size and structure of boards and good governance (Hermalin and Weisbach 2003 and Adams, Hermalin and Weisbach 2010 provide surveys). Although there is no single optimal board size, for instance, firms may have boards that are either too small (less diversity of opinion and expertise) or too large (board members are more likely to shirk). Independent or outside directors are also considered to be integral to effective oversight. Outsiders, or board members without a managerial position within the firm, are thought to be less beholden to executives and can bring fresh perspectives to strategic decisions, which may be particularly important for large, complex firms. A recent literature, in addition, focuses on board diversity, including gender, age, cultural and ethnic,

outside employment and, even, board tenure diversity, but there is as yet no consensus on whether diversity enhances firm performance or shareholder value (Carter, Simpkins, and Simpson 2003; Adams and Ferreira 2009; Sila, Gonzalez and Hagendorff 2016)). Despite a spate of studies on gender, racial and ethnic diversity, little attention has been paid to diversity of tenure or experience (Fizel et al 1990 is an exception), which is the focus here.

2.1 Early American law and practice concerning bank directors

Legislative charters and general laws created legal qualifications for bank directors. Pennsylvania's (1814) Omnibus Bank Act, which created more than two dozen banks with a single statute, adopted what were to become four standard director qualifications for the next half century in Pennsylvania and beyond (Dewey 1910). The act required directors to be shareholders and US citizens; members of the state legislature and other public officials were ineligible to serve on boards; individuals could not serve on more than one *bank* board at a time, though they were free to serve on nonbank boards; and, the act established limits on the number of consecutive terms a director could serve.

The requirement that directors hold shares had implications for bank management. If managers and directors have sizeable ownership stakes in the banks they control, they will "arguably behave more like principals and less like agents" (de Haan and Vlahu 2016, 231). New York required directors to own at least ten shares (New York 1833).[3] Pennsylvania required directors to be shareholders, but did not specify a minimum number of shares to qualify. Banks organized under the National Banking Act required each director to own at least 1.0% of a bank's capital if was capitalized at $200,000 or less, or 0.5% if the bank's capital exceeded $200,000 (US Congress 1863).

There is little systematic evidence on director ownership in the early US, but that which exists suggests that directors often owned more than the statutory

[3] A ten-share requirement represented a $1,000 investment because most bank shares had par values of $100. Given that the average country bank was capitalized at $250,000, the ten-share requirement also represented a minimum ownership of 0.4% of a bank's capital.

minimum. Among a sample of New York and Ohio banks chartered between the 1820s and 1920s, directors collectively owned an average of about one-quarter of outstanding shares (see Appendix Table A1). Because directors held – and voted – a substantial fraction of bank shares, and because nineteenth-century shareholders appear to be as disengaged as modern ones, director share ownership had obvious implications for the length of board service. Among 64 Massachusetts (1860) banks that reported, directors owned 7.68% of the shares. Only 19.0% of shareholders attended a recent annual meeting and those shareholders voted just 16.1% of outstanding shares. Given low voter turnout, so long as sitting directors voted for themselves and each other, many directors served about as long as they wished.

Statutory limits on the number of consecutive terms an individual could serve on a board also had implications for lengths of directors' board service. Director incumbency was a point of concern from the inception of chartered commercial banking in the United States (Bodenhorn 2011). Alexander Hamilton expressed concerns with director turnover in his 1791 *Report on a National Bank* (Clarke and Hall 1832). Critics feared that long and uninterrupted service among board members would transform "monied republics" into "monied aristocracies," an attitude that reflects the notion that early banks were inherently public institutions whose governance reflected the elite's approach to democracy and the polity (Dorfman 1946, p.338). At a more pragmatic level, critics believed that long tenures allowed directors to manage the bank to their own advantage rather than to benefit of all shareholders, minority shareholders included, and the public.

In response to public concerns with the lack of director turnover the charter of the First Bank of the United States (1791) provided that no more than three-quarters of the existing board was eligible for annual reelection. Several states, including Massachusetts, Connecticut, and Maryland, included similar limits in their early charters (Dewey 1910). The charter of the Second Bank of the United States (1816) provided that no director could hold office more than three years in

succession. Pennsylvania adopted the same rule in 1824.[4] Kentucky's bank charters limited directors to two successive years.

A three-quarter rule or a limit on successive terms did not stand in the way of long service; the rules limited years of consecutive service not years in toto. The available evidence (discussed below), however, suggests that the successive term limit reduced director tenures relative to a three-quarters eligibility rule. The average tenure among Pennsylvania (consecutive term limits) directors elected to their first term between 1814 and 1924 was 9.33 years. It was 13.53 years in Massachusetts (three-quarters rule). In New York (no limit), the average director served 14.15 years.[5] Laws that required rotation in office reduced the tenures of some directors, but rotation requirements did not eliminate long years of service per se.

The insider nature of nineteenth-century banks also had implications for director tenure. Lamoreaux (1996) and Parglender and Hansmann (2013) characterize America's early banks as loan clubs that extended credit mostly to directors and other shareholders. The relationship between director borrowing and tenure is ambiguous a priori. On one hand, if directorships provided a businessman with access to credit at more attractive terms than were available in arm's-length markets, directors faced incentives to remain on the board so long as the marginal credit cost advantage exceeded the opportunity cost of the last day spent on board business. On the other hand, if director lending reduced shareholder value (i.e., lower dividends, lower share values, higher failure risks), non-directing, non-borrowing shareholders faced incentives to identify and elect men whose welfare was enhanced more by service per se than access to credit.[6] The calculus at each bank differed based on such factors as ownership concentration, state ownership, state regulations, and a host of other factors.

2.2 The economics of director turnover

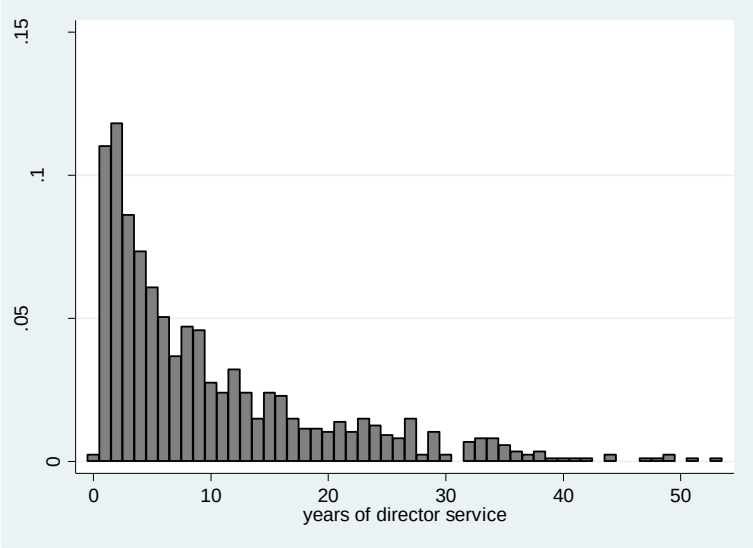
[4] For a bank chartered before 1824 the rule became effective when the bank's charter was renewed. The three-term rule, for example, applied to the Philadelphia Bank (chartered 1803) beginning in 1842.

[5] The p-value of a t test of difference between Pennsylvania and Massachusetts is 0.002; it is 0.001 for the difference between Pennsylvania and New York. The difference between New York and Massachusetts is not statistically significant (p-value = 0.751).

[6] Besley (2005) develops an economic approach to identify good or "virtuous" political representatives that is applicable to the selection of corporate directors.

Barro and Barro (1990) develop a parsimonious model of CEO pay and turnover that is readily adapted to analyze director tenure and offer insights into two features of nineteenth-century bank director service: (1) nearly one-fourth of directors serve for two terms (years) or less; and, (2) more than one-third of directors serve for ten years or more (see Figure 1). The Barro and Barro model predicts that if a director's relative performance is low and perceived skill is revealed to be low early the bank's president and other directors will place an alternative candidate on a ballot, and shareholders will discharge the below-average director early in his tenure. Dismissal avoids the costs of a poor match, but it creates dismissal costs, which may include the costs of replacing any already accumulated firm-specific human capital of the dismissed director.

Figure 1
Distribution of director tenure



Source: see Data Appendix (designated with *) and text.

If a director's service lasts for T years, the bank's president, managers, other directors, and shareholders estimate the director's skill, S(i), to be (E[S(i)] | T), which will be compared to some bank-specific (and, perhaps, director-specific) critical value, which will depend on time of service (T), bank age, bank size, director compensation, if any, and the bank's return on equity relative to returns in the

industry, among other factors. If the director's expected skill in year T falls below the critical value, management and continuing directors will nominate a replacement to the shareholders. Because the variance of (E[S(i)] | T) around the true value of S(i) declines with T (because longer service generates more and better quality information about S(i)), the critical value for dismissal will tend to increase with years of service. A high critical value early in a director's service is not optimal because a high initial value will result in excessive director turnover, which increases dismissal costs. A low critical value late in a director's service is not optimal because long-term directors should create high value added, which follows from experience.

The Barro and Barro model yields two additional predictions with respect to a director's performance relative to industry-average performance. First, the elasticity of director turnover to performance does not necessarily decline with experience. Even a long-time director will be subject to replacement if his contribution to the board falls short of expectations. Second, because the decision to replace a director follows from an impulse to replace one director with another, the likelihood of termination depends on expected relative performance. One implication is that long-term directors are more likely to be replaced when their relative performance, which is presumably reflected in their bank's relative performance, falls below that of other potential directors. Thus, we are more likely to observe the replacement of a long-serving director when the firm's performance falls below one or more relevant industry benchmarks *and* there is reason to believe that the bank's below-average performance results, at least in part, from the poor relative performance of a long-term director.

It is also noteworthy that the evidence in Figure 1 suggests a relatively continuous decline in director turnover after year two, which is not consistent with the spike in CEO turnover in the fifth year after appointment uncovered by Coates and Kraakman's (2007) study of the modern corporation. The fifth-year spike may be driven by providing CEOs with adequate time to implement new strategies and the board's having sufficient time to assess them (as in an academic tenure decision). Or it might be that once CEOs survive beyond their fifth year, they are sufficiently entrenched to resist efforts to oust them. Neither effect appears to have operated for bank directors.

The remainder of this paper introduces a new data set of director service and characteristics and uses that data to explore three issues: (1) how a director's personal and professional characteristics are related to length of service; (2) whether the replacement of board members is correlated with bank contemporaneous performance; and (3) whether long-term service affects bank profitability and risk taking.

3. Data

Lengths of service for bank directors, presidents, and cashiers are taken from 45 published bank histories (see Data Appendix). In the early to mid-twentieth century, many banks published histories on their fiftieth, one-hundredth, or some other notable anniversary of their founding. Some histories contain as few as 20 pages, though others run to several hundred pages of history, anecdote, portraits and photos, biographies of the banks' founders, directors and offices, and appendices that provide balance sheets and dividend distributions.

Two sets of histories were selected for inclusion in this study. The first set includes 22 histories that provide detailed biographies of its directors, presidents, and cashiers (histories that provided useful biographies are identified with an asterisk in the Data Appendix). Among this group of 22 histories, biographies included information on the director's year of birth, the first year the he was elected to board, the number of years he served, his principal employment at the time he was elected to the board, whether he had attended a private academy or college, whether he ever served in a political office, and a list of the boards of any other for-profit corporation or charitable organization to which he was elected at any point in his career.

< Table 1 about here >

Bank histories with director biographies yielded some or all of the information on 924 directors, and 664 biographies contained information on years of board service, year of birth, occupation, outside board service, political participation, education, and so on. A comparison of the variable means and standard deviations suggests that the smaller sample is representative, so it is used in the statistical

analysis reported below. Summary statistics are reported in Table 1. The mean year of the bank establishment was 1829; the mean birth year of the directors was 1817; and the mean year of appointment was 1860. The average term of service (82% of terms were completed at the time the biographies were written) was 10 years, with a maximum term of 51 years. Directors served on an average of 1.15 outside corporate boards and 0.38 charity boards.[7] The measure of service of outside boards should be taken as lower bound estimates, however, because the data were coded under the assumption that no mention of outside service implies that the director did not serve on any other boards. The average age at which directors were initially elected to boards was 44.25 years; the youngest was 25 years old and the oldest was 88 years.

Directors were drawn from all major occupational sectors. Ten percent of directors were listed as farmers, planters, or gentlemen. Nearly one-half were merchants, which includes all mercantile employments from shopkeeper to commission merchant. One-fifth was manufacturers; more than 11% were attorneys and nearly 8% were bankers or brokers. Just 2.4% were drawn from the professions, a category that includes physicians, architects, teachers, and so on.

Three-quarters of directors reported a common school or "typical" education. If the director's biography made no note of education, it was assumed that he had a common school education. More than 6% reported having attended a private academy. Nearly one-fifth reported at least some college. The most commonly mentioned colleges were Harvard, Yale, and Princeton. Bank directors were, with apologies to W. E. B. Du Bois (1903), drawn from the talented tenth.

Finally, bank directors were politically active. Directors were coded according to the highest office attained. Thus, more than 10% were elected to a local political office, such as town or county council, a school board, or served as magistrate or justice of the peace. Another 10% served in a state office; most served in the state legislature, but some served as governor, judge, or other state official. Five percent were elected to Congress or appointed to a federal office at some point during their lifetime. Two of the politically most prominent directors, perhaps, were Associate Justice of the Supreme Court of the United States Joseph Story, who served as a

[7] The most common outside boards are savings banks, manufacturing firms and, in the late nineteenth century, railroads and mining firms. Outside charity boards included various nonprofits, including schools, museums, and various philanthropic organizations.

director at the Merchants Bank of Salem, Massachusetts between 1815 and 1835; and Oliver Wolcott, signer of the Declaration of Independence and Articles of Confederation, and governor of Connecticut, who served as a director of the Hartford Bank between 1803 and 1805.

< Table 2 about here >

Table 2 reports the five longest serving bank directors, presidents, and cashiers in the biography sample. The longest serving director in this sample was a founding director of the First National Bank of Chicago who served for 51 years. Another long-serving director was Ferdinand Roebling, director of the Mechanics Bank of Trenton, New Jersey and manager of John A. Robeling's Sons Company, which produced steel cable.[8] Roebling served on nine other corporate boards, including that of Otis Elevator Company, and the boards of three nonprofit organizations at some point during his career. The table also reveals that some bank presidents served for 30 to 50 years, as did some cashiers. Because bank presidents were members of the board, but were exempted from turnover mandates, formal analyses of the biography sample are conducted with and without presidents. With only 51 observations the tenures of cashiers are not separately analyzed because some state statutes made them ineligible for election to bank boards.

The second set of bank histories (see Data Appendix entries marked with a dagger †) used in this study are those that provide comprehensive lists of the banks' presidents, directors and cashiers, and their terms of service, and could be matched to five or more years of annual bank dividend payouts and/or five or more years of antebellum bank balance sheets provided by Weber (2008). The unit of observation in this second data set is the bank-year. For each year in which the requisite information is available, the dataset includes information on banks, boards, and director and officer tenure for each bank in each year.

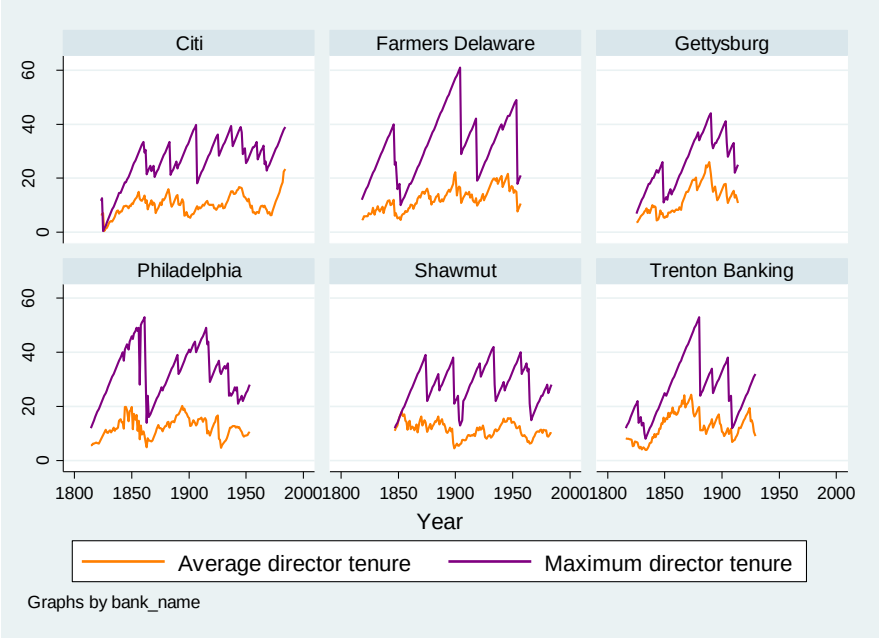
< Table 3 about here >

[8] John A. Roebling designed and supervised construction of the Brooklyn Bridge until he died during its construction. Roebling's company manufactured wire rope (cable).

The data sources yield 610 bank-year observations matched to Weber's (2008) bank balance sheets, and 445 bank-year observations matched to annual dividend payouts for banks that have been in operation for 10 or more years.[9] Table 3 provides an overview of the principal variables. The data sources are used to construct three measures of director tenure. The first is average director tenure by bank-year. Average director tenure is average years of service among all members of the board (excluding the president) in a given year. Table 3 reports mean average director tenure (the average of averages across all bank-years) is 10.49 years, which is consistent with the 10.01 average years of service in the biography sample. The second measure of director tenure is maximum tenure by bank-year. Maximum tenure is the years of service for the longest serving board member in a given year. Mean maximum director tenure (the average across all bank years) is 24.64, and the value ranges from three to 58 years. The third measure of tenure is the standard deviation of director tenure (excluding presidents) for each bank year. The mean standard deviation is 7.34 years for all bank-years.

Figure 2
Maximum and average director tenure at six representative banks

[9] The analysis excludes the first 10 years of each bank's data so that the early years, during which there was relatively little turnover among founding directors, do not bias the tenure statistics. Results of the formal analysis are comparable when the first ten years are included.



Sources: see Data Appendix and text.

Figure 2 provides time-series plots of maximum and average director tenure for six banks for which the series can be constructed for more than a century. At two banks – City Bank (now Citi, New York City) and Shawmut Bank (Boston), average tenure is less than 20 years between 1850 and 1950, and maximum tenure is generally between 20 and 40 years. Average tenure increases modestly at the Farmers Bank of Delaware, which also exhibits the longest maximum tenure. The figure, however, reveals three important features of the data: (1) at least some directors at most banks served for upwards of 40 years; (2) there is substantial variation in tenure across banks and years; and (3) there is no discernible industry-wide, long-run trend over 150 years of observation.

The remaining rows of Table 3 provide summary statistics on the other variables used in the analysis of the effects of director tenure on bank behaviors. Mean average president tenure is 10.30 years; for cashiers it is 12.73 years. Average bank capital is just less than $800,000 and retained earnings just less than $85,000. Average total assets are $1.9 million. The principal measure of bank risk taking is leverage, which is defined as the ratio of total assets to shareholder equity (capital plus retained earnings).

Dividend rates are used as a proxy for profits. It is difficult to estimate bank profitability for the nineteenth and early twentieth century, and the few estimates that are available are reconstructed from bank dividends (Bodenhorn 1992; Bodenhorn and Rockoff 1992). Thus, the measures of profitability used here are the ratio of dividends paid to total shareholder equity (a proxy measure of return to equity) and dividends to total assets (for returns to assets). The dividend-to-equity ratio is about two percentage points lower than reported return on equity for modern US banks, but the dividend-to-asset ratio is about two percentage points higher than the reported return on assets for modern banks (Chronopoulos et al. 2013).

Selection and survivor bias is an obvious concern with using histories of banks that survived for 50 years or more as sources. The survivor bias problem is not an issue here because director tenure is surely a second-order concern at short-lived firms. Long tenure is, nearly by definition, an issue only at long-lived firms. The selection problem may, however, be a concern if only certain types of banks published histories. To determine whether selection among already long-lived firms creates an interpretive problem, director tenures were collected for four (more to come) Philadelphia banks from McElroy's (1839-1864) city directories, which provided annual lists of all directors at the city's banks. When tenure is calculated with common start (1839) and end (1864) dates, the directory lists suggest that the histories do not generate biased estimates. Appendix Table C1 reports correlation coefficients between two Philadelphia banks included in the bank history sample (Girard Bank and Philadelphia Bank) and two not included (Kensington and Southwark Banks). The correlation coefficients for average tenure between included and excluded banks exceed 0.65, with p-values < 0.01. The correlation coefficients for maximum director tenure exceed 0.90 with p-values < 0.01. The correlations offer some reassurance that banks with published histories are not unique, at least in terms of the average length of director tenure in the antebellum era.

4. Director characteristics, tenure, turnover, and bank performance

This section addresses three issues surrounding bank director tenure: (1) how a director's personal and professional characteristics are related to length of service; (2) whether the replacement of directors is correlated with contemporaneous bank

performance; and (3) whether increases in average or maximum director tenure alters bank performance.

4.1 Director characteristics and length of service

Because we are interested in the time between a director's initial election to a bank board and when he steps down or is replaced, the analysis follows a standard hazard model approach. Under the assumption that time to failure can be estimated with a Cox proportional hazards model, the hazard function can be written as:

$$h(t) = h_0(t)\exp\left(\sum_{i=1}^{n} \beta_i x_i\right).$$

The Cox model generates estimates of the β_i's but not the baseline hazard, $h_0(t)$, which imposes the assumption that the baseline hazard is proportional over time. The proportionality assumption implies that the hazard for a "nontreated" group, say men with a common school education, is a constant multiple of the hazard of a "treated" group, say men with some college, at year one, at year two, at year ten, at year twenty, and so on. Because the Cox model turns on this assumption it is important to determine whether it holds. Figures B1 through B4 in Appendix B suggest that the proportionality assumption is valid. As a robustness check the equations are also estimated assuming a Weibull distribution, which can be estimated under either a proportional hazard or accelerated time assumption. The Cox and Weibull specifications are appropriate in this case because the x_i's do not vary over time.

< Table 4 about here >

Summary statistics for the hazard models are presented in Table 1, discussed in §3. Table 4 presents estimates from six specifications. Columns (1) and (2) are estimated excluding bank presidents (who were exempted from term limits) and include decade of election fixed effects, but do not include bank fixed effects. Robust standard errors of the hazard ratios are reported in brackets. Columns (3)

and (4) include presidents in the analysis; and Columns (5) and (6) include bank fixed effects, so these results are within-bank estimates.

Most of the hazard ratios accord with prior expectations. In Column (1) the estimated hazard ratio for men elected in their 30s is 0.605, which implies that the hazard decreases by 39.5% for a one-decade increase in age at initial election relative to initial election in a director's twenties (the reference category). By comparison, the hazard for men initially elected in their sixties increases by 63.4% for a four-decade increase in age. Estimated age hazards are consistent across specifications, and increasing in the age at which men are elected to bank boards, which is not unexpected. Men elected at older ages were more likely to step down after fewer years of total service than men elected at younger ages, all else constant.

Political activity appears not to have had a significant effect on length of service. College and academy educations are associated with lower hazard, though the effects disappear in the within-bank estimates in Columns (5) and (6). Expected hazards for merchants and manufacturers, on the other hand, are lower than for farmers, planters, and gentlemen (the reference group). Estimates in Columns (1) through (4) imply that the expected hazard declines by about 25%. The expected hazard declines by about 35% for manufacturers. The estimated within-bank hazard ratios reported in Columns (5) and (6) imply even lower hazards for merchants (40%), manufacturers (45%), and bankers/brokers (40%). If directors add value to board deliberations concerning the extension of credit, the political and occupational hazard ratios are reasonable. Politically active men might assist in securing a bank charter at the outset (Bodenhorn 2017), but active businessmen are probably more attuned to current market and credit conditions. As such they can offer better advice on loan terms to existing and prospective borrowers. And businessmen may be better positioned to identify profitable new borrowers with whom the bank might build long-term relationships.

The final set of hazard ratios, which segregate directors by outside board service, provides further insights into whether connected directors add value to bank board deliberations. The finance literature offers two interpretations of outside board service. The "reputation and monitoring hypothesis" posits that the market for directorships provides incentives for existing and potential directors to develop

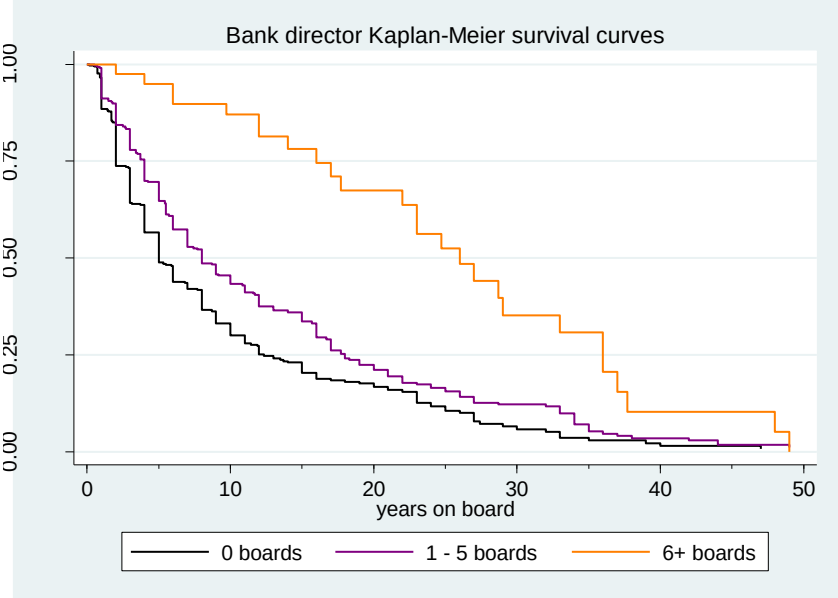
monitoring abilities (Fama 1980; Fama and Jensen 1983). Outside directorships can be valuable, particularly if they provide directors with monitoring skills and commercial contacts (Mace 1986). Empirical studies provide some support for the reputation and monitoring hypothesis (Yermack 2004; Ferris, Jagannathan, and Pritchard 2003). The "busyness hypothesis," on the other hand, holds that too many outside directorships ("busyness") may reduce the effectiveness of directors as monitors. Studies find that boards with a large fraction of busy directors provide CEOs with excessive compensation packages and firms with busy directors are less profitable and have lower market-to-book values (Fich and Shivdasani 2006; Cooper and Uzun 2012).

The data used here may provide insights into the reputation and monitoring hypothesis, but does not necessarily measure "busyness." The count of outside board service measures the number of boards on which an individual *ever* served, not the number of outside boards served on during the director's term of service on the bank board. Given that bank directors were elected, on average, in their forties, or their prime career years, it is likely that at least some of the observed outside service was contemporaneous with bank service.

Coefficient estimates in Columns (1) through (4) point to a generally declining hazard in outside board service. In Column (1), for example, service on two boards is associated with 36.3% reduced hazard of not being elected the following year relative to no outside service (the excluded category). Service on seven or more outside boards reduces the hazard by 73.5%. The within-bank estimates reported in Columns (5) and (6) are modestly lower than the cross-section estimates, but they follow the same general pattern of declining in the number of outside boards.

Figure 3 presents a Kaplan-Meier survival graph that separates board service into three categories (0 boards, 1-5 boards, and 6 or more boards), and is fully consistent with the coefficient estimates in Table 4. Fifty percent of directors with no outside board appointments are no longer serving at year six, and fifty percent of directors who served on one to five outside boards are no longer serving at year 10. By comparison, 50 percent of bank directors who served on six or more outside boards are still serving at year 25.

Figure 3
Kaplan-Meier survival curves for bank directors by outside board service



Source: author's calculations from data in Appendix.

4.2 Determinants of director turnover

A second issue that bears on director tenure is whether turnover is associated with bank performance and profitability. The Barro and Barro (1990) model predicts that bank performance will depend on the performance of bank directors relative to some critical benchmark. If director performance falls below the tenure-dependent benchmark, bank performance and profitability will suffer, and management, fellow directors, and shareholders will replace under-performing directors. To test this hypothesis, a data set was constructed for the years served by individual directors for banks and years for which the director could be matched to dividend records and antebellum bank balance sheets provided by Weber (2008).

Such data were available for 213 directors and bank presidents who served at nine banks between 1800 and 1861.[10] To understand the nature of the estimation take, for example, Peter I. Nevius, who was elected in 1837 to the board of the Merchants Bank of New York City. He served continuously for 10 years, so we

[10] The nine banks are designated with a double dagger (‡) in the Data Appendix.

observe the end of his service within the 1837 to 1861 window. Alexander T. Stewart, on the other hand, was elected to the Merchants Bank's board in 1843 and served continuously for 17 years to 1861, and we do not observe the end of his service (in this data). These two data points generate 27 observations (one data point for each director-year of service) in a discrete-time hazard model, 26 of which do not end in a director being replaced ("failure" within the terminology of a hazard model). Each director-year observation was then matched to the bank's balance sheet and dividend-to-equity distribution for that year. Thus, the discrete-time hazard model for 213 directors yields more than 1,400 director-year observations, 8.4% of which represent a final year of service (failure). Discrete-time hazard models are estimated using a standard logit specification (a log-log logit specification generates a Cox proportional hazard estimate) in which the dependent variable is zero/one with one representing the end of a term of service. Thus, the dependent variable, y_{it}, is:

$$y_{it} = \begin{cases} 0 \; if \; director \; tenure \; does \; not \; end \\ \\ 1 \; if \; director \; tenure \; ends \end{cases}$$

$$\frac{\lambda(t_j \mid x_i)}{1 - \lambda(t_j \mid x_i)} = \frac{\lambda_0(t_j)}{1 - \lambda_0(t_j)} \exp\{xb\}$$

$$\text{logit } \lambda(t \mid x) = aj + xbj$$

<Table 5 about here>

Summary statistics of the dependent variable (turnover) and independent variables are reported in Table 5. Presidents represent 9.0% of the director-year observations. The average loan-to-asset ratio reveals that loans were the principal asset of antebellum banks, and reveals something about a bank's risk taking. The ratio speaks directly to the directors' preferences for risk, because directors approve the number, size, and type of loans. Moreover, directors at most banks convened

weekly to approve loans and provided input into a bank's asset mix between loans, interbank deposits, specie, government debt, and so on. If the directors' choices diverged from the shareholders' preferences, shareholders may have voted out one or more directors. The average dividend-to-equity ratio of 6.095% provides insights into bank profitability and the directors' decisions regarding the distribution of profits to shareholders. Dividend cuts signal one of three facts to shareholders: (1) current profitability is lower than in previous years; (2) future profits may be more uncertain (variable) than past profits; or, (3) future investment opportunities can be profitably financed with retained earnings. Additional factors that may be related to director turnover are bank size, measured by the natural log of total assets, annual asset growth, and the natural log of bank age. Director turnover is likely to be lower at larger banks because larger banks presumably have more and more dispersed shareholders. Shareholders are likely to be less prone to replace directors at growing banks. The effect of bank age on director turnover is ambiguous.

< Table 6 about here >

Table 6 reports estimated marginal effects derived from discrete-time hazard models estimated by logit maximum likelihood.[11] Despite being exempt from term limits, bank presidents are not less likely to experience an end of their terms than directors. Only two of the other independent covariates – dividend distributions and the natural log of assets (size) -- are statistically significant in any regression. The marginal effect reported in Column (1) implies that a one percentage point increase in dividends-to-equity is associated with a 1.2% decrease in the probability of observing the end of a director's tenure. The 1.2% decrease represents 13.3% of the mean turnover rate, so that the effect of a change in dividend distributions on turnover is a sizeable and meaningful effect. When controlling for the full set of covariates, the marginal effect of dividend distributions remains significant and increases to 1.4%.

[11]The marginal effect is calculated as:

$$\frac{\partial \Pr[y=1|x,z]}{\partial x} = \frac{\beta}{x} p(1-p)$$

Although the marginal effects are not precisely estimated, the sign on the coefficients of the other dependent variables are consistent with expectations. The estimated marginal effects on bank size (log total assets) in Columns (4) and (5) imply that a one log-point increase in bank size reduces the probability of observing the end of a director's tenure by 4.5%. This, too, represents a meaningful effect in that a 7% (one log point) increase in bank assets is associated with a 4.5% decrease in director turnover. The estimated marginal effects on year-over-year asset growth in Columns (4) and (5) suggest that directors at growing banks are less likely to leave the board. The estimated coefficient is 21.7% of the mean of annual asset growth.

The Barro and Barro (1990) model predicts that, if bank performance falls below some benchmark, the probability that one or more directors will be replaced increases. An analysis of director turnover from the sample of bank histories finds that dividend cuts increased turnover.

4.3 Director tenure and bank profitability and leverage

A third issue that bears directly on director tenure is whether long board tenures influence profitability or risk taking. The extant literature has largely overlooked the question of how firm behavior or performance might evolve with director tenure, but useful insights might be drawn from the literature on how CEO choices evolve over a career. Serfling (2014), for example, finds that older CEOs prefer less risky strategies, and Cline and Yore (2016) find that firm value declines in CEO age. Serfling's (2014) result is consistent with the predominant conjecture, which holds that the CEO's private benefits to control, due either to greater power within the firm or undiversified human capital, increase in tenure and decrease in risk taking (Hermalin and Weisbach 1998; Bertrand and Mullainathan 2003; Coles, Daniel and Naveen 2006; Chen and Zheng 2013). Others argue that career concerns create incentives to favor safe projects because they are less informative about managerial quality and make it more difficult for monitors to accurate assess skills given tenure, that is, the variance of E[S(i) | T] increases, which reduces the likelihood of early termination (Hirshleifer and Thakor 1992; Barro and Barro 1990). It is not evident that models of managerial behavior are applicable to directors, but it is plausible that some directors derive utility from service, which increases in service. If so, they will

be less willing for their bank to take on greater risk as tenure increases. On the other hand, director skill or confidence may increase with tenure, which will encourage greater risk taking (Gervais, Heaton and Odean 2011 discuss managerial (over)confidence).

The data used to address the issue of director tenure and firm performance is the bank-year data summarized in Table 3 and discussed in §3. The data are an unbalanced panel of 21 banks that could be matched to balance sheet and dividend data, and survived for more than 10 years. One bank is observed for just two years; one is observed for 51 years. Given the nature of the data, namely, repeated observations on individual banks over consecutive years, the appropriate regression technique is autoregressive fixed effects. The within estimator for a fixed effect model can be expressed as:

$$y_{it} = \alpha + \beta X_{it} + \gamma_i + \varepsilon_{it}$$
$$\varepsilon_{it} = \rho \varepsilon_{it-1} + \eta_{it}$$
$$|\rho| < 1 \; and \; \eta_{it}(i.i.d.) \sim (0, \sigma_\eta^2)$$

Equations are estimated using OLS on Cochrane-Orcutt transformed first differences of the dependent and independent variables, which generates within estimates of the parameters.

While it is common to interpret fixed-effects results that control for time-invariant confounders as causal relationships (Angrist and Pischke 2009), Imai and Kim (2016) show that causal interpretations depend on two assumptions: (1) past treatments do not directly influence current realizations; and, (2) past outcomes do not directly influence current treatments. That is, fixed effects regressions fail to account for dynamic relationships between treatments and outcomes. If the modern literature teaches us anything about the empirical analysis of boards of directors, it is that board characteristics are endogenous to past, present, and expected future corporate characteristics and outcomes (Adams, Hermalin and Weisbach 2010). That said, I estimate fixed effects models corrected for autocorrelation recognizing that the results may not be interpreted as causal if past realizations affect average or maximum board tenure.

Table 7 reports the results of four specifications of autoregressive fixed effects models. The regressions control for bank president tenure, cashier tenure, the number of directors, the standard deviation of director tenures, and the lagged value of the natural log of retained earnings. Retained earnings are included because dividend distributions will be influenced by a bank's cash holdings. To limit bank size charters typically restricted either the total dollar amount of retained earnings or the ratio of retained earnings to paid-in capital. Banks with more retained earnings may distribute more dividends either because the law requires it or shareholders prefer it.

Columns (1) and (2) of Table 7 specify the dividend-equity ratio, which served to proxy for profitability, as the dependent variable. Column (1) uses the average bank-year director tenure to control for board service. Three notable features emerge from the results. First, banks with more retained earnings distribute more dividends as a fraction of equity. Second, the tenure of the president and cashier has no meaningful effect on profitability. Third, average director tenure has a positive, statistically significant, and meaningful effect on profitability. A one standard deviation change in the log of average director tenure leads to a 0.4 percentage point increase in the dividend-equity ratio, an amount equal to 6% of its mean and 15% of its standard deviation.

Column (2) regresses the dividend-equity ratio on the maximum bank-year board tenure. Using this specification, higher values of retained earnings are associated with higher dividend distributions; the log of board size and the standard deviation of board tenure are negatively related to profitability. Neither president nor cashier tenure affect profitability. The coefficient on maximum director tenure, however, implies that a one standard deviation change in maximum tenure is associated with a 1 percentage point change in the dividend-equity ratio, which represents 17% of the mean dividend-equity value and 39% of its standard deviation. Longer director tenures, whether measured by average or maximum tenure, are associated with higher bank profitability. The regressions in Table 7 do not themselves provide any insights into the reasons for this result, but the literature on boards of directors is consistent with long-serving directors being effective monitors

and connected businessmen who can attract promising clients to the bank. The results in §4.1 and §4.2 are also consistent with this interpretation.

The results reported in Column (3) and (4) of Table 7 are derived from regressing the asset-equity ratio, a common measure of bank leverage and preference toward risk, on board characteristics. Three results stand out. First, longer president tenure is associated with significantly lower leverage. A one standard deviation change in log president tenure leads to a decrease in leverage equal to about 2% of its mean value and 5% of its standard deviation. Second, the coefficient on the log of average director tenure in Column (3) implies that a one standard deviation change in average director tenure is associated with a 10% change in leverage, which is 5% of its average value and 26% of its standard deviation. Third, the coefficient on the log of maximum director tenure in Column (4) implies that a one standard deviation change in log tenure leads to a 20% change in leverage, which is 6% of its mean value and 46% of its standard deviation.

The results in Column (3) and (4) are consistent with the traditional Jensen-Meckling (1976) interpretation of the corporate principal-agent problem. Long-serving bank presidents, men with relatively large investments in firm-specific human capital, prefer less risky portfolios as their tenure increases. Long-serving directors, on the other hand, were presumably men with diversified portfolios, many of whom served on multiple corporate boards (consistent with investments in multiple corporations), preferred greater risk taking. The movement toward greater leverage at banks with long-serving directors could also reflect that more experienced directors had learned about how to manage a portfolio in ways that allowed for increased leverage without placing the bank at risk of failure. All the banks included in the sample, after all, survived for 50 years or more and successfully navigated multiple financial crises.

5. Concluding comments

Conventional wisdom holds that the CEO plays the most important role in the modern American corporation (Coates and Kraakman 2007). CEOs manage firms, take credit for its successes, and shoulder blame for its failures. The board plays a supporting role, mostly by advising and monitoring CEOs and replacing

them when their performance falls short of expectations. The modern approach of CEOs as active managers and boards as passive monitors does not well describe the historical American bank. Directors, in close consultation with bank presidents (CEOs) and cashiers (CFOs), engaged in what are now considered managerial tasks. Directors at many banks sat in weekly or bi-weekly meetings to determine who would receive credit, how much, and for how long. Directors managed.

This paper addresses several questions. First, how long did directors serve? About one-half of directors served for less than five years, but a substantial fraction served for 20 or more years. Second, was length of service related to a board member's characteristics, particularly his connectedness? It was. Men who served on outside boards were more likely to serve longer terms, as were merchants and banker/brokers. Third, was the likelihood of a director's departure from the board related to contemporary bank performance? It was. The odds of turnover increased with lower dividend distributions. And, fourth, did long service influence bank performance. It did. Banks with long-serving directors tended to be more profitable and to operate with greater leverage. Before the separation of ownership and control became the norm, corporate boards were responsive to shareholder preferences, not least because directors tended to be substantial shareholders. The results reported here point to the pitfalls of blindly applying modern conceptions (and models) of the modern corporation to their historical analogs. Modern theories can surely inform historical analyses, but they must be tempered by an understanding of the institutional milieu in which the historical corporation operated.

6. References

Adams, Renée B. and Daniel Ferreira. 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics* 94, 291-309.

Adams, Renée B., Benjamin E. Hermalin, and Michael S. Weisbach. 2010. The role of boards of directors in corporate governance: a conceptual framework and survey. *Journal of Economic Literature* 48(1), 58-107.

Alcorn, Edgar G. 1908. *The Duties and Liabilities of Bank Directors*. Columbus, Ohio: Financial Publishing Company.

Angrist, Joshua D. and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton: Princeton University Press.

Armour, Tim, et al. 2016. Commonsense corporate governance principles. *Wall Street Journal* (July 21, 2016), A14.

Barro, Jason R. and Robert J. Barro. 1990. Pay, performance, and turnover of bank CEOs. *Journal of Labor Economics* 8(4), 448-81.

Bebchuk, Lucian A. and Jesse M. Fried. 2003. Executive compensation as an agency problem. *Journal of Economic Perspectives* 17(3), 71-92.

Berle, Adolph A. Jr. and Gardiner C. Means. 1932. The Modern Corporation and Private Property. New York: Macmillan Company.

Bertrand, M. and S. Mullainathan. 2003. Enjoying the quiet life? corporate governance and managerial preferences. *Journal of Political Economy* 111(5), 1043-75.

Besley, Timothy. 2005. Political selection. *Journal of Economic Perspectives* 19(3), 43-60.

Bodenhorn, Howard. 1992. Capital mobility and financial integration in antebellum America. *Journal of Economic History* 52(3), 585-610.

Bodenhorn, Howard. 2011. Federal and state commercial banking policy in the Federalist Era and beyond. In *Founding Choices: American Economic Policy in the 1790s*, pp. 151-176. Edited by Douglas A. Irwin and Richard Sylla. Chicago. University of Chicago Press.

Bodenhorn, Howard. 2014. Voting rights, shareholdings, and leverage at nineteenth-century US banks. *Journal of Law and Economics* 57(2), 431-458.

Bodenhorn, Howard. 2017. Opening access: banks and politics in New York from the Revolution to the Civil War. NBER working paper no. 23560.

Bodenhorn, Howard and Hugh Rockoff. 1992. Regional interest rates in antebellum America." In *Strategic Factors in Nineteenth Century American Economic History: A Volume to Honor Robert W. Fogel*, pp. 159-187. Edited by Claudia Goldin and Hugh Rockoff. Chicago: University of Chicago Press.

Calomiris, Charles and Charles Kahn. 1991. The role of demandable debt in structuring optimal banking arrangements. *American Economic Review* , 497-513.

Carter, David A., Betty J. Simpkins, and W. Gary Simpson. 2003. Corporate governance, board diversity, and firm value. *Financial Review* 38, 33-53.

Cary, Thomas G. 1845. *A Practical View of the Business of Banking: An Address Delivered before the Mercantile Library Association of Boston*. Boston: private printing.

Chen, Dong and Yudan Zheng. 2013. CEO tenure and risk-taking. Working paper, SSRN.

Chronopoulos, Dimistris K., Hong Liu, Fiona J. McMillan, and John O. S. Wilson. 2013. The dynamics of US bank profitability. http://ssrn.com/abstract=1972835.

Clarke, M. and D. A. Hall. 1832. *Legislative and Documentary History of the Bank of the United States*. Washington, D. C.: Gales & Seaton.

Coates, John C. IV and Reinier Kraakman. 2007. CEO tenure, performance and turnover in S&P 500 companies. *Harvard Law School John M. Olin Center for Law, Economics and Business Discussion Paper Series*, Paper 595.

Cline, Brandon N. and Adam S. Yore. 2016. Silverback CEOs: age, experience, and firm value. *Journal of Empirical Finance* 35, 169-188.

Coles, J. L., N. D. Daniel, and L. Naveen. 2006. Managerial incentives and risk-taking. *Journal of Financial Economics* 79(2), 431-468.

Cooper, Elizabeth and Hatice Uzun. 2012. Directors with a full plate: the impact of busy directors on bank risk. *Managerial Finance* 38(6), 571-86.

Core, John E., Robert W. Holthausen, and David F. Larcker. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* 51, 371-406.

De Haan, Jakob and Razvan Vlahu. 2016. Corporate governance of banks: a survey. *Journal of Economic Surveys* 30(2), 228-77.

Dewey, Davis R. 1910. *State Banking before the Civil War*. Washington, D.C.: GPO.

Doggett, John Jr. 1846. *The Great Metropolis; or Guide to New-York for 1846*. New York: H. Ludwig, Printer.

Dorfman, J. 1946. *The Economic Mind in American Civilization, 1060-1865*. New York: Viking Press.

Douglas, William O. 1934. Directors who do not direct. *Harvard Law Review* 47(8), 1305-34.

Du Bois, W. E. B. 1903. *The Negro Problem*. New York: James Potts and Company.

Duryea, J. B. 1893. *A Practical Treatise on the Business of Banking and Commercial Credits*. Des Moines, Iowa: private printing.

Estée Lauder Companies Incorporated Inc. 2017. Annual Report. Available at https://www.elcompanies.com/~/media/Files/E/Estee-Lauder/investors/elc-annual-report-2017.pdf

Fama, Eugene. 1980. Agency problems and the theory of the firm. Journal of Political Economy 88( ), 288-307.

Fama, Eugene and Michael Jensen. 1983. The separation of ownership and control. *Journal of Law and Economics* 26( ), 301-325.

Ferris, Stephen P., Murali Jagannathan, and A. C. Pritchard. 2003. Too busy to mind the business? monitoring by directors with multiple board appointments. *Journal of Finance* 58(3), 1087-1111.

Fich, Eliezer M. and Anil Shivdasani. 2006. Are busy boards effective monitors? *Journal of Finance* 61(2), 689-724.

Fizel, John L., Kenneth K. T. Loui, and Marc S. Mentzer. 1990. An economic, organizational and behavioral model of the determinants of CEO tenure. *Journal of Economic Behavior and Organization* 14, 363-379.

Feintzeig, Rachel. 2015. 52 and counting: the longest-tenured CEOs. *Wall Street Journal* (May 6, 2015), B1, B7.

Francis, Theo and Joann S. Lublin. 2016. Investors scrutinize board tenures. *Wall Street Journal* (March 24, 2017), B1, B7.

Frydman, Carola and Raven E. Saks. 2010. Executive compensation: a new view from a long-term perspective, 1936-2005. *Review of Financial Studies* 23(5), 2099-2138.

Gervais, S., J. B. Heaton, and T. Odean. 2011. Overconfidence, compensation contracts, and capital budgeting. *Journal of Finance* 66(5), 1735-77.

Hamilton, Alexander. 1790. Report on a National Bank. In *Legislative and Documentary History of the Bank of the United States* (1832). Edited by M. Clarke and D. A. Hall. Washington, D.C.: Gales & Seaton.

Hermalin, Benjamin E. and Michael S. Weisbach. 1998. Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review* 88(1), 96-118.

Hermalin, Benjamin E. and Michael S. Weisbach. 2003. Boards of directors as an endogenously determined institution: a survey of the economic literature. Federal Reserve Bank of New York Economic Policy Review (April), 7-26.

Hilt, Eric. 2008. When did ownership separate from control? corporate governance in the early nineteenth century. *Journal of Economic History* 68(3), 645-85.

Imai, Kosuke and In Song Kim. 2016. When should we use linear fixed effects regression models for causal inference with longitudinal data. Working paper, Princeton University.

Jensen, Michael and xx Meckling. 1976.

Johnson, A. B. 1851. The duties, omissions, and misdoings of bank directors. *Hunt's Merchants' Magazine* 24(4), 431-39.

Lamoreaux, Naomi R. 1996. Insider Lending: New York: Cambridge University Press.

Lublin, Joann S. 2017. CFOs learn to survive. *Wall Street Journal* (August 14, 2017), B6.

Lublin, Joann S., Ted Mann, and Kate Linebaugh. 2014. GE rethinking the 20-year chief. *Wall Street Journal* (April 15, 2014), B1, B4.

Mace, Myles. 1986. *Directors: Myth and Reality*. Cambridge: Harvard University Press.

New York (City) Commissioners. 1840. *Report of the Commissioners Appointed to Investigate the Condition of the Manhattan Company*. New York: James P. Wright, Printer.

New York (State). Banking Department. 1838-1967. Inactive institution files. Record Group N-Ar 14272. Albany: New York State Archives.

Parglender, Mariana and Henry Hansmann. 2013. A new view of shareholder voting in the nineteenth century: evidence from Brazil, England, and France. *Business History* 55(4), 585-600.

Serfling, Matthew A. 2014. CEO age and the riskiness of corporate policies. *Journal of Corporate Finance* 25, 251-273.

Shleifer, Andrei and Robert W. Vishny. 1986. Large shareholders and corporate control. *Journal of Political Economy* 94(3), 461-488.

Sila, Vathunyoo, Angelica Gonzalez, and Jens Hagendorff. 2016. Women on board: does boardroom gender diversity affect firm risk? *Journal of Corporate Finance* 36(1), 26-53.

South Carolina. Comptroller General. 1824. *A Compilation of All the Acts, Resolutions, Repots, and Other Documents of the Bank of the State of South Carolina*. Columbia, SC.

Weber, Warren E. 2008. Balance sheets for U.S. antebellum state banks. Research Department, Federal Reserve Bank of Minneapolis. http://cdm16030.contentdm.oclc.org/cdm/about/collection/p16030coll5

White, Eugene N. 1985. The merger movement in banking, 1919-1933. *Journal of Economic History* 45(2), 285-291.

Table 1
Director characteristics from biography sample

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Year bank established	624	1829	22.15	1792	1891
Birth year	537	1817	29.51	1740	1885
First year on board	624	1860	30.39	1792	1924
Years of service	624	10.01	10.12	0.17	54
Corporate boards	624	1.15	2.05	0	24
Charity boards	624	0.38	0.84	0	5
Age	537	44.25	10.97	25	88
Director occupations					
Farmer	624	0.10	0.30	0	1
Merchant	624	0.47	0.50	0	1
Manufacturer	624	0.20	0.40	0	1
Attorney	624	0.11	0.31	0	1
Banker/broker	624	0.08	0.27	0	1
Professional	624	0.02	0.15	0	1
Director education					
Common school	624	0.74	0.44	0	1
Academy	624	0.07	0.25	0	1
College	624	0.19	0.39	0	1
Director political participation					
Local office	624	0.11	0.31	0	1
State office	624	0.10	0.30	0	1
Federal office	624	0.05	0.22	0	1

Sources: see Data Appendix

Table 2
Five longest serving directors, presidents, and cashiers from biography sample

Name	Bank	State	Service (yrs)	First year	Occupation
	Directors				
Samuel W. Allerton	First National Bank -- Chicago	Illinois	51	1863	merchant
Ferdinand W. Roebling	Mechanics Bank – Trenton	NJ	49	1842	manufacturer
Benjamin Fish	Trenton Banking Company	NJ	48	1833	merchant
Abraham Barker	Merchants Bank – New Bedford	Mass	47	1825	?
Richard Ashurst	Philadelphia National Bank	Penn	44	1874	attorney
	Presidents				
Philemon Dickinson	Trenton Banking Company	NJ	49	1828	attorney
George M. Hollenback	Wyoming Bank - Wilkes Barre	Penn	34	1832	merchant
Daniel B. Cummins	Girard Bank	Penn	33	1858	merchant
William Darlington	Bank of Chester County	Penn	33	1830	physician
John P. Van Ness	National Metropolitan Bank	DC	32	1814	banker
	Cashiers				
John B. McPherson	Bank of Gettysburg	Penn	45	1814	banker
John E. Bair	Bank of Gettysburg	Penn	40	1867	banker
William L. Schaffer	Girard Bank	Penn	35	1850	banker
Isaac N. Stoddard	Plymouth National Bank	Mass	34	1845	teacher
James B. Congdon	Merchants Bank-New Bedford	Mass	33	1825	merchant

Sources: see Data Appendix entries with asterisks.

Table 3
Director and bank characteristics for tenure and bank performance and profitability sample

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
Average director tenure	610	10.49	3.83	1.67	24.50
Maximum director tenure	610	24.64	9.95	3.00	58.00
StdDev director tenure	610	7.34	2.95	1.42	16.87
Directors	610	11.91	3.95	4.00	28.00
Log directors	610	2.42	0.34	1.39	3.33
President tenure	610	10.30	8.16	0.12	40.00
Cashier tenure	610	12.73	9.52	0.12	50.00
Capital	610	791,123	701,120	65,987	5,000,000
Retained earnings	610	84,777	113,957	0	814,823
Total assets	610	1,939,741	1,751,000	0	9,294,000
Assets to equity	610	2.31	0.77	1.04	6.02
Dividends to equity	445	0.06	0.02	0.00	0.23
Dividends to assets	445	0.03	0.01	0.00	0.07
Number of bank_no	21	21	21	21	21

Source: see Data Appendix and text.

Table 4
Estimated Cox and Weibull proportional hazard ratios from biography sample

	Dependent variable = years of service					
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Cox	Weibull	Cox	Weibull	Cox	Weibull
			Hazard Ratios			
Bank president			0.730**	0.692**	0.867	0.841
			[0.080]	[0.082]	[0.152]	[0.153]
Age 30s	0.605**	0.557**	0.660*	0.600*	0.739	0.661+
	[0.115]	[0.112]	[0.139]	[0.125]	[0.171]	[0.148]
Age 40s	0.803	0.748	0.922	0.844	0.966	0.861
	[0.155]	[0.154]	[0.195]	[0.180]	[0.222]	[0.197]
Age 50s	0.740	0.671+	0.892	0.806	1.033	0.920
	[0.151]	[0.147]	[0.195]	[0.179]	[0.242]	[0.216]
Age 60s	1.634*	1.760*	1.799**	1.841**	1.902*	1.882*
	[0.360]	[0.415]	[0.410]	[0.430]	[0.476]	[0.481]
Age 70s	1.225	1.223	1.331	1.292	1.256	1.232
	[0.282]	[0.312]	[0.322]	[0.328]	[0.331]	[0.333]
Local politics	0.991	1.012	0.996	1.012	1.124	1.134
	[0.132]	[0.149]	[0.122]	[0.135]	[0.144]	[0.160]
State politics	0.886	0.865	0.824	0.812	0.908	0.920
	[0.137]	[0.148]	[0.110]	[0.115]	[0.141]	[0.151]
Appointed federal office	0.551	0.495	0.837	0.782	0.927	0.832
	[0.396]	[0.359]	[0.583]	[0.559]	[0.667]	[0.618]
Congress	1.160	1.195	0.936	0.922	1.143	1.174
	[0.274]	[0.315]	[0.186]	[0.203]	[0.212]	[0.242]
Merchant	0.776	0.737+	0.783+	0.756+	0.619**	0.589**
	[0.122]	[0.132]	[0.116]	[0.125]	[0.105]	[0.109]
Manufacturer	0.661*	0.637*	0.657*	0.635*	0.566**	0.555**
	[0.117]	[0.126]	[0.109]	[0.116]	[0.099]	[0.105]
Attorney	0.819	0.801	0.919	0.926	0.704	0.710
	[0.173]	[0.190]	[0.177]	[0.197]	[0.151]	[0.164]
Railroad manager	1.036	0.981	0.983	0.936	0.737	0.604
	[0.308]	[0.295]	[0.260]	[0.249]	[0.284]	[0.253]
Banker/broker	0.943	0.956	0.757	0.758	0.583*	0.585*
	[0.199]	[0.229]	[0.152]	[0.169]	[0.125]	[0.137]
Professional	0.909	0.890	0.955	0.952	0.880	0.866
	[0.267]	[0.291]	[0.231]	[0.255]	[0.207]	[0.220]
Mine owner/manager	0.725	0.670	0.773	0.726	0.455*	0.419**
	[0.239]	[0.246]	[0.245]	[0.255]	[0.139]	[0.138]
Education = Academy	0.879	0.857	0.829	0.797	1.134	1.089
	[0.146]	[0.154]	[0.118]	[0.121]	[0.196]	[0.196]
Education = College	0.747*	0.722*	0.762*	0.742*	0.959	0.950
	[0.106]	[0.112]	[0.093]	[0.098]	[0.119]	[0.126]
Board = 1	0.922	0.925	0.929	0.923	0.793*	0.769*

	[0.104]	[0.118]	[0.096]	[0.107]	[0.085]	[0.091]
Boards = 2	0.637**	0.637**	0.657**	0.658**	0.532**	0.519**
	[0.101]	[0.108]	[0.098]	[0.103]	[0.081]	[0.083]
Boards = 3	0.666+	0.640*	0.709+	0.691+	0.551**	0.503**
	[0.139]	[0.138]	[0.133]	[0.133]	[0.099]	[0.098]
Boards = 4	0.529**	0.513**	0.587**	0.574**	0.451**	0.426**
	[0.110]	[0.113]	[0.103]	[0.106]	[0.081]	[0.080]
Boards = 5	0.854	0.892	0.931	0.968	0.692+	0.683+
	[0.194]	[0.208]	[0.213]	[0.226]	[0.141]	[0.142]
Boards = 6	0.376**	0.396**	0.422**	0.433**	0.334**	0.318**
	[0.138]	[0.135]	[0.130]	[0.127]	[0.088]	[0.084]
Boards = 7 or more	0.266**	0.241**	0.330**	0.311**	0.217**	0.212**
	[0.067]	[0.061]	[0.072]	[0.069]	[0.057]	[0.053]
Constant		0.300**		0.246**		0.196*
		[0.124]		[0.099]		[0.144]
ln(p)		0.134**		0.115**		0.240**
		[0.031]		[0.032]		[0.029]
Decade of initial election Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed Effects	No	No	No	No	Yes	Yes
Observations	624	624	738	738	738	738
Robust seeform in brackets						
** p<0.01, * p<0.05, + p<0.1						

Table 5
Summary statistics for discrete-time hazard estimates

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
President	1,876	0.065	0.247	0	1
Turnover	1,876	0.090	0.286	0	1
Loans to assets	1,876	0.763	0.134	0.327	0.951
Dividends to equity	1,876	5.705	1.589	0	12.68
Log total assets	1,876	14.53	0.803	12.03	16.04
Annual asset growth	1,588	0.023	0.155	-0.596	0.667

Sources: see Data Appendix.

Table 6
Discrete time hazard estimates of the determinants of director turnover
(marginal effects)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	logit	logit	logit	logit	Cox
President	0.022	0.023	0.023	0.030	0.029
	(0.022)	(0.023)	(0.022)	(0.026)	(0.026)
Dividends to equity	-0.012**	-0.016**	-0.015**	-0.014*	-0.014*
	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)
Loans to assets		0.106	0.090	0.069	0.065
		(0.074)	(0.080)	(0.092)	(0.092)
Log total assets			-0.016	-0.044	-0.045
			(0.034)	(0.041)	(0.042)
Annual asset growth				-0.005	-0.004
				(0.053)	(0.055)
Bank fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	1,876	1,876	1,876	1,521	1,521

Standard errors clustered by bank in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7
Autoregressive fixed effects estimates

VARIABLES	(1) Div/equity	(2) Div/equity	(3) Assets/equity	(4) Assets/equity
Log average director tenure	0.009+		0.264**	
	[0.005]		[0.095]	
Log maximum director tenure		0.022**		0.459**
		[0.007]		[0.135]
Log president tenure	0.001	0.001	-0.048*	-0.052*
	[0.001]	[0.001]	[0.023]	[0.024]
Log cashier tenure	-0.002	-0.002	-0.001	-0.000
	[0.001]	[0.001]	[0.024]	[0.024]
StdDev director tenure	-0.000	-0.002*	-0.000	-0.035+
	[0.001]	[0.001]	[0.014]	[0.020]
Log directors	-0.004	-0.012*	0.068	-0.041
	[0.005]	[0.005]	[0.098]	[0.105]
Log retained earnings (-1)	0.006**	0.006**		
	[0.001]	[0.001]		
Constant	-0.011	-0.021**	1.693**	1.372**
	[0.007]	[0.007]	[0.108]	[0.123]
Observations	356	356	588	588
Number of bank_no	16	16	21	21
R-sq within	0.11	0.13	0.02	0.03

** p<0.01; * p<0.05; + p<0.10. Standard errors in brackets.
All regressions include bank fixed effects, and include banks in existence for 10 or more years.

Data Appendix:
Sources for bank officer tenure and biographies

Bank histories marked with * provide detailed biographies for all or some directors and/or presidents and are used in the analysis of director characteristics and tenure. Bank histories marked with † are used in the statistical analysis of director tenure on bank leverage and profitability. Bank histories marked with ‡ are included in the director turnover sample.

New York

National City Bank. (BK) Cleveland, Harold van B. and Thomas F. Huertas. *Citibank, 1812-1970*. Cambridge: Harvard University Press, 1985.

†*‡Merchants National Bank. (GB) Hubert, Philip G. Jr. *The Merchants National Bank of the City of New York: A History of Its First Century Compiled from Official Records at the Request of the Directors, 1803-1903*. New York: privately printed, 1903.

Corn Exchange Bank. (Archive.org) Ketchum, William F. *History of the Corn Exchange Bank, New York City, From Its Organization in 1852 to March 1923*.

†Bank of New York. (GB) Dommett, Henry W. *A History of the Bank of New York, 1784-1884*. New York: G. P. Putnam's Sons, 1884.

*National Bank of North America in New York. (GB) Anonymous. The National Bank of North America in New York.

National Commercial Bank (Albany). (GB) Prescott, Herbert F. *The National Commercial Bank of Albany: A Brief History of Three-Quarters of a Century*. Albany: Weed-Parsons Printing Company, 1901.

*Chemical Bank (BK). Anonymous. *History of the Chemical Bank, 1823-1913*. New York: privately printed, 1913.

Pennsylvania

†*‡Philadelphia National Bank (BK). Wainwright, Nicholas B. *History of the Philadelphia National Bank: A Century and a Half of Philadelphia Banking, 1803-1953*. Philadelphia: Wm. F. Fell Co., Printers, 1953.

†*‡Philadelphia National Bank (GB). Cook, Joel. *The Philadelphia National Bank: A Century's Record, 1803-1903*. Philadelphia: Philadelphia National Bank, 1903.

†National Bank of Germantown (GB). National Bank of Germantown. *A Century of the National Bank of Germantown, 1814-1914*. Private printing, 1914.

†Honesdale National Bank (ILL). Freund, Marie R. *One Hundred Years of Banking: A History of the Origin and Development of the Honesdale National Bank*. Scranton: International Textbook Press, 1936.

*National Bank of Chester County (GB). Burnham, Smith. *First Hundred Years of the National Bank of Chester County, West Chester, Pennsylvania*. West Chester: private printing, 1914.

†Bank of North America (GB). Michener, John H. *The Bank of North America Philadelphia: A National Bank Founded 1781: The Story of its Progress through the Last Quarter of a Century, 1881-1906*. New York: Robert Grier Cooke, 1906.

†*Delaware County National Bank (GB). Ashmead, Henry Graham. *History of the Delaware County National Bank with Biographical Notes of Its Officers*. Chester, Penn.: Press of the Chester Times, 1914.

†*Bank of Gettysburg (GB). McSherry, William. *History of the Bank of Gettysburg, 1814-1864 and the Gettysburg National Bank 1864-1914 of Gettysburg, Pennsylvania*. Gettysburg, Penn.: private printing, 1914.

†Bank of Northern Liberties (GB). Simon, Lemuel C. *A Century of the National Bank of Northern Liberities of Philadelphia, Pennsylvania*. Philadelphia: private printing, 1910.

†Farmers and Mechanics Bank of Philadelphia (ILL). Farmers and Mechanics Bank. *The Charter and by-Laws of the Farmers' and Mechanics' Bank To Which Are Added Several Acts of Assembly, Relative to Banks*. Philadelphia: J. B. Lippincott & Co., 1849.

†*Girard National Bank (GB). Leach, Josiah Granville. *The History of the Girard National Bank of Philadelphia, 1832-1902*. Philadelphia: J. B. Lippincott & Co., 1902.

*Harvey, Oscar Jewell (GB). Harvey, Oscar Jewell. *Eighty Years of Banking in Wilkes-Barre: A Brief Narrative of the Origin, Growth, and Present State of the Wyoming National Bank*. Wilkes-Barre: private printing, 1910.

New Jersey

†*‡Trenton Banking Company (BK). Committee of the Board of Directors of the Trenton Banking Company. *The Trenton Banking Company: A History of the First Century of its Existence*. Trenton, NJ: private printing, 1907.

†*‡Trenton Banking Company (BK). Tomlinson, Paul G. *A History of the Trenton Banking Company, 1804-1929*. Trenton, NJ: Princeton University Press, 1929.

*Godfrey, Carlos (ILL). The Mechanics Bank Trenton in New Jersey, 1834-1919: A History. Trenton, NJ: private printing, 1919.

Connecticut

†Thames National Bank (ILL). *Thames National Bank. One Hundred Years of Banking in Norwich, Connecticut*. Norwich, Conn.: private printing, 1925.

†*Hartford Bank (GB). Woodward, P. H. One Hundred Years of the Hartford Bank, Now the Hartford National Bank of Hartford, Conn. Hartford: Case, Lockwood & Brainard Company, 1892.

Massachusetts

†‡Machinists National Bank (ILL). *Machinists National Bank. Taunton and the Machinists' National Bank: High Lights in the History of the City and a Record of the Bank*. Taunton: private printing, 1928.

‡National Bank of Commerce (GB). C. H. W. *The National Bank of Commerce of Boston*. Cambridge, Mass.: privately printed, 1892.

Revere Bank (GB). Revere Bank. *History of the Revere Bank of Boston, Incorporated Marc, 1859*. Cambridge, Mass.: privately printed, 1886.

*Merchants National Bank of New Bedford (BK). Pease, Zephaniah W. The Centenary of the Merchants National Bank. New Bedford, Mass.: privately printed, 1925.

†*‡Massachusetts First National Bank of Boston (BK). Gras, Norman S. B. *The Massachusetts First National Bank of Boston, 1784-1934*. Cambridge: Harvard University Press, 1937.

†*‡Massachusetts First National Bank of Boston (ILL). Anonymous. *The First National Bank of Boston, 1784-1934*. Boston: privately printed, 1934.

†Plymouth National Bank (GB). Anonymous. *Centennial Memorial of the Plymouth Bank and the Plymouth National Bank of Plymouth, Mass., June 23, 1803 – June 23, 1903*. Plymouth: Memorial Press, 1903.

‡National City Bank of Lynn (GB). Anonymous. Semi-Centennial of the National City Bank of Lynn, Massachusetts, October 1, 1904. Lynn: privately printed, 1904.

†*‡Shawmut Bank (BK). Knowles, Asa S. *Shawmut: 150 Years of Banking, 1836-1986*. Boston: Houghton Mifflin Company, 1986.

Merchants National Bank of Salem (GB). Dennis, Albert W. *The Merchants National Bank of Salem, Massachusetts: An Historical Sketch*. Salem: Salem Pres, 1908.

†*‡State Bank of Boston (ILL). Stetson, Amos W. *Eighty Years: An Historical Sketch of the State Bank, 1811-1865, The State National Bank, 1865-1891*. Boston: privately printed, 1893.

Blackstone National Bank (ILL). Anonymous. *One Hundred Years of Banking Service*. Boston: privately printed, 1925.

Other states

*First National Bank of Chicago (GB). Morris, Henry C. The History of the First National Bank of Chicago. Chicago: R.R. Donnelly & Sons Company, 1902.

*First National Bank of Chicago (GB). First National Bank of Chicago. *The First National Bank of Chicago: Charter Number Eight*. Chicago: private printing, 1913.

Bank of Marysville (ILL). Gamble, Joe C. *Bank of Marysville, Marysville, Tennessee, 1885-1879*. Marysville, Tenn.: Brazos Press, 1979.

Bank of Blount County (ILL). Gamble, Joe C. *Bank of Marysville, Marysville, Tennessee, 1885-1879*. Marysville, Tenn.: Brazos Press, 1979.

†*Hagerstown Bank (ILL). Anonymous. *The Hagerstown Bank at Hagerstown, Maryland: Annals of One Hundred Years, 1807-1907*. New York: Knickerbocker Press, 1910.

Indian Head Bank (ILL). Indian Head National Bank. *Indian Head National Bank Seventy-Fifth Anniversary, 1851-1926*. Nashua, NH: private printing, 1926.

††Farmers Bank of Delaware (ILL). Lunt, Dudley C. *The Farmers Bank: An Historical Account of the President, Directors and Company of the Farmers Bank of the State of Delaware, 1807-1957*. Philadelphia: privately printed, 1957.

*State Bank of Chicago (GB). Henschen, Henry S. *A History of the State Bank of Chicago from 1879 to 1904*. Chicago: Lakeside Press, 1905.

*First National Bank of Davenport (GB). First National Bank of Davenport. *The History of the First National Bank in the United States: A History of the First National Bank of Davenport, Iowa, Preceded by Some Account of Banking under the State Laws and Early Banking in Davenport*. Chicago: Rand, McNally & Company, 1913.

Cleland, Robert Glass and Frank B. Putnam (Rutgers-Alex). *Isaiah W. Hellman and the Farmers and Merchants Bank*. San Marino, Cal.: The Huntington Library, 1965.

Lesesne, J. Mauldin (CU). *The Bank of the State of South Carolina: A General and Political History*. Columbia, SC: University of South Carolina Press, 1970.

Appendix A

Table A1 provides weighted average of

Appendix Table A1
Number of shareholders, number of directors, and fraction of shares owned by directors at New York and Ohio banks
1814-1928

Year	Bank Name	City	Shareholders	Directors	% shares directors
	Pennsylvania				
1814	Bank of Delaware County			13	0.146
1814	Bank of Gettysburg	Gettysburg		13	0.116
	New York				
1823	Bank of America	New York	560	15	0.053
1823	Chemical Bank	New York	109	7	0.221
1823	Dry Dock Bank	New York	214	7	0.117
1823	New York Lombard Assoc	New York	50	8	0.140
1838	Farmers and Mechanics	Batavia	8	8	1.000
1839	Agricultural Bank	Herkimer	58	13	0.420
1854	Onondaga Bank	Syracuse	20	11	0.836
1865	Farmers and Drovers	Somers	26	11	0.627
1869	West Side Bank	New York	8	8	1.000
1888	Twenty Third Ward Bank	New York	56	15	0.365
1888	Twelfth Ward Bank	New York	53	15	0.560
1890	State Bank	New York	18	9	0.690
1891	Bank of Amityville	Amityville	28	15	0.800
1893	Wells Fargo Bank	New York	12	12	1.000
1895	Plaza Bank	New York	58	18	0.315
1898	Plaza Bank	New York	54	21	0.572
1899	Plaza Bank	New York	56	21	0.575
1901	Baldwins Bank	Penn Yan	12	5	0.734
1902	Twenty Third Ward Bank	New York	55	10	0.125
1902	Riverside Bank	New York	30	10	0.475
1902	Bank of Long Island	Jamaica	8	23	1.000
1902	Royal Bank	New York	5	5	1.000
1903	Union Exchange Bank	New York	118	19	0.248
1904	Prospect Park Bank	Brooklyn	11	13	0.980
1905	Yorkville Bank	New York	32	20	0.633
1905	United States Exchange Bank	New York	24	17	0.680
1907	Public Bank	New York	5	7	1.000
1909	Plaza Bank	New York	62	13	0.325
1920	Bank of America	New York	568	22	0.120
1928	State Bank	New York	536	17	0.171

	Shareholder weighted average				**0.225**
	Ohio				
1854	Stark County Bank	Canton	3	3	1.000
1854	Savings Bank	Cincinnati	6	6	1.000
1854	City Bank	Cincinnati	20	5	0.095
1854	Commercial Bank	Cincinnati	5	5	1.000
1854	Bank of Commerce	Cleveland	11	5	0.878
1854	Forest City Bank	Cleveland	27	4	0.185
1854	Canal Bank	Cleveland	8	5	0.400
1854	Iron Bank	Ironton	26	3	0.610
1854	Bank of Marion	Marion	29	4	0.283
1854	Merchants Bank	Massillon	33	3	0.040
1854	Springfield Bank	Springfield	74	5	0.231
1854	Champaign County Bank	Urbana	46	5	0.142
1850	Mahoning County Bank	Youngstown	44	9	0.321
1854	Mahoning County Bank	Youngstown	94	5	0.119
1854	Franklin Bank	Zanesville	35	9	0.432
	Shareholder weighted average				**0.267**

Notes

Sources: Hilt (2008); New York State Archives ; Ohio (1854).

Appendix B

Graphical tests of the proportional hazard assumption in Cox models

The proportionality of the baseline hazard assumption likely holds if the survival probability plots by the relevant treatments are parallel. The proportionality assumption appears to be a reasonable assumption.

Figure B1
Test of proportionality assumption by education

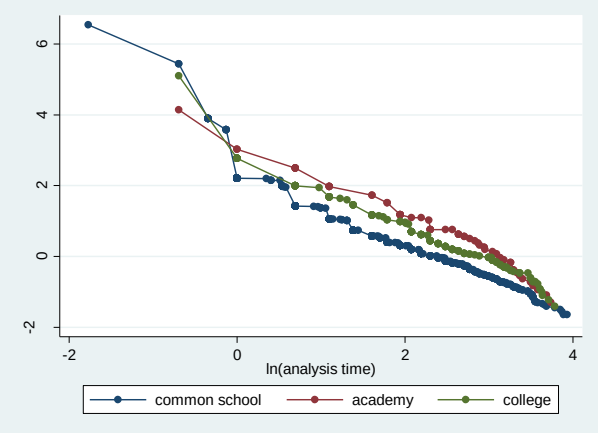


Figure B2
Test of proportionality assumption by highest political office attained

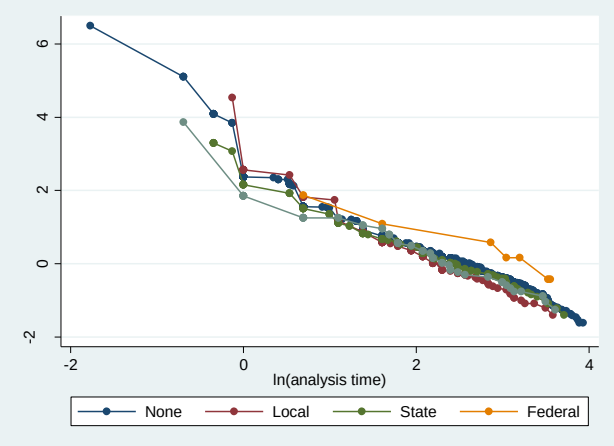


Figure B3
Test of proportionality by number of other boards served on during career

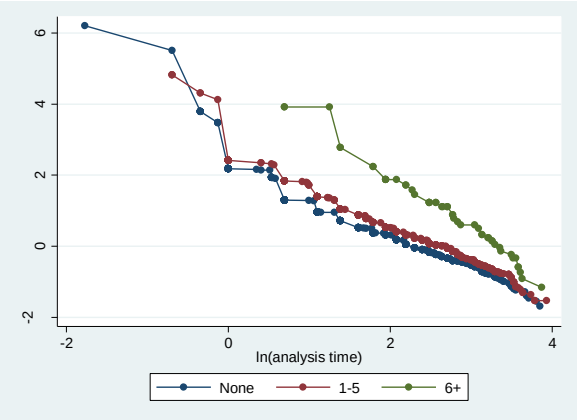
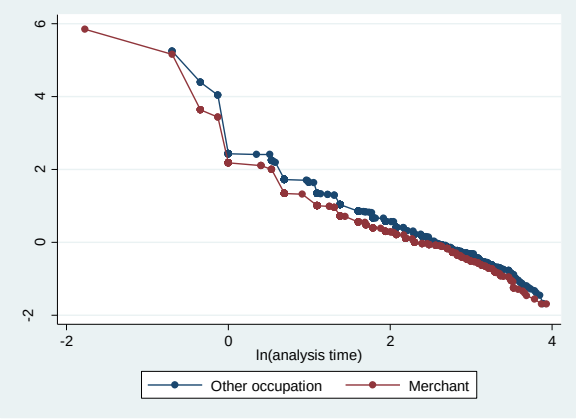


Figure B4
Test of proportionality assumption by occupation (merchants vs all other occupations)



Appendix C

Representativeness of bank history sample

Table C1
Correlation coefficients between average and maximum director tenure

Panel A: Average director tenure

	Girard	Philadelphia	Kensington
Philadelphia	0.56**		
Kensington	0.68**	0.80**	
Southwark	0.74**	0.71**	0.80**

Panel B: Maximum director tenure

	Girard	Philadelphia	Kensington
Philadelphia	0.93**		
Kensington	0.92**	0.99**	
Southwark	0.91**	0.99**	0.99**

Notes: ** p<0.01. Girard and Philadelphia banks are included in history sample; Kensington and Southwark banks are not.
Sources: McElroy (1839-1864).

$$\frac{\partial \Pr\left[y = 1 | x, z\right]}{\partial x} = \frac{\beta}{x}\, p(1-p)$$