Corporate Governance, Rent Seeking, Portfolio Choice, and Failure Risk at Unprotected Banks: National Banks in the 1890s

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It has long been recognized that the incentives of managers toward risk may conflict with those of shareholders or creditors, particular at highly leveraged and opaque institutions such as banks. Examining these issues at banks is complicated by government protections, such as deposit insurance, too-big-to-fail policies, and a lender of last resort, which can distort incentives. To investigate how agency problems give rise to corporate governance mechanisms to rent seeking, and to differences in the management of risk, we look at banks from the 1890s, a period when there was no deposit insurance, no lender of last resort, and virtually no government interventions to save banks. We do so using banks' Examination Reports, a detailed but seldom used resource that provides considerable information about banks' ownership structures, governance structures, tools for managing risk and levels of risk. This information allows us to link differences in ownership structure (especially the extent of managerial ownership) to differences in corporate governance policies, risk outcomes, and banks' approaches to risk management.

We find that use of formal corporate governance controls is lower when manager ownership is higher (which we interpret as reflecting the substitution between ownership and formalized oversight in controlling incentives toward risk). We find that rent seeking (higher salaries and greater insider lending) is affected by the structure of ownership and the use of governance controls. Banks with higher managerial ownership tend to target lower default risk, which is consistent with greater risk aversion when managerial stakes are high. We also find that higher managerial ownership is associated with a greater reliance on cash rather than capital as a means of limiting risk. This last finding is consistent both with higher adverse-selection costs of raising equity and greater moral-hazard with respect to risk shifting in banks with higher managerial stakes and less-formal corporate governance.

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1. Introduction

The role that governance and ownership structure play in corporate risk taking is of particular concern for banks, which are highly leveraged and quite opaque. One agency problem results from the difference in risk preferences between equity and debt holders, which in the presence of limited liability, gives rise to moral hazard problems. In some states of the world, bankers will prefer to increase asset risk at the expense of debtholders (this problem – modeled by Jensen and Meckling 1976, Myers 1977, and Merton 1977 – is known as "risk shifting" or "asset substitution"). Moral-hazard issues can be mitigated through various measures, including short-term debt contracting; a first-come, first-served rule for bank liquidation; and actions by bankers that credibly signal good risk management, including the maintenance of a minimum amount of cash assets (Calomiris and Kahn 1991, Calomiris, Heider and Hoerova 2013). If bank debt holders are protected by deposit insurance or other guarantees, however, moral hazard can be exacerbated because bank debt holders lose their incentive to monitor and control banks' risk taking.

More complicated agency issues arise between managers and equity holders. Managers who have large stakes in the performance of their banks may prefer to take less risk in order to preserve their own financial wealth or their firm-specific human capital (see the discussion in Demsetz, Saidenberg, and Strahan 1997). In these cases, equity holders may seek to incentivize managers to take more risk through pay schemes that reward risk taking (see Bai and Elyasiani 2013). Alternatively, Gorton and Rosen (1995) suggest that, when faced with a declining industry, managers may boost profits to hide poor prospects from shareholders. These agency issues have received additional attention in the wake of the recent financial crisis and a number of studies have argued about whether corporate governance and manager incentive schemes influenced how banks fared during the crisis (Berger, Imbierowicz, and Rauch 2012, Ellul and Yeramilli 2010, and Fahlenbrach, Prilmeier and Stulz 2012, Senior Supervisors Group 2008).

Although the nature of conflicts of interest between bankers and their funding sources differ between outside equity and debt, there is also considerable overlap in the usefulness of corporate governance tools for addressing many aspects of conflicts of interest that are common to both types of outside funding sources. For example, the presence of outside directors, or the "bonding" of management, should mitigate the risk of defalcation, which benefits both outside stockholders and debtholders.

Corporate governance policies of banks should arise endogenously, in part to reduce the costs related to the two sets of conflicts of interest in risk taking – that is, the conflict between shareholders and debtholders, and the conflict between managers and shareholders.

Understanding how governance policies respond to such conflicts, and what effects ownership structure and governance policies have on risk taking, is highly challenging in the current regulatory environment, where policies such as deposit insurance, too-big-to-fail (TBTF) bailouts, and legal restrictions on controlling ownership interests in banks, which remove the disciplinary incentives of debtholders and limit the ability of equity holders to concentrate ownership (on the effects of TBTF, for example, see Acharya, et. al 2009).[1]

To improve our understanding of how ownership structure affects corporate governance, and how ownership structure and corporate governance affect banks' risk management, we examine the links among ownership, governance and risk management during a period prior to the establishment of a regulatory safety net for banks. During the National Banking Era (1863-1914), government protection was absent, and the latitude for voluntary governance decisions by banks was great. We observe large cross-sectional differences in the ownership structure of national banks, as well as great variation in their choices for organizing corporate governance. Banks also structured their portfolios very differently, and displayed important differences in their management of risk – indicated by balance sheet differences and the patterns of bank failure during the panics of this era, especially the severe Panic of 1893. Cross-sectional differences in ownership, governance choices, portfolios and risks, under a common and relatively laissez-faire regulatory environment (national bank chartering of unit banks), makes national banks' experiences in the 1890s an ideal laboratory for examining how manager ownership and board oversight are related to rent seeking, portfolio choice, and failure risk, in an environment free of many of the regulatory distortions that affect those decisions today. Another advantage of focusing on cross-sectional variation among national banks is that their business models were quite similar (in contrast to today's banking system, in which small banks focus on lending and deposit taking, while global universal banks undertake a much wider range of activities for a quite different customer base).

The data we use come primarily from national banks' Examination Reports, a source which, to our knowledge, has been little used, and never used for quantitative analysis of the questions we address here. These Reports provide very detailed pictures of the banks and the bank examiners' views about them. They describe the equity ownership of managers and of Board members (and identifies whether managers are on the Board). There is substantial heterogeneity with respect to ownership structure among the national banks in our sample. Some managers own a considerable

[1] The so-called separation of banking and commerce places special constraints on who is permitted to exercise a controlling interest in a bank. For public corporations as a whole, insider ownership concentration has increased over time. Holderness, Kroszner and Sheehan (1999) show that greater hedging opportunities and lower volatility have been associated with increases in insider ownership concentration in U.S. public corporations from 1935 to 1995.

portion of the shares of the bank, while in other cases the managers own only a small fraction. We also have information about a variety of corporate governance measures that could be used to provide oversight of bank managers, such as the frequency of board meetings, the number of outside directors on the board, and whether there was an independent loan review committee that included outside directors. We also know whether the managers were required to post surety bonds, which protected other equity holders in the event of fraud. The reports also provide a fairly detailed picture of the balance sheet, as well as containing the examiner's assessments of various measures of asset quality, forward-looking expectations of loss, and qualitative evaluations. Thus, we are able to examine the relationship between ownership and governance choices, as well as the impact of both on risk preferences at the bank. The richness of the data permits us to provide an integrated picture of the linkages between ownership, governance and financial stability.

For our analysis, we gather data from 206 banks from 37 fairly large cities located mainly in the Western and Southern parts of the United States. Those regions saw the greatest financial turmoil and the highest rates of bank failure during the Panic of 1893. By selecting banks from 37 similar cities in these regions we intend to construct a sample of reasonably comparable national banks, in terms of their economic environment and lending activities. We combine the information in the Examination Reports with standard balance sheet data from the Call Reports, as well as other location-specific controls, drawn from various censuses and other sources. We examine the banks situations in the early 1890s, just prior to the Panic of 1893.

This panic is a useful moment to focus upon because it brought the most severe distress for banks of any of the crises during the National Banking Era. That episode resulted in the highest numbers of bank failures of any of the crises, and was one of three episodes during the National Banking Era that witnessed a suspension of convertibility in New York. Although most of the banks in our sample avoided failure, there was enough failure risk during this episode to provide substantial observable cross-sectional variation – something that is absent during most of the National Banking Era.

We look first at the interplay between ownership and governance by gauging the extent to which the structure of ownership affects banks' choices of corporate governance policies. The patterns are clear and striking: All five of the formal corporate governance policy choices we consider are mutually positively correlated with one another, and each of them is negatively correlated with the degree of managerial ownership. We interpret this as evidence that managerial ownership concentration is a substitute for formal governance tools in resolving conflicts of interest between managers and the sources of outside funding for the bank.

Next we can see how ownership and governance – taking into account the endogeneity of governance to ownership structure – affects rent seeking behavior, which is captured by managerial salaries and loans to managers. We find that managers' salaries relative to assets tend to be higher when they own a greater portion of outstanding stock, reflecting their greater ability to extract rents. Interestingly, the *total* proportion of loans made to insiders is not affected by the structure of ownership or governance, but ownership and oversight have a strong impact on who receives those insider loans. When managers have greater equity ownership, more inside loans are allocated to them; when outside directors exercise greater oversight in corporate governance, a greater proportion of the inside loans are received by them.

We can connect ownership structure and corporate governance choice to banks' risk preferences and their balance sheet choices. In particular, we can observe how ownership and governance affected bank portfolio structure, performance and failure probabilities during the Panic of 1893. Building the analysis out in this way provides a rich perspective on the connections among ownership, governance, rent seeking, and risk choices.

Our results on risk taking indicate that managers who own a greater proportion of the bank's stock take less risk according to any measure of risk we employ. For example, with respect to forward-looking measures of risk, managers with large equity stakes in their banks are less likely to rely upon high-cost "borrowed funds" and are also less likely to be involved in real estate lending. Both activities were perceived by contemporaries as riskier and such perceptions are generally borne out in the Panic. Ex post measures of risk – the proportion of troubled loans, the estimated probability of bank failure, or the forecasted losses anticipated by the bank's examiner – paint a similar picture; greater management stakes are associated with lower default risk. We view these results as consistent with the idea that managers with a larger share of their wealth invested in the bank were more risk–averse in their risk management practices. Banks with more lower managerial stakes, and consequently with more formal governance policies, tended to undertake greater levels of risk. That finding is consistent with outside directors, who represent the interests of all equity holders, as preferring a slightly higher level of risk.

The preference for lower risk appears to have been beneficial during the Panic of 1893 as we find that banks with higher manager ownership were less likely to fail. This affect is due largely to how these banks structured their balance sheets as when additional balance sheet controls are included, the direct effect of manager ownership concentration is reduced.

Finally, we investigate how banks differed in the instruments they chose to manage risk. Banks seeking to reduce the risk of default on their debts that is traceable to risks of default on

their loans can use two alternative risk management tools in combination: a higher cash-to-asset ratio (on the asset side of the balance sheet), or a higher equity-to-asset ratio (on the liability side of the balance sheet). We find that banks with higher managerial ownership concentration relied more on cash assets, and less on equity, to control bank default risk. This finding is consistent with the view that high managerial ownership, and informal governance, make bank managers' behavior less observable and less controllable. It is harder to observe and control risk management at banks without formal governance structures. Similarly, it is harder for outsiders to observe the level of risk in such banks. Under these circumstances, banks will suffer from greater asset substitution risk, and greater adverse-selection problems (if they were to attempt to raise additional sources of outside equity). Greater asset substitution risk will tend to lead banks to rely more on cash as a means of signaling good risk management practices (Calomiris, Heider and Hoerova 2013). Greater adverse-selection problems raise the cost of equity finance, and thus also lead to a greater weight on cash in controlling default risk. Given the paucity of equity offerings in our sample, we think the asset substitution channel is more likely to be the important one.

In our identification, we assume that ownership structure is exogenous with respect to governance choices and risk management. Of course, ownership structure is not entirely exogenous because bank stock can be sold in response to banks' chosen governance and risk management practices. For the most part, however, the shares of the national banks in our sample were not actively traded in secondary markets. Our second defense against concerns that ownership was endogenous to governance and risk management is to point to the internal consistency of the various regression results under the assumption of exogeneity. In other words, one means of addressing the endogeneity concern is to see whether a story that treats ownership as exogenous "works well" in explaining many endogenous variables – not just one or two endogenous variables, but many different measures of governance, risk, and rent extraction. This is a somewhat novel methodological approach, but one that we believe has substantial intellectual merit.

The paper is organized as follows. Section 2 discusses the data sources and the sample. That section also explains the construction of our corporate governance measures and the variables we use as indicators of rent seeking and risk preferences. The baseline analysis is contained in Section, 3 while a variety of robustness checks are presented in Section 4. Section 5 concludes.

Section 2. Data

We gather a variety of information on individual banks using the Call Reports and the Examination Reports. In this section, we describe the data sources and the definitions of the variables used in this study.

Section 2.1 The Sample

Our sample contains 206 banking institutions, which consists of all the national banks located in 37 cities. As national banks (i.e., those chartered by the federal government), these institutions were subject to the same set of rules and regulations regardless of where they were located. Beneficially for our purposes, all the banks were unit, or single office, banks which makes it easier to control for differences in local economic conditions. National banks were required to provide information to the Comptroller of the Currency, their primary regulator, several times a year. One method was through the Call Report, which contains information on the banks' balance sheets and was filed about five times a year. The second method of providing information about themselves consisted of Examination Reports filed by examiners who visited each bank once or twice a year. To be included in our sample, the banks needed to have provided information for the September 1892 Call Report and to have had at least one Examination Report completed prior to May 1893 (the onset of the Panic). Those are the Reports that provide the information used for the analysis.[2]

The cities include many of the larger ones in the Western and Southern parts of the United States.[3] A number of them were designated as "reserve cities" for purposes of regulatory cash reserve requirements. Deposits held at banks in reserve cities could count as part of a "country" bank's legal reserve and these deposits often served as part of the regional payment system (see James 1978 for further detail). Some of the other cities, even though they were not technically reserve cities, were important enough regionally that other banks held deposits there. Thus, many of the banks in our sample played important roles as intermediaries in interbank markets. Nevertheless, our sample includes a number of banks from smaller cities as well.

[2] Two banks file the September 1892 call report but close prior to May 1893. For these institutions, we use the examination report nearest closure, so long as it was filed at least [four] months prior to closure.
[3] The cities are: Birmingham, AL; Mobile, AL; San Diego, CA; Los Angeles, CA; Denver, CO; Pueblo, CO; Indianapolis, IN; Des Moines, IA; Dubuque, IA; Lexington, KY; Louisville, KY; New Orleans, LA; Minneapolis, MN; Rochester, MN; St. Paul, MN; Stillwater; MN; Kansas City, MO; St. Joseph, MO; Helena, MT; Lincoln, NE; Omaha, NE; Albuquerque, NM; Fargo, ND; Cincinnati, OH; Portland, OR; Knoxville, TN; Memphis, TN; Nashville, TN; Dallas, TX; El Paso, TX; San Antonio, TX; Salt Lake City, UT; Spokane, WA; Tacoma, WA; Milwaukee; WI; Racine, WI; and Cheyenne, WY.

Section 2.2. Data Sources

The Examination Reports provide a wealth of information.[4] The most vital material contained in the Examination Reports for our purposes is the detailed information regarding the extent of ownership by the bank's management and its board, as well as the information about corporate governance practices. The Examination Report lists all the bank directors and major officers (President, Vice-President, Cashier), the number of shares held by these individuals, and any loans to these individuals. Salaries of the officers were noted and whether the officers were required to put up a surety bond, which would provide insurance against fraud. The examiner also commented on whether the board exercised any oversight of the officers, such as by maintaining an independent discount and examining committee to review its loans, or through the frequency of its board meetings.

The Examination Reports also considered a variety of aspects of the balance sheet beyond what was covered by the Call Report. That information included additional quantitative detail about the loan book, such as the amount of loans that were demand or time loans, the amount of loans secured by real estate, and the amount secured by other collateral.[5] There was also information on the bank's liabilities including additional detail on whether the bank borrowed from other banks (a form of higher-interest, short-term "hot" money).

Finally, the examiner provided information on the performance of the bank, which combined hard facts about the bank with their own judgments. Specifically, the examiners evaluated the quality of the loan book by listing the volume of slow and overdue loans and providing an estimate of expected losses on the banks' assets – which included loans, as well as other assets. The examiners also noted the amount and date of the most recent payment of dividends, as well as whether funds that were retained would cover current and future losses or build up the bank's net worth.

In our analysis, for most of our balance sheet data, we use information from the September 1892 Call Report. The Call Report at this time provides considerable detail about the balance sheet. While some additional information is available on the Examination Report, the Call Report has the advantage of providing data for all the banks at the same point in time, which reduces concerns about spurious differences due to seasonal or other time-related factors.

[4] See also Robertson (1995) for more information on the examination process.

[5] Although real estate lending was "prohibited" by national banks, national banks nonetheless found ways to lend against real estate. A loan made without real estate as collateral could become collateralized by real estate if the creditworthiness of the borrower deteriorated.

We also include a number of variables related to the economic environment in which the bank operated. These include county level variables from the various censuses, such as population and the share of income from agriculture.

All variables, their definitions, and their sources appear in Table 1. Summary statistics for these variables appear in Table 2.

Section 2.3 Ownership and Governance Variables

The individuals most responsible for running the bank were its senior managers, in particular the president, vice-president, and cashier (essentially, the chief operating officer of the bank). They played a large role in making loans and arranging the funding of the bank, including whether the bank borrowed from other banks via short-term, higher-interest "borrowed" money. These individuals tended to own shares in the bank and were frequently also on the board of directors (the President of the bank was always on the Board, and the others typically were, too). A key variable in our analysis is the share of the bank's stock owned by the officers of the bank. We focus, in particular, on the fraction of outstanding bank shares owned by the president, vice-president, and cashier.[6] The average portion of shares owned by these three officers, as reported in Table 2, was 25 percent. The histogram in Chart 1 provides a better indication of the distribution of managerial ownership. At most banks in the sample, ownership by the managers is fairly modest; the three top managers owned less than 6 percent of outstanding shares for about 30 percent of the sample. There are also cases of significant ownership concentration; the top three managers owned at least half the outstanding shares in nearly 10 percent of the sample.

The behavior of the managers could be constrained by the Board of Directors. Boards ranged in size from 4 members to 23 members. Some Board members owned significant stakes in the bank. Others were prominent businessmen that might provide business to the bank.[7] The average portion of shares owned by outside (non-officer) directors was 15 percent but it reached as high as 95 percent. Presumably, the larger the portion of shares owned by the outside directors, the more they could influence the behavior of managers.

There were also other ways that the board could exert control over managers. One way was by maintaining an active independent discount committee containing at least one outside director

[6] We obtain the number of outstanding bank shares by dividing bank capital by 100 (as bank capital was typically carried at book value based on share prices of $100 per share). In a few cases the examiner indicated the number of shares outstanding and these reports confirm that our procedure is correct. In a few other cases the examiner reported that the value of capital had previously been written down and shares revalued. We believe that we have made all the appropriate corrections for these write-downs.

[7] For instance, a Mr. Proctor and a Mr. Gamble served on the board of the Citizens National in Cincinnati.

to review and approve loans proposed by the managers. Such a committee was maintained by 60 percent of banks. Another way of exerting control was by meeting frequently. Boards that met infrequently, such as semi-annually, presumably had little influence on the managers. The board met monthly or more frequently in nearly two-thirds of the banks in our sample. In cases where the managers comprised a significant portion of the board, there was presumably little independent oversight; when outside directors dominated the board, they could presumably exert more control. In our sample, the median portion of the board that consisted of outside directors was 71 percent; we create an indicator variable equal to one when the portion of directors are outsiders is above the median and is zero otherwise. Our measures of the reliance on independent directors, of the existence of a loan review committee, and of the frequency with which it met are similar to other measures used to analyze corporate risk management in modern financial institutions, such as the "active board risk committee" of Ellul and Yerramilli (2010).

Another way of influencing bank management was requiring bank managers to post surety bonds. These bonds would offer the directors (or receiver) a way of recovering funds in the event the manager committed some specified act, typically some type of fraud that caused losses to the bank. Bonds could be personal or provided through a surety bond agency (which often required that the person being insured post some type of collateral).[8] Surety bonds were most often required for the cashier, who oversaw the books and for whom the possibility of fraud was therefore highest (nearly 60 percent of cashiers posted bonds). Other managers also were required to post such bonds (the President posted a bond in 33 percent of our sample and the vice-president did so in 12 percent of the sample).

In Chart 2, we illustrate the relationship between manager ownership and one of the indicators of corporate oversight: the fraction of the Board consisting of outside directors. The negative relationship between these two measures indicates that more manager ownership tends to be associated with less oversight. Moreover, not only are each of the measures of Board oversight negatively correlated with manager ownership, Table 3, but they are all positively correlated with each other. Although we investigated the impact of each of these measures of Board control on managerial behavior, it is useful for our purposes to create an index that aggregates the different measures into a single corporate governance index. We do so by summing the five indicator variables.[9]

[8] For more information on surety bonds see Lunt (1922).

[9] We also tried aggregating the five indicators by taking the first principle component, similar to Ellul and Yerramilli (2010). All the five indicators had positive and roughly equal weights. Thus, the first principle component was not so different than the simple average so we stick with the average for simplicity.

Examiners seem to have understood that banks could achieve good management of risk with or without active oversight of management by the Board. Below are excerpts from the Examination Reports of two banks, one with the minimum corporate oversight score of 0 and the other with the maximum score of 5. In neither case did the examiner have concerns about the management of the bank or the soundness of the bank, even though the examiner was aware of the clear differences in the oversight being exercised by the Board.

Oversight score of 0 - comment on the Board:

> Frequent meetings are not held by the directors of this bank and records only show that formal meetings are held to declare dividends. No mention being made of their having examined or approved loans and discounts at such times, and there is no report of discount and examining committee having acted. The management is apparently with Mr. Gates, the president of the bank.

Comment on the Officers:

> Officers are capable, prudent and of good reputation and their management is efficient and successful, that management being in the hands of Mr. Henry Gates the president who has had over 30 years experience in the banking business in this city. No bonds required.[10]

Oversight score of 5 - comment on the Board:

> Directors meet monthly. Minutes full and explicit. Have discount board and examining committee. Discount board pass[es] upon all loans.

Comment on the Officers:

> Officers are capable, prudent, of good reputation. Their management successful; the bonds are furnished by Louisville Bond Co. and in custody of Lexington Trust.[11]

Section 2.4 Financial and Portfolio Measures

A number of financial measures are potentially of interest as controls in our regressions relating ownership, governance and risk management, while others will serve as endogenous variables (i.e., the cash assets ratio and the equity-to-assets ratio). Two important basic control variables are bank size and bank age. Smaller banks, ceteris paribus, may be more closely held and may also be less likely to adopt formal governance procedures due to fixed costs. We measure size and age using the log of assets and the log of the number of years since the bank was established (this could be the date the bank became nationally chartered, or the date it was founded, depending on whether it was a conversion of a state bank). Our banks are of generally similar size, but of fairly heterogeneous age.

[10] From the examiner report of November 14, 1892 for the Nebraska National Bank of Omaha, NE charter 2665.
[11] From the examiner report of August 18, 1892 for the Fayette National Bank of Lexington, KY, charter 1720.

We have considerable information on the asset portfolio of the banks. Loans were obviously a relatively risky asset but also a relatively high-earning asset. One basic and often-used asset ratio that captures both risk and earning potential is the share of assets consisting of loans. The Examination Reports provide additional information about the loan portfolio. During the National Banking Era, real estate loans were considered riskier loans. National banks were not supposed to originate mortgages; however, they were allowed to have mortgages loans if the real estate was being used to collateralize a previously existing loan. Thus, we will employ real estate loans relative to total loans as a measure of lending risk. We are also interested in the degree of insider lending. We construct two measures: the share of all loans that are made to insiders (whether board members or managers) and the share of loans to insiders that are made to managers rather than outside directors.

Previous research on bank risk management has identified liability structure as an important indicator (Calomiris and Mason 1997, 2003, 2008, Calomiris, Mason and Wheelock 2011, Carlson 2010). A bank's liability structure may reflect exogenous liquidity risks faced by banks (e.g., a higher proportion of checking deposits). Liability structure also may capture endogenous changes in the composition of debts in reaction to changes in unobserved characteristics of banks' asset risks (e.g., banks that rely on borrowed funds may find it hard to raise funds from other sources), and we include reliance on high-interest rate borrowed funds as an endogenous variable in our analysis as an indicator of risk.[12] In some specifications, we include the proportion of liabilities consisting of individual deposits and the proportion of deposits in checking deposits, as opposed to savings or time deposits, as controls.

We have some potentially useful information about the earnings and expenses of the banks in our sample. One of the expenses listed in the Examination Reports is the salaries paid to managers. As larger banks tend to pay higher salaries, we scale salaries by the assets of the bank. We also observe dividend payments. Dividend payments are a way to reward equity holders. We analyze dividends as a dependent variable; high dividend payments are sometimes viewed as an indication of a disciplined corporate governance environment. We recognize, of course, that dividends can also reflect differences in profitability; that is, they may be used to signal management's belief that earnings will persist. Dividend payment differences may also reflect different growth opportunities; retaining profits raise the amount of equity invested in the bank,

[12] Often this borrowing took the form of rediscounting notes or having bills payable, but could also take the form of collateralized certificates of deposit. While the former are noted on the Call Report, the latter type is noted only in the Examination Reports. As the amounts are not always noted, we instead use an indicator for whether or not the bank made of this "hot" money.

which ceteris paribus, lowers the bank's default risk, and thus increases the capacity of the bank to grow its assets. To analyze dividend payouts, we consider is the ratio of dividend payments relative to shares outstanding if dividends were paid during the past six (banks typically paid dividends semi-annually, in June and December). [13]

Section 2.5 Risk

We consider several indicators of the risk of the bank. Some of these indicators focus on aspects of bank asset risk – based either on objective criteria about the composition of bank assets (e.g., the ratio of real estate loans), or on examiner expectations (e.g., the ratio of "troubled" loans, or the losses forecast on assets). Another asset-side indicator of risk is the amount of other real estate owned among bank assets. This asset category typically represented properties seized when loans went into default. Finally, we measure risk based on failure outcomes.

Our measures of risk that employ examiner opinions use specific categories contained in the Examination Reports. Examiners reported the amount of bad debts or other suspended or overdue paper; the proportion of loans consisting of these items – which we define as "troubled loans" – is a useful metric of loan quality. Examiners also provided estimates of likely losses on assets (not just loans but on securities and other items as well, such as non-income generating assets such as furnishings).

The two primary tools of risk management for banks were the equity-to-asset ratio and the cash assets-to-total-assets ratio. Equity, or net worth, is measured as the sum of paid in capital plus cumulative retained earnings held as surplus or undivided profits. There were no equity ratio requirements, although banks were required to maintain minimum amounts of capital and surplus. Estimating the demand for cash assets is complicated by the legal minimum requirements of cash relative to deposits. Cash reserve requirements specified a certain level of cash and deposits in reserve city banks relative to deposits and net due to banks. As we show in our regression analysis, however, regulatory constraints on holdings of cash reserves were not binding on banks' demands for cash assets.

Section 2.6 Other Controls

We also include a number of variables to control for local conditions. At the county level, we gather information on population and the share of county income from agriculture. These

[13] As an alternative, we also looked at whether the bank paid out dividends during the past six months. The implications from those results are similar.

variables are from the 1890 census. As a further control for the banking environment in the state, we include the log of banking assets in the state.

An important feature of the banking system during the National Banking Era was the system of interbank depositing of reserves. National banks were required to hold cash and interbank deposits against their own deposit liabilities. Banks outside major cities need to hold a 15 percent reserve, three-fifths of which could be held as deposits at banks in larger "Reserve" cities or, "Central Reserve" cities—New York, Chicago, or St. Louis. Banks in Reserve cities needed to hold a 25 percent reserve, half of which could consist of deposits in a "Central Reserve" city. Deposits in New York played a key role in the settling of interregional payments. Many banks held deposits with banks in New York. Moreover, banks in New York provided a substantial amount of interbank loans through rediscounting. To capture the potential importance of proximity to New York in affecting banks' risks and operations, we include the log of the distance of banks from New York as a control. We also include an indicator for whether the city in which the bank is located is a reserve city, to capture the possible effects of differences in interbank relationships and reserve requirements on bank behavior.

Section 3. Analysis

We are interested in how the different ownership and corporate governance variables affected behavior. As these variables are clearly inter-related, we start by presenting our approach to identifying the linkages among ownership structure, governance choices, rent seeking, and risk management. We then review our findings.

As we noted in our review of the literature on manager/stockholder conflicts, it is not clear a priori whether increased shareholdings by managers lead them to take more or less risk. Risk-averse managers that hold a large share of their wealth in the form of bank stock, and whose human capital depends on the fortunes of the bank, should generally prefer less risk than the outside shareholders. In some states of the world, however – if hidden losses are large – managers may prefer to undertake more risk than outside shareholders. With respect to rent extractions, we expect that all managers would prefer to extract greater rents from the bank, and that those with more equity shares will be more successful in doing so, especially if they are not subject to formal oversight.

Outside directors presumably will try to influence the behavior of the managers, particularly if that behavior deviates from what outside stockholders would prefer. We expect that when the managers own a larger equity stake, and outside directors own a smaller stake, that fewer

oversight tools will to be employed. We also expect that outside directors will try to reduce any rent seeking by the managers. With respect to risk preferences, outside directors should represent the interests of outside shareholders. If, for example, managers with large equity stakes tend to keep risk lower than outsiders would like, then banks with lower managerial shares and greater oversight should maintain higher levels of risk than banks with high managerial shares and less oversight.

Section 3.1 Inter-Related Ownership and Corporate Governance Measures

We are interested both in both whether higher ownership by management results in particular behaviors and in whether the use of various oversight tools by outside directors results in similar or different behaviors. As we have noted, and as the correlations in Table 1 show, there is a strong negative correlation between the degree of management ownership and each of the different oversight measures that could constrain management.

Our empirical approach to identifying the effects of ownership and government choices on bank behavior employs a two-step procedure. We first regress the governance score measure (from section 2.3) on the fraction of bank shares owned by the top three managers and other controls. We capture both the predicted values and the residuals from that regression. For the second stage, we run sets of four regressions (which we will label columns 1-4) for each outcome variable of interest in which the independent variable of primary interest is, respectively: the fraction of bank shares owned by the top three managers, the governance score variable, the predicted values from the first stage, and the residual values from the first stage. In this setting, the predicted values from the first stage indicate the impact on behavior from greater board oversight, which is predicted by the degree of ownership by management. By using predicted values of governance as a second-stage regressor, we ensure that governance effects are not reflecting the endogenous responses of governance to other endogenous variables.

We emphasize that we are not imposing the identifying restriction that managerial ownership only affects rent seeking and risk choices through its effect on the oversight score. Obviously, as we have discussed at length above, managerial ownership should matter for rent seeking and risk taking both directly (through the influence managers can exert as shareholders) and indirectly (through the ability of managers with large stakes to avoid demands for oversight by outside shareholders). Our methodology should be interpreted as an *empirical decomposition*, not an instrumenting procedure.

To be clear, we regard the column 1 regressions as a true "reduced form," which captures the *combined direct and indirect* effects of managerial ownership (the exogenous variable) on each of the endogenous variables of interest. Column 2 reports OLS regressions where the governance score is treated as an exogenous variable and managerial ownership is excluded from the regression. The coefficient on the governance score in the column 2 regressions is a partial correlation and should be interpreted with caution. We regard the governance score as an endogenous variable, and we recognize that column 2 omits a highly relevant exogenous variable (managerial ownership) from the model, which is correlated with governance. Nevertheless, we regard column 2 as useful when juxtaposed with columns 3 and 4. Columns 3 and 4 "decompose" the coefficient in column 2 into two parts: the part of governance that is correlated with managerial ownership and the part that is not.

The results of the first stage regressions are reported in Table 4. As expected, when the top three managers own a greater fraction of the bank's stock, the governance score is lower. Having outside directors own a greater share tends to increase the governance score, but that effect is not statistically significant. Older banks tend to have lower governance scores. We also find that banks farther away from New York tended to have lower scores.

Section 3.2 Corporate Governance and Insider Rent Seeking

We first explore whether managerial ownership and formal oversight measures are related to insider rent seeking. In particular, we look at officer salaries, lending to insiders, and (lower) dividend payments as ways that insiders might seek to extract value from the bank.

When management owns a greater share of the stock, we expect them to pay themselves higher salaries as a way of extracting rents from the bank. Higher salaries increase the expenses of the bank and reduce funds paid out to shareholders as dividends. When non-management shareholders own a greater proportion of stock, they may be able to better limit salaries. The results, shown in Table 5, are consistent with that idea and indicate that when the managers own more shares, they tend to pay themselves higher salaries.

Another way of extracting rents from a bank is for the owners to lend to themselves to finance their outside projects. There has been considerable prior academic analysis of this issue, which indicates that insider lending is not always value-destroying or risky (Lamoreaux 1994, Haber 1995). We look at two variables related to insider lending. The first is the amount of loans made to all insiders (board members and management) relative to all loans. The second is the

proportion of all insider loans going to managers. We expect that managerial ownership and governance measures will be associated with both these variables.

Interestingly, we do not find any evidence that our measures of ownership or Board oversight are associated with insider lending (Table 6). We do find, however, that ownership and governance structure strongly influence who receives those insider loans (Table 7). At banks where the management owned a greater proportion of the stock, a greater fraction of insider loans went to the management. When there were more corporate governance controls, more of the insider loans were made to the outside directors.

With respect to dividends, we find, in Table 8, that when more shares are owned by managers, then dividend payments are higher. While this finding is consistent with the idea that institutions with higher managerial ownership provide greater payouts to owners, it is also consistent with the idea that these institutions are more profitable.

Taken together, our results regarding salaries, insider lending, and dividend payments are consistent with the idea that when managers own a greater fraction of the equity shares of the bank, they extract greater rents from the bank through higher salaries and more loans to themselves. They do not, however, limit dividend payments (because this means of rent extraction would harm them as stockholders). Stronger oversight by the Board of Directors tends to be associated with less rent extraction by the managers but somewhat greater extraction by the outsiders on the Board (insider lending became skewed more toward the outsiders on the Board). All parties appeared interested in maintaining strong dividend payments.

Section 3.3 Corporate Governance, Balance Sheet Composition, and Risk Taking

We begin our analysis of the relationship between risk choices and ownership and governance structure by focusing on measures of risk from the asset side of the balance sheet.

First, we consider the composition of loans. As noted earlier, real estate loans were generally considered to be riskier and were forbidden by the National Bank Act, but banks could use mortgages to secure debts previously entered into. As shown in Table 9, when management owns more shares in the bank, the bank tends to have fewer mortgages on its books.

With respect to the composition of liabilities, we examine bank reliance on the use of borrowed funds in Table 10, which previous research has shown is a forecaster of bank distress (Calomiris and Mason 1997, 2003, Carlson 2010). Borrowed funds were more expensive and had to be secured; use of these funds suggests a greater level of risk. As noted earlier, due to data limitations in tracking the exact amounts of borrowed funds, we use a probit specification to test

whether our ownership or governance variables are associated with the use of such funds. We find, in Table 10, that banks where managers are more significant owners are less likely to rely on borrowed funds from other banks.

There are a number of outcome variables that also reflect the risk preference of the banks. The three measures we consider are other real estate owned relative to assets, as well as the examiner's assessment of problems, measured by the share of troubled loans to total loans and by the estimated losses on assets relative to total assets. Table 11 shows that other real estate owned relative to assets is lower when managerial ownership is higher. We find, in Tables 12 and 13, that greater ownership by management is associated with lower values of both these measures. There is no association between board controls and troubled loans. However, estimated losses do appear to be reduced by increased board oversight measures, a finding that suggests that these governance structures are at least partially effective. On closer inspection of the composition of expected losses, we found that loan losses were not driving this result; rather, losses related to greater expenditures on furnishings are a primary contributor to the greater expected losses of banks with both low managerial ownership and low board oversight. That result is intuitively appealing: excessive expenditures on furnishings are a wasteful, value-destroying use of funds that would not be chosen in a disciplined environment.

Table 14 examines the effects of ownership and governance on bank survival. We find that increased ownership by management is associated with a reduced likelihood that the bank closes between October 1892 and December 1893, though the bulk of the closures occur during the Panic of 1893. When managers had a greater ownership stake, they took less risk and were thus less likely to succumb. However, the direct effect of managerial ownership is reduced when additional balance sheet controls are included. This finding suggests that the benefits of managerial ownership on survival operate largely through the balance sheet choices made by the managers.

We now turn to the question of how ownership and governance structure are related to greater or lesser reliance on particular tools of risk management. Our analysis of bank loan composition in Table 9 showed that higher managerial stakes and greater oversight were associated with less risky lending, but this is only one of the main influences on bank default risk. In finance theory, the default risk of a bank is mainly determined by three variables: the riskiness of the risky assets (loans and other risky assets), the ratio of (riskless) cash assets to total assets, and the ratio of equity to assets. Less risky loans, a higher ratio of cash assets, or a higher equity ratio all contribute to lower risk. Banks can tradeoff among these three measures to target the desired level of default risk on their debts.

In deciding whether to employ more cash assets or more capital to reduce risks, banks consider the costs of each. Calomiris and Wilson (2004) show that banks may prefer to rely less on equity when they face higher adverse-selection costs of raising equity in the market. Calomiris, Heider and Hoerova (2013) show that asset substitution risk can also lead banks to rely relatively more on cash because higher cash holdings change bankers' incentives to manage the risks of their risky assets, and thus higher cash holdings credibly signals a safer loan portfolio. The implication of these studies is that banks that have higher adverse-selection costs and higher asset substitution risks – both of which reflect problems of asymmetric information about managerial risk taking – will tend to rely more on cash and less on equity to manage their default risk.

We expect problems of asymmetric information to be mitigated by the use of Board oversight. Board meetings, a loan review committee, and bonding should be associated with greater transparency and less opportunities for risk shifting by management. Thus, we expect a greater reliance on formal oversight to be associated with a greater use of equity and less use of cash. Of course, in estimating the reliance on cash, other factors are relevant. In particular, the structure of deposits has implications for liquidity risk—a bank that is more reliant on checking accounts than savings accounts for its funding will probably need to hold more cash, ceteris paribus. Thus, we include additional controls in our analysis of the choices of cash and equity, in particular the ratio of individual deposits to total liabilities and the ratio of checking deposits to all individual deposits.[14]

The results, presented in Tables 15 and 16, suggest that banks with greater managerial ownership prefer to make greater use of cash and less use of equity capital to target their default risk. When outside board members own more shares, they also tend to prefer to have a lower net worth to asset ratio, but they do not push for holding more cash. At banks that had more Board oversight of management, cash ratios tended to be slightly lower, consistent with those banks' higher tolerance for default risk noted above.

Section 4 Robustness and extensions

Here we report a variety of robustness checks and extensions of the baseline analysis. In conducting this additional analysis, we focus on selected indicators of risk.

[14] As noted earlier, banks in Reserve Cities were required to hold more cash relative to deposits than other banks. We therefore include a dummy variable indicating whether the bank is located in a Reserve City. The results indicate that this being in a Reserve City did boost cash holdings slightly. Finding only a modest effect is consistent with Carlson (2013) who finds that cash holdings were not very different between banks in larger country cities and banks in the reserve cities, as the buffers held by the country banks were substantial. Moreover, he finds that it was not uncommon for banks to hold less cash than required, suggesting that the reserve requirements were not strongly binding. For these reasons, the simple dummy variable control in the regression is likely sufficient.

Section 4.1 Considering the components of the governance score separately

We first explore whether our results relating to the corporate governance score are driven by one or two of the five individual indicators. We repeat the regressions, replacing the score variable with each component in turn. In many cases, we find that the coefficients on the individual components tend to point in the same direction, which suggests that the overall results are indeed driven by the summation of these different measures. For example, a high ratio of other real estate owned relative to assets was positively related to most individual component measures. We also find that the reduction in losses relative to assets is most strongly associated with having an active discount committee and with having a bonded cashier, though the relationship with the other governance measures also point in that direction.

For a few measures, the relationship between oversight and outcomes is more complicated. For the use of borrowed funds, having the board meet monthly or more frequently, having a relatively high portion of the Board consisting of outside directors, and requiring a bond from the cashier are all associated with an increased likelihood of using borrowed funds. By contrast, having an active discount committee and requiring a bond from the president are both associated with a lower likelihood of using borrowed money. Thus, there is some indication that the different oversight measures triggered different responses on the part of managers in some cases.

Section 4.2 Examining Executive Compensation Schemes

Managers were paid salaries, and there is no evidence of stock-based, option-based, or cash bonuses in managerial compensation. Nevertheless, we are able to consider how managerial incentives may have been influenced by the extent to which the income of the manager covaried with the bank's income. The manager received a salary as well as dividend payouts by virtue of his ownership of shares. A number of recent studies have found that compensation sensitivity to firm performance matters for risk taking and that when the executive's salary is more sensitive to risk – in our case, when it is more dependent on dividends – the bank's investments tend to be riskier (Bai and Elyasiani 2013). For this analysis, we focus on the income of the president.

We find that the having a higher proportion of the president's compensation in the form of salary (rather than dividends) is associated with having a higher proportion of loans related to real estate and having more troubled loans. These results point to greater risk taking when compensation is less due to profits. Of course, these results are subject to concerns about endogeneity; it could be that having more troubled loans reduces profits and dividends, which increases the proportion of compensation due to salary.

Section 4.3 Alternative Measures of Outside Director Influence

Our measure of outside director ownership considers all outside directors together. However, it is possible that the effects of board oversight depend on the amount of shares that board members own. To investigate that possibility, we create a dummy variable indicating when there is an outside director with more shares than any of the top three managers (individually, not collectively). Such an outside director exists for about 20 percent of the banks in our sample.

When a director with a large number of shares is on the Board, we find that the presence of such an individual tends to magnify the prior result of greater risk taking. For instance, the bank tends to have greater shares of loans related to real estate. The tendency for greater risk taking appears to be consequential as banks with large-shareholding directors also are more likely to close during the panic.

Section 4.4 Additional Control variables

We also tried including a variety of other variables as controls. One such variable was the average score for banks in the same city, which might reflect the best practice of the neighboring banks. This variable tended to have the same coefficient as the bank's own score variable. Including it did not affect the results about which we are most interested.

We also tried including the square of the ownership by the top three managers in case there were diminishing returns to ownership concentration. This variable also did not affect our main results and was largely insignificant.

Section 5 Conclusion

Our results have interesting, important, and novel implications for how governance differences lead companies manage to attract outside funding sources in an environment where conflicts of interest are important. We find that managerial ownership and formal governance tools are alternative means to resolve conflicts. Each of these alternatives has important and somewhat different implications for rent seeking, the targeting of default risk, and the tools used (cash vs. equity) to achieve the targeted level of default risk. More concentration of ownership leads to less formal structures of governance, more insider tunneling through loans and salaries, more dividend paying, less risk taking (presumably due to risk aversion of manager stockholders), and more reliance on cash (to resolve asset-substitution and adverse-selection problems). Endogenously chosen formal governance structures produce greater risk, and more relative reliance on capital for risk management.

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Table 1
List of variables

Variable	Source	Description
Man_share	Exam report	The share of stock owned by the top 3 bank managers – the president, vice president, and cashier
Out_share	Exam report	The share of stock owned by individuals who were on the board of directors but were not managers
Active_disc	Exam report	Indicator variable for having an active independent discount committee
Board_month	Exam report	Indicator variable for the board of directors meeting monthly or more frequently
Out_dir_share	Exam report	The share of the board of directors that consisted of individuals that were not managers
Pres_bond	Exam report	President posted a surety bond
Cshr_bond	Exam Report	Cashier posted a surety bond
Log_assets	Call Report	Log of assets.
Log_age	Comptroller/Rand McNally	Log of the difference between 1892 and the time the bank was established.
Lns_assets	Call report	Ratio of loans to assets
RE_lns	Exam report	Ratio of loans secured by real estate to total loans
Lns_inside	Exam report	Share of all loans made to the board of directors or managers not on the board
Lns_manage	Exam report	Share of insider loans consisting of loans to managers
Indiv_liabs	Call report	Share of liabilities consisting of deposits by individuals
Chk_indiv	Exam report	Share of individual deposits consisting of checking deposits
Brrw_fnds	Exam report	Indicator for borrowing via notes discounted, bills payable, or collateralized certificates of deposit issued to other banks
Sal_assets	Exam report	Sum of salaries to president, vice-president, and cashier divided by asset of the bank
Div_6mo	Exam report	Indicator for whether dividends were paid during the 6 months preceding the exam report
Div_shrs_6mo	Exam report	Ratio of dividends to bank shares outstanding if dividends were paid in the last six months
Cash_asset	Call report	Ratio of cash (specie, legal tender, etc.) relative to assets
Nw_asset	Call Report	Ratio of capital, surplus, and undivided profits, to assets
Trb_lns	Exam report	Ratio of "troubled" loans – those past due or suspended – to total loans
Loss_assets	Exam report	Ratio of total losses on all balance sheet items as estimated by the examiner relative to assets

Closure	Comptroller reports	Did the bank close (suspend, fail, voluntarily liquidate)after filing the September 1892 call report but before Jan 1, 1894.
Res_city	Comptroller reports	Indicator that the city is a reserve city
Log_nyc		Log distance to NY
Pcnt_ag	1890 Census	Value of agricultural products in the county divided by the sum of the value of agricultural products and the value of manufacturing

Table 2
Summary statistics

Variable	Mean	Median	Std. Dev	Min	25th percentile	75th percentile	Max
Man_share	0.25	0.17	0.23	0.01	0.08	0.37	0.97
Out_share	0.15	0.12	0.13	0.01	0.06	0.22	0.95
Active_disc	0.59	1	0.49	0	0	1	1
Board_month	0.63	1	0.48	0	0	1	1
Out_dir_share	0.70	0.71	0.13	0.20	0.60	0.78	0.94
Hgh_od_share	0.57	1	0.50	0	0	1	1
Pres_bond	0.33	0	0.47	0	0	1	1
Cshr_bond	0.57	1	0.50	0	0	1	1
Score	2.69	3	1.56	0	1	4	5
Log_assets	14.09	14.10	0.85	12.01	13.48	14.66	15.93
Log_age	2.41	2.40	0.75	0.69	1.79	3.14	3.43
Lns_assets	62.10	62.78	10.23	30.15	55.97	69.37	82.05
RE_lns	3.55	1.07	6.09	0	0	5.16	54.71
Lns_inside	8.69	6.47	7.47	0.01	3.51	11.53	48.25
Manage_inside	36.80	34.42	29.40	0	8.11	56.33	100
Indiv_liabs	69.64	71.73	17.14	15.02	56.44	84.62	96.67
Chk_indiv	74.14	77.02	19.81	17.51	60.97	91.42	100.08
Brrw_fnds	0.31	0	0.46	0	0	1	1
Sal_assets	0.60	0.46	0.50	0	0.33	0.70	3.68
Div_6mo	0.69	1	0.47	0	0	1	1
Div_shrs	4.95	4	6.94	0	3	5	50
Cash_asset	30.67	29.86	9.11	11.51	24.31	35.68	59.24
Nw_asset	32.97	30.74	12.76	8.48	24.18	39.94	76.08
Trb_lns	9.04	5.82	9.90	0	2.41	12.40	71.75
Loss_assets	1.23	0.23	3.78	0.00	0.00	1.07	32.13
Closure	0.25	0	0.43	0	0	0.5	1
Res_city	0.38	0	0.49	0	0	1	1
Log_nyc	7.07	7.05	0.45	6.35	6.76	7.40	7.81
Pcnt_ag	0.25	0.12	0.27	0.02	0.07	0.36	0.96
State_asts	17.99	18.20	0.85	15.38	17.57	18.52	19.27

Table 3
Correlation of measures of ownership and control

	Board meets at least monthly	High % Outsiders on Board	Active discount comm.	Pres. bonded	Cashier bonded
Management stock share	-0.23	-0.44	-0.25	-0.15	-0.22
Board meets at least monthly		0.20	0.33	0.08	0.15
High % Outsiders on Board			0.25	0.22	0.20
Active discount committee				0.24	0.43
Pres. bonded					0.50

Table 4
Determinants of the Corporate Governance Score

		Score
Intercept	Coeff	11.22
	SE	2.66
	T-stat	4.21
Concentration measure	Coeff	-1.91
	SE	0.43
	T-stat	-4.41
Shares of outside directors	Coeff	0.74
	SE	0.82
	T-stat	0.90
Log assets	Coeff	0.16
	SE	0.15
	T-stat	1.09
Log age	Coeff	-0.421
	SE	0.149
	T-stat	-2.82
Reserve city	Coeff	0.04
	SE	0.24
	T-stat	0.18
Log distance to NYC	Coeff	-1.33
	SE	0.25
	T-stat	-5.38
Percent county income from Ag	Coeff	-0.04
	SE	0.43
	T-stat	-0.10

Table 5 - Determinants of Manager Salaries Relative to Assets

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	0.60	0.44	2.29	0.35
	SE	0.63	0.70	1.36	0.61
	T-stat	0.95	0.63	1.68	0.57
Concentration measure	Coeff	0.25			
	SE	0.15			
	T-stat	1.71			
Score	Coeff		-0.01		
	SE		0.02		
	T-stat		-0.27		
Score - predicted	Coeff			-0.13	
	SE			0.08	
	T-stat			-1.62	
Score - residual	Coeff				0.02
	SE				0.02
	T-stat				0.75
Shares of outside directors	Coeff	0.12	0.10	0.22	0.09
	SE	0.27	0.27	0.30	0.27
	T-stat	0.45	0.37	0.75	0.35
Log age	Coeff	-0.16	-0.16	-0.21	-0.15
	SE	0.04	0.05	0.06	0.04
	T-stat	-3.71	-3.43	-3.60	-3.46
Reserve city	Coeff	-0.02	-0.04	-0.01	-0.04
	SE	0.08	0.08	0.09	0.08
	T-stat	-0.30	-0.49	-0.12	-0.51
Log distance to NY	Coeff	0.04	0.07	-0.13	0.08
	SE	0.08	0.09	0.15	0.08
	T-stat	0.53	0.85	-0.81	1.07
Percent county income from Ag	Coeff	0.04	0.04	0.01	0.04
	SE	0.13	0.13	0.14	0.13
	T-stat	0.33	0.29	0.11	0.30

Table 6 – Determinants of Insider Loans to Total Loans

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	38.98	34.35	19.55	39.87
	SE	13.87	14.48	19.84	13.90
	T-stat	2.81	2.37	0.99	2.87
Concentration measure	Coeff	-3.30			
	SE	2.25			
	T-stat	-1.47			
Score	Coeff		0.47		
	SE		0.35		
	T-stat		1.33		
Score - predicted	Coeff			1.73	
	SE			1.20	
	T-stat			1.45	
Score - residual	Coeff				0.35
	SE				0.37
	T-stat				0.94
Shares of outside directors	Coeff	-0.17	-0.27	-1.45	0.17
	SE	4.29	4.30	4.48	4.30
	T-stat	-0.04	-0.06	-0.32	0.04
Log assets	Coeff	-2.72	-2.67	-3.00	-2.55
	SE	0.77	0.76	0.83	0.76
	T-stat	-3.55	-3.50	-3.62	-3.35
Log age	Coeff	-0.76	-0.71	-0.03	-0.96
	SE	0.78	0.79	1.00	0.77
	T-stat	-0.98	-0.90	-0.03	-1.25
Reserve city	Coeff	-2.47	-2.41	-2.55	-2.36
	SE	1.27	1.27	1.29	1.27
	T-stat	-1.95	-1.90	-1.98	-1.85
Log distance to NY	Coeff	1.82	2.05	4.12	1.28
	SE	1.29	1.37	2.33	1.24
	T-stat	1.41	1.50	1.77	1.03
Percent county income from Ag	Coeff	-4.86	-4.67	-4.79	-4.63
	SE	2.22	2.21	2.24	2.22
	T-stat	-2.19	-2.11	-2.14	-2.09

Table 7 – Determinants of Loans to Management Relative to Insider Loans

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	-28.97	19.71	166.79	-37.90
	SE	53.75	56.26	89.09	54.75
	T-stat	-0.54	0.35	1.87	-0.69
Concentration measure	Coeff	33.28			
	SE	8.73			
	T-stat	3.81			
Score	Coeff		-4.91		
	SE		1.37		
	T-stat		-3.58		
Score - predicted	Coeff			-17.44	
	SE			5.37	
	T-stat			-3.25	
Score - residual	Coeff				-3.68
	SE				1.46
	T-stat				-2.53
Shares of outside directors	Coeff	-36.63	-35.42	-23.67	-40.01
	SE	16.61	16.71	20.10	16.92
	T-stat	-2.20	-2.12	-1.18	-2.37
Log assets	Coeff	-3.13	-3.57	-0.33	-4.83
	SE	2.97	2.97	3.71	2.99
	T-stat	-1.05	-1.20	-0.09	-1.61
Log age	Coeff	2.99	2.34	-4.35	4.97
	SE	3.01	3.06	4.51	3.02
	T-stat	0.99	0.77	-0.97	1.64
Reserve city	Coeff	2.79	2.17	3.57	1.62
	SE	4.92	4.93	5.79	5.01
	T-stat	0.57	0.44	0.62	0.32
Log distance to NY	Coeff	13.40	10.70	-9.86	18.75
	SE	5.00	5.32	10.46	4.90
	T-stat	2.68	2.01	-0.94	3.83
Percent county income from Ag	Coeff	16.88	14.99	16.15	14.54
	SE	8.59	8.60	10.06	8.73
	T-stat	1.97	1.74	1.60	1.66

Table 8 – Determinants of the Ratio of Dividends to Shares

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	-9.75	-7.37	26.90	-13.53
	SE	11.94	12.72	20.67	12.16
	T-stat	-0.82	-0.58	1.30	-1.11
Concentration measure	Coeff	6.18			
	SE	1.97			
	T-stat	3.14			
Score	Coeff		-0.48		
	SE		0.30		
	T-stat		-1.60		
Score - predicted	Coeff			-3.14	
	SE			1.18	
	T-stat			-2.67	
Score - residual	Coeff				-0.23
	SE				0.32
	T-stat				-0.73
Shares of outside directors	Coeff	1.43	1.17	4.14	0.66
	SE	3.63	3.70	4.46	3.71
	T-stat	0.40	0.32	0.93	0.18
Log assets	Coeff	-0.68	-0.77	-0.23	-0.87
	SE	0.65	0.67	0.80	0.67
	T-stat	-1.04	-1.16	-0.29	-1.31
Log age	Coeff	2.07	2.26	0.83	2.53
	SE	0.67	0.69	1.00	0.67
	T-stat	3.09	3.30	0.83	3.78
Reserve city	Coeff	0.52	0.23	0.49	0.17
	SE	1.08	1.09	1.27	1.10
	T-stat	0.48	0.21	0.39	0.15
Log distance to NY	Coeff	2.30	2.50	-2.01	3.32
	SE	1.09	1.18	2.35	1.06
	T-stat	2.11	2.12	-0.86	3.11
Percent county income from Ag	Coeff	3.40	3.16	3.34	3.13
	SE	1.86	1.90	2.20	1.91
	T-stat	1.82	1.67	1.52	1.64

Table 9 – Real Estate Loans to Total Loans

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	-15.95	-16.91	-39.08	-14.90
	SE	11.63	12.25	17.84	11.75
	T-stat	-1.37	-1.38	-2.19	-1.27
Concentration measure	Coeff	-3.93			
	SE	1.89			
	T-stat	-2.08			
Score	Coeff		0.17		
	SE		0.30		
	T-stat		0.57		
Score - predicted	Coeff			2.06	
	SE			1.07	
	T-stat			1.92	
Score - residual	Coeff				-0.01
	SE				0.31
	T-stat				-0.04
Shares of outside directors	Coeff	-3.71	-3.47	-5.24	-3.31
	SE	3.60	3.64	4.03	3.63
	T-stat	-1.03	-0.95	-1.30	-0.91
Log assets	Coeff	-0.84	-0.69	-1.17	-0.64
	SE	0.64	0.65	0.74	0.64
	T-stat	-1.31	-1.06	-1.58	-1.00
Log age	Coeff	0.65	0.50	1.51	0.41
	SE	0.65	0.67	0.90	0.65
	T-stat	0.99	0.76	1.68	0.64
Reserve city	Coeff	-0.66	-0.54	-0.75	-0.52
	SE	1.06	1.07	1.16	1.07
	T-stat	-0.62	-0.50	-0.64	-0.48
Log distance to NY	Coeff	4.43	4.08	7.18	3.80
	SE	1.08	1.16	2.09	1.05
	T-stat	4.09	3.52	3.43	3.62
Percent county income from Ag	Coeff	1.12	1.38	1.20	1.39
	SE	1.86	1.87	2.01	1.87
	T-stat	0.60	0.74	0.60	0.74

Table 10 – Likelihood that Bank Used Borrowed Money

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	0.70	-0.60	-9.53	0.37
	SE	2.88	2.91	5.38	2.80
	z-stat	0.24	-0.21	-1.77	0.13
Concentration measure	Coeff	-1.80			
	SE	0.53			
	z-stat	-3.36			
Score	Coeff		0.09		
	SE		0.07		
	z-stat		1.23		
Score - predicted	Coeff			0.95	
	SE			0.36	
	z-stat			2.65	
Score - residual	Coeff				0.02
	SE				0.08
	z-stat				0.20
Shares of outside directors	Coeff	-1.96	-1.98	-2.79	-1.82
	SE	0.93	0.92	1.27	0.90
	z-stat	-2.11	-2.15	-2.20	-2.02
Log assets	Coeff	-0.40	-0.28	-0.56	-0.26
	SE	0.16	0.15	0.24	0.15
	z-stat	-2.44	-1.83	-2.36	-1.68
Log age	Coeff	0.02	-0.05	0.40	-0.09
	SE	0.16	0.16	0.28	0.15
	z-stat	0.10	-0.30	1.44	-0.58
Reserve city	Coeff	0.09	0.14	0.06	0.16
	SE	0.27	0.26	0.36	0.26
	z-stat	0.34	0.53	0.16	0.60
Log distance to NY	Coeff	0.74	0.62	1.97	0.47
	SE	0.28	0.28	0.66	0.26
	z-stat	2.69	2.18	2.97	1.84
Percent county income from Ag	Coeff	-1.19	-1.03	-1.18	-1.00
	SE	0.47	0.46	0.62	0.46
	z-stat	-2.53	-2.24	-1.90	-2.20

Table 11 – Other Real Estate Owned to Assets

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	-4.89	-6.13	-11.23	-4.63
	SE	3.18	3.34	4.68	3.21
	T-stat	-1.54	-1.84	-2.40	-1.44
Concentration measure	Coeff	-1.09			
	SE	0.51			
	T-stat	-2.13			
Score	Coeff		0.13		
	SE		0.08		
	T-stat		1.57		
Score - predicted	Coeff			0.56	
	SE			0.28	
	T-stat			2.02	
Score - residual	Coeff				0.08
	SE				0.09
	T-stat				0.97
Shares of outside directors	Coeff	-0.61	-0.61	-1.02	-0.49
	SE	0.98	0.99	1.07	0.99
	T-stat	-0.62	-0.62	-0.96	-0.49
Log assets	Coeff	-0.13	-0.11	-0.23	-0.08
	SE	0.18	0.18	0.20	0.18
	T-stat	-0.74	-0.62	-1.13	-0.44
Log age	Coeff	0.09	0.09	0.33	0.02
	SE	0.18	0.19	0.24	0.18
	T-stat	0.47	0.50	1.35	0.13
Reserve city	Coeff	0.15	0.18	0.14	0.20
	SE	0.29	0.29	0.31	0.30
	T-stat	0.52	0.63	0.47	0.67
Log distance to NY	Coeff	1.05	1.09	1.81	0.88
	SE	0.29	0.32	0.55	0.29
	T-stat	3.58	3.47	3.30	3.09
Percent county income from Ag	Coeff	1.06	1.15	1.13	1.16
	SE	0.53	0.53	0.56	0.53
	T-stat	2.02	2.16	2.04	2.17

Table 12 – Ratio of Troubled Loans to Total Loans

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	-17.46	-21.51	-53.04	-15.83
	SE	17.71	18.61	26.83	17.88
	T-stat	-0.99	-1.16	-1.98	-0.89
Concentration measure	Coeff	-6.05			
	SE	2.88			
	T-stat	-2.10			
Score	Coeff		0.48		
	SE		0.45		
	T-stat		1.07		
Score - predicted	Coeff			3.17	
	SE			1.62	
	T-stat			1.96	
Score - residual	Coeff				0.22
	SE				0.48
	T-stat				0.46
Shares of outside directors	Coeff	-6.23	-6.07	-8.58	-5.61
	SE	5.47	5.53	6.05	5.52
	T-stat	-1.14	-1.10	-1.42	-1.02
Log assets	Coeff	-1.99	-1.80	-2.49	-1.68
	SE	0.98	0.98	1.12	0.98
	T-stat	-2.03	-1.83	-2.23	-1.72
Log age	Coeff	0.61	0.51	1.95	0.25
	SE	0.99	1.01	1.36	0.99
	T-stat	0.62	0.50	1.43	0.26
Reserve city	Coeff	-1.09	-0.93	-1.23	-0.87
	SE	1.62	1.63	1.74	1.64
	T-stat	-0.67	-0.57	-0.70	-0.53
Log distance to NY	Coeff	7.69	7.51	11.91	6.71
	SE	1.65	1.76	3.15	1.60
	T-stat	4.66	4.26	3.78	4.20
Percent county income from Ag	Coeff	6.03	6.42	6.17	6.46
	SE	2.83	2.85	3.03	2.85
	T-stat	2.13	2.25	2.04	2.27

Table 13 – Estimated losses relative to assets

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	7.59	13.04	-6.71	8.63
	SE	7.57	7.90	12.53	7.49
	T-stat	1.00	1.65	-0.54	1.15
Concentration measure	Coeff	-2.41			
	SE	1.26			
	T-stat	-1.92			
Score	Coeff		-0.37		
	SE		0.19		
	T-stat		-1.95		
Score - predicted	Coeff			1.24	
	SE			0.74	
	T-stat			1.67	
Score - residual	Coeff				-0.53
	SE				0.20
	T-stat				-2.65
Shares of outside directors	Coeff	-4.22	-3.61	-5.30	-3.93
	SE	2.33	2.33	2.77	2.31
	T-stat	-1.81	-1.55	-1.91	-1.70
Log assets	Coeff	-0.47	-0.27	-0.64	-0.37
	SE	0.42	0.42	0.50	0.41
	T-stat	-1.12	-0.65	-1.28	-0.89
Log age	Coeff	-0.32	-0.69	0.19	-0.48
	SE	0.42	0.43	0.63	0.41
	T-stat	-0.75	-1.61	0.31	-1.17
Reserve city	Coeff	-0.99	-0.83	-1.06	-0.88
	SE	0.69	0.69	0.80	0.69
	T-stat	-1.42	-1.20	-1.32	-1.28
Log distance to NY	Coeff	0.40	-0.61	2.06	0.01
	SE	0.70	0.74	1.45	0.66
	T-stat	0.58	-0.82	1.43	0.01
Percent county income from Ag	Coeff	-0.86	-0.68	-0.81	-0.71
	SE	1.20	1.19	1.37	1.18
	T-stat	-0.72	-0.57	-0.59	-0.60

Table 14 – Effect on closure

		OLS	TSLS	OLS	TSLS
Intercept	Coeff	-2.85	-2.49	-1.83	-1.70
	SE	2.81	2.76	3.11	3.10
	z-stat	-1.01	-0.90	-0.59	-0.55
Concentration measure	Coeff	-0.93		-0.36	
	SE	0.50		0.54	
	z-stat	-1.88		-0.66	
Score - residual	Coeff		0.07		0.08
	SE		0.08		0.08
	z-stat		0.88		1.03
Shares of outside directors	Coeff	-0.31	-0.19	0.64	0.72
	SE	0.88	0.87	0.95	0.95
	z-stat	-0.35	-0.22	0.67	0.76
Log assets	Coeff	-0.12	-0.07	-0.03	-0.01
	SE	0.15	0.15	0.17	0.16
	z-stat	-0.76	-0.47	-0.20	-0.06
Real estate loans to total loans	Coeff			0.75	0.84
	SE			1.83	1.76
	z-stat			0.41	0.48
Demand loans to total loans	Coeff			0.68	0.72
	SE			0.23	0.23
	z-stat			2.92	3.14
Individual deposits to total deposits	Coeff			-1.53	-1.50
	SE			0.77	0.76
	z-stat			-1.99	-1.97
Checkign Deposits to total deposits	Coeff			-1.24	-1.29
	SE			0.57	0.57
	z-stat			-2.18	-2.25
Log age	Coeff	0.03	-0.04	0.02	-0.01
	SE	0.16	0.15	0.19	0.18
	z-stat	0.20	-0.25	0.10	-0.06
Reserve city	Coeff	-0.49	-0.45	-0.67	-0.65
	SE	0.26	0.26	0.29	0.29
	z-stat	-1.86	-1.71	-2.34	-2.29
Log distance to NY	Coeff	0.61	0.45	0.51	0.43
	SE	0.27	0.25	0.32	0.30
	z-stat	2.30	1.82	1.60	1.46
Percent county income from Ag	Coeff	-0.33	-0.27	-0.13	-0.09
	SE	0.44	0.43	0.48	0.48
	z-stat	-0.76	-0.62	-0.26	-0.20

Table 15 – Net worth to assets

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	123.38	115.45	37.31	129.74
	SE	19.67	21.47	38.44	21.12
	T-stat	6.27	5.38	0.97	6.14
Concentration measure	Coeff	-17.13			
	SE	3.05			
	T-stat	-5.61			
Score	Coeff		1.30		
	SE		0.51		
	T-stat		2.56		
Score - predicted	Coeff			8.86	
	SE			2.38	
	T-stat			3.73	
Score - residual	Coeff				0.54
	SE				0.54
	T-stat				1.00
Shares of outside directors	Coeff	-18.74	-17.93	-23.94	-16.82
	SE	5.84	6.19	8.97	6.26
	T-stat	-3.21	-2.90	-2.67	-2.69
Log assets	Coeff	-6.14	-5.58	-7.47	-5.25
	SE	1.05	1.11	1.67	1.11
	T-stat	-5.86	-5.05	-4.48	-4.72
Individual deposits to total liabilities	Coeff	-19.54	-19.46	-19.78	-19.42
	SE	4.38	4.64	6.59	4.71
	T-stat	-4.46	-4.19	-3.00	-4.13
Checking to individual deposits	Coeff	10.21	8.49	2.03	9.10
	SE	3.48	3.71	5.61	3.77
	T-stat	2.94	2.29	0.36	2.42
Log age	Coeff	-3.16	-3.57	0.18	-4.24
	SE	1.12	1.20	2.04	1.19
	T-stat	-2.82	-2.99	0.09	-3.58
Reserve city	Coeff	-5.03	-4.56	-5.42	-4.41
	SE	1.78	1.88	2.68	1.91
	T-stat	-2.83	-2.42	-2.02	-2.31
Log distance to NY	Coeff	2.71	1.86	13.45	-0.20
	SE	1.85	2.04	4.53	1.92
	T-stat	1.46	0.91	2.97	-0.10
Percent county income from Ag	Coeff	-1.97	-1.02	-2.24	-0.85
	SE	3.02	3.19	4.54	3.23
	T-stat	-0.65	-0.32	-0.49	-0.26

Table 16 – Cash to Assets

		OLS	OLS	TSLS	TSLS
Intercept	Coeff	-24.50	-22.34	-12.93	-25.53
	SE	6.66	6.90	9.12	6.72
	T-stat	-3.68	-3.24	-1.42	-3.80
Concentration measure	Coeff	2.30			
	SE	1.03			
	T-stat	2.23			
Score	Coeff		-0.28		
	SE		0.16		
	T-stat		-1.72		
Score - predicted	Coeff			-1.19	
	SE			0.56	
	T-stat			-2.11	
Score - residual	Coeff				-0.19
	SE				0.17
	T-stat				-1.10
Shares of outside directors	Coeff	-0.33	-0.36	0.36	-0.61
	SE	1.98	1.99	2.13	1.99
	T-stat	-0.17	-0.18	0.17	-0.31
Log assets	Coeff	1.13	1.09	1.31	1.01
	SE	0.36	0.36	0.40	0.35
	T-stat	3.20	3.06	3.32	2.86
Individual deposits to total liabilities	Coeff	4.85	4.84	4.88	4.83
	SE	1.48	1.49	1.57	1.50
	T-stat	3.27	3.25	3.12	3.23
Checking to individual deposits	Coeff	2.56	2.88	3.66	2.81
	SE	1.18	1.19	1.33	1.20
	T-stat	2.17	2.42	2.75	2.35
Log age	Coeff	0.71	0.72	0.27	0.87
	SE	0.38	0.38	0.48	0.38
	T-stat	1.88	1.87	0.55	2.29
Reserve city	Coeff	1.13	1.08	1.19	1.05
	SE	0.60	0.60	0.64	0.61
	T-stat	1.88	1.79	1.86	1.73
Log distance to NY	Coeff	1.28	1.23	-0.16	1.69
	SE	0.63	0.66	1.07	0.61
	T-stat	2.05	1.88	-0.15	2.77
Percent county income from Ag	Coeff	-2.18	-2.29	-2.14	-2.32
	SE	1.02	1.02	1.08	1.03
	T-stat	-2.13	-2.23	-1.99	-2.25

Chart 1
Distribution of ownership by top 3 managers

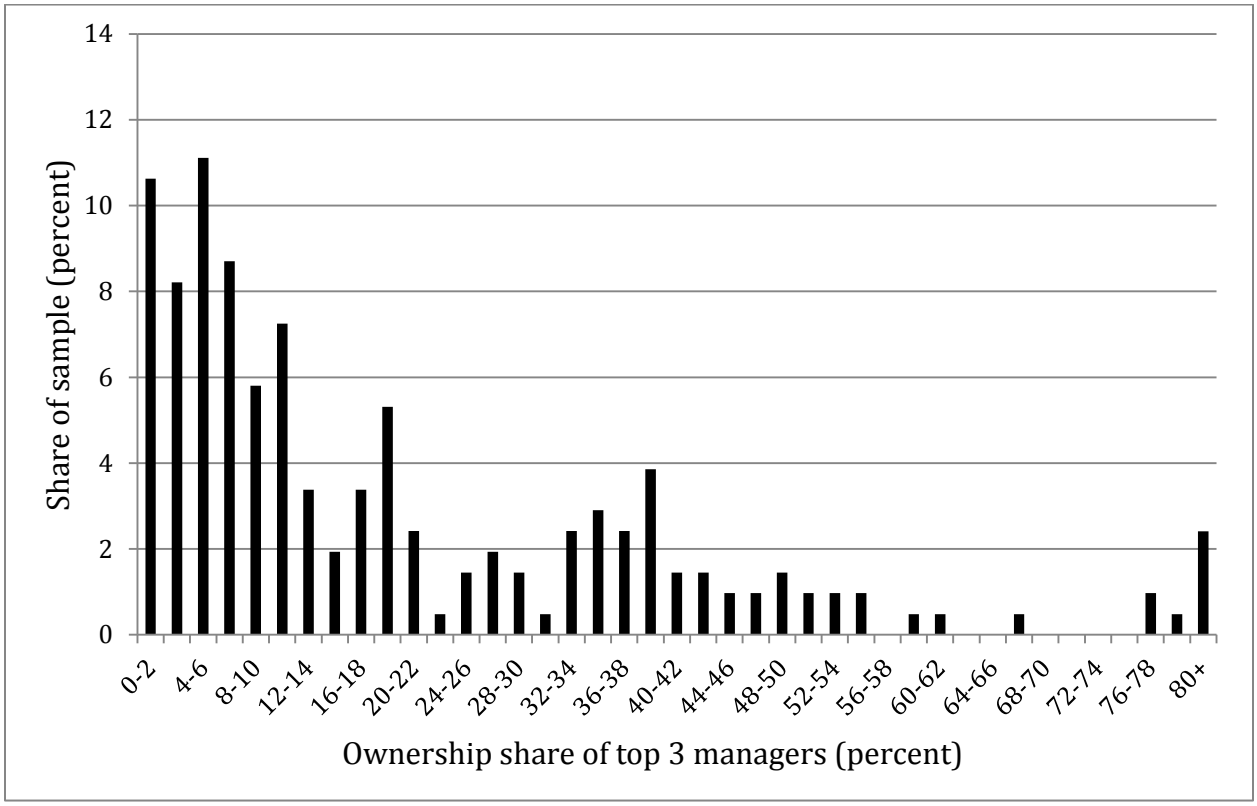

Chart 2
Manager ownership and Board Composition