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ABSTRACT

The massive rise in U.S. stockholding during the early twentieth century resulted in the deepening of securities markets, the spread of investment banks, and the expansion of publicly held corporations. This paper makes use of a unique panel database of South Dakota bank stockholders from 1910-1934 to study bank stockholder growth as well as its effect on bank composition and risk. Overall, the average number of stockholders in a bank rose from 8 to 21 over the period with much of the rise occurring after 1924, but many banks remained highly concentrated. The new stockholders are associated with a subsequent increase in a bank's proportion of loans-to-assets, but no direct effect on bank closure outside of this balance sheet effect. The data thus illustrate the start of a movement towards more diffuse bank stockholding and its potential consequences for the industry.

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1. Introduction

Personal investing has become commonplace in modern society, but even as late as World War I (1914-1918), a small proportion of the U.S. population held any securities. While shareholding was growing slowly before the war, the post-war period saw an explosion of investment. Conservative estimates show the total number of individuals owning corporate stock in the United States grew from less than one million in 1910 to more than 10 million by the early 1930s.[1] This massive rise in middle-class investing was responsible for the deepening of U.S. securities markets, the spread of investment banks, the increase in the scale of corporations, and the further transition to manager-run businesses. Many scholars (e.g., Friend et al. 1958, 1967; Carosso 1970, 1979; Calomiris 1995, 2002; Baskin and Miranti 1997; Calomiris and Raff 1995) have argued that the period was the dawn of a new age in investing; however, the lack of micro-level data has prevented the study of who purchased bank securities or how the rise affected the operation of banks. Building on the literature, this paper makes use of biennial stockholder lists for all state-regulated banks in South Dakota from 1910 through 1934 to examine the pattern and effect of stockholding during this turning point in the development of American securities markets.

In their book, *The Modern Corporation and Private Property*, Berle and Means (1932) highlight what they see as the unsettling switch from historical firms where concentrated stockholding incentivized ownership control to the modern corporations where diffuse stockholding freed managers to pursue their personal interests rather than firm value. While many historical firms had diffuse stockholding (Hilt 2008) and many large modern corporations have concentrated owners, the study nevertheless spurred the study of how stockholder concentration influences firm operation. Larger stockholders often are the only ones to have a sufficient stake to justify paying the costs of monitoring management and operational decisions (Shleifer and Vishny 1986). Therefore, as the number of stockholders increase and the concentration of ownership decreases, the oversight on management often declines as small, uninformed, or distracted investors choose not to invest the time to monitor or lack the power to

[1] No comprehensive data on corporate shareholding exists for this period and definitive counts of total numbers of shareholders should be treated with skepticism, as they are generally unsubstantiated. Several scholars, including Warshow (1924), Means (1930), Berle and Means (1932), and Bernheim and Schneider (1935), have produced reasonable estimates of the total number of shareholdings (stakes held in companies) from samples of public corporations. Rutterford and Sotiroupolos (2017) estimate the total number of shareholders from those numbers. Their calculations suggest that there were 0.81 million shareholders in the United States in 1907, and 10 to 12 million in 1932.

enforce needed changes (Roe 1994; Yafeh and Yosha 2003, Kempf, Manconi, and Spalt 2017). This greater control and monitoring by large shareholders, however, is not always linked to safer firms. For instance, Saunders, Strock and Travlos (1990), Faccio et al. (2003), and Laeven and Levine (2009) find that greater control by large shareholders can be associated with higher risk-taking as managers are pushed to maximize stockholder value.[2]

While the corporate finance literature studies firms in all different industries, the effect of stockholding on historical banks could differ from modern results for a variety of reasons. First, Lamoreaux (1994) and Lamoreaux and Glaisek (1991) find that New England banks often made loans almost exclusively to directors and large stockholders. The authors argue that this approach might have been efficient as the bank was better informed about those individuals' business prospects. Second, bank stockholders often were subject to additional liability on their equity holdings. This additional liability required that all bank shareholders would have to pay in an amount proportional to the par value of their shares in the event of bank failure. This could have pushed large stockholders to take a more active role in monitoring risk-taking. Third, the lack of branching in the country meant that many banks were small and focused on local lending. This potentially limits the degree of diversification and broad stockholding that most banks would have been capable of supporting.

Despite the importance of the period, the lack of information on individual stockholders has largely prevented any detailed panel study bank stockholding over the early 1900s. Bodenhorn (2013, 2014) examines stockholding and corporate governance of banks over a much broader period of time, but neither study contains many observations during the 1910s and 1920s. Warshow (1924) and Means (1930) study stockholder growth in a sample of established non-bank companies over the early 1900s, arguing that the large-scale financing needs and tax policies during World War I (WWI) drove firms to search out new middle class investors. Highlighting the specific effect of the WWI liberty bond drives on securities ownership, Hilt, Jaremski, and Rahn (2020) show that individuals residing in states with higher liberty bond subscription rates were more likely to own stocks and bonds in the late 1930s. Calomiris and Oh (2019) provide the one examination of individual stockholders using private data on Citibank from 1925-1929. They find that the number of stockholders in Citibank tripled over the four

[2] See for instance, the detailed survey of the benefits and costs of large stockholders in Shleifer and Vishny (1997).

years with many of the new purchasers being either connected to the bank through business relationships or living near a branch of the bank.

The effect of the rise in stockholding on bank operations in the period has likewise gone unstudied, but several papers have been written on the connection between stockholding and bank operations in other historical periods. Bodenhorn (2013) has shown that banks with large block shareholders had higher value and made fewer loans, while Bodenhorn (2014) finds that banks with more stockholders held larger capital barriers. In this way, while some of the results match those from the modern period, there is no clear effect of whether more stockholders would have led to additional risk-taking or expansion during the period.

This paper builds on the literature by studying a unique source of stockholder information for the key historical period. Starting in 1910, South Dakota biennially reported the stockholder list and balance sheet of each bank under its supervision. The lists contain the name of each stockholder, their current location, and the par value of the amount of stock they owned. The data allow for the study of the number and characteristics of stockholders in each year as well as the impact of new stockholders on bank balance sheets and stability. Containing information on over 750 banks and 20,000 unique stockholders from 1910 through 1934, the analysis can remove fixed bank characteristics that might have driven initial stockholding separate from those factors that increased stockholding over time.

The drawback of the data is that they only exist for one state. While South Dakota was an agricultural state representative of the Midwest and Great Plains, it is not immediately comparable to the wealthier manufacturing and financial centers elsewhere in the country where stockholding was more common. For instance, South Dakota banks had fewer stockholders on average than estimates from other locations, and despite the large rise in stockholders over the period, most banks still maintained concentrated ownership. As such, the data provide a glimpse of the general dynamics of the expansion of stockholding in America. While they likely serve as a lower bound on its overall size across the nation, the analysis provides a clearer examination of the expansion of stockholding in small agricultural states were farming and credit for farmers was much more important.

The average number of stockholders per South Dakota bank increased from 8 to 21 between 1910 and 1934. And while there was a rise in stockholders during WWI, the biggest rise came after 1924. These new stockholders were more likely to be located near the bank and

without a family connection to other stockholders. Most of the increases are associated with existing owners selling off shares rather than new capital issues. The rise dilutes the power of the largest stockholder, yet ownership of most banks remained relatively concentrated throughout the period. Even as late as 1930, the average bank's largest stockholder held about 36% of the bank's value.

Two mechanisms for the rise stand out as plausible given the timing. First, the rise in stockholders corresponds to the post-WWI agricultural crisis and collapse of deposit insurance in South Dakota. With the requirement of double liability, some stockholders in rural areas likely sought to mitigate their exposure to bank runs during the turbulent 1920s. Second, the rise also corresponds to the nation-wide investing increase during the period. If anything it seems like both factors play a role. Specifically, while there is a slightly higher decline in stockholder concentration for rural, small, and agricultural banks (i.e., more risky banks), all banks saw increases in stockholders and decreases in concentration during the mid-1920s.

Matching stockholder information with balance sheet information, I find that the rise in the number of stockholders correlated with an increase in a bank's fraction of loans but no change in leverage. The new stockholders thus might have brought additional capital into the bank, but the bank scaled up assets with loans to maintain the same capital buffer over time. In places where the rise in stockholders significantly diluted the concentration of the largest stockholder, the data additionally show a resulting increase in assets. The rise in stockholders or decline in concentration, however, do not consistently affect the probability of bank closures beyond these balance sheet measures.

2. Data

To shed light on the patterns of stockholding, I digitize the data reported in South Dakota's *Biennial Report of the Public Examiner* (1910-1918) and the *Biennial Report of the Superintendent of Banks* (1920-1938). The reports provide each state bank's balance sheet as well as a list of the names, current locations, and stock holdings of its stockholders every two years.[3] An example page is provided in Appendix Figure A1. The director, balance sheet, and

[3] As was common until the modern period, the reports do not contain information on non-performing loans, interest rates, dividends, or income. The state report also contains no information on the stockholders of national banks as national banks were subject to oversight by the Comptroller of the Currency rather than the state superintendent.

stockholding data on each bank was entered and then matched over time to provide a panel database for each bank.[4]

I further augment the data using county-level census information from Haines (2004).[5] These data help control for various location-specific characteristics that may have influenced banking and stockholding.

Summary statistics by decade are provided in Table 1 and a map of state banks and county population is provided in Figure 1. Regardless of period, most of the population and banks in South Dakota were located in the eastern portion of the state. Those banks that stretched into western South Dakota were typically located in the towns that grew along the various railroad lines. Population growth was relatively mild over the decades with few counties adding more than 5,000 people and several even losing people. As discussed below, the WWI agricultural price shock forced many banks out of business over the 1920s, leading to the sizable difference in banks across the two maps.

3. South Dakota Background

South Dakota was fairly typical of the Great Plains and Midwest. It was a relatively rural state that was highly dependent on agriculture (corn, oats, and wheat in particular). Even as late as 1930, only Sioux Falls had a population above 18,000, and only six cities had between 5,000 and 18,000 people. Matching the rural nature of the state, the banking system consisted mostly of state-regulated banks with a few national banks regulated by the Office of the Comptroller of the Currency operating in the larger cities.[6] Fearing potential transfers of deposits from rural to urban areas, the state did not allow branching and bank operations were typically isolated within their local area.

[4] I account for the few name/location changes of banks noted by the report in order to fully track banks over time. There are a handful of "consolidations" over time, but other sources suggest that most of these are acquisitions or absorptions rather than true mergers. When examining these "consolidations", there are no consistently large increases in stockholders. Just as often the number of stockholders goes down or remains the same after a "consolidation" as they go up, and in only one occasion did the number of stockholders go up by more than two.
[5] I aggregate counties to their 1910 boundaries to have consistent county definitions over time. Values in between each Census observation are filled with a linear trend.
[6] While data on the stockholders of individual national banks are not available, the balance sheet patterns of state and national banks were relatively similar over time. See Appendix Figure A2.

By law, South Dakota bank stock had $100 par values[7], and stockholders were subject to double liability which required them to pay up to the par value of their stock if the bank was declared bankrupt. Based on the La Porte et al. (1998) classification, the laws tended to lean towards being anti-director. While stockholders were entitled to a vote for each share they owned, the state guaranteed the right for stockholders to cumulate their votes, allowed voting by proxy through the mail, and did not require shares to be blocked before meetings. Bank directors were required hold 5 or more shares of stock, and put up at least a $5,000 surety bond with the superintendent of banks. South Dakota also required loans to stockholders/directors to be approved by the full board and limited insider lending to less than 50% of the bank's capital. Giving directors some protection, the law required a majority of stock to call for a special meeting to remove a director.

The evidence points to a decentralized system of person-to-person bank stock transactions in South Dakota as opposed to decentralized and impersonal transactions. First, the banks' stocks do not seem to be listed on any of the nation-wide or larger regional exchanges. Second, there were only three investment banks in South Dakota during the period and none of them listed bank stocks or even general stocks as their specialty. Third, the state's law likely made it hard for impersonal trades. Specifically banks were required to maintain a stock book with the names and locations of its stockholders that was available to view during all regular business hours. Moreover, the law required that banks advertise delinquent stock for sale in local newspapers.

While the state's laws were relatively constant over time, the installation of deposit insurance for state banks was the notable exception. South Dakota tried to install a voluntary deposit insurance system in 1909, but so few banks opted in that the system never started up. Instead, the state passed a mandatory deposit insurance law that became active in 1916.[8] In addition to raising the minimum capital level of banks, the law created a fund to repay depositors of failed banks. The deposit insurance was seen as a way to stabilize the banking system and

[7] This was a relatively high proportion of average wages. For instance, the NBER Macroeconomic database shows that the average teacher made $936 in 1920, the average postal worker made $1,844, and the average railway clerk made $1,681 which would all have been considerably higher than farmers and farm laborers earned.

[8] Each of the Great Plains states passed a law between 1908 and 1918: Oklahoma (1908), Texas and Kansas (1909), Nebraska (passed a law in 1909 but was not active until a second law was passed in 1911), and North Dakota (1918). Mississippi (1914) and Washington (1917) are the two geographic outliers that installed deposit insurance.

encourage banks to make additional loans to their communities. It also protected owners by reducing the risk of bank runs and the need for sudden liquidations.

The sample period was challenging for agricultural areas as a result of WWI price shock. During the war, European demand for U.S. crops drove up prices by 80-250%. The rise in prices caused farmers to borrow and new land to be purchased. Using South Dakota as a representative agricultural state, the number of farm acres rose by 33% between 1910 and 1920, and the value of farms rose by 147.2% in nominal terms and 20% in real terms.[9] However, when European farmers returned to the fields after the war, U.S. crop prices quickly fell back to their pre-war level. Farmers were caught over-extended leading to a wave of bankruptcies and an extended agricultural depression. Between 1920 and 1930, the number of farm acres in South Dakota grew by only 5.3% and the value of farms fell by 53.7% in nominal terms and 41.7% in real terms. Therefore, while much of the country was experiencing the Roaring 20s, the Great Plains continued to suffer without much recovery before the start of the Great Depression.

The connection between agriculture and banking is clearly visible during the crop price boom and bust. Not only did a sizable number of banks enter to help provide liquidity and loans to farmers (Jaremski and Wheelock 2020), but insured banks also expanded their assets and took on higher risk profiles during the late-1910s (Calomiris and Jaremski 2019).[10] The sudden collapse in prices then caused a series of bank failures as farm losses mounted. As seen in Figure 2, there was a sizable rise in South Dakota state bank assets between 1916 and 1920 followed by a decline through the rest of the period. The number of banks fell from 566 in 1921 to 303 in 1929 and the amount of assets fell by almost 42% in real terms over the same period. The decline in banks was sufficient to bankrupt the state's deposit insurance system. By late 1923, the South Dakota fund ceased paying out depositors of closed banks in cash, opting instead for certificates of indebtedness. The deposit insurance system was officially repealed in 1927 leaving behind sizable losses for depositors of those banks that closed after 1923.

[9] Rajan and Ramcharan (2015) discuss the effect of crop prices and banks on the run up of land prices.
[10] Similar results are found for other states as each of the deposit insurance systems in the country collapsed during the 1920s. See for instance, general summaries by Thies and Gerlowski (1988) or specific state studies by Hooks and Robinson (2002), Wheelock (1992), and Wheelock and Wilson (1995).

4. Timing and Characteristics of Rise in Stockholding

The South Dakota data allow for the calculation of several measures of stockholding. I start by examining the number of stockholders per bank.[11] The top panel of Figure 3 shows the unweighted average number of stockholders per bank rose from 8.0 in 1910 to 21.8 in 1934. Most of this rise occurs after 1924, but there is also a slight rise after WWI. The pattern is not driven by bank entry or exit as the results are similar for those banks that survived from 1910 through 1928. Further, population growth cannot explain either the overall rise in stockholders or its timing. South Dakota population grew by about 9 percent growth across each decade. As such, stockholding grew as a portion of the population, particularly after 1924.[12]

The distributions of the number of stockholders per bank in the bottom panel of Figure 3 show that the average increase in stockholders over time is not a result of large changes at a few banks. About 13.8 percent of banks had three or fewer stockholders in 1910, compared to 0.9 percent in 1920, and 0.4 percent in 1930. Moreover, the percent of banks with 35 or more stockholders rose from 1.0 percent in 1910 to 2.4 percent in 1920 and 14.0 percent in 1930. Therefore, most banks experienced a rise in stockholders over the 1910s and a much larger rise over the 1920s.

Figure 4 sheds light on who the new investors were by calculating the average fraction of stockholders that lived fewer than 15 miles away from the bank in the top panel and the average fraction of stockholders that had the same last name (i.e., those likely to be in the same family) in the bottom panel.[13] In each case, I calculate the unweighted average with and without banks that had three or fewer stockholders because the proportions for these banks display large swings due to even a single stockholder change. The top panel shows a rapid increase in the fraction of local owners after 1924. The bottom panel shows the fraction of stockholders in a bank sharing the same last name was steadily decreasing over time, but much of the decline between 1910 and 1918 was driven by the handful of banks with three or fewer stockholders. The stockholder boom of the 1920s was thus driven by local individuals that were not already connected to the bank through their family.

[11] Similar patterns are found when using the median or dropping the few banks with several hundred stockholders.
[12] It is important to note that the number of stockholders rose over the period relative to population despite the declining number of banks.
[13] The rise in stockholders was primarily driven by those located in the town itself. Therefore, the exact mileage cutoff does not play a large role.

I next examine the concentration of bank ownership in Figure 5 using three measures: (1) the fraction of stock owned by the largest stockholder, (2) the fraction of stock owned by directors of the bank, and (3) the Herfindahl-Hirschman Index (HHI). Each measure provides a slightly different view on control of the bank. However, based on all three measures, the concentration of ownership declined for most of the period, but the decline occurred most strongly after 1924. On average, between 1910 and 1934, the fraction of stock owned by the largest stockholder dropped from 41.9% to 36.8%, the fraction of stock owned by the directors of the bank dropped from 79.6% to 62.0%, and HHI dropped from 30.5% to 24.2%. Therefore, the new stockholders diluted concentration, but the ownership of many banks remained in the hands of a few.

Next, I examine whether the increases came from new issues of capital rather than purchases of previously-issued stocks. While I cannot observe stock transfers, I can observe when banks increased the value of their capital. I, therefore, separate periods when a bank increased their number of stockholders by whether the bank also increased the value of its capital. Of the stockholder increases between 1910 and 1928, only 23% correspond to increases in capital. There is, however, some positive correlation between the number of new stockholders and a change in capital. For instance, 34% of the increases in 2 or more stockholders correspond to a capital increase and 42% of increases in 3 or more stockholders correspond to a capital increase. Most of the increases in stockholding, therefore, were related to existing stockholders selling off some of their shares, but as would be expected, some of the larger increases in stockholders correspond to new shares of banks being issued.[14]

Looking at the correlation over time, Figure 6 shows that the most of the stockholder increases that corresponded to capital changes occurred in the 1910s. This decade corresponds to the increase in minimum capital requirements and the WWI agricultural price boom. Likely as a result of the agricultural price decline, the 1920s have relatively few increases in capital requirements despite the many increases in stockholders. The top panel indicates that increases in stockholders were common throughout the period, whereas the bottom figure shows the fraction of changes in the 1910s was much smaller than in the 1920s when single stockholder increases are removed.

[14] Interestingly, one of the largest increases in number of stockholders occurred when a bank decreased its capital.

Contrasted with the relatively steady growth of population, the distinct timing of the rise in stockholders begs the question of what might have caused it. There are a couple of competing but not necessarily mutually exclusive hypotheses. Specifically, 1924 marks the collapse of the deposit insurance system during the agricultural depression that followed WWI. The rise, therefore, could be the result of undiversified owners reducing their double liability exposure without the protection of deposit insurance and after years of loses. Alternatively, stock prices and other market rates had begun to accelerate across the country during the mid-1920s, potentially pulling more investors into the market. If the former story was true, then we would expect the largest stockholder gains to be in areas where risk was more of a factor and diversification opportunities were limited. If the latter story was true, then we would expect a more uniform rise in stockholders across the state.

To help shed light on its cause, I thus examine whether the rise in stockholders was isolated to particular types of banks or locations. Highly capitalized banks and those located in larger cities were often better equipped to diversify their investments and liquidity sources. In fact, in states with voluntary deposit insurance (e.g., Washington and Kansas), those banks that opted out of the system were often larger banks in populated cities. Further, stockholders at banks that were removed from the largest agricultural shocks likely had fewer losses and more confidence maintaining their concentrated holdings.

Figures 7, 8, and 9, therefore, examine the pattern in stockholding behavior when separating banks by: (1) their maximum capital level across the sample period, (2) whether they were located in a county with a populated place of 2,500 or more, or (3) whether they experienced an above median crop price shock during WWI.[15] The figures show that while large and urban banks have more stockholders and less concentrated ownership in general, they display the same general pattern in stockholder behavior over time as other banks. Potentially as a mechanical result of size, the rise in the number of stockholders was slightly greater for larger, urban banks, while the fall in stockholder concentration was greater in small, rural banks. Also banks that experienced above median crop price shocks during WWI saw larger increases in stockholders and declines in concentration over the period, but other banks also see substantial

[15] I split banks based on capital I use each bank's maximum capital across all years. To calculate the crop price shock, I use the approach in Jaremski and Wheelock (2020) by applying the value of crops produced in 1910 at 1918 prices relative to the value of crops produced in 1910 at 1910 prices. Banks are separated by the median price shock 205%, but there are not sizable changes if other similar cutoffs are used. It should be noted that South Dakota counties have a relatively homogeneous mix of crops and thus the cross-sectional variance in the index fairly low.

changes after 1924. These figures thus do not clearly isolate the "main" reason for the sudden uptick in stockholding, and if anything suggest that both the collapse of deposit insurance and the general rise in investing over the period were likely responsible.

5. Effect of Rise in Stockholding on Bank Composition

The data show a dramatic rise in the number of stockholders per bank over the period, but did it alter the behavior of banks? As highlighted in the introduction, large stockholders likely had a vested interest in spending the time to watch over and protect their investment, compared to smaller and potentially uninformed investors. This is especially relevant given the requirement of double liability of stockholders. I, therefore, next examine the effect of stockholding on bank balance sheets using a Panel Vector Autoregression (PVAR). The approach is important as the characteristics of a bank could have attracted more stockholders just as more stockholders could have influenced a bank's characteristics. The PVAR provides benefits of two different types of analysis. The VAR methodology enters the variables into a system of equations as endogenous, enabling the estimation of the bi-directional relationships between them, while the panel methodology controls for unobserved heterogeneity across banks and across time using bank and time-fixed effects. The identifying variation thus comes from changes over time at the bank level, and the first two lags of each variable are used as instruments to obtain more reliable results (Holtz-Eakin, Newey, and Rosen 1988).

I focus on the most important observable aspects of the bank's balance sheets. First, I examine a bank's size using the logarithm of its assets. Second, I examine a bank's risk and illiquidity using its ratio of loans to assets. Third, I examine a bank's buffer against losses using its ratio of capital and surplus to assets. I also estimate the model for two different measures of stockholders: (1) the logarithm of the number of stockholders, and (2) the fraction of the bank's capital owned by the largest stockholder. Estimated using a generalized method of moments (GMM) framework[16], the series of equations is:

$$Y_{it} = \boldsymbol{\alpha} + \Omega\, Y_{i,t-l} + t_t + u_i + e_{it} \qquad (1)$$

where Y_{it} is the vector of endogenous variables (a measure of stockholders, the logarithm of bank assets, the ratio of loans to assets, and the ratio of capital and surplus to assets), $Y_{i,t-l}$ is a set

[16] GMM helps avoid concerns of a Nickell bias (1981) due to the length of the sample period relative to the cross-section.

of lags for each of the dependent variables, t_t is a vector of time-fixed effects that capture common, year-specific shocks across all banks, u_i is a vector of bank-specific fixed-effects that capture any unobserved, time-invariant bank characteristics, and e_{it} is a robust error term. Bank-fixed effects are removed using forward orthogonal deviation (the Helmert procedure) and time-fixed effects are removed by subtracting each variable's cross-sectional means before estimation. I select one lag due to the limited number of biennial observations per bank but find similar results across additional lag specifications. I also confirm that the system satisfies the necessary stability conditions using a unit root test.

The removal of bank and time-fixed effects are important to identifying the effect of stockholding on bank outcomes. First, underlying locational characteristics such as local population or the concentration of farming are likely to influence bank portfolios and the availability of stockholders. In this way, removing bank-fixed effects is necessary to separating factors that led to the initial portfolio and stockholders of a bank from the effect of stockholder changes on bank portfolio changes (or vice versa). Second, as discussed above, the period witnessed a dramatic boom and bust in agricultural crop prices surrounding WWI. These changes substantially impacted the wealth of individuals in the community and the operation of banks. Removing year-fixed effects, therefore, avoids conflating bank changes in response to agricultural prices changes with banks changes in response to stockholder changes.

I estimate equation (1) using a balanced panel of banks from 1910 to 1928 to avoid the variation due to exiting and entering banks as well as other structural changes to investment markets during the Great Depression.[17] I display the results in two ways. First, Table 2 provides the estimated coefficients of equation (1) along with Granger Causality tests. Granger Causality tests display whether one variable can significantly improve the forecast of another variable over and above that variable's own values. Second, Figures 10 and 11 display the orthogonalized impulse response functions (IRFs) from the estimates in Table 2 using the two measures of stockholding.[18] The IRFs display the effect of a one-time positive shock to either the number of

[17] While unreported, the results of equation (1) are similar when extending the balance sample to 1930 or 1932. When using an unbalanced panel, the effect of the number of stockholders is similar but the effect of stockholder concentration is statistically weaker. The weakened effect of concentration is driven by banks that closed before the decline in concentration in after 1924.

[18] The Cholesky ordering in the displayed figure is assets, loans to assets, capital to assets, and stockholders to reduce the effect of stockholders. However, because the model finds no significant effect from assets, loans, or capital to stockholders, ordering the number of stockholders higher does not significantly change the results.

stockholders or the fraction of capital owned by the largest stockholder on the other variables in the system over time.

Table 2 shows that there is little bidirectionality across the system[19]. The number of stockholders, the fraction owned by the largest stockholder, and the ratio of capital and surplus to assets are not Granger caused by any other variable. When including the number of stockholders in the model, the model estimates that the loans-to-asset ratio is Granger caused by the number of stockholders and the amount of assets, but the amount of assets and number of stockholders is not Granger caused by any other variable. Alternatively, when including the fraction owned by the largest stockholder, the model estimates that the loans-to-asset ratio is Granger caused by the fraction owned by the largest stockholder and the amount of assets, but in this case, the amount of assets is not Granger caused the fraction owned by the largest stockholder. As expected, the effect of the number of stockholders is opposite that of the fraction owned by the largest stockholder. Specially, the number of stockholders is positively associated with the loans-to-assets ratio, while the fraction owned by the largest stockholder is negatively associated with the loans-to-assets ratio and the amount of assets.

On top of the use of lagged values as instruments, this lack of reverse Granger causation suggests there is an underlying relationship between the increase in stockholders and the rise in the loan to asset ratio and declined. Nevertheless, the model should not be translated in stark causality terms without a source of completely exogenous stockholding behavior. Rather these tests suggest the direction and size of a relationship between the variables while explicitly accounting for much of the endogenous behavior, aggregate changes occurring across all banks, and constant differences across individual banks over time.

Based on the coefficients in Table 2, Figure 10 shows the impulse response of total assets, loans to assets, and capital and surplus to assets to a one standard deviation positive shock to the number of stockholders, whereas Figure 11 shows the same relative to a one standard deviation in the fraction owned by the largest stockholder. I focus on these responses because they provide the cleanest approximation of what the model would predict to happen during the rise in stockholding in the 1920s. Matching the model's coefficients and Granger Causality tests, the effect of a rise of stockholders on total assets and capital and surplus to assets is effectively zero, while its effect on loans to assets is positive, significant, and lasts over four biennial

[19] Similar results occur when using HHI instead of the fraction owned by the largest stockholder.

periods. Similarly, the effect of a rise in the fraction of capital owned by the largest stockholder has a effectively zero effect on capital and surplus to assets but negative effects on loans to assets and total assets. Thus, the data suggest that the rise in local stockholders and decrease in concentration over the period increased the proportion of loans that banks were willing to provide and potentially the level of assets, but not necessarily the proportion of capital.

As highlighted by Wainright (1953), Lamoreaux (1994) and others, this relationship between stockholders and loans could be driven by historical banks favoring insiders for loans. Lacking information on loans to directors, I cannot directly test whether insider lending was responsible for the relationship.[20] The results match Bodenhorn (2013) who shows that banks with fewer large block shareholders made more loans, but not Bodenhorn (2014) who shows that banks with more stockholders had higher capital ratios. The lack of a positive correlation between the number of stockholders and the capital ratio, however, is the result of studying changes over time at individual banks rather than cross-sectional patterns across banks. In the cross-sectional results seen in Appendix Table A1, South Dakota banks show a strong positive correlation between the contemporaneous capital ratio and the number of stockholders. In this way, stockholders might have been initially attracted to banks with high capital ratios but the additional stockholders did not lead to a further rise in the capital ratio. The difference in results indicates why a panel is necessary to remove the fixed differences among banks over time.

6. Effect of Stockholding on Bank Stability

Having found that the rise in stockholding is correlated with an increase in a bank's proportion of loans, the next question is whether it is also associated with a bank's probability of closure. The expansion of stockholding could have had both an indirect and a direct effect on risk. First, as shown in the previous section, it led to a higher proportion of loans which could have indirectly led to a higher probability of closure. For instance, the ratio loans to assets has been shown to have a negative effect on bank stability and the value of assets has been shown to have a positive effect on bank stability in a large number of previous empirical studies. Second, less concentrated stockholding could lead to worse management and more risky investments even holding portfolio composition fixed. In this way, we need to test whether each balance

[20] Hilt (2008) also finds that large stockholders at many types of historical firms were utilizing their firm's resources for their own benefit.

sheet factor matter alongside the stockholding variables to examine both types of effects on risk-taking.

Similar to those estimated by others for the period (White 1984; Wheelock and Wilson 1995; Jaremski 2018; Jaremski and Wheelock 2020), I model closure as a function of various balance sheet measures intended to capture bank performance and risk. Specifically, closures are modeled using a Cox Proportional Hazard Model:

$$Closure_{i,t} = a + \beta_1 Stockholders_{i,t-2} + \beta_2 BalSheet_{i,t-2} + \beta_3 X_{c,t-2} + t_t + e_{i,t} \quad (2)$$

where $Closure_{i,t}$ is an indicator variable for whether bank *i* closed during the following biennial period, $Stockholders_{i,t-2}$ is the vector of stockholder measures including the logarithm of the number of stockholders in bank *i* at the beginning of the biennial period the fraction owned by the largest stockholder in bank *i* at the beginning of the biennial period, and the fraction of stockholders who live within 15 miles of bank *i* at the beginning of the biennial period, $BalSheet_{i,t-2}$ is a vector of balance sheet characteristics of bank *i* two years at the beginning of the biennial period including the logarithm of assets, loans to assets, cash and due from banks to assets, capital and surplus to assets, and surplus to capital and surplus, $X_{c,t-2}$ is a vector of county-specific census control variables for county *c* at the beginning of the biennial period including the logarithm of the county's population, the logarithm of the number of farms in the county, the fraction of farm acres planted in wheat, the fraction of the county that is non-white, and the crop price index of the county based on 1910 production, and e_i is the error term is clustered by county.

Table 3 provides the estimated hazard ratios of equation (2). The table begins without including measures of stockholding to view the effect of the various balance sheet factors separate from other factors. These initial results show that South Dakota banks with more loans to assets and capital to assets or less reserves and profit to capital and profit were more likely to close during the period. The coefficients on the balance sheets remain relatively stable regardless of the stockholding variables added to the models. Columns (2) through (5) proceed by adding various stockholding measures followed by the inclusion of them all. The estimates provide no statistically significant direct effect of stockholding on closure, suggesting that the concentration of stockholding in the South Dakota sample did not dramatically increase the probability of closure for banks outside of its effect on the balance sheet ratios.

7. Conclusion

During the 1910s and 1920s, American securities markets exploded as a result of widespread investment. Scholars have long argued that this democratization was the dawn of a new age in investing, but the timing of the rise and its effect on bank risk-taking has never been analyzed systematically. Using unique bank-level data for South Dakota, I find that there was a substantial rise in the number of bank stockholders after 1924. The bulk of the rise came from local investors without a previous family connection to the bank. The rise, however, was not sufficient to reduce the concentration of ownership down to modern levels. In fact, several smaller banks remained with fewer than 10 stockholders and high concentration even at the end of the sample period, suggesting it was only the start of a longer stockholder expansion in South Dakota. The data suggest that there are roles both for a general shift towards investing as well as for the stockholders seeking diversification after collapse of deposit insurance system in explaining the rise of stockholding.

Further, I show that the rise in stockholders is correlated with an increase in banks' loans to asset ratio, and in cases where concentration was significantly lowered, an expansion of bank assets. Confirmed by closure regressions, a simple increase of stockholders might have weakened a bank whereas a reduction of concentration could have offered some protection in terms of additional assets. Neither the number of stockholders nor the level of concentration are directly associated with bank closure once all variables are controlled for.

South Dakota's data availability is unique in that it provides information on all stockholders for each bank over the period of increased investing. The agricultural and rural aspects of the state make it hard to clearly extrapolate to the wealthier manufacturing and financial centers elsewhere in the country that likely experiences much larger investment growth, but the data still provide new insights into the expansion of American stockholding and its effect on banking. Going forward, the data will also enable other studies into the nation's rise in stockholding by allowing a linking of the specific stockholders with their Census records. While the painstaking matching process will take some time to complete, the combination of data will allow an examination of the characteristics of people who owned bank stock before the sudden growth in 1924 and how those characteristics of investors changes across time as more people became involved.

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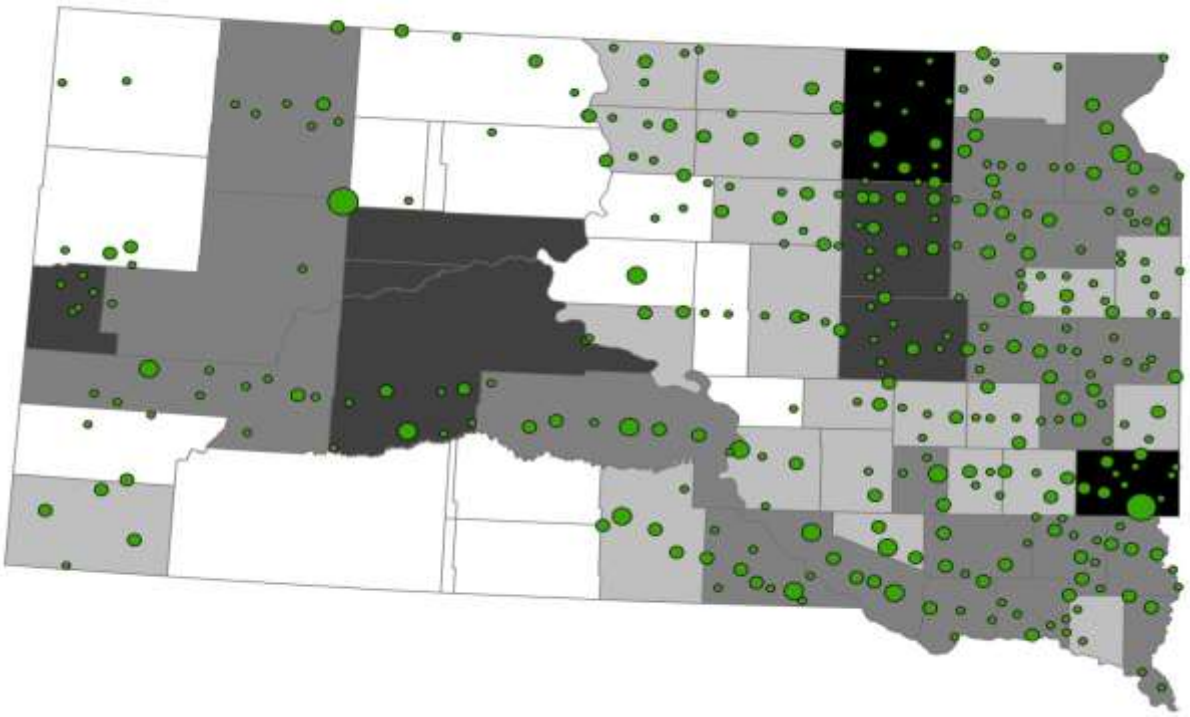
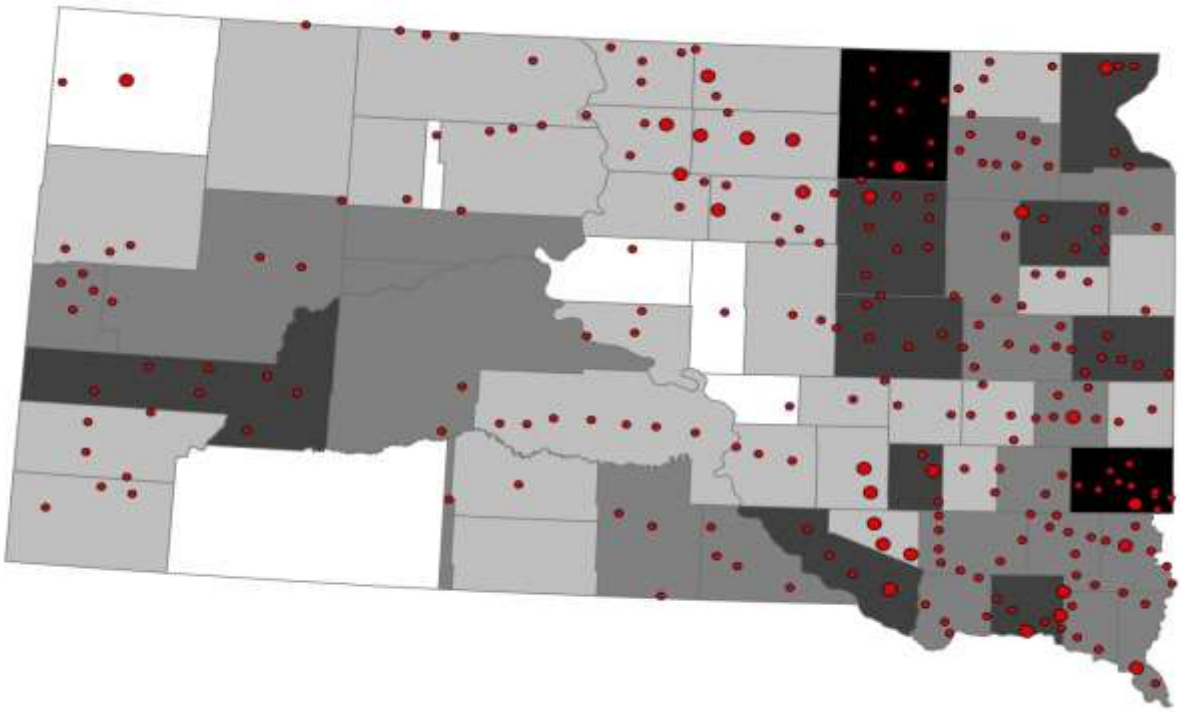
Figure 1: Banks and Population in South Dakota
Panel A: 1910

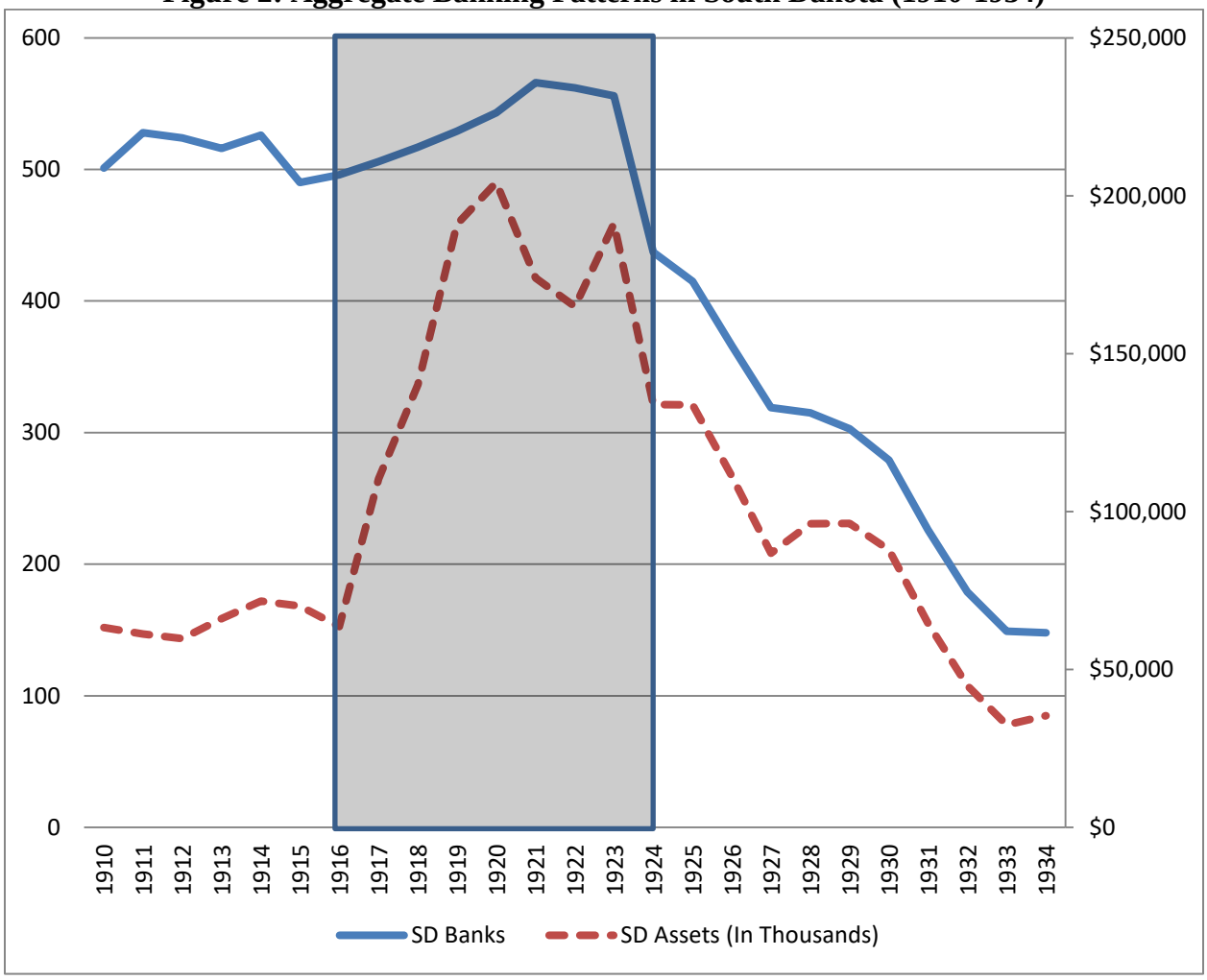


Panel B: 1930



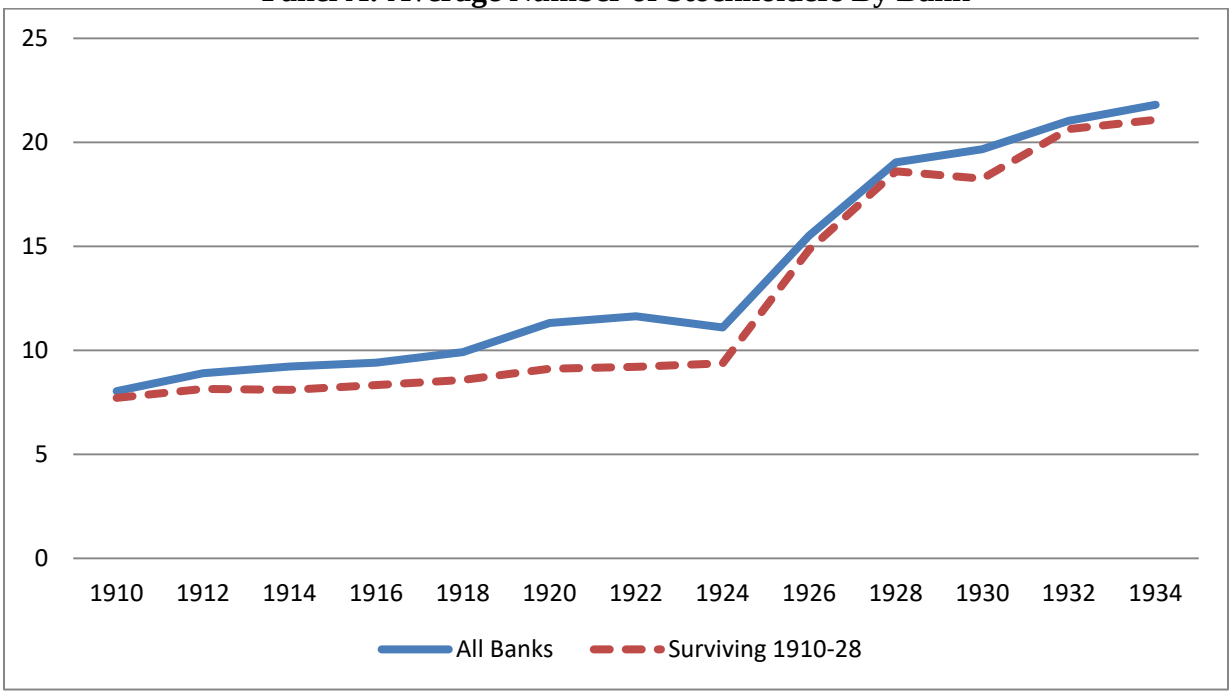
Notes: The maps provide the population of each county and locations of banks in each year. The size of the dots denote the number of banks in each location. Boundaries were obtained from Minnesota Population Center (2004).

Figure 2: Aggregate Banking Patterns in South Dakota (1910-1934)

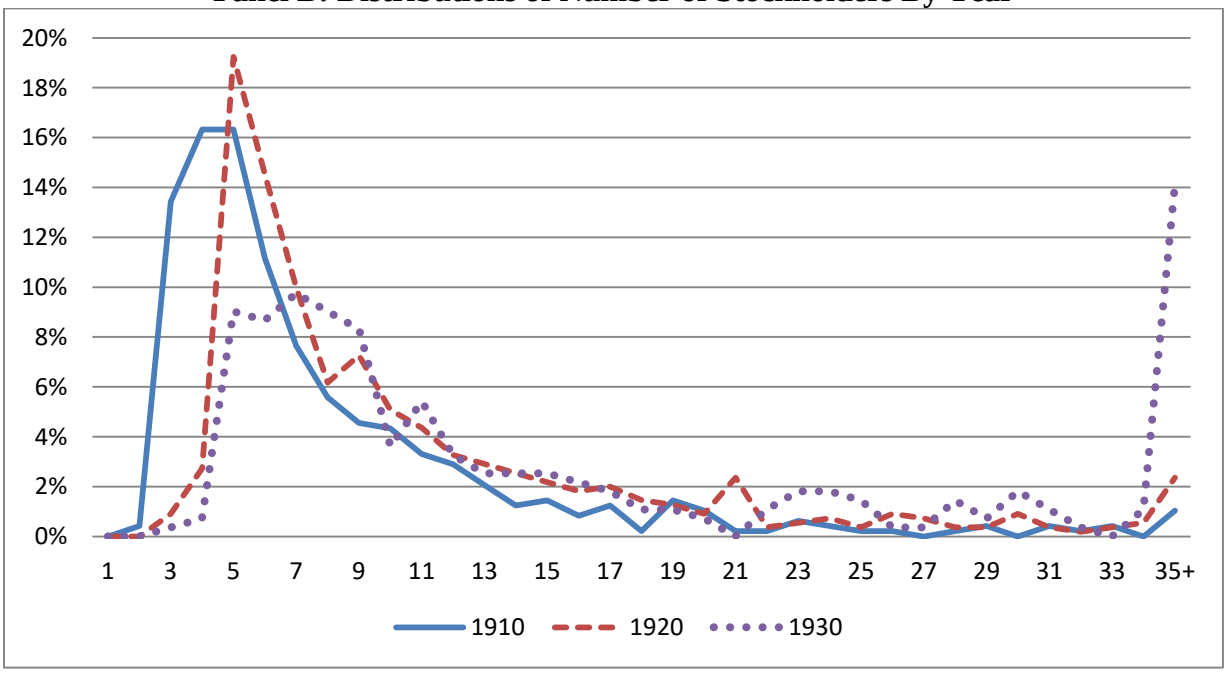


Notes: The figure provides an aggregate view of banking in South Dakota during the sample period. The shaded region highlights the period when deposit insurance was active and solvent in the state.

Figure 3: Stockholding Patterns (1910-1934)
Panel A: Average Number of Stockholders By Bank

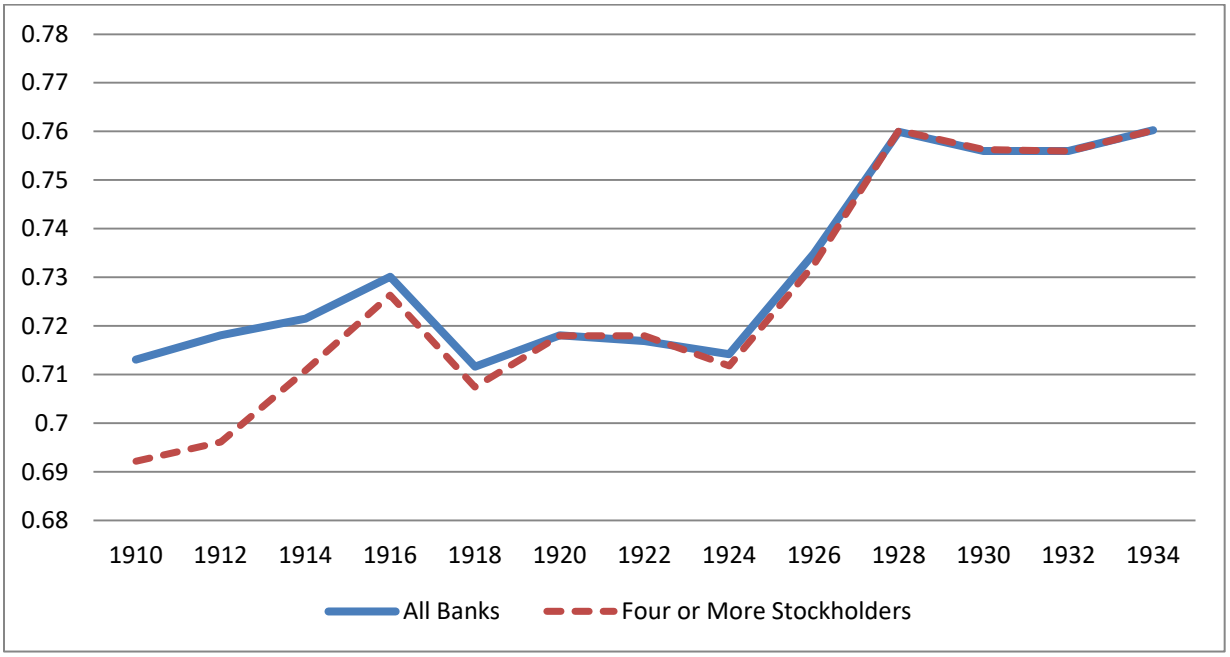


Panel B: Distributions of Number of Stockholders By Year

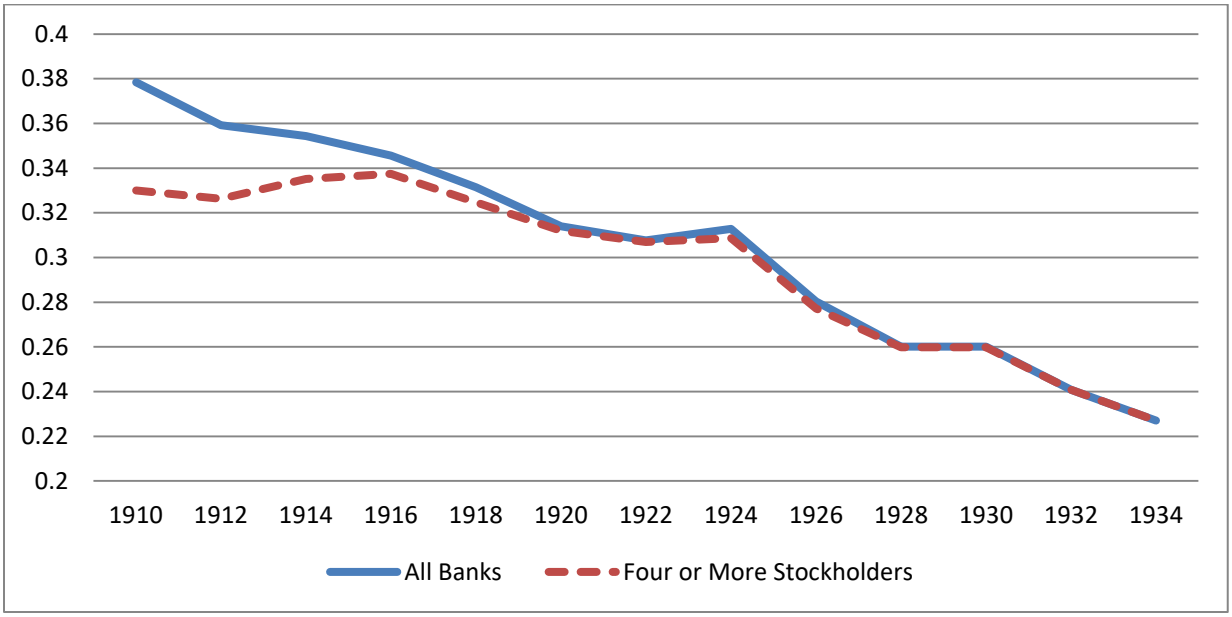


Notes: The top panel provides the unweighted average number of stockholders in South Dakota state banks each year. "All Banks" denotes all South Dakota banks, whereas "Surviving 1910-28" denotes a sample of banks that were present in each year from 1910 to 1928. The bottom panel provides the full distribution of the number of stockholders per bank in the specified years. The distributions are top coded at 30 for ease of viewing.

Figure 4: Characteristics of Stockholders (1910-1934)
Panel A: Fraction of Stockholders Located Within 15 Miles of Bank



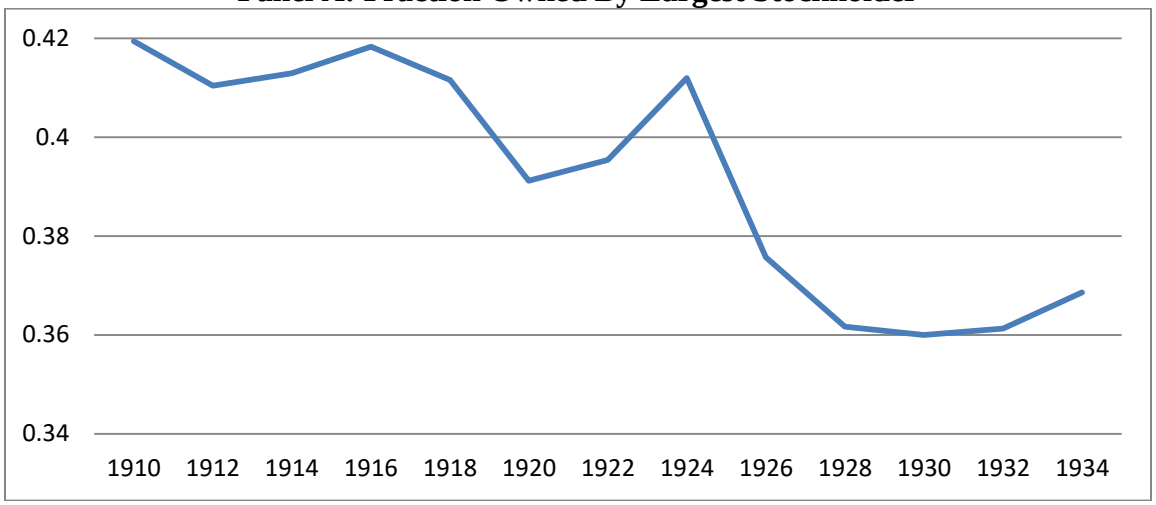
Panel B: Fraction of Stockholders with Same Last Name



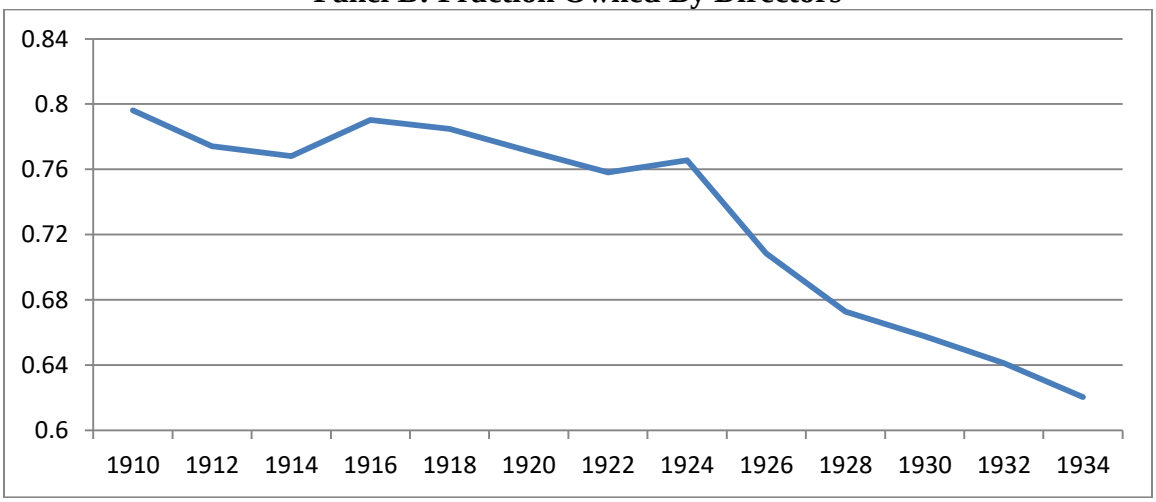
Notes: The top panel provides the unweighted average fraction of stockholders in a bank that were located within 15 miles of the bank's location, whereas the bottom panel provides the unweighted average fraction of stockholders in a bank that had the same last name. "All Banks" denotes all South Dakota banks, whereas "4 or More Stockholders" denotes a sample of banks that had at 4 or more stockholders.

Figure 5: Measures of the Concentration of Bank Ownership (1910-1934)

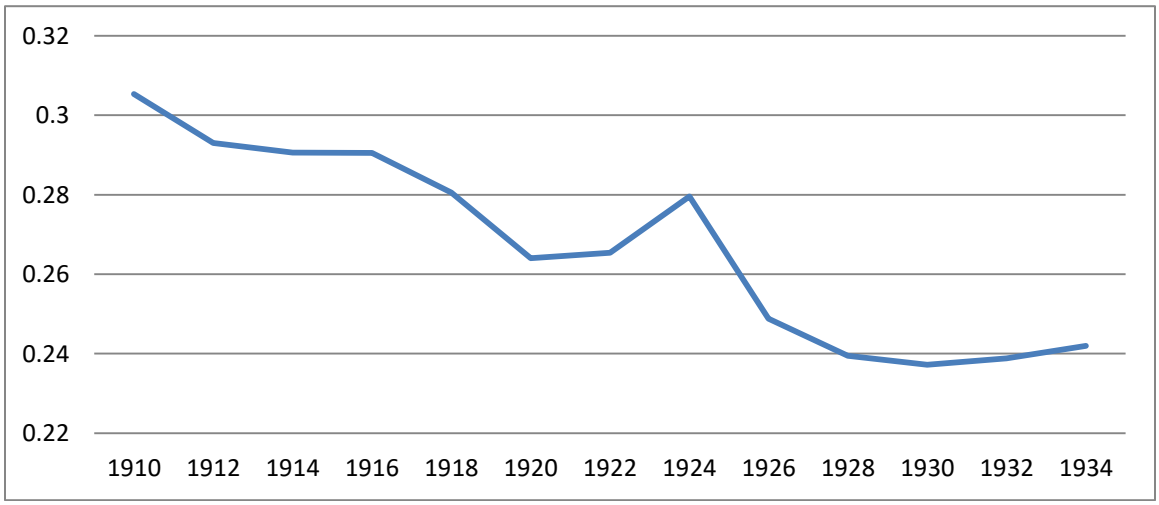
Panel A: Fraction Owned By Largest Stockholder



Panel B: Fraction Owned By Directors



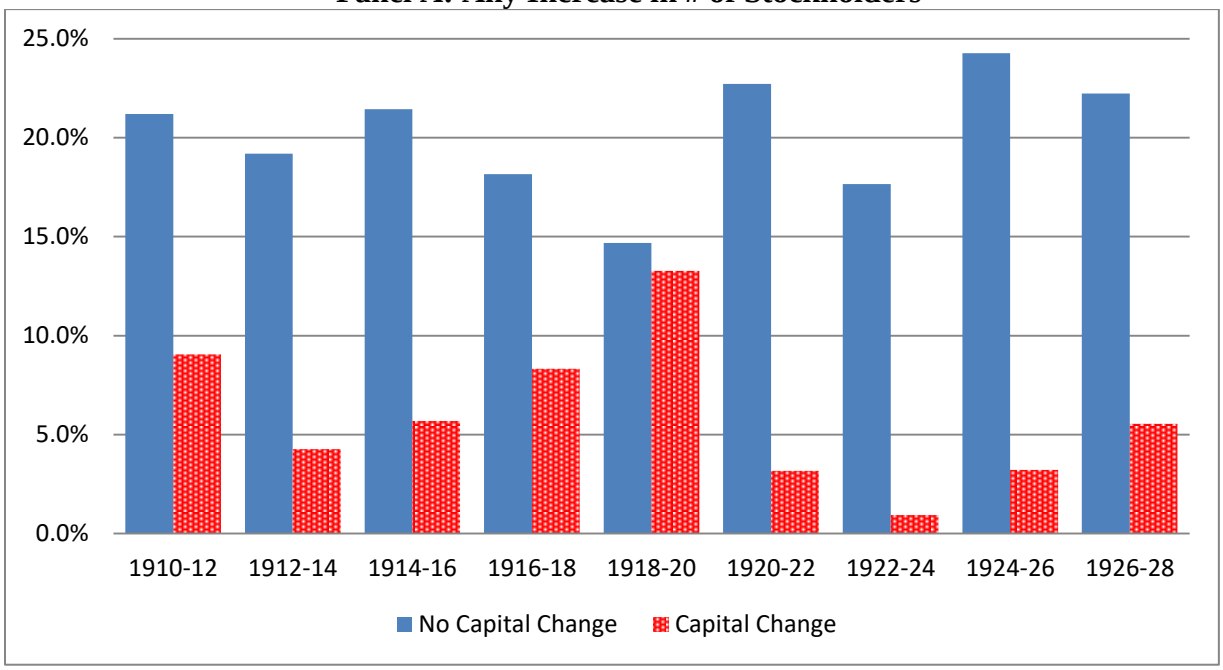
Panel C: HHI Index of Stockholders



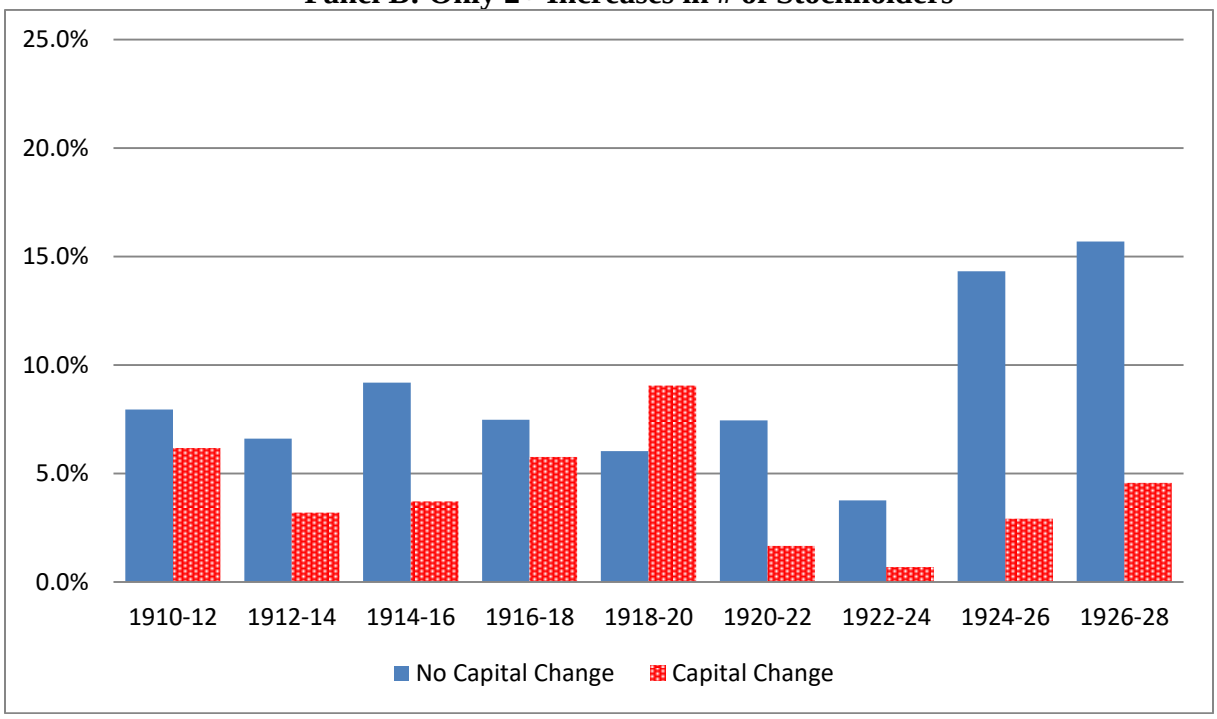
Notes: The panels provide the unweighted averages of each bank's fraction of the value of stock owned by the largest stockholder, fraction of the value of stock owned by directors, and Herfindahl-Hirschman Index (HHI).

Figure 6: Fraction of Banks With An Increase in Stockholders (1910-1928)

Panel A: Any Increase in # of Stockholders

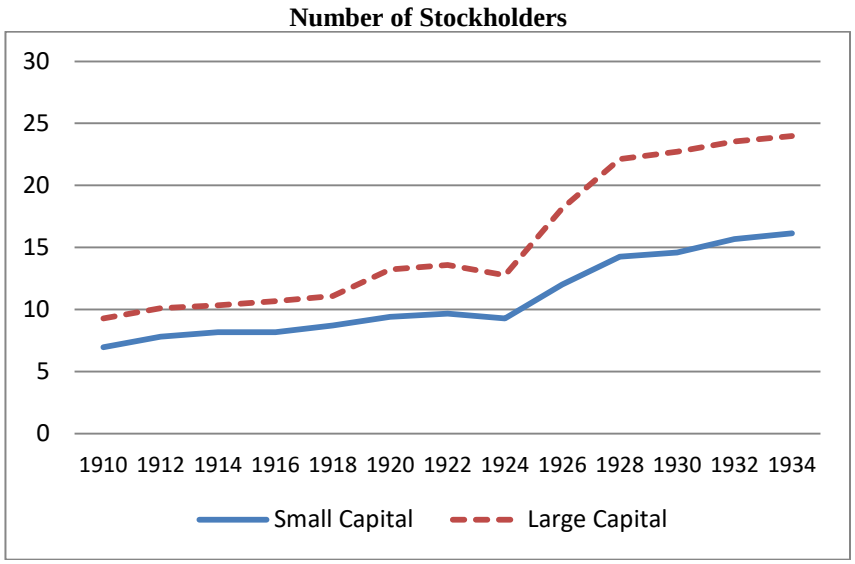


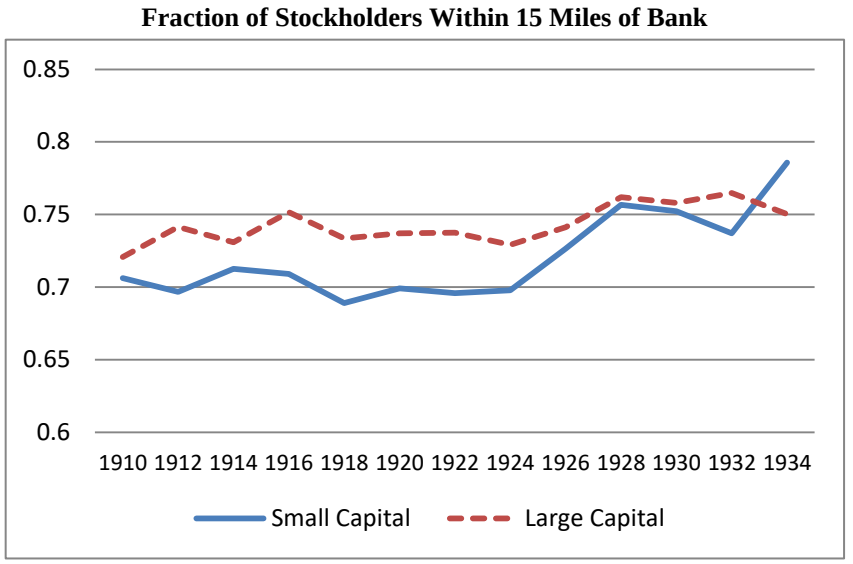
Panel B: Only 2+ Increases in # of Stockholders

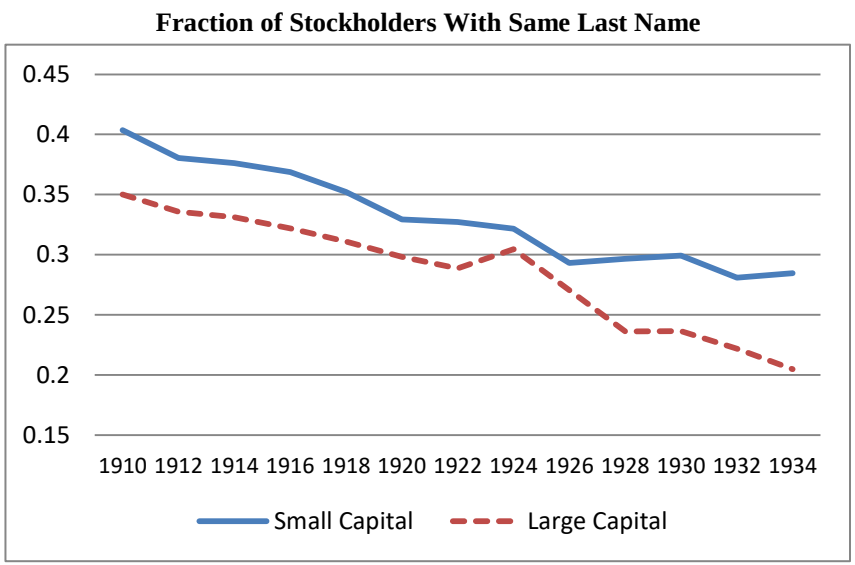


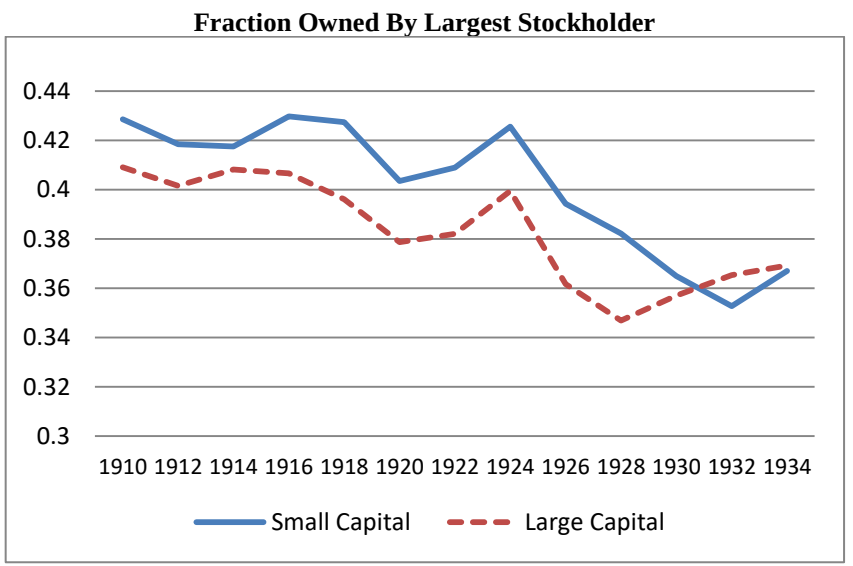
Notes: The panels isolate periods when a bank increased their number of stockholders over the two-year period, and separate those observations by whether the bank also had an increase in capital. The top panel focuses on all stockholder increases, whereas the second drops observations where stockholders increased by one.

Figure 7: Separating Stockholder Patterns By Median Capital Stock (1910-1934)



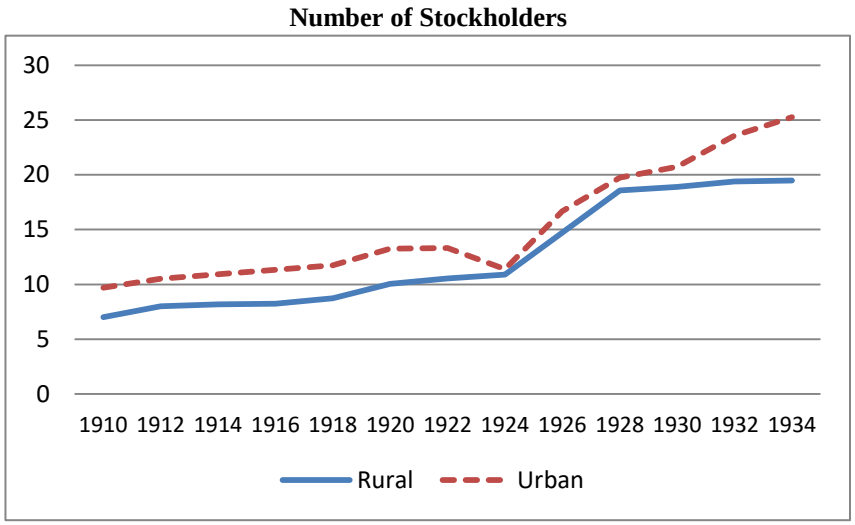


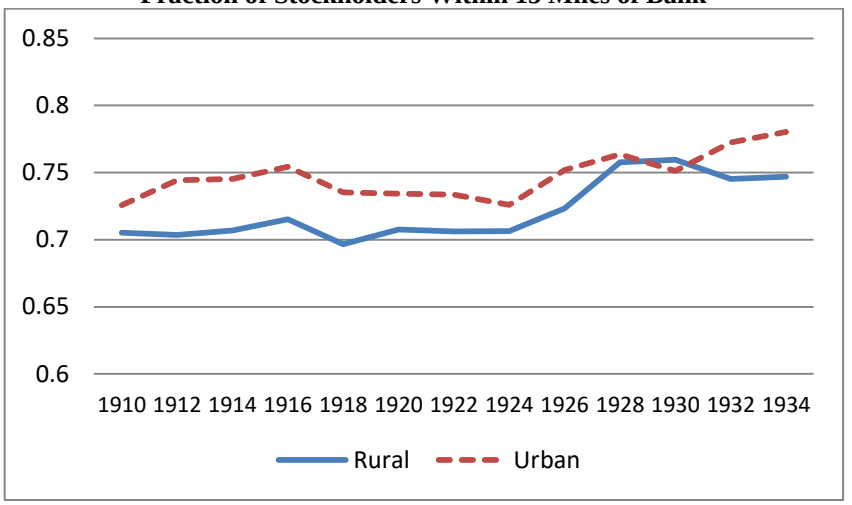


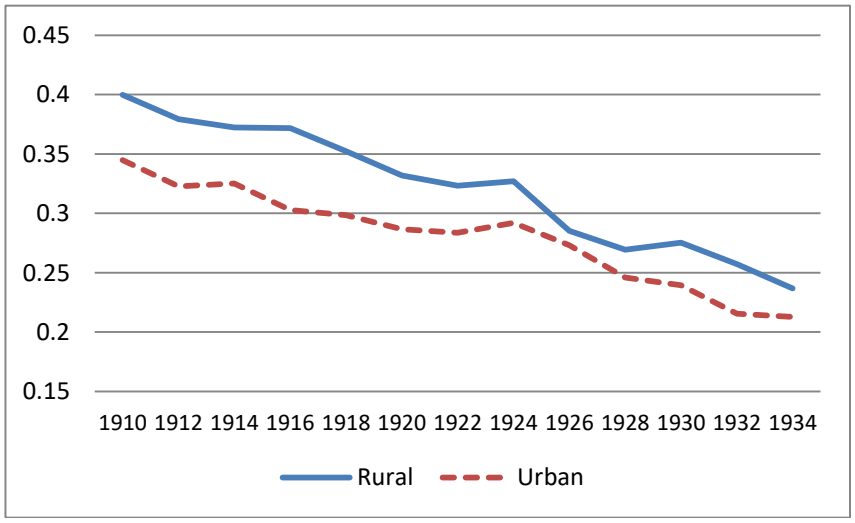


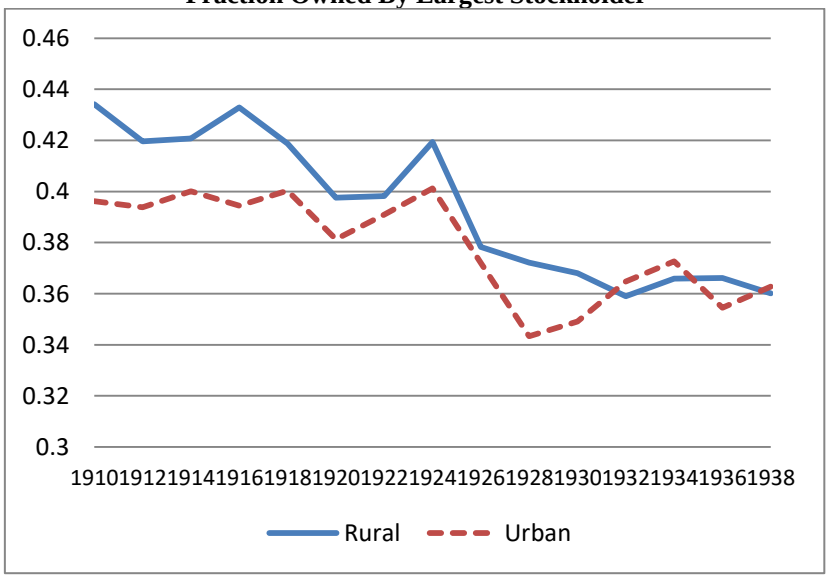
Notes: The panels provide the specified measures split by whether the bank was in the top half of the capital distribution (i.e., "Large Capital") or the bottom (i.e., "Small Capital") based on its maximum capital level in the sample.

Figure 8: Separating Stockholder Patterns By County Urban Status in 1930 (1910-1934)



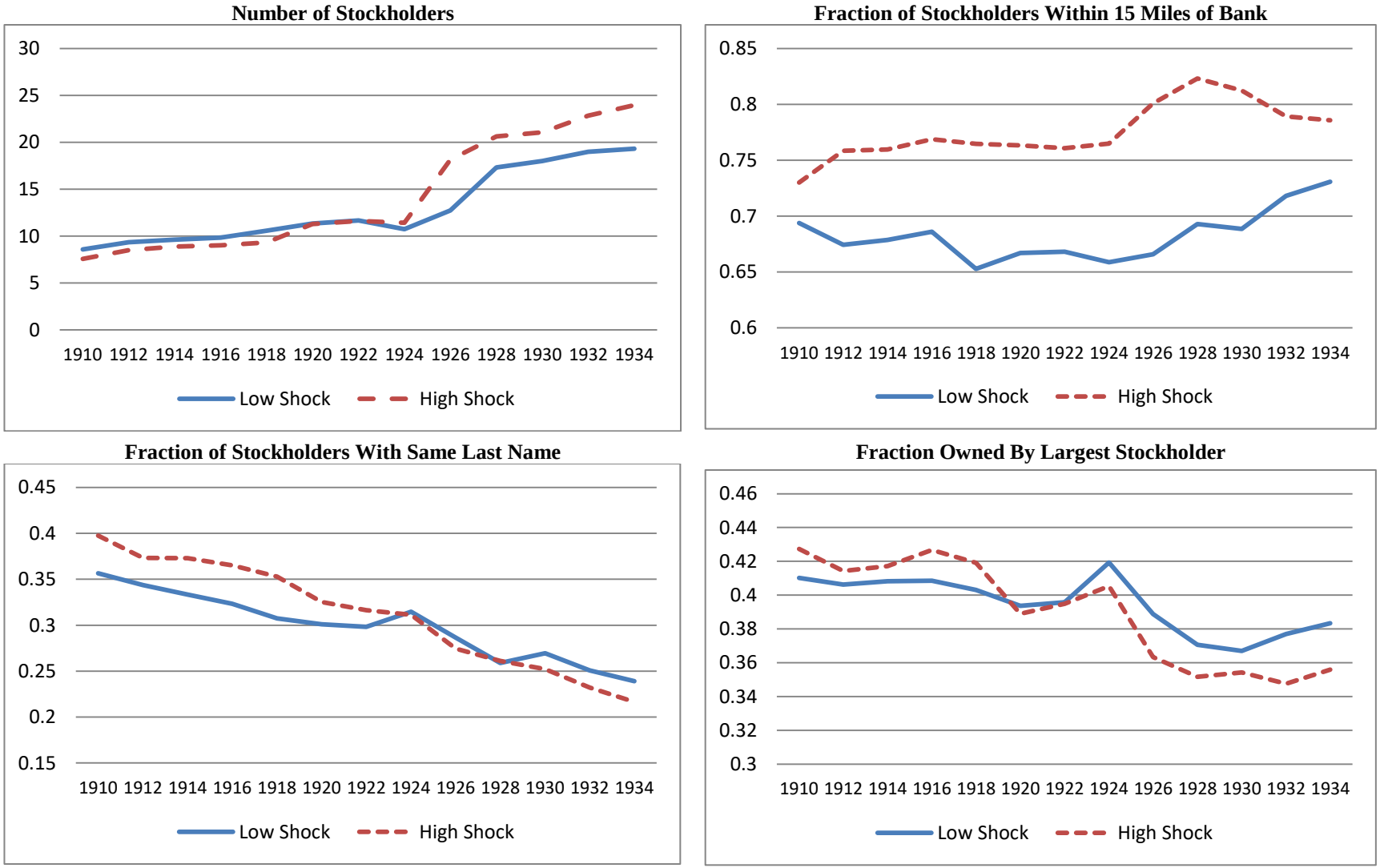






Notes: The panels provide the specified measures split by whether the bank was in a county that had an urban location of 2,500 or more people by 1930.

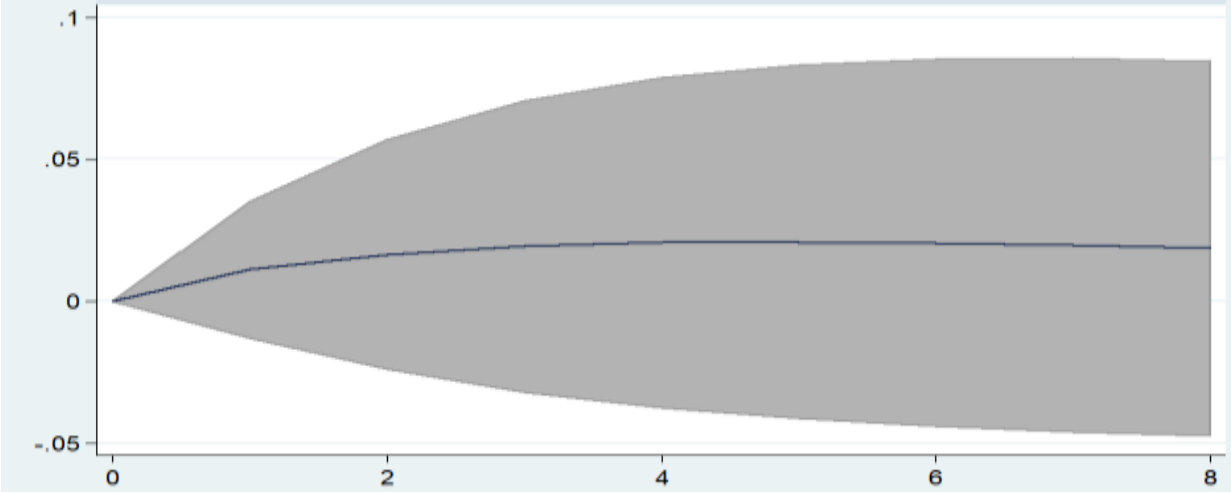
Figure 9: Separating Stockholder Patterns By WWI Agricultural Price Shock (1910-1934)



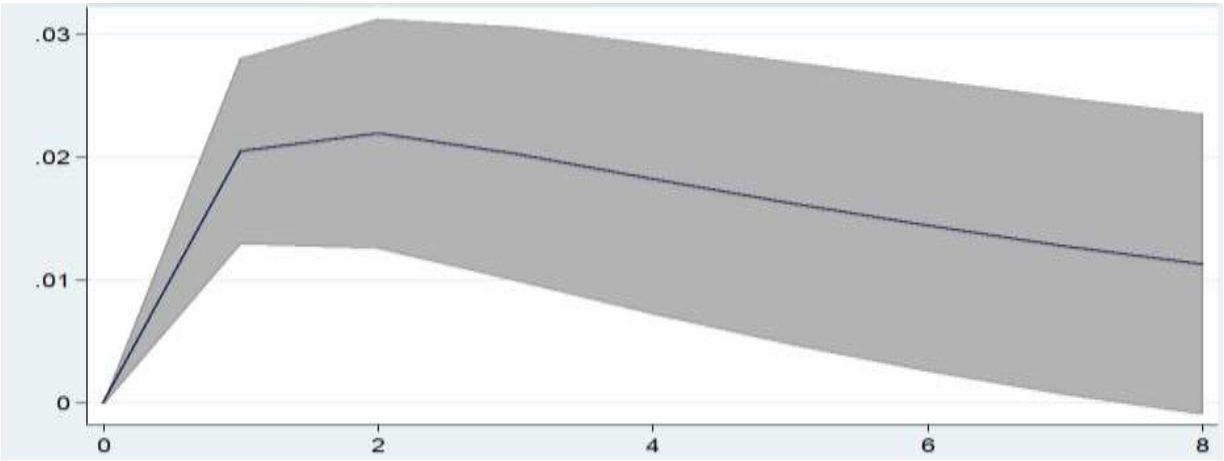
Notes: The panels provide the specified measures split by whether the bank was in a county had an above median agricultural price shock between 1910 and 1918.

Figure 10: Impulse Response Functions to a Positive Shock to Stockholders

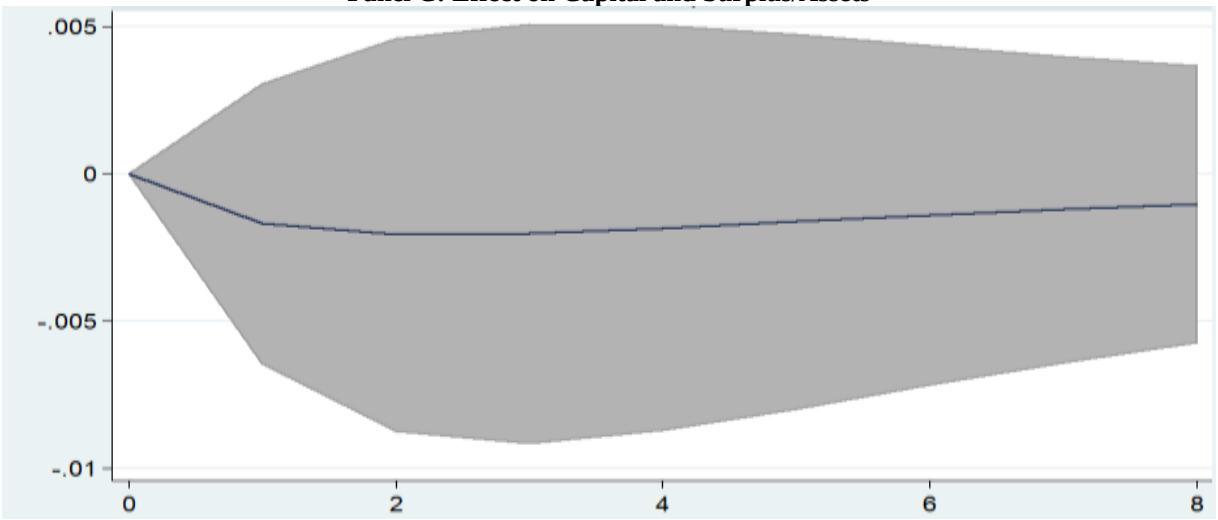
Panel A: Effect on Ln(Assets)



Panel B: Effect on Loans/Assets



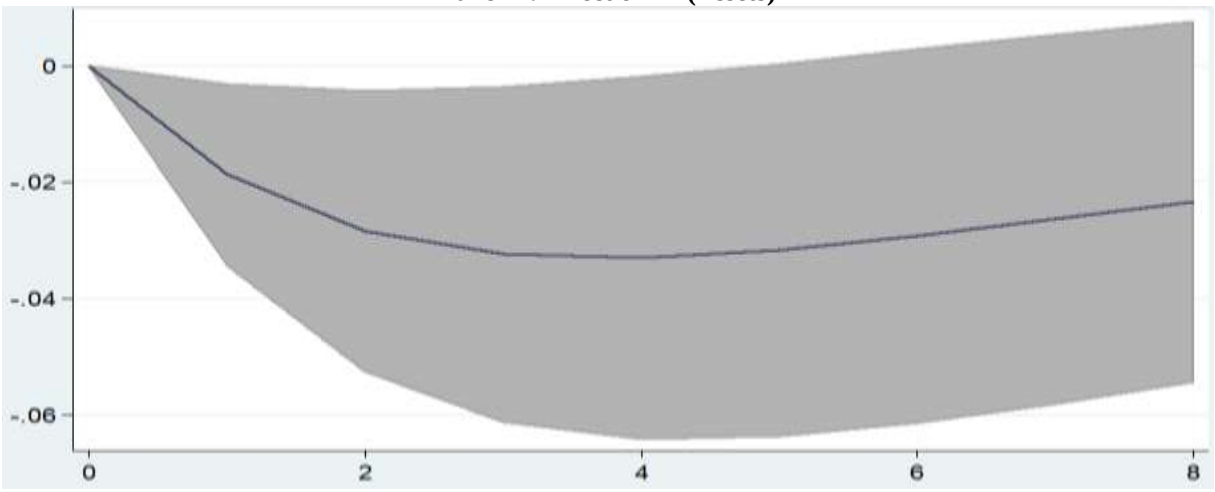
Panel C: Effect on Capital and Surplus/Assets



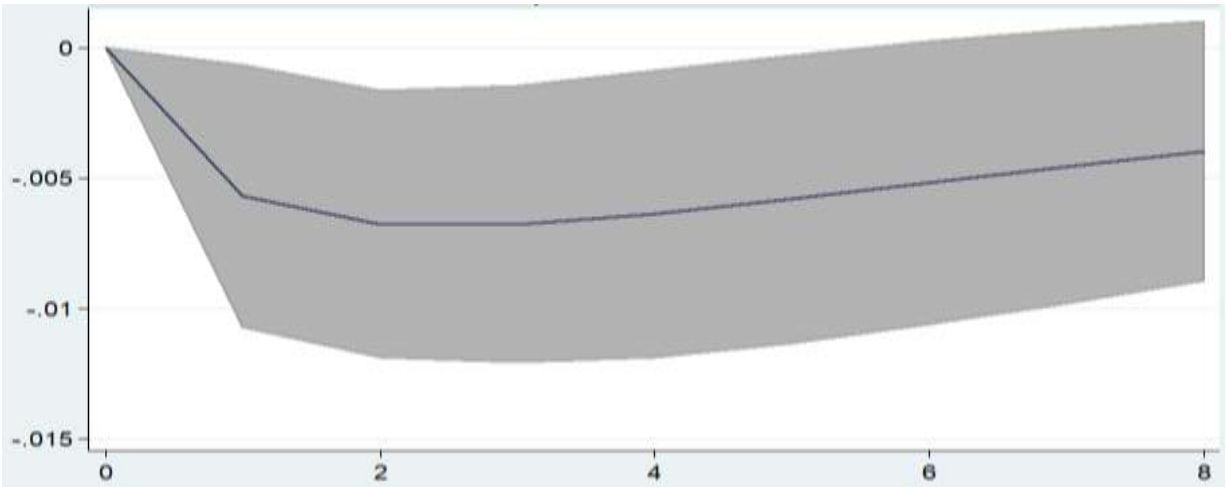
Notes: The panels provide the orthogonal impulse response functions to a positive shock to the number of stockholders within equation (1). The estimated coefficients for equation (1) are provided in Table 2. Displayed is the estimated response plus a 90% confidence interval.

Figure 11: Impulse Response Functions to a Positive Shock to Fraction Owned By Largest Stockholder

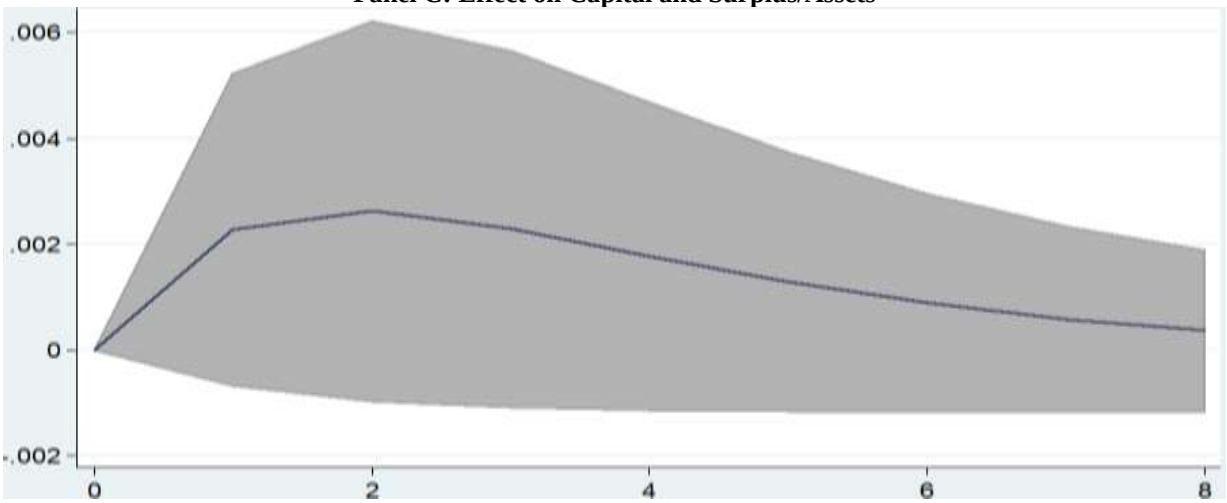
Panel A: Effect on Ln(Assets)



Panel B: Effect on Loans/Assets



Panel C: Effect on Capital and Surplus/Assets



Notes: The panels provide the orthogonal impulse response functions to a positive shock to the fraction of the bank owned by the largest stockholder within equation (1). The estimated coefficients for equation (1) are provided in Table 2. Displayed is the estimated response plus a 90% confidence interval.

Table 1: Summary Statistics By Decade

	1910 (N=484)		1920 (N=551)		1930 (N=277)	
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
Ln(Assets)	11.37	0.85	12.53	0.76	12.39	0.70
Loans/Assets	0.66	0.13	0.76	0.08	0.59	0.12
(Cash+Due From Banks)/Total Deposits	0.35	0.23	0.20	0.22	0.22	0.21
(Capital+Surplus)/Assets	0.20	0.11	0.13	0.07	0.16	0.06
Surplus/(Capital+Surplus)	0.26	0.16	0.42	0.18	0.39	0.15
Ln(# of Stockholders)	1.87	0.60	2.20	0.60	2.58	0.81
Fraction of Stockholders Within 15 Miles of Bank	0.30	0.30	0.28	0.28	0.23	0.27
Fraction of Stockholders With Same Last Name	0.38	0.25	0.31	0.21	0.26	0.19
Fraction Owned By Largest Stockholder	0.42	0.19	0.39	0.16	0.36	0.20
HHI Index of Stockholders	0.31	0.16	0.26	0.13	0.24	0.17
Fraction Owned By Directors	0.80	0.21	0.77	0.22	0.66	0.27
Ln(County Population)	9.26	0.49	9.34	0.52	9.39	0.54
Fraction of County Population Non-White	0.02	0.08	0.02	0.06	0.02	0.05
Fraction of Population Illiterate	0.02	0.04	0.02	0.02	0.01	0.01
Ln(# of Farms in County)	7.22	0.50	7.20	0.42	7.24	0.40
Fraction of County Planted in Wheat	0.18	0.13	0.18	0.13	0.18	0.13

Notes: Table provides summary statistics for the banks in the sample by decade.

Table 2: Coefficients on PVAR and Granger Causality Tests (1910-1928)

Using Number of Stockholders

	Ln(Assets)	**Loans/Assets**	**(Capital+Surplus) /Assets**	**Ln(# of Stockholders)**
L.Ln(Assets)	0.806***	0.095***	0.003	0.008
	[0.075]	[0.026]	[0.013]	[0.090]
L.Loans/Assets	-0.065	0.171***	0.008	0.240
	[0.155]	[0.058]	[0.020]	[0.209]
L.(Capital+Surplus)/Assets	0.279	-0.050	0.506***	0.396
	[0.274]	[0.092]	[0.064]	[0.327]
L.Ln(# of Stockholders)	0.036	0.067***	-0.005	0.842***
	[0.046]	[0.015]	[0.008]	[0.060]
Observations		1232		

Using Shareholder Concentration

	Ln(Assets)	**Loans/Assets**	**(Capital+Surplus) /Assets**	**Ln(# of Stockholders)**
L.Ln(Assets)	0.833***	0.111***	0.002	0.013
	[0.074]	[0.026]	[0.013]	[0.031]
L.Loans/Assets	0.032	0.139**	0.009	-0.056
	[0.158]	[0.056]	[0.021]	[0.061]
L.(Capital+Surplus)/Assets	0.258	0.045	0.487***	-0.196
	[0.264]	[0.084]	[0.062]	[0.131]
L.Fraction Owned By Largest	-0.204**	-0.062*	0.025	0.705***
Stockholder	[0.101]	[0.035]	[0.018]	[0.059]
Observations		1232		

Notes: Table provides the estimated coefficients and standard errors from Granger Causality tests for equation (1). Each observation is a biennial observation of a bank. The sample contains those banks that survived from 1910 through 1928. A bank's first balance sheet is dropped to avoid large changes as the bank is starting up. Bank fixed effects are removed using a Helmert transformation, and time fixed effects are removed by subtracting each variable's cross-sectional means before estimation. Two-lags of each variable are used as instruments. Robust standard errors are presented in parentheses below the coefficients. * denotes significance at 10%; ** at 5% level and *** at 1% levels.

Table 3: Determinants of Bank Closure (1910-1932)

	Closed During Following Biennial Period				
	(1)	(2)	(3)	(4)	(5)
Ln(# of Stockholders)		-0.025			0.035
		[0.090]			[0.123]
Fraction of Stock Owned by Largest			0.213		0.328
Stockholder Two Years Prior			[0.245]		[0.362]
Fraction of Stockholders Less Than 15				-0.160	-0.195
Miles From Bank Two Years Prior				[0.205]	[0.221]
Ln(Assets)	-0.469***	-0.463***	-0.466***	-0.464***	-0.467***
	[0.148]	[0.147]	[0.147]	[0.149]	[0.150]
Loans/Assets	0.098	0.075	0.069	0.111	0.102
	[0.918]	[0.934]	[0.918]	[0.909]	[0.923]
(Capital+Surplus)/Assets	5.571***	5.612***	5.605***	5.525***	5.513***
	[0.984]	[0.983]	[0.979]	[0.986]	[0.992]
Surplus/(Capital+Surplus)	-2.250***	-2.265***	-2.254***	-2.258***	-2.243***
	[0.324]	[0.308]	[0.320]	[0.326]	[0.304]
(Cash+Due From Banks)/Total	-3.328**	-3.337**	-3.334**	-3.330**	-3.328**
Deposits	[1.326]	[1.330]	[1.324]	[1.325]	[1.331]
County Controls?	Yes	Yes	Yes	Yes	Yes
Observations	4387	4387	4387	4387	4387
R-squared	0.0742	0.0743	0.0743	0.0745	0.1195

Notes: Table provides the results of a Cox Proportional Hazard model from equation (2). Each observation is a bank at the beginning of the biennial period and the dependent variable is an indicator for whether the bank closed over the following two year period. The final observation is in 1930 which measures where the bank closed by 1932. "County Controls" includes the logarithm of the county's population, the fraction of the county with a population greater than 25,000, the logarithm of the number of farms in the county, the fraction of the county that is non-white, the fraction of acres planted in wheat, and the crop price index based on 1910 crop production. Robust standard errors clustered by county are presented in parentheses below the coefficients. * denotes significance at 10%; ** at 5% level and *** at 1% levels

Table A1: Correlation Between Number of Stockholders and Bank Characteristics (1910-1930)

	Ln(# of Stockholders)										
	1910	**1912**	**1914**	**1916**	**1918**	**1920**	**1922**	**1924**	**1926**	**1928**	**1930**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Ln(Assets)	0.291***	0.320***	0.384***	0.387***	0.338***	0.344***	0.386***	0.286***	0.324***	0.335***	0.351***
	[0.059]	[0.052]	[0.048]	[0.039]	[0.046]	[0.051]	[0.052]	[0.056]	[0.067]	[0.090]	[0.101]
(Capital+Surplus)/Assets	1.351**	1.744***	1.971***	2.054***	2.101***	2.715***	2.776***	2.873***	2.292***	3.627***	3.558***
	[0.575]	[0.424]	[0.516]	[0.617]	[0.545]	[0.821]	[0.585]	[0.657]	[0.759]	[0.788]	[0.944]
Surplus/(Capital+Surplus)	-0.276	-0.409**	-0.553***	-0.694***	-0.610***	-0.633***	-0.672***	-0.480***	-1.193***	-1.345***	-0.948***
	[0.194]	[0.200]	[0.198]	[0.174]	[0.156]	[0.134]	[0.153]	[0.143]	[0.216]	[0.263]	[0.306]
Loans/Assets	0.660	0.665	0.632	0.824	-0.519	0.476	0.207	0.122	-0.205	-1.032**	-1.035**
	[0.680]	[0.448]	[0.462]	[0.920]	[0.716]	[0.629]	[0.490]	[0.417]	[0.452]	[0.495]	[0.497]
(Cash+Due From Banks)/	0.224	0.524	0.850	0.364	-1.356*	-0.044	-0.101	0.118	0.738	-0.624	-0.779
Total Deposits	[0.912]	[0.631]	[0.693]	[0.977]	[0.720]	[0.740]	[0.530]	[0.464]	[0.729]	[0.567]	[0.805]
Ln(Bank Age)	-0.131**	-0.172***	-0.244***	-0.215***	-0.142***	-0.213***	-0.232***	-0.152***	-0.152**	-0.078	-0.082
	[0.055]	[0.053]	[0.069]	[0.042]	[0.047]	[0.044]	[0.041]	[0.057]	[0.072]	[0.080]	[0.092]
County-Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	428	498	482	477	493	516	552	430	357	309	273
R-squared	0.138	0.159	0.209	0.224	0.217	0.235	0.251	0.169	0.163	0.175	0.139

Notes: Table provides the results of OLS regressions. Each observation is a bank in the provided year. "County Controls" includes the logarithm of the county's population, the logarithm of the number of farms in the county, the fraction of the county that is non-white, the fraction of the county that is illiterate, and the fraction of acres planted in wheat. Robust standard errors clustered by county are presented in parentheses below the coefficients. * denotes significance at 10%; ** at 5% level and *** at 1% levels.

Figure A1: Sample Page from South Dakota Biennial Report of the Superintendent of Banks 1922

First State Bank, Sioux Falls
(Minnehaha County)

OFFICERS

G. W. SCHULTZ, President
M. MacGREGOR, Vice-President
A. N. GRAFF, Vice-President
F. W. SCHULTZ, Cashier
J. F. SCHULTZ, Asst. Cashier

DIRECTORS

G. W. Schultz
M. MacGregor
F. W. Schultz
A. N. Graff
J. F. Schultz

COMPARATIVE STATEMENT

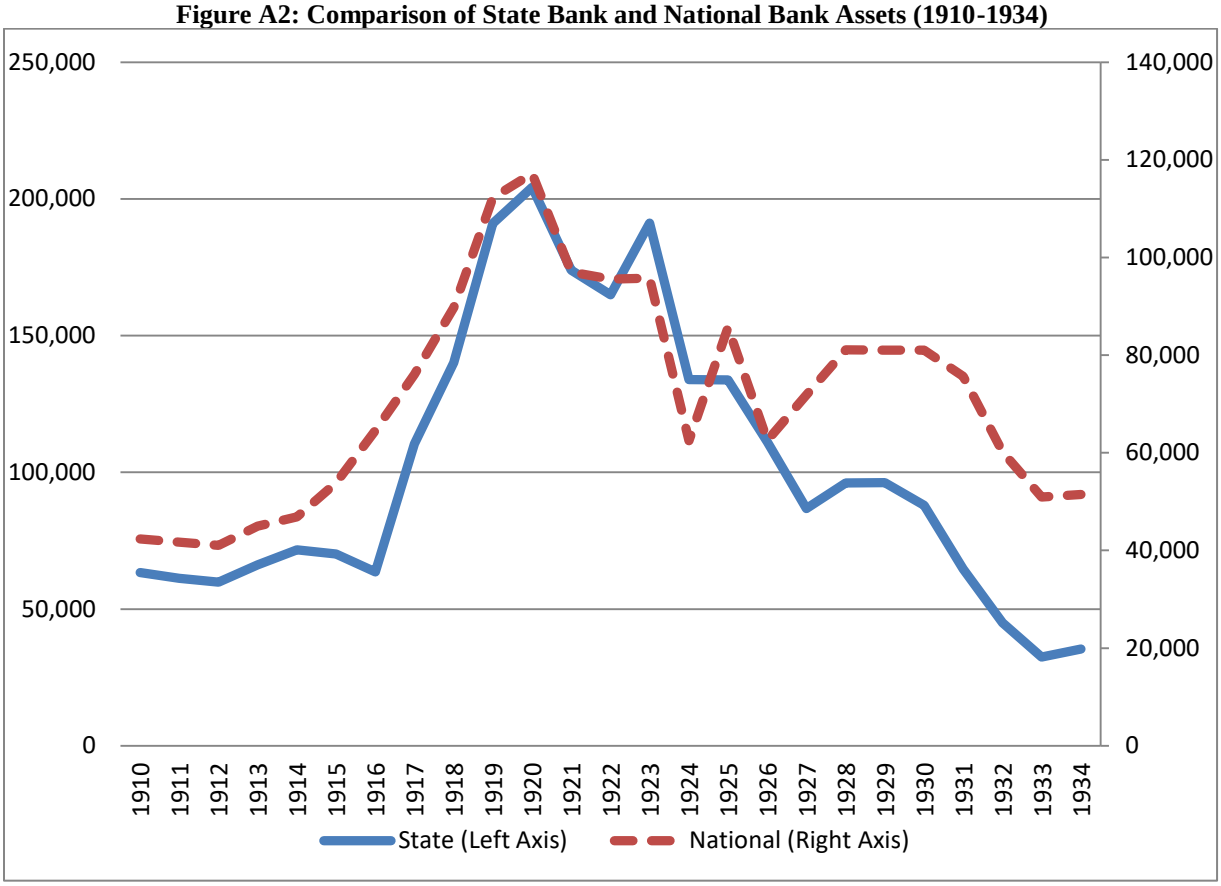
RESOURCES—	June 30, 1921	June 30, 1922
Loans and Discounts	$ 145,353.09	$ 227,292.60
Overdrafts	1.71	90.32
Stocks and Bonds	7,155.79	.....
Tax Certificates	.....	.....
Other Real Estate	.....	.....
Other Property	.....	1,563.47
Expense	4,936.58	97.25
Banking House	.....	.....
Furniture and Fixtures	2,918.45	3,658.45
Due from Banks and Cash on Hand	41,235.75	88,797.31
Items for Clearing	2,993.25	3,219.59
Cash Items	20.56	.....
Totals	$ 204,615.18	$ 324,718.99

LIABILITIES—	June 30, 1921	June 30, 1922
Capital Stock	$ 50,000.00	$ 50,000.00
Surplus Fund	.....	.....
Undivided Profits	7,174.52	3,214.18
Bills Payable	.....	.....
Notes Rediscounted	.....	.....
Other Liabilities	.....	.....
Dividends Unpaid	.....	.....
Deposits Subject to Check	67,249.69	135,638.77
Savings Deposits	10,227.17	25,350.91
Certified Checks	.....	.....
Cashier's Checks	.....	1,474.07
Due to Other Banks	9,035.18	3,384.26
Demand Certificates	1,176.75	.....
Time Certificates	57,751.87	104,871.08
Depositors' Guaranty Fund	2,000.00	785.72
Totals	$ 204,615.18	$ 324,718.99

STOCKHOLDERS

F. E. Mattoon, Los Angeles, Cal. $4,000
Gertrude Mattoon, Los Angeles, Cal. 1,000
Jane Fulton, Omaha, Neb. 1,000
Martha Fulton . Wapheton, N. D. 1,000
Nettie Goff, Los Angeles, Cal. 1,000
Mary Jane MacGregor, Owen Sound, Canada 1,000
Vern Keck, Washta, Iowa 300
Inez Keck, Washta, Iowa 200
Mary Mac Gregor, Sioux Falls 3,000
M. Mac Gregor, Sioux Falls 5,000
G. W. Schultz, Sioux Falls 6,500
F. W. Schultz, Sioux Falls 4,000
Eda C. Schultz, Sioux Falls 2,500
J. F. Schultz, Sioux Falls 4,500
Inez Schultz, Sioux Falls 2,000
Bertha Schultz, Sioux Falls 1,000
Ed. Livingston, Sioux Falls 500
Joseph Livingston, Sioux Falls. 500
William Iseman, Sioux Falls 500
A. P. Phillips, Sioux Falls 1,000
R. L. Gillon, Sioux Falls 500
M. Gustafson, Sioux Falls 1,000
F. C. Craig, Sioux Falls 500
J. A. Jenson, Sioux Falls 1 500
Alma Langhout, Sioux Falls 1,000
A. N. Graff, Sioux Falls 4,000
John Mundt, Sioux Falls 1,000

Figure A2: Comparison of State Bank and National Bank Assets (1910-1934)



Notes: Figure provides the aggregate amount of bank assets in thousands by type of bank.