The Evolution of Bank Supervision: Evidence from U.S. States

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We examine U.S. states to shed light on the origins of bank supervision and assess factors that led to the creation of "formal" supervisory institutions. We show that the process was extremely slow, taking more than a century to move from no or light supervision of commercial banks to widespread use of independent institutions tasked with maintaining safety and soundness. Contrary to modern supervisory institutions, early supervisors were not interested in systemic stability. Only after commercial bank liabilities shifted from notes to deposits did policymakers re-orient their policy and focus on the negative externalities associated with bank failures.

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Why are commercial banks supervised? Public interest theories of regulation suggest at least two broad reasons for the special treatment of banks: (1) externalities and (2) efficiency. When larger numbers of banks fail they can impose external costs on the economy by reducing lending and hence aggregate investment. Moreover, as banks fail and disintermediation occurs, the costs of credit can rise for firms due to the loss in information about the quality of investment projects (Bernanke 1983). Since (fractional reserve) commercial banks are conduits through which the money supply changes, a large number of failures can also ripple through the economy by altering the money supply (Friedman and Schwartz 1963). Prudential regulation and supervision aimed at reducing risk taking thus may reduce the incidence of failures and "contagious runs," and limit macroeconomic externalities. A second argument given for regulating banks has to do with the efficient transfer of savings from lenders to borrowers. As in other industries, market structure can affect the price and provision of services; in banking, this translates to lending rates that are influenced by the competitive structure of the industry. Supervision could thus be used to ensure that the policies of banks are consistent with efficiency objectives.

Alternatively, private-interest theories of regulation suggest regulatory agencies get "captured," and evolve to respond to the needs of the businesses they regulate. Stigler (1971) theorized that regulation or government intervention principally serves to redistribute economic resources from those with less political power to those with more.[1] So in the case of bank regulation, public interest goals such as system-wide stability can be compromised by the private agendas of well-organized bankers, customers, or political constituencies. For example, one could imagine that, ex ante, bankers encourage regulation in order to obtain a call option on their risk taking: if investment projects fail to deliver returns for banks, then the risk can be socialized and passed on to depositors or citizens. Banks may also lobby for restrictions on branching or chartering and then use government agencies to limit competition from entrants. Hence, even without spillovers

[1] See also (Posner 1971, 1974) and Peltzman (1976).

or efficiency considerations, public regulation may still be compatible with the self-interest and profit maximizing motives of banks.[2]

Given the large impact that bank failures can have on macroeconomic outcomes and the considerable governmental and industry resources directed toward influencing banking market structure, it is surprising how little is actually known about why bank supervision exists. The few studies of bank supervision for the period that have examined the topic either summarize bank regulations in a specific year (e.g., Weldon 1910) or focus on the rise of supervision in specific states (e.g., Gruchy 1937). Most models of bank regulation focus on deposit insurance, demandable deposits, or capital requirements, and provide less guidance on the costs and benefits of supervision.

In this paper, we aim to fill this lacuna by examining the evolution of bank supervision of the United States through the beginning of the twentieth century – a critical period which laid down the foundations of the bank supervisory system observed today. Since the country's inception, power over the chartering of banks devolved to states. As a result, each state developed its own supervisory system; experimentation and implementation of them varied considerably during the nineteenth and early twentieth centuries. We exploit the differences in the timing of changes in supervisory practices to trace out factors that influenced supervisory practices and to describe the evolution from informal to formal supervisory institutions. Rather than assuming the objectives of policymakers or social planners were known ex ante, we show how supervision evolved in response to the shifting goals of policymakers.

Our analysis suggests that it took more than 100 years to move in the direction of modern policy priorities, such as concerns about systemic stability. We document how supervisory objectives evolved. Between 1783 and 1837, state policymakers had altogether different intentions; they focused on limiting the power of individuals who were granted special charters or licenses by state legislatures (and effectively monopoly power) to operate banks. Included in many state banking charters were provisions to request information about the conditions of banks, but it was not until considerably later, largely during the national banking era, 1863-1913, that state regulators were granted the authority to shut down risky banks. As the nation's economy grew and bank chartering

[2] Both of these approaches ignore the possibility of self-regulation, a point we turn to later in our paper.

expanded during the free banking era (roughly the 1830s to early 1860s), policymakers' concerns shifted to the notes emitted by banks, and a desire to prevent fraud and inflation by requiring more oversight of note issuance and the collateral that backed it.

Our empirical results suggest that states improved their supervisory quality after periods of banking distress. For instance, seven states enhanced supervisory practices after the Panics of 1837 and 1839 and fourteen states made changes after the Panic of 1907 but no other short period had as many new departments established.[3] The implementation of formal supervisory institutions and practices (i.e., regular and periodic bank examinations and bank supervisory departments) began in the old Northeast states, and moved steadily westward, largely bypassing the South until the end of the nineteenth century.[4] The introduction of a national currency in the 1860s was also critical to the development of modern supervisory practices. Commercial banks changed the composition of their balance sheet liabilities, moving from notes to deposits, consequently re-orienting policymakers' focus on depositors. As deposit taking grew in importance, supervision shifted toward maintaining the safety and soundness of banks by reining in risk taking. By the beginning of the nineteenth century and prior to the founding of the Federal Reserve System, most states regularly published bank balance sheet information and established separate regulatory agencies in charge of bank supervision. Some had also given their examiners the power to shut down banks that were deemed unsafe. However, problems remained, including enforcement and competition with federal regulatory agencies, and persisted long after the founding of the Federal Reserve System.

II. Bank Supervision and Theory

When considering the origins of bank supervision, perhaps a logical starting point is to ask whether government intervention is necessary. One potential issue that might motivate government intervention arises from asymmetric information in the banking

[3] Maine, Michigan, New Hampshire, Georgia, Ohio, Louisiana, and Florida formalized supervisory practices between 1837 and 1845. Oklahoma, Utah, Washington, Oregon, Minnesota, Nevada, South Dakota, Maryland, Virginia, Alabama, Kentucky, and New Mexico installed it between 1907 and 1912.
[4] Out of the thirteen states that could be considered the South, only Louisiana, Georgia, and Florida had developed supervisory practices before 1890.

industry due to costly state verification (Townsend 1979) or the cost of monitoring and the opacity of bank decisions (Chen 2001, Meh and Moran 2010). A second reason governments may intervene are incentive problems, where managers take on more risk, perhaps aimed at maximizing current returns, and put too little weight on depositor safety as a result (i.e., moral hazard). Asymmetric information problems may be lessened through government activities aimed at transparency or through supervision. Regarding incentive problems, it is certainly possible that banks may be capable of monitoring their own risk. For example, managers (directors) could also be the owners, which might serve to limit risk taking. Alternatively, managers' contracts could made incentive compatible, and alter managerial incentives for risk taking, rendering government policies redundant. If such contracts can be created, then regulation of risk taking may be unnecessary, as losses would accrue to equity and debtholders just like for any other firm.

Demandable deposits are one example of a device that could operate like an incentive compatible contract. A bank offers to pay a fixed return on deposits which can be withdrawn at any time, in exchange for use of deposits. If depositors doubt the safety of their bank, they have the ability to run on the bank.[5] The possibility of bank runs may act to discipline bank managers such that they hold less risky portfolios (Calomiris and Kahn 1991).

In practice, it may be difficult to rein in managerial risk taking simply through the use of demand deposits. For example, Dewatripont and Tirole (1993) argue that private monitoring is costly because bank customers are small and dispersed. Before the twentieth century, few households had large bank accounts, and the release of bank information was spotty and periodic at best. When monitoring is imperfect, managers may still invest in risky assets and depositors may still rationally start bank runs. If runs become "contagious," they can potentially result in costly spillovers to the real economy. The possibility of "contagious" and costly bank runs, however, provides a theoretical

[5] Theorists have shown that it is rational for depositors to run on fractional reserve banks (Diamond and Dybvig 1983).

justification for supervision and/or regulation of banks: governments can commit resources to develop technologies that monitor risk taking.[6]

Formal rules or regulations on bank behavior are another mechanism that can be used to make managers operate in ways that are incentive compatible with depositors. For example, governments can impose double liability on bank stockholders such that stockholders of a bank are additionally liable for losses up to the amount of their stock. Grossman (2002) shows that double liability pushed banks to reduce their risk, but that it did not guarantee systemic stability. It is interesting to note that contingent liability clauses do not exist today, having been eliminated in the 1930s (Mitchener and Richardson 2012), whereas supervision remains.

Concerns over market structure are another reason often provided for government intervention in banking. Since governments often make chartering costly (imposing requirements on paid-in capital or controlling who can receive licenses to operate), their actions may limit entry and give existing banks monopoly power. Supervision may take place to ensure product and price competition and enforce legal restrictions on bank activity. Absent government intervention restricting entry, however, banks may still need supervision. Market structure in banking may evolve in a way that leads to an inefficient or suboptimal allocation of capital, either geographically or in terms of sectoral allocation, resulting in slower overall economic growth.

Finally, the special status often conferred to banks is sometimes confounded with a government's desire to extract seigniorage through monopoly note issuance. While governments may desire to have control over note issuance to derive rents, it is not clear that supervision of banks is necessary to achieve this objective.

These theoretical perspectives provide insight into why supervision might arise in a polity. Perhaps surprisingly, they do not describe the starting point for state bank supervision in the United States. As we describe below, late 18th century bankers acted with private motives (maximizing individual returns). Early banks were not focused on taking deposits, so runs were not of primary concern, and because the government issued

[6] It is possible that banks could act jointly and come up with collective mechanisms that would prevent spillovers to each other or to the economy, but in practice such practices have been few and far between as a result of coordination problems.

few notes, the government had limited ability to extract seigniorage. We now turn to examining why bank supervision arose across U.S. states.

III. An Analytic Narrative of U.S. State Bank Supervision

To provide a roadmap to our empirical analysis, we begin by highlighting the key changes that took place in the evolution of state bank supervision over three eras. The first period covers the nation's early history, 1783-1837, when state banks received special charters from state legislatures to operate. The second period corresponds to the free banking era – a period when special chartering fell by the wayside and state bank supervision evolved in response to the growth in commercial banking. The last period covers the National Banking Era (1863-1913), including the rise of dual banking and the shift to deposit-taking commercial banks, both of which further transformed state bank supervision.

A. *Special Bank Charters and the Young Republic*

Commercial banking emerged slowly during the first decades of the 19th century, and private banks and money lenders featured prominently. In part, the growth in banking was hindered by the chartering process. Individuals wanting to create a bank had to seek legislative approval at the state level. The use of special acts of incorporation to charter banks was a practice inherited from Europe. American legislators, however, viewed their authority to bring banks into existence with some trepidation, fearing that charters effectively granted monopolies that were concentrated in the hands of a few. Because states were banned from issuing their own currency, some politicians also worried about concentrating banks' unique power to create money through note issuance in the hands of a few.[7] Special charters balanced two objectives: permitting banks to exist but providing more control over banking than a fixed set of standards.

[7] Although they feature less prominently in the early discussions of bank chartering, some legislatures also expressed concern that the issuance of "bad notes" would lead to a faulty money supply or that excessive note issuance could lead to inflation.

The chartering process was tedious and requests were often denied by state legislatures. Often in order to obtain a charter, banks had to agree to purchase government debt or make loans to the state (Bodenhorn 2003). Special bank charters were also susceptible to influence peddling, and many histories of this early period describe a process whereby charters were only handed out to those that were politically connected. For example, as one banking historian describes, "It had long been difficult to get new bank charters in New York, because the [Albany] Regency kept the number down conservatively. And whenever a new one was decided on...opportunities were afforded the public to purchase stock—provided of course that most of the stock went into the possession of Democrats" (Hammond 1957, 574).[8] Fears of centralized bank power were ironically enhanced by the special chartering process. Since banks needed special government privilege to operate, banking during this period grew slowly, mostly in urban areas, and banks had considerable monopoly power.

Bank supervision sprouted its first roots in response to these special charters, and with the general concern of giving banks the right to exist and issue notes. Legislators sometimes required simple reports of condition and reserved the right to inspect banks by special committee. Some states placed limitations on note issuance or prohibited dealings in certain types of securities. These types of provisions were often vague and enforcement was virtually non-existent. When reports were requested, it was easy to hide the true state of a bank's condition. Virginia provides a representative example of the problems of early bank supervision. In 1817, residents of Lynchburg accused Farmers' Bank of Virginia of discrimination in lending practices, including excessive lending to directors and real estate agents. The Virginia legislature appointed a committee to examine the bank's practices. However, the committee had no any real power to inspect the bank's lending practices, and the bank's directors had no incentive to cooperate because there was little legal means to enforce compliance (Gruchy 1937).

The chartering of the First Bank of the United States provides a prominent example of the federal stance on bank supervision in the federalist era. The quasi-central bank was intended to serve the fledging government's needs for finance as well as provide

[8] The Albany Regency was a group of politicians that held considerable power in New York during the 1820s and 1830s. They are most associated with the Jackson Democrats and Martin Van Buren.

monetary stability in aftermath of the Continental era hyperinflations.[9] Despite its large size (i.e., $10 million in capital) and unique ability to branch across state lines, the bank was only required to provide periodic financial statements, as Congress did not give itself the right to formally inspect the bank's books or practices.

In spite of these shortcomings, incremental improvements took place in the first three decades of the 19th century. For example, Massachusetts passed a law in 1803 requiring periodic statements by banks; the law specified which items were to be included and authorized the assessment of fines when reports were not submitted. In 1813, the governor of the state set up a system of three bank commissioners to enforce charter regulations, including minimum paid-in capital, but their examinations could not be described as comprehensive by any means (Gruchy 1937). Massachusetts also went on to reform its banking laws by regulating paid-in capital, note issuance, and bank loans over the following decades. That said, the establishment of the Suffolk Bank System might have provided a greater foundation in this period for the relative stability of New England banks (Weber 2012).

The Suffolk Bank System, set up in 1818 by entrepreneurs, eclipsed formal legislative efforts by establishing a clearinghouse system and requiring all participating banks to submit to bank examinations. Specifically, the Suffolk Bank offered to clear the notes of any other bank at par as long as they held funds in an account at the bank. By holding a large number of other banks' notes, the Suffolk bank had the power to force banks to hold safer portfolios by threatening to redeem their notes en masse. The system's utility led to its growth, and it eventually spanned much of the New England area.[10]

New York was also an early adopter of bank supervision. The New York Safety Fund established a mutual insurance system that guaranteed the liabilities of failed banks.[11] The fund authorized three bank commissioners to examine member banks on a quarterly

[9] For instance, in his 1790 report to Congress, Hamilton stressed that the bank was "a political machine of the greatest importance to the state," clearly connecting the bank to the benefit of the nation (quoted in Holdsworth 1942, p 15). The Bank lent $400,000 to the government for one of its Indian Wars in 1792, and $2,000,000 in 1794 to prepare for the hostilities with England and France (Holdsworth 1942, p. 43-44).
[10] The Suffolk Bank was eventually replaced by the Bank of Mutual Redemption in 1858.
[11] It is helpful to note that the insurance was only intended to cover bank notes, and it was only through loose wording that some depositors were paid out. During the collapse of the system, New York properly defined the language to make sure that no additional depositors were repaid.

basis and determine if they were solvent. This public-private partnership also authorized any three banks to call for the examination of any other bank within the system.[12] Despite giving them the power to supervise member banks, the commissioners had no legal basis for shutting down banks unless they were in violation of a particular section of state banking law. The fund eventually had to be bailed out through state borrowing after the Panic of 1839, making it one of the earliest examples of socialized risk in the American banking system.[13]

Supervision improvements also carried over to federal banking regulation. The Second Bank of the United States was chartered in 1816 as a result of the specie suspension and subsequent money fluctuations after the War of 1812. Like the First Bank of the United States, the second bank was required to make reports of condition to the Secretary of the Treasury upon demand, but Congress added supervision beyond what was in the First Bank's charter. In particular, the House of Representatives and the Senate both had the right to appoint a committee to inspect the bank's balance sheet and its activities and report whether its charter had been violated.

B. The Free Banking Era: Unleashing the Genie from the Bottle

The early establishment of boards of commissioners and regulation in Massachusetts and New York provided the model by which other states could expand their supervisory reach. However, the diffusion of banking supervision also responded to another banking innovation: the free banking movement. As the country's thirst for capital appears not to have been quenched by the number of banks created through special legislative charters, 18 states passed general banking acts permitting groups of individuals to form banks without legislative approval.[14] These "free banking" laws specified a well-defined set of capital, reserve, and note issue requirements; the precise figures differed across states, but all free banks were required to fully back their note issues with government bonds or

[12] The fund also did not properly incentivize its member to monitor each other as failures were borne by the fund and not individual banks (Weber 2011).
[13] A similar insurance scheme was started in Vermont in 1831, but suffered from similar problems as well.
[14] Kentucky, Missouri, and Virginia are generally not considered free banking states as their general incorporation law differed from the rest.

other specified assets.[15] As shown in Figure 1, the laws were particularly prevalent in the Midwest, where nearly every state passed a law by 1860.

Free banking lowered the cost of entry, and encouraged tremendous growth in the banking industry.[16] Corresponding to a period of tranquility and economic growth, the U.S. witnessed a dramatic increase in the number of banks, from just over 800 in 1837 to over 1,650 in 1860. Consistent with the laissez faire nature of the laws, free banking states generally did not implement a strict monitoring system to accompany their expanding banking systems; in most cases, they only required banks to publish unaudited balance sheets a few times a year.[17] Without much attention directed toward supervision, depositors, noteholders, and creditors had to rely on private monitoring; however, banks generally kept poor records and published information lacked specificity and timeliness.

The growth in commercial banking, fueled by the free banking states, raised two concerns for state policymakers: note issuance of banks and bank capital. With banks sprouting up like "wildcats," state governments did not always have the institutional framework to to verify that capital was "paid-in" prior to the start of business. In addition, the first wave of free banking legislation placed few, if any, restrictions on the size of note issuance, continuing a trend that had been started in the era of special charters. Banks received interest on their bond collateral and thus had little incentive to rein in their issuance. Bank notes were consequently profligate and circulated widely throughout the U.S. states and territories, often far outside their city of issuance. Varying in quality and quantity, many thousand types of bank notes were circulating at their peak in 1860. They came to constitute two-thirds of the money supply (Temin 1969, Table

[15] The intent was that notes should be "riskless" since the state could redeem the notes of a defaulted bank out of the collateral bonds.

[16] For instance, 46 free banks were chartered in the first four years after free banking was established in Wisconsin.

[17] These balance sheets were often found to be lacking. For instance, when there was a special bank examination in Michigan of the Jackson County Bank in Michigan, the examiner recounted how "the teller selected one of the boxes and opened it; this was examined and appeared to be a full box of American half dollars. One of the commissioners then selected a box, which he opened, and found the same to contain a superficies only of silver, while the remaining portion consisted of lead and ten penny nails." (U.S. Congress 1839-40, p.1109).

5.2), and represented a potential risk as note issuance was not fundamentally limited and mechanisms to induce banks to issue them prudently were largely lacking in state laws.[18]

State banking in this period was historically unstable. Nearly a third of free banks and a fifth of all chartered banks defaulted on their notes by 1863. Insufficient portfolio diversity and lack of supervision are two reasons cited for these failures.[19] In response, nearly a third of all state legislatures authorized limited bank examinations. The supervision was limited in the sense that commissioners and special examiners primarily focused on determining if de novo banks were in compliance with capital and note requirements; very few states' legislatures devoted any resources for regular and periodic examinations of balance sheets and risk taking (in general).

The case of Massachusetts again provides a useful illustration of some of the state and regional changes that were foreshadowing greater government involvement in bank supervision. The first change occurred in response to the suspension or failure of 32 banks during the banking crisis in 1837. Massachusetts strengthened its board of bank commissioners in 1838, and required them to conduct annual examinations of all banks in addition to any special examinations requested by the legislature. With authorization from the state supreme court, the commissioners were also empowered to force any bank to cease unsound businesses practices. In 1851, the state passed a free banking law and, in contrast to some other states, simultaneously enabled stockholders or creditors to request an examination of any bank in the state. This enabling provision provided the first basis for a state's supervisory authority to take action before a bank became insolvent, and eventually became a universal feature of state bank regulation.

After passing its free banking law, New York initially reduced its supervision of banks; the legislature abolished banking commissioners in response to corruption and the failure of the Safety Fund in 1843. However, the state took a new approach in April 1851 when the legislature transferred authority from the State Comptroller to a newly, independent banking department. The superintendent of this department was authorized

[18] To enable this circulation, private note brokers discounted banks' notes using fundamental values, such as the market price of their state debt holdings and published balance sheet information (usually quite limited in nature) (Gorton 1995, 1999; Jaremski 2011). Discounts appear to have been efficient, in the sense that they reflected risk, but they do not seem have either limited note issuance or induced banks to act more prudently. Mihm (2007) documents the degree of counterfeiting that accompanied note issues.

[19] See studies such as Rolnick and Weber (1984), Economopoulos (1990), or Jaremski (2010).

to hire as many examiners as "necessary," had the authority to require quarterly reporting of balance sheets from all banks, and (in 1853) gained the power to solicit weekly statements of condition for all banks. These features were later embraced by the Comptroller of Currency's office (Gruchy, 1937), the regulatory agency authorized to oversee national banks beginning in the 1860s.

Between 1830 and 1860, 15 other states enacted laws establishing bank commissioners to carry out examinations. The approach was more prevalent in the Northeast, with New Jersey (1837), Connecticut (1836), Vermont (1831), Maine (1837), Rhode Island (1836) and New Hampshire (1837) all passing laws. However, states like Michigan (1837), Illinois (1853), Wisconsin (1858), Iowa (1858), and Ohio (1839), in what is now the Midwest, also established separate banking entities. Similar to the New York Safety Fund, however, the institutions had little power, and most commissioners lacked the authority to take action against banks that were in danger of becoming insolvent. Nevertheless these changes mark a significant step toward closer monitoring of banks by state governments.

Small groups of banks in Indiana (1834), Ohio (1845), and Iowa (1858) also set up self-insurance systems to limit risk taking. Under these state self-insurance systems, banks were mutually responsible for each others' liabilities. To limit risk taking, boards of directors were created to oversee the integrity of the systems.[20] The resulting system appears to have delivered some stability to these states' banking systems.[21] For instance, no member bank in Indiana failed during the Panics of 1837 and 1839, and most of the three states' systems survived the Civil War decline in southern and western state debt prices (Golembe and Warburton 1958).

As a region, the South lagged behind the Midwest and Northeast. For the most part, banks in the region faced little supervision, and few were subject to inspection beyond a simple reporting of activity. The delay in Southern development may have resulted from the region's state-sponsored banks. The banks were large, filled by state funds, and allowed to branch throughout a state. Established to fund agriculture and state building

[20] The committees were made up of members appointed by the state legislature and one director from each participating bank.

[21] This structure encouraged banks to monitor each others portfolios in order to prevent default while allowing each bank a large degree of autonomy (Weber 2010).

projects, these banks crowded out other financial institutions and limited competition. Free banking laws, therefore, had little impact in the growth of southern banking. The resulting small number of banks may have thus limited the incentives for legislatures to develop costly supervision. Louisiana stands out as the exception to this statement. It established a board of commissioners in 1842, and improved the quality of supervision with its free banking law in 1853 by requiring weekly statements of condition, uniform quarterly reporting (including details on loans by maturity), and annual bank examinations. In this way, the state far surpassed the basic supervision installed in Florida and Georgia (i.e., the other two southern states that installed bank commissioners).

Newspaper reports from the period indicate that bank failures played a crucial role in the evolution of supervisory institutions. A number of large and publicized bank closures stirred up fears of instability. While still not concerned about bank contagion, politicians seized upon a few bank failures in order to paint a picture of wildcat banking in rural locations and to gain support in elections. For instance, the architect of the National Banking Act, Salmon Chase, railed against the improper behavior of state banks while he was governor of Ohio (Davis, 1910). The actual record suggests that, while there were many bank closures, losses to depositors and noteholders were minor (King 1983). And, although the free banking era is often described as one of banking excess, in fact, the evolution of financial institutions may have accelerated economic development (Bodenhorn and Cuberes 2010, Jaremski and Rousseau 2012).

Many factors may have affected the pace and location of bank supervision during the antebellum period. For starters, banks during this era typically facilitated trade through their lending, issuing more short-term debt and making far fewer long-term commercial loans and investments than modern banks.[22] If this characterization accurately depicts the bank lending of the period, then government oversight would have been less important since bank liabilities and assets were both short-term.

The focus on note issue rather than deposit taking might have also led to the lack of supervision. As evident by the Panics of 1837 and 1839, bank note issue carried the

[22] Financial historians have thus suggested that banks may have followed the Real Bills doctrine, which advocated short-term and self-liquidating loans rather than long-term and risky debt.

potential for bank runs, but there are several reasons why bank runs by noteholders might have been less frequent and less contagious than those by depositors. First, a bank's notes circulated widely whereas depositors usually lived close to the bank. In this way, noteholders might not have actively monitored banks or even been able to quickly take action. Second, noteholders often held several different types of bank notes, whereas individuals typically held deposits in a single bank. In this way, noteholders would be more diversified against bank risk and have less incentive to monitor a specific bank than a depositor. Third, notes were explicitly backed by collateral assets and noteholders were the first to be repaid in the case of bankruptcy. In this way, a noteholder would only need to worry about repayment in the case of idiosyncratic fraud or dramatic market fluctuations that would have affected all banks. Finally, each bank's notes were uniquely identified and thus a problem at one bank might not have been considered a problem at all banks.

In addition to the backing requirements of bank notes, the nature of bank lending may have lowered the probability of a bank run, giving policymakers little reason to worry about improving supervisory institutions. Specifically, many loans were made to insiders and members of the board of directors (at least in the Northeast). This practice lessened the information asymmetry problem because the borrower had a stake in the bank and had a well-established relationship with the lender (Lamoreaux 1986, 1994). In this way, banks reduced their potential loan losses.

Finally, the slow changing nature of regulation might have been due to the slow growth in banking and knowledge about what constituted safe and sound banking practices. Because of dramatically different systems, states could not simply import bankers from Europe or even other states, and instead had to cultivate its own experts. Trescott (1963) posits that it took many years for bankers to learn their trade and for the industry to mature sufficiently before enough knowledgeable bankers were available to serve as efficient monitors and regulators.

C. The Era of the Dual Banking: Bottling the Genie

The 1860s ushered in dramatic changes to the American banking system. The National Banking Act of 1863 established national banks – a new type of commercial

bank that was federally chartered by the Office Comptroller of the Currency and competed with state chartered banks. Borrowing extensively from the supervisory systems of New York, Massachusetts, and Louisiana, the Office of the Comptroller of the Currency (OCC) extended government's role in supervising banks. It required commercial (national) banks to file reports of condition five times a year, and it implemented a system of regular examinations of these banks. National examiners were charged with looking past the balance sheets and examining the quality of management and loans. Unlike the two states from the Northeast, however, the OCC did not have the authority to take actions against banks that were in trouble and nearing insolvency. It only had the authority to force a suspension if the bank had defaulted and failed to redeem its bank notes.

Competition from national banks as well as a tax placed on state bank notes fundamentally altered the balance sheets of state banks. Liabilities shifted from notes to deposits. Figure 2 shows that deposits in the antebellum period were a smaller portion of liabilities than bank notes, but deposits quickly surpassed them after the Civil War. The rise in deposits is often attributed to state banks gradually introducing demand deposits and checking accounts as a way of competing with national banks. National banks also seized upon the benefit of deposits, and by the end of 1900, bank notes made up less than 10% of all liabilities. The widespread use of demand deposits, however, exposed banks to greater liquidity risk and depositor runs, as witnessed by the banking Panics of 1873, 1893, and 1907, where liquidity seems to have played a role.

In response to deposits becoming the most prominent source of funds for banks, state policymakers shifted their focus toward ensuring bank safety and soundness. Concern over bank note issuance fell to the wayside. During this period, it was slowly recognized that banks could and would fail, and that there were negative spillovers to the rest of the economy from such failures. In turn, bank commissioners made improvements in supervisory standards in order to protect depositors and improve solvency. These included higher reserve requirements, prohibitions on lending to directors, and restrictions on the size and composition of loan portfolios (Gruchy, 1937). The latter half of the nineteenth century thus marked an important shift toward a system of bank

supervision that would more explicitly deal with the negative externalities associated with fractional reserve banking and deposit-taking financial institutions.

One early attempt that may have been aimed at improving banking stability was the introduction of double liability for bank stockholders. Double liability implied that directors, chief executive officers, chief financial officers, and stockholders of banks would have to pay up to twice the par value of their shares in the event of bank failure; with more at stake, bank owner-managers may have taken less risk. Figure 3 shows that nearly every Midwest state installed a double liability clause before 1870, yet relatively few in the Northeast had done so. Over the next two decades, the practice spread through the Great Plains and Rocky Mountains and over 12 more states added double liability. The bulk of double liability laws thus were installed between 1840 and 1890, and were in place long before most states installed formal banking department.[23] Northeastern states largely avoided double liability, as Vermont, New Hampshire, Connecticut, Rhode Island, New Jersey, and Delaware still had either single liability or no law in 1890.

The creation of independent state banking departments whose primary purpose was to supervise state banks, and what we regard as the creation of "formal institutions," was slow to develop across the United States. In 1890, only 18 states had a separate banking department. The rest had some other state official such as a state auditor, treasurer, or secretary in charge of examination.[24] Figure 4 shows Western and Midwestern states continued to make advances, but most came after 1880. California led the West by requiring that banks be examined twice a year beginning in 1878. Other states on the Pacific Coast followed suit and put in similar provisions towards the end of the century.

Despite having more population and more than double the number of banks in 1890, the South continued to lag other regions.[25] Only Florida, Georgia, and Louisiana had an independent banking department by 1890, and it was not until the end of the 19th century that all states in the region at least required periodic statements from their banks. Indeed, more supervisory change occurred in the South during the first two decades of the 20th

[23] Indeed, there were only 7 states that installed double liability after a banking authority was created (GA, MI, MS, NH, NV, NY, OR). The average state installed double liability almost 15 years before the authority.
[24] These officials also often had many other responsibilities in addition to the banking sector.
[25] In 1890, the South had 1248 banks and the West had only 491.

century than in the previous four. Even after installing formal banking departments, however, many southern states did not conduct regular examinations of banks.

While state bankers' associations spearheaded the effort to establish independent banking departments in states like Virginia, banking crises, like the Panic of 1907, seem to have also been an agent for change by bringing the shortcomings of the states' systems for bank examination to the forefront. Only 5 states installed separate banking departments between 1894 and 1906, yet 14 new states created one between 1907 and 1914.[26] By 1914, the only states without independent banking departments were Arizona, Delaware, Indiana, and Tennessee.

Existing state banking departments also adapted in response to the Panic of 1907. For instance, New York reformed its laws in the year following the Panic, giving the state banking department the power to restrict chartering by requiring that banks receive charters only if "public convenience and advantage" required a new financial institution. Several other states also passed legislation or informally enforced the chartering of new banks.

By the beginning of the twentieth century, the actions of state banking authorities had been affirmed by the Supreme Court of the United States. Even prior to the creation of the Federal Reserve System, ground work had been laid for supervision in the public interest. In a 1911 decision, the Supreme Court ruled: "The power to restrict liberty by fixing a minimum of capital required of those who could engage in banking is not denied. The power to restrict investments to securities regarded as relatively safe seems equally plain. It has been held, we do not doubt rightly, that inspections may be required and the cost thrown on the bank." (Noble State Bank v. Haskell, 219 U.S. 104. January 3, 1911).

IV. Explaining the Development of State Bank Supervision

A. Predictors of State Banking Characteristics

We now turn to examining the drivers of state supervision based on our new database of state supervisory characteristics. Using archival records, state banking reports, and a

[26] These states were: Alabama (1911), Arkansas (1913), Kentucky (1912), Maryland (1910), Minnesota (1909), Mississippi (1913), Nevada (1909), New Mexico (1912), Oklahoma (1907), Oregon (1908), South Dakota (1909), Utah (1907), Virginia (1910), and Washington (1907)

survey of state banking departments, we were able to obtain the year in which each state first established an independent banking authority (e.g. Office of the Bank Examiner or Bank Commissioner or state banking department) as well as the year at which the state began to publish detailed reports on the banking system within each state. These variables capture the creation of formal institutions as well as improvements in supervisory practices. To examine the timing of these changes, we run OLS regressions using state-decade observations for these two outcome variables over the period 1820-1900.[27] Each dependent variable is coded as either a zero in a decade where the condition is not met for any of the years or 1 if it came into existence during the decade.[28]

Using the historical narrative as our guide, we include a variety of potential predictors that might help explain the timing of when these changes in supervisory practices took place. To account for whether growth in banking or periods of banking distress led to changes in supervisory institutions, we calculated the number of new banks and closures (either voluntary liquidations or failures) across the previous decade using data we hand collected from *Merchants and Bankers' Directory* and *Rand McNally Bankers' Directory* as well as data from Weber (2005).[29] We include separate effects for state and national banks since policymakers may have treated changes to state banks different from those outside their purview (national banks). That said, even though the OCC had no regulatory or supervisory authority over state banks, the inclusion of a national banking measure tests whether there were any potential spillover effects. For example, the presence of national banks could have created a demonstration effect. The agency sought to develop a set of best practices with respect to bank examination, including understanding how accounting procedures and asset portfolios affected risk, suspension, and failure. It routinized bank examination and improved the process for liquidating banks that were insolvent, and eventually turned to improving corporate governance of banks,

[27] We have chosen the decade-level in order to match with the U.S. Census, but when we break the data into smaller time periods the results remain qualitatively similar.

[28] In order to form a complete panel of states, we allow states to move into the sample at the date they began reporting to the Census Bureau, but disaggregate states such as West Virginia and Virginia and South and North Dakota for the whole period.

[29] Our data do not permit us to separate bank mergers and conversions from voluntary liquidations and failures; however, based on our reading of primary source material, there were relatively few mergers over our sample period in comparison to liquidations and failures.

encouraging national banks to adopt a common set of by-laws (Gruchy, 1937).[30] Another way the national banking may have influenced state banking is through a legislative requirement passed in 1873 requiring that the OCC file an annual report describing the banking condition of the entire country. To fulfill this duty, the OCC had to gather information on state banks even though they were outside its formal jurisdiction.[31] In this way, the presence and coordination efforts might have pushed some states to change their practices and improve their collection of banking information.

On the other hand, the existence of the OCC might not have led to better supervision of state banks. A competing agency that chartered banks within a state creates incentives for commercial bankers to game the system and choose a regulatory environment that was most profitable. The dual banking system might have encouraged competition in laxity (White 1983). This played out most visibly in chartering, such that when one agency failed to grant a charter to individuals wishing to form a new bank, those citizens simply went to the other banking authority to acquire a charter.

We also include an indicator variable for whether a state had a double liability law in place for banks during the decade under consideration as well as whether states had passed free banking laws.[32] To account the extent to which states established a banking department after they had reached a certain level of development, we also include (log) state population, the urbanization rate (using the census definition of areas with more than 2,500 people as urban), and the percent of the population that is non-white.[33] Since

[30] White (1983, p 34) states that "examiners often performed a hurried job and followed easy and predictable routes, thereby alerting banks to an impending visit." Despite such criticism of national bank examiners (at least relative to modern ones), the quality of their examinations was perhaps superior to what almost any state had at the time.

[31] It sent regular notices to all state banking departments, requesting information on the state of banking. Compliance was initially quite low, but the lack of reporting was explained away: "It should be remembered that this is the first call made upon them by any officer of the Federal Government." (Report 1874, XLIII). The Comptroller, however, quickly became frustrated, stating "how neglectful are the constituted authorities in respect to the monetary institutions of their respective States" (Report 1875 LX). The Comptroller's frustration with states is evident in some passages. For instance, the 1888 Report (p.16) states "In one State, in response to the request for a summary of reports of banks reporting, the chief of the department in charge of the returns wrote: 'We have no printed report of the condition of banking institutions in this State. We can have an abstract if you wish it. It will cost you $25, as we will have to get some outside party to come in and make it.'"

[32] While it is possible that the adoption of double liability was endogenous to supervision, we find that very few states installed it after supervision. In this way, double liability seems to have been an early attempt to prevent bank risk taking. A regression with double liability as the outcome variable and supervision as an explanatory variable shows no statistical relationship between the two.

[33] Data are from Haines (2004).

these factors are potentially endogenous to economic growth and stability, we exclude them from some specifications. When they are included in the regression model, we use the lagged value (i.e., taken from the previous decade) in order to present a more exogenous control variable. Finally, since geographical differences in supervision adoption are suggested from the historical narrative, the regressions include regional indicator variables. (The omitted category is the Northeast; these indicator variables thus show how much other regions potentially lagged relative to the Northeast.)

B. Empirical Estimates

As shown in Table 1, periods of banking distress seem to have influenced supervisory practices. Based on column (4), a one-standard deviation increase in state-bank closures is associated with a 6.7 percentage point increase probability of having a state banking department compared to a 1 percentage point decrease for a one standard deviation shift in national bank closures. Moreover, only state banks had an effect on the publication of banking reports. These results suggest that state policymakers may have been more compelled to change supervisory practices in response to distress that they had chartered (i.e., state banks) in comparison to those that may have created negative spillovers but for which they had no authority (i.e., national banks).

The entry of new national banks seems to have delayed the establishment of independent banking departments. Using the model with time and state fixed effects, we find that for every 10 new national banks, the probability of having supervision fell by about 1.6 percentage points, but for every 10 new state banks, the probability would be unchanged. These results suggest that state legislatures may have acted as free riders, taking advantage of supervisory resources that they believed the OCC would necessarily commit to their states with national banks.

The number of new state banks arising during the current decade does not appear to drive changes in state bank supervision. On the other hand, the establishment of a free banking seems to have encouraged states to create separate banking authorities, though not necessarily to publish reports of banks. The difference between the two results may be driven by the fact that most of the free banking laws did not explicitly require annual

examinations, whereas a few installed a bank examiner or bank commissioners. In addition, many of those states that installed free banking without making supervisory improvements experienced large increases in bank closures.

Consistent with our historical narrative, the coefficients on the regional indicator variables suggest that supervisory improvements began in the Northeast and moved westward, largely bypassing the South. In terms of establishing independent banking authorities, the Midwest was 21.3 percentage points less likely to do so than the Northeast, the West 48.6 percentage points less likely, and the South 38 percentage points less likely. Relative to the Northeast, a Midwest state was 27 percentage points less likely to publish bank reports, a Western state was 48.4 percentage points less likely, and a Southern state was 49.6 percentage points less likely.

With respect to other non-banking state characteristics, increased urbanization and population appears to accelerate the establishment of formal bank supervision. A one standard deviation increase (i.e., 18-percentage points) in the lagged urbanization rate increases the probability of having an independent banking authority by 9.4 percentage points. Alternatively, a one standard deviation rise in the lag of population (i.e., 1.39 log points) would increase the probability of having an independent authority by 14.5 percentage points. The fact that urbanization and population are quantitatively important should not be surprising given that unpopulated areas would have had less of a need for bank supervision. This positive coefficient may also reflect the fact that low population states had less tax revenue, and as a result, would have found it more challenging to use resources to establish bank supervision.

As a robustness check, Table 2 includes some additional state-level economics characteristics that become available in the 1850 census. In particular, we include information on lagged farm values and lagged capital in manufacturing. Table 2 shows that our findings are largely unaffected by their inclusion.

C. Quality of State Bank Supervision

As our analysis suggests, adoption of formal supervisory institutions by states was nearly completed by the first decades of the twentieth century. That said, the quality of

state banking departments varied considerably across states. For example, state banking departments differed in the expenditures they devoted to collecting information about banks and carrying out exams. We take advantage of information provided by the Comptroller of Currency in 1911 to examine some of these institutional differences. In his report for that year, the Comptroller provided the total expense on bank supervision, the number of examiners on staff, and how many examinations were conducted during the previous year.

In Table 3, we test whether the cross-state variation in these measures of the quality of supervisory institutions can be explained by similar factors as the adoption of supervisory institutions. Because some of the variation may be due to differences in the size of banking departments, we control for the total number of national and state banks in 1911. We also account for differences in the maturity of institutions by including the number of years that the state had either an independent banking authority or had published annual banking reports.

The results suggest that amount of supervision seems to have been driven by two variables: the number of banks. The number of state and national banks is positively correlated with the depth of supervision. On the other hand, state bank closures before 1900 seem to detract from supervision and national bank closures before 1900 seem to increase supervision. The result, however, is may be driven by reverse causality since supervision might have prevented state bank closures. Unlike modern bureaucracy, the fact that the number of years since the state established supervision, double liability, or bank reporting indicates that departments did not start out small and grow much larger. Instead, it seems that states implemented their "optimal" or desired level of supervision and changed it based on environmental factors rather than slowing ramping up expenditures in some linear way.

VI. Conclusion

From the outset, government officials in the U.S. were skeptical of giving banks too much power and autonomy. Initially, regulation focused primarily on controlling the size and monopoly power of banks, and as a result, an atomistic, largely non-branched

banking system emerged to service the needs of industry and agriculture. The first attempts at state bank supervision focused on assessing whether banks had sufficient paid-in capital to open for business and whether they had sufficient assets to back up the notes they issued. Policymakers in the first part of the nineteenth century paid little attention to systemic risk.

Contrary to popular belief, bank supervision had made considerable strides toward modern standards and objectives by the beginning of the twentieth century. While laxity in state bank supervision still existed, the U.S. had, in the course of less than a half century, largely shifted to formal bank supervisory institutions. Using a newly-assembled data set on state supervisory practices, we show that the vast majority of U.S. states had established separate state banking departments by the time the Federal Reserve System was founded.

Formal institutions such as state banking departments staffed with supervisors who carried out regular and periodic examinations were slow to emerge because, for quite some time, supervisors lacked incentives to do create them. It was only when commercial banks shifted their focus to deposit taking that safety and soundness became a primary objective of policymakers. Indeed, our analysis suggests that the rise of formal supervisory institutions responded to state banks closures and banking panics, in particular. The public demand for financial stability thus might have been a key impetus for rise of banking departments.

Institutional quality would likely have continued to improve without federal impetus, although the OCC may have had considerable influence on improving state bank supervision by encouraging standardized reporting of financial institutions. We nevertheless suggest a two-way street existed. Federal regulatory agencies were influenced by state banking practices already in place. New York and Massachusetts, in particular, appear to have shaped the Comptroller's approach. Further, the creation of federal regulatory agencies was a double edged sword. The dual banking system created an alternative to state regulation and, according to our analysis, seems to have slowed the spread of formal banking supervision. States with large numbers of national banks had less incentive to monitor the banks they chartered, perhaps free riding on the within-state monitoring of banks carried out by the Office of the Comptroller of the Currency. States

economized on supervisory expenditures while preserving the growth of their banking systems by allowing commercial banks to select an alternative regulatory and supervisory environment. In the U.S. commercial banks could practice regulatory arbitrage, and choose a system that offered more lax standards – the consequences of which persisted and are still apparent today (Agarwal, Lucca, Seru, Trebbi, 2011, Mitchener 2005, 2007).

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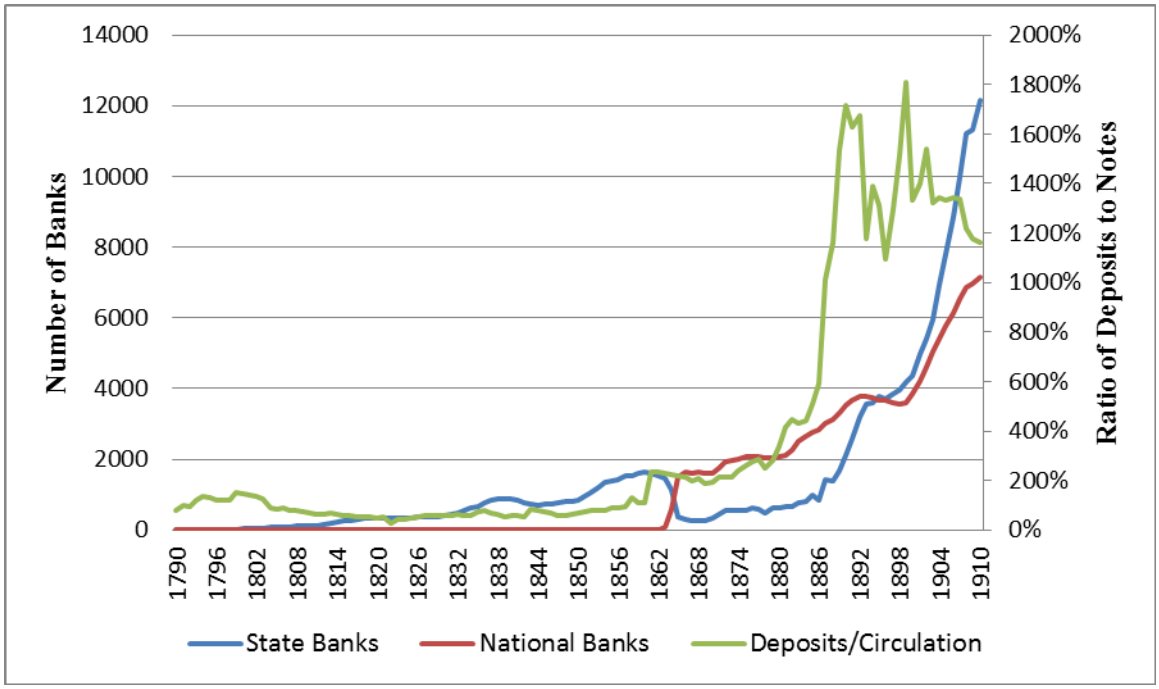
Figure 1: Free Banking Laws

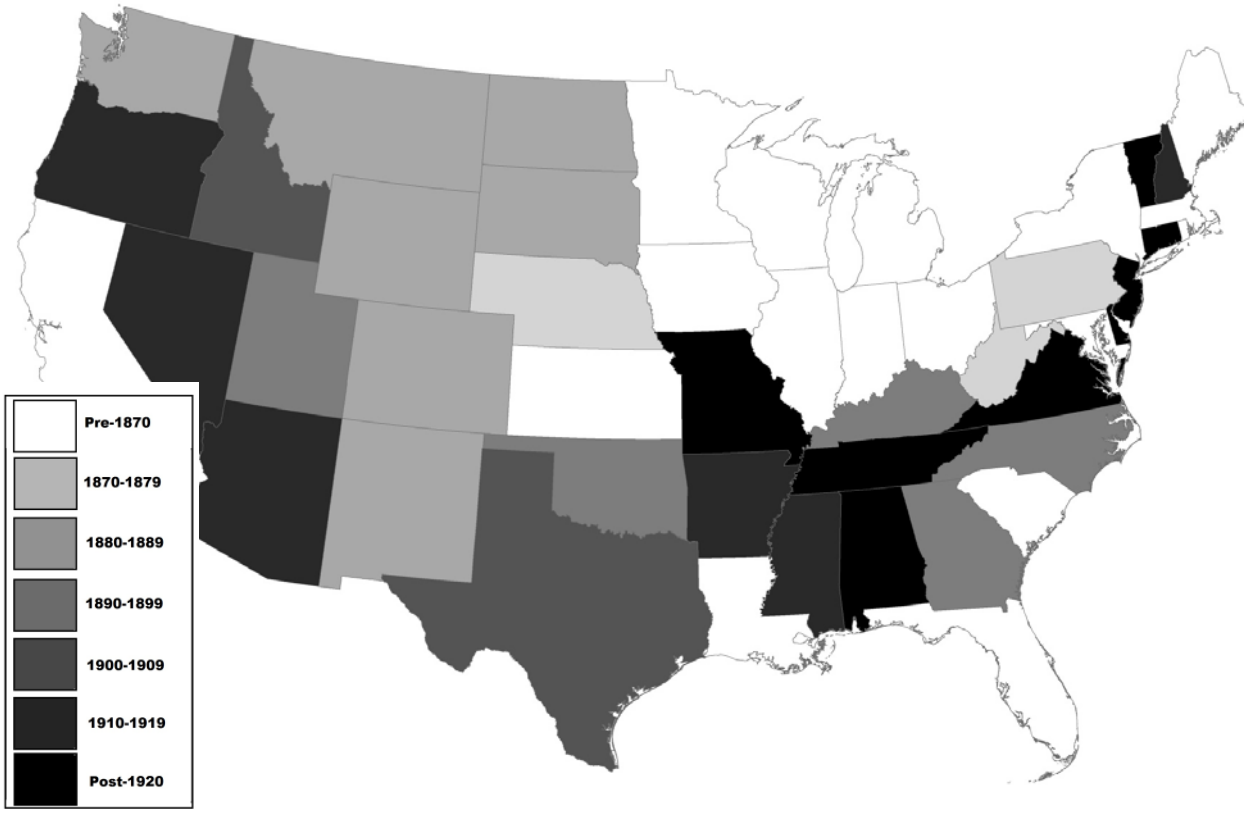
Notes: Years obtained from Rolnick and Weber (1983, p. 1082). Despite being similar, Kentucky's, Missouri's, and Virginia's laws are sometimes not referred to as "Free Banking Laws."

Figure 2: Number of Banks and Ratio of Deposits to Circulation (1790-1910)



Notes: Number of state banks and the ratio of individual deposits to notes in circulation are from Weber (2005, 2008). The number of state and national banks and ratio of deposits to notes in the 1860s come from the *Merchants and Bankers Directory*, and those after 1870 come from the *Annual Report of the Comptroller of the Currency*.

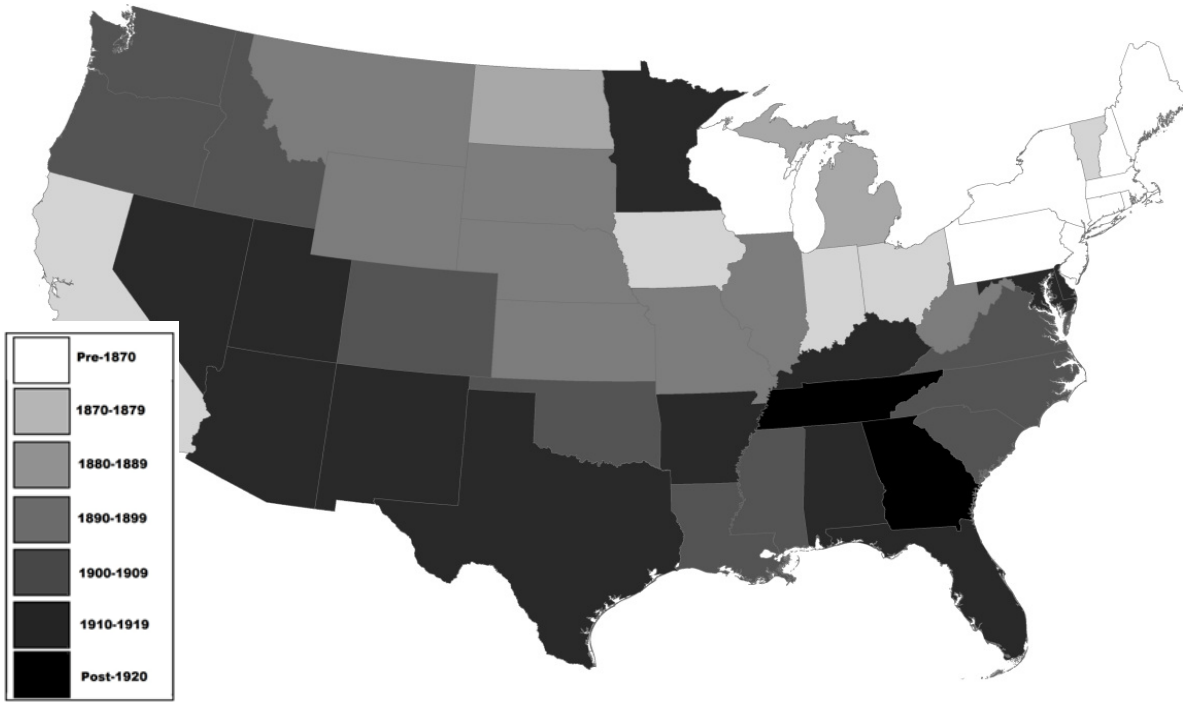
Figure 3: Decade When Double Liability First Installed



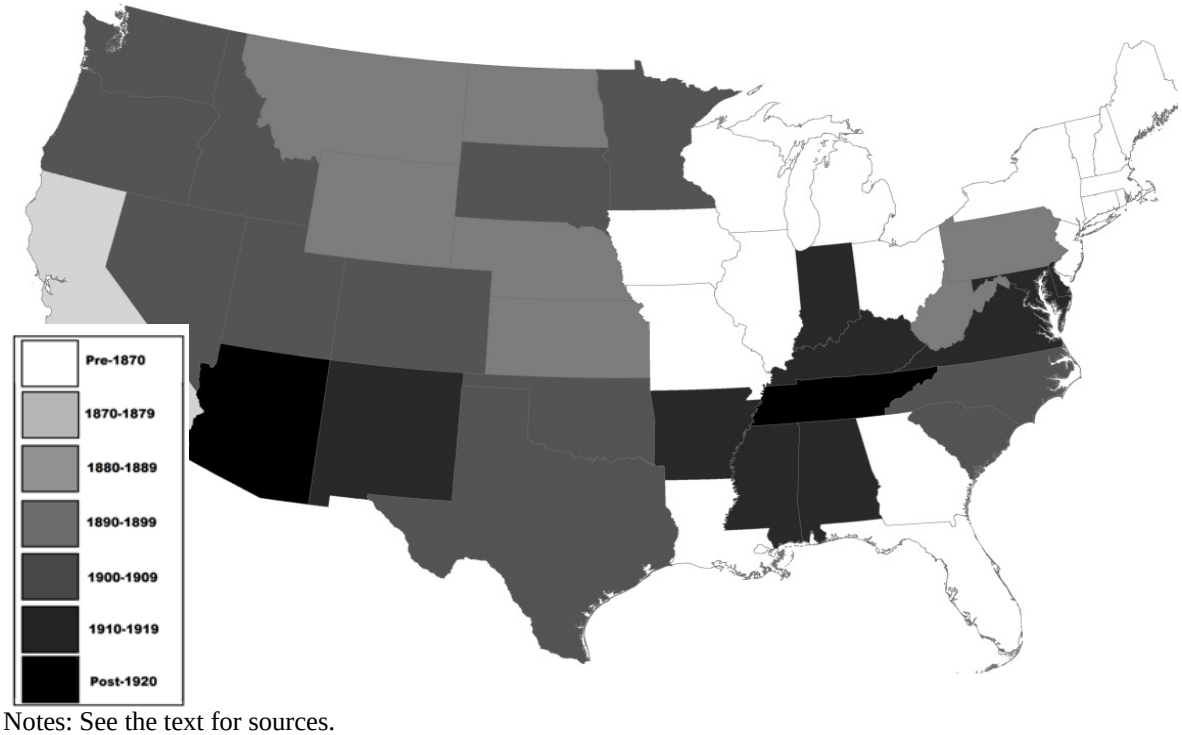
Notes: See the text for sources.

Figure 4: Evolution of State Banking Authority

Panel A: Decade when State Began Publishing Report on State Banking



Panel B: Decade when Established Independent Banking Authority



Notes: See the text for sources.

Table 1: Explaining the Timing of State Bank Supervision By Decade (1820-1900)

	Independent Banking Authority				Published Report of Banks			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
# of Entering State Banks/100	0.048	0.010	0.072	-0.001	-0.059	-0.049	-0.030	0.047
	[0.054]	[0.054]	[0.051]	[0.046]	[0.062]	[0.061]	[0.070]	[0.075]
# of Entering National Banks/100	-0.153**	-0.179***	-0.126*	-0.163***	0.026	-0.033	0.017	-0.069
	[0.074]	[0.068]	[0.067]	[0.059]	[0.082]	[0.075]	[0.067]	[0.065]
# of Closing State Banks/100	0.208***	0.214***	0.208***	0.212***	0.130	0.146	0.154*	0.192**
	[0.076]	[0.072]	[0.072]	[0.075]	[0.099]	[0.090]	[0.082]	[0.079]
# of Closing National Banks/100	0.271	0.013	0.350*	0.009	0.932***	0.681**	1.110***	0.797**
	[0.204]	[0.216]	[0.200]	[0.246]	[0.333]	[0.313]	[0.363]	[0.345]
Free Bank Law Dummy	0.243***	0.176***	0.189*	0.135*	-0.007	-0.058	-0.048	-0.080
	[0.057]	[0.060]	[0.102]	[0.078]	[0.048]	[0.047]	[0.120]	[0.099]
Double Liability	-0.092*	-0.039	0.006	0.052	-0.012	0.056	0.073	0.072
	[0.052]	[0.056]	[0.084]	[0.073]	[0.042]	[0.044]	[0.067]	[0.061]
L.Ln(Total Pop)		0.058**		0.104***		0.020		-0.040
		[0.025]		[0.038]		[0.019]		[0.043]
L.% Urban		0.552***		0.521		0.760***		1.546***
		[0.199]		[0.344]		[0.167]		[0.278]
L.%Black		0.038		-1.067		-0.029		0.458
		[0.325]		[0.650]		[0.163]		[0.622]
Midwest Region	-0.393***	-0.213			-0.399***	-0.270***		
	[0.104]	[0.141]			[0.068]	[0.086]		
Southern Region	-0.524***	-0.486***			-0.556***	-0.484***		
	[0.091]	[0.150]			[0.060]	[0.090]		
Western Region	-0.557***	-0.380***			-0.573***	-0.496***		
	[0.100]	[0.147]			[0.077]	[0.106]		
Year Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects?	No	No	Yes	Yes	No	No	Yes	Yes
Observations	350	302	350	302	350	302	350	302
R-squared	0.3992	0.3908	0.408	0.411	0.4034	0.4581	0.411	0.490

Notes: Estimates are based on OLS regressions, where the dependent variable is a dummy denoting whether the state met either of the conditions listed in the column heading. Observations are defined at the state-decade level. The panel is unbalanced since new states are allowed to enter the sample when they are created, but their inclusion does not significantly bias the coefficients. The mean and standard deviation of closed state banks is 16 and 31.5 banks, compared to a 4.8 and 10.1 for national banks. Robust standard errors appear in brackets beneath the coefficients. *, **, and *** denote statistical significance at ten percent, five percent, and one percent levels, respectively.

Table 2: Explaining the Timing of State Bank Supervision By Decade (1850-1900)

	Independent Banking Authority				Published Report of Banks			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
# of Entering State Banks/100	0.038	-0.035	0.049	-0.033	0.011	0.007	0.048	0.105
	[0.049]	[0.041]	[0.044]	[0.048]	[0.065]	[0.061]	[0.071]	[0.072]
# of Entering National Banks/100	-0.116*	-0.139**	-0.104*	-0.135**	-0.031	-0.149*	-0.036	-0.179***
	[0.061]	[0.054]	[0.059]	[0.057]	[0.081]	[0.077]	[0.065]	[0.064]
# of Closing State Banks/100	0.198***	0.201***	0.202***	0.205***	0.094	0.122	0.124	0.175*
	[0.062]	[0.056]	[0.071]	[0.073]	[0.095]	[0.091]	[0.084]	[0.087]
# of Closing National Banks/100	0.332*	0.172	0.358*	0.171	0.895***	0.575*	1.041***	0.763*
	[0.176]	[0.175]	[0.193]	[0.224]	[0.310]	[0.300]	[0.363]	[0.396]
Free Bank Law Dummy	0.181**	0.196**	0.133	0.000	-0.022	-0.060	-0.032	0.000
	[0.075]	[0.099]	[0.116]	[0.000]	[0.052]	[0.050]	[0.126]	[0.000]
Double Liability	-0.058	-0.073	-0.015	-0.051	-0.014	-0.027	0.081	0.080
	[0.056]	[0.061]	[0.062]	[0.053]	[0.047]	[0.045]	[0.061]	[0.063]
L.Ln(Total Pop)		0.008		0.012		0.028		-0.081
		[0.026]		[0.034]		[0.023]		[0.052]
L.% Urban		0.300		0.343		0.220		0.644
		[0.229]		[0.426]		[0.200]		[0.406]
L.%Black		0.423		0.003		0.082		-0.055
		[0.377]		[0.355]		[0.215]		[0.503]
L.Ln(Farm Value P.C.)		0.034		0.036		0.089**		0.162***
		[0.036]		[0.050]		[0.041]		[0.050]
L.Ln(Mfg. Capital P.C.)		0.045		0.044		0.046		0.109**
		[0.032]		[0.042]		[0.031]		[0.050]
Midwest Region	-0.418***	-0.223			-0.565***	-0.559***		
	[0.146]	[0.154]			[0.087]	[0.124]		
Southern Region	-0.626***	-0.620***			-0.796***	-0.801***		
	[0.108]	[0.190]			[0.067]	[0.111]		
Western Region	-0.645***	-0.504**			-0.743***	-0.689***		
	[0.135]	[0.209]			[0.081]	[0.117]		
Year Fixed Effects?	No	No	Yes	Yes	No	No	Yes	Yes
State Fixed Effects?	No	No	Yes	Yes	No	No	Yes	Yes
Observations	265	217	265	217	265	217	265	217
R-squared	0.2598	0.3059	0.462	0.778	0.3059	0.2787	0.330	0.734

Notes for Table 2: Estimates are based on OLS regressions, where the dependent variable is a dummy denoting whether the state met either of the conditions listed in the column heading. Observations are defined at the state-decade level. The panel is unbalanced since new states are allowed to enter the sample when they are created, but their inclusion does not significantly bias the coefficients. The mean and standard deviation of closed state banks is 16 and 31.5 banks, compared to a 4.8 and 10.1 for national banks. Robust standard errors appear in brackets beneath the coefficients. *, **, and *** denote statistical significance at ten percent, five percent, and one percent levels, respectively.

Table 3: Explaining the Level of Bank Supervision in 1911

	Ln(Total Supervision Expenses)		# of Bank Examiners		Ln(Total # of Examinations in Year)	
	(1)	(2)	(3)	(4)	(5)	(6)
# of State Banks in 1910	0.006*	0.008**	0.006	0.007	0.006**	0.007**
	[0.003]	[0.004]	[0.005]	[0.005]	[0.002]	[0.003]
# of Nat. Banks in 1910	0.006	0.002	0.018**	0.017*	0.004	0.003
	[0.006]	[0.006]	[0.008]	[0.009]	[0.004]	[0.004]
State Bank Closures Before 1900	-0.007	-0.010	0.020	0.019	-0.007	-0.007
	[0.010]	[0.011]	[0.021]	[0.022]	[0.007]	[0.007]
Nat. Bank Closures Before 1900	0.010	0.033	0.036	0.045	0.007	0.016
	[0.031]	[0.039]	[0.068]	[0.073]	[0.022]	[0.024]
Yrs Since Double Liability Installed	0.013	0.009	0.009	0.005	0.018	0.014
	[0.018]	[0.020]	[0.019]	[0.017]	[0.013]	[0.014]
Yrs publishing Banking Report	0.011		-0.004		-0.002	
	[0.030]		[0.026]		[0.021]	
Yrs with Sep. Banking Authority		0.099		0.061		0.051
		[0.072]		[0.093]		[0.051]
Bankers Association in 1900	-0.870	-1.497	0.546	0.094	-0.608	-0.974
	[1.181]	[1.205]	[1.164]	[1.251]	[1.078]	[1.089]
Ln(Total Pop)	-0.971	-1.235	-1.281	-1.467	0.228	0.077
	[0.752]	[0.811]	[0.884]	[0.925]	[0.610]	[0.664]
% Urban	4.118	4.059	-1.709	-2.116	-0.314	-0.599
	[4.276]	[4.378]	[4.264]	[4.468]	[3.264]	[3.372]
%Black	-0.801	0.051	0.515	0.642	-0.394	-0.233
	[8.169]	[7.745]	[6.161]	[5.795]	[5.356]	[5.097]
Ln(Farm Value P.C.)	0.900	0.688	-0.982	-1.083	-0.174	-0.263
	[1.093]	[1.039]	[1.480]	[1.518]	[0.834]	[0.803]
Midwest Region	-3.572	-1.171	-3.899	-1.935	-1.394	0.168
	[3.319]	[1.691]	[4.436]	[3.322]	[2.430]	[1.743]
Southern Region	-3.076	1.328	-2.716	0.673	-2.335	0.383
	[3.407]	[3.409]	[3.554]	[4.495]	[2.461]	[2.606]
Western Region	-2.130	1.375	-0.500	2.323	-0.144	2.105
	[2.693]	[2.608]	[3.117]	[3.705]	[2.057]	[2.255]
Observations	48	48	48	48	48	48
R-squared	0.380	0.428	0.696	0.703	0.397	0.423

Notes for Table 3: Estimates are based on OLS regressions, where the dependent variable is denoted by the column heading. Observations are defined at the state level. Robust standard errors appear in brackets beneath the coefficients. *, **, and *** denote statistical significance at ten percent, five percent, and one percent levels, respectively.