# The 3-6-3 Rule: An Urban Myth?

John R. Walter

Observers often describe the banking industry of the 1950s, 1960s, and 1970s as operating according to a 3-6-3 rule: Bankers gathered deposits at 3 percent, lent them at 6 percent, and were on the golf course by 3 o'clock in the afternoon. The implication is that the industry was a sleepy one, marked by a lack of aggressive competition. Further, the often heard phrase "bankers' hours" also seems to point to a lack of competitive zeal. Tight regulation is thought to have limited competition and allowed the 3-6-3 rule and the concept of bankers' hours to survive.

The banking industry was indeed subject to a raft of regulations that were introduced during the Great Depression and only began to be removed in the early 1980s. Included were restrictions that limited the formation of banks and the location of bank branches. These regulations also limited the interest rates they could pay depositors and charge borrowers.

In today's banking environment, one can hardly imagine bankers operating by anything close to a 3-6-3 rule because the market is clearly quite competitive and is likely more competitive than during the 1950s, 1960s, and 1970s. Consider an example of today's competitive setting: A visit to the Internet allows a mortgage borrower the choice of hundreds of mortgage lenders from around the country, any of whom are happy to lend. Price comparisons are fairly simple since all of these mortgage lenders openly advertise their interest rates and, to a lesser degree, their fees. Further, with numerous offers of home equity loans and an average of 4 billion credit card solicitations mailed per year, consumers have ample options for financing non-real-estate consumption (Lazarus 2003). Last, most shopping areas contain several bank branches (including those from out-of-state banks) and consequently provide

The author benefited greatly from comments from Kartik Athreya, Hubert Janicki, Yash Mehra, and Ned Prescott. Able research assistance was provided by Andrea Waddle and Chris Herrington. The views expressed herein are not necessarily those of the Federal Reserve Bank of Richmond or the Federal Reserve System.

consumers with a wide choice of deposit facilities, as well as ATMs from banks not located in the shopping area. Much of this type of competition was not in place before the 1980s, in part because delivery technology had not matured. Undoubtedly, restrictions on banks prior to the 1980s also played a role.

There is a good deal of evidence that restrictions in place before the 1980s limited the competitiveness of banking markets and thereby granted some banks monopoly power. For example, Flannery (1984) presents evidence that banks in unit banking states (i.e., states that largely prohibited branches) were less efficient than those in states allowing less restrictive branching. Flannery also indicates that branching restrictions reduced competition, allowing banks in unit branching states to earn above-normal profits. Similarly, Keeley (1990, 1192) finds that branching restrictions "provide a degree of protection from competition." Others also have found evidence that branching restrictions were anti-competitive, allowing banks to charge higher interest rates on loans and pay lower rates on deposits.[1]

Nevertheless, how widespread was the influence of these restrictions on the banking industry and its customers? When the restrictions were binding, they likely had significant effects; however, a review of the regulations indicates that they were often not binding or were at times sidestepped. Limits on the formation of new banks, while fairly strict from the Depression through the 1950s, were loosened afterward. As a result, bank formation in the 1960s and 1970s was not very different from that in the 1980s and 1990s. While a number of states maintained stringent restrictions on branching, aggregated across the United States, the number of bank branches grew quite rapidly well before branching restrictions were removed in the 1980s. Interest rate restrictions were binding for only part of the period. Further, even if the restrictions had been consistently binding, the opportunity for banks to exercise monopoly power was checked to some degree by intense competition from nonbank providers of most of the same products offered by banks. Also, some aggregate measures of bank profits and costs do not indicate that banks held significant monopoly power.

Evidence produced by Flannery (1984) and Keeley (1990) and others clearly indicates that restrictions limited competition and allowed some monopoly profits. Yet, the ability of financial market competitors (banks and nonbanks) to sidestep the restrictions may have offset some of the negative effects of the restriction.

---

[1] Keeley (1990, 1192) cites a number of studies on the effect of branching on pricing.

## 1. RESTRICTIONS AND EFFICIENCY

One can expect that the three types of restrictive banking regulations mentioned earlier—new bank entry, branching, and pricing—would have led to a staid and inefficient banking industry. On the one hand, if the banking industry faced no restrictions, incumbent banks could not operate inefficiently for long. Other banks or entrepreneurs, observing an inefficient bank or one charging above-market prices, will perceive a profit opportunity by grabbing the customers of the inefficient bank and forming a bank or opening a branch in competition with the incumbent bank. Faced with this threat of entry, incumbent banks have strong incentive to remain efficient.

On the other hand, entry restrictions (on the formation of *new* banks) and branching restrictions remove the threat of entry, allowing inefficient banks to remain. An investor, who might be tempted to form a new bank, will be prevented by binding entry restrictions. Branching restrictions would preclude incumbents from entering one another's markets to vie for these profits.

Interest rate restrictions, or ceilings on deposits or loans, also remove the incentive to compete aggressively. Interest rate ceilings on deposits, if binding, remove the opportunity to compete since a new entrant cannot attract the inefficient incumbent's customers by offering a better interest rate. A ceiling on loan interest rates likewise implies a reduced incentive to compete aggressively. Incentives are reduced because, as discussed below, with a ceiling, the bank does not wish to make as many loans as customers would seek.

## 2. ENTRY RESTRICTIONS

Restrictions on entry were a prominent feature of the American banking environment throughout its history that continues today.[2] Their intensity varied from extremely strict to fairly liberal. Entry restrictions were inaugurated in America as a means of enhancing the flow of government revenues from banks. After the formation of the national banking system in the 1860s, entry restrictions seem intended to protect from failure the banks for which the chartering agency was responsible. Similarly, following the widespread bank failures of the 1920s and the early years of the Depression, and with the 1934 creation of federal deposit insurance, the clear goal of these restrictions was to protect incumbent banks from a repetition of the earlier failures.

From 1934 through the early 1980s, restrictions were tighter than they are today, though the rate of entry was not significantly different for much of the pre-1980 period. Bank entry was slow during much of the 1930s, 1940s,

[2] In the next section, I discuss another type of entry restriction—limiting existing banks' ability to open branches.

and 1950s. In contrast, entry was more rapid in the late 1960s and 1970s, occurring at rates similar to those of the 1980s and 1990s. Consequently, entry restrictions, at least in the 1960s and 1970s, may have had only a small negative effect on competition.

## The Origin of the Tradition of Government-Granted Banking Charters

Just prior to the Revolutionary War, American banking services, which at the time mostly consisted of issuing notes to circulate as money, were largely provided by colonial governments (McCarthy 1984, 4). The issue of such notes in exchange for specie and other assets provided an inexpensive source of funding for the colonial governments. Private attempts to form note-issuing banks were quelled by colonial government rulings.

By the end of this period, government ownership of banks, or at least government authorization to operate a bank, was firmly established by 100 years of American banking tradition. The U.S. Constitution (in Article 1, Section 10, Clause 1) made state government ownership of note-issuing banks impossible by denying states the power to issue paper money (called *bills of credit* in the Constitution). As a result, the tradition was carried forward through government charter of private banks once the United States was formed. For the next 50 years, in order to form a bank, organizers were typically required to convince their state legislature to pass a law granting a bank charter (Robertson 1995, 21–22; McCarthy 1984, 5–8). While the colonial governments benefited directly from the seigniorage revenues earned from government bank note issues, the constitutional prohibition meant that state governments had to acquire the seigniorage earnings indirectly. States granted only a limited number of charters and extracted compensation from these banks in exchange for the valuable note-issue privilege (McCarthy 1984, 6–7). Such compensation included fees paid to states when charters were issued, shares in the new banks issued to the state at below-market prices, and requirements that banks finance various government services such as schools (Sylla, 4).

Starting with Michigan in 1837, states began to move away from requiring legislative action to form banks. States formed administrative agencies empowered to charter banks that met minimum requirements. States continued to derive extensive revenues from these banks by requiring them to purchase state bonds as security for bank note issues.

In 1863, the opportunity to form banks with federal charters was created. The charter-granting agency was a newly created bureau of the U.S. Treasury called the Comptroller of the Currency and was headed by an appointee known as the Comptroller. Following 1863, when investors decided to form a bank, they had a choice of either a national charter or a state charter so that both types of banks were extant, a situation that continues today. When the national banking system was created by the National Currency Act of 1863, national banks, chartered by the Comptroller, were granted the right to issue notes in exchange for purchasing U.S. bonds as security for their note issues (McCarthy 1984, 11).

One reason for creating the national bank charter was to establish a market for issues of government debt needed to finance the prosecution of the Civil War. In 1865, state bank issues of notes were effectively restricted by a 10 percent tax on all banks issuing notes, and national bank notes became the national currency (hence the title Comptroller of the *Currency*). The replacement of state bank notes (backed by state government bonds) with national bank notes (backed by U.S. government bonds) meant a source of revenue was stripped from state governments and was shifted to the federal government. This expropriation of government revenues was made politically feasible only because the Civil War placed the federal government under severe financial pressure (McCarthy 1984, 10).

## Chartering Restrictions Tightened After Depresssion-Era Bank Failures

While the first several Comptrollers held to a fairly strict policy of new national bank charters, subsequent Comptrollers loosened the policy for a more liberal one. State-chartering agencies followed suit.[3] As seen in Figure 1, the number of banks began growing rapidly in the late 1880s, and growth was especially rapid after the turn of the 20th century until 1921.

An important explanation for the brisk growth in the number of banks from 1900 to 1921 was that the minimum capital required to form a bank was reduced (Mengle 1990; Wheelock 1993). But banks failed in growing numbers starting in 1921, and the failure rate grew even higher with the advent of the Depression and continued until 1934.[4] Failures in the 1920s were tied to agricultural problems and were concentrated in the agricultural regions of the United States. Failures during the early years of the Depression were more widespread.

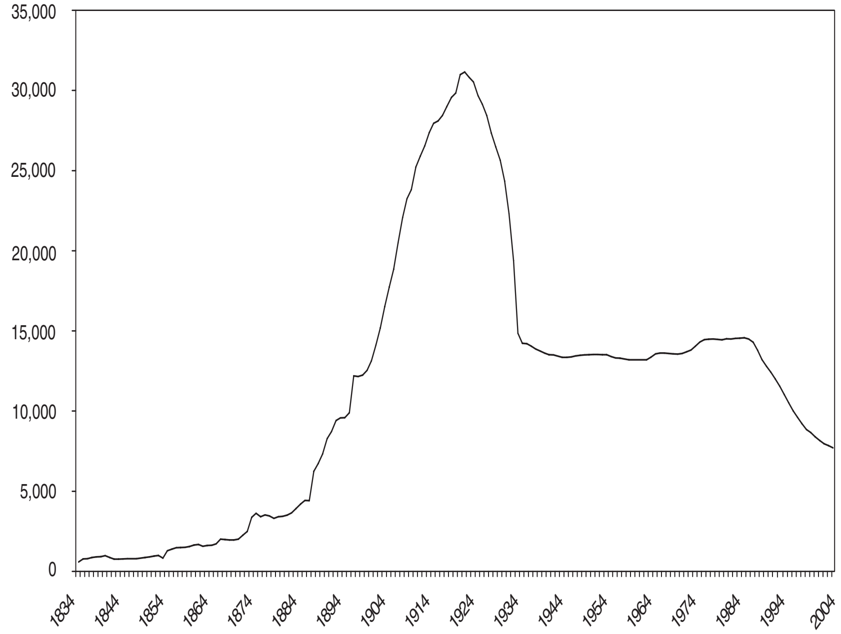
By 1934, half of all banks had failed. The widespread banking failures convinced many policymakers that the liberal chartering rules of the past 50 years had negative consequences and that entry should be restricted in the future. In his January 1935 report to Congress, Comptroller J. F. T. O'Connor expressed his view that future entry should be restricted:

---

[3] Sources of historical information on chartering standards of state banking agencies are quite limited. Consequently, my discussion of chartering policy is largely restricted to the policy of the Comptroller of the Currency for which more information is available.

[4] See Walter (2005) for a review of the causes of bank failures in the 1920s and 1930s.

**Figure 1 Number of U.S. Banks: 1834–2004**



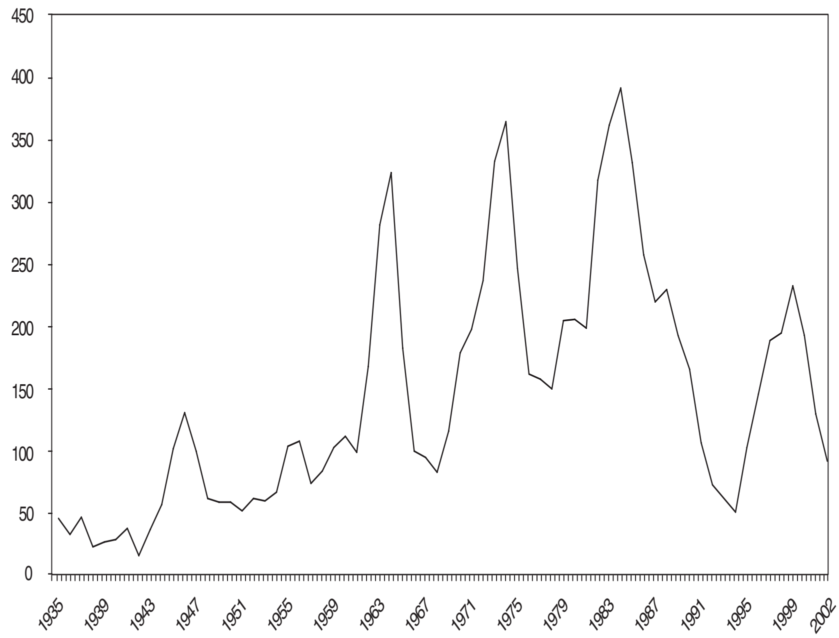

Sources: U.S. Department of Commerce, Bureau of the Census; Federal Deposit Insurance Corporation.

> Great caution should be exercised in the future in the establishment of either State or national banks, or branches of either, in order to prevent a repetition of the failures of a few years ago.... The Comptroller's Office, under existing law, is in a position to require national banks to maintain adequate, sound capital, and also to prevent the organization of a new national bank unless it has adequate, sound capital, and unless there is a need for additional banking facilities in the location chosen.... (OCC 1934, 14)

O'Connor's restrictive attitude toward chartering new banks, whereby the agency approved relatively few new bank charters, continued until the early 1960s, overlapping the tenure of his two successors, Preston Delano and Ray M. Gidney. Figure 2 shows a fairly low level of new bank entries from 1935 until the end of World War II, with some increase thereafter, mostly because of new state charters.

As required by the Banking Act of 1935, the Comptroller analyzed applications for bank charters to review the character of the prospective management

**Figure 2 Number of New Charters Per Year: 1935–2002**




Source: Figure created from FDIC data.

and the "convenience and needs of the community" in which the bank would operate. The Act did not specify the parameters of these analyses, but instead left that responsibility to supervisors. As part of the convenience and needs analysis, the Comptroller carefully reviewed the market in which the applicants intended to enter.

## Variations in the Severity of Chartering Restrictions

The policy for chartering national banks was relaxed with the appointment of James J. Saxon by President Kennedy in November 1961. Saxon made clear to the banking community his willingness to approve more charters than his predecessors. As a result, the Office of the Comptroller for the Currency (OCC) received more applications in Saxon's first three years in office than in the past 20 years (Robertson 1995, 153). However, this increase was not so far-reaching. Robertson (1995, 154) notes that the OCC remained "concerned to prevent overinvestment in banking by trade areas, and the economists on the staff were continually on the alert for signs of such overinvestment." In his

1965 testimony on the OCC chartering policy before a Senate subcommittee, Saxon indicated that the change was one of tone, not policy:

> I would not characterize... our policy [as] being more liberal. Our policy was clearly to minimize, to reduce the image of the national banking system as being one of a closed industry. (White 1992, 11)

Further, in February 1965, Comptroller Saxon announced that new charters would not be granted in some states or portions of others, plus Washington, D.C. (White 1992, 11). For the remainder of Saxon's tenure (Saxon left the OCC in 1966) and throughout the rest of the 1960s, the OCC approved fewer new charters. The number of state bank charters per year declined in the late 1960s as well; Figure 2 shows a significant decline in the number of new banks during this period.

Starting in the early 1970s, national bank charters began to increase again. Still, the long-standing OCC policy of limited entry persisted to a degree. The OCC continued to approve new banks only when the agency deemed it necessary.

**Analysis of Needs**

How did the OCC determine the need for a new bank? The Senate Banking Committee investigated the question in the late 1970s. The Committee reported that when OCC examiners reviewed the needs of a community in which investors wished to open a bank, they were to answer the following questions:

> Is there a public need for the proposed bank, or do existing banks and branches serve the area reasonably well?
>
> Is it reasonable to expect that the available banking business will be adequate to support the proposed bank, together with existing competitive banks and branches, or will an overbanked situation be created? (The Senate Banking Committee, U.S. Senate 1980)

The OCC often denied charters because it decided that there was little need for a new bank; for example, a community might already be served "reasonably well." Need was measured by a number of factors including per capita income, residential growth, deposit growth, loan-to-deposit ratios at existing banks, population per banking office, hours of operation of existing banks, and interest rates paid on deposits by existing banks. The Committee notes, however, that the OCC could offer no clear benchmarks for any of these measures used to determine whether a need existed and that various measures were used either to justify or deny an application.

Need was the major reason for rejected applications during the years covered in the study (1970 through 1977 [U.S. Senate 1980, 31]). Inadequate need accounted for, either in part or in whole, 62 percent of denials. In addition, 28 percent of denials were issued to protect "a newly approved or recently opened bank."

The negative findings of this Committee report sparked a policy shift at the OCC. In October 1980, John Heimann, Comptroller from 1977 to 1981, announced that the OCC would de-emphasize the analysis of need and focus instead on the proposed bank's organizing group and operating plan (White 1992, 54). Following the announcement, new national bank charters increased, from 41 in 1979 to 268 in 1983 (White 1992, 54). The large increase in new charters during the early 1980s was not only attributable to OCC actions, however. At the same time, state agencies were chartering new banks fairly quickly (for example, 171 in 1983) so that the total increase in bank charters in 1983 was about 370 (see Figure 2).

The Heimann policy was reversed, however, in the mid-1980s. Falling banking industry profitability led to a decline in new bank formations. In the face of weakened bank profits, the OCC clamped down on new bank charters in order to protect newly formed banks, an apparent return to the policies of the late 1970s (White 1992, 54).

Needs analysis endures today. The OCC continues to consider the need for a bank when reviewing an application (OCC 2005, 32). When reviewing a new bank's application for membership, the Federal Reserve also reviews market need. State banking agencies often regard need as an important factor as well. Still, supervisors report that needs analysis today receives less emphasis than in the past.

## Entry Restrictions Since 1934

Entry restrictions in the form of needs analysis almost certainly limited competitive pressure on banks. An existing bank knew that as long as it was serving its market "adequately," it had nothing to fear from new entrants. Consequently, it was under less pressure to innovate or seek improvement than if there had been no restrictions in place.

But how binding were these entry restrictions for new bank formation? While the OCC as well as state agencies emphasized limiting bank entry to only those banks that were, in the regulator's determination, needed, how many new bank formations were prevented? Figure 2 shows that during the 1930s, 1940s, and 1950s, entry was slow compared to that during the 1980s and 1990s. On average, from 1934 through 1959, the annual rate of new bank entry was 0.8 percent (the annual new bank formations divided by the outstanding number of banks), compared to 1.6 percent during the 1980s and 1990s. Figure 2 implies that during the 1960s and 1970s, entry was fairly rapid and not much different than in the 1980s and 1990s when entry restrictions were less binding. On average, the rate of entry during the 1960s and 1970s was 1.4 percent, just below the rate of entry in the 1980s and 1990s, but not greatly so.

## 3. BRANCHING RESTRICTIONS

Like entry restrictions, branching restrictions are considered a major factor that limited the level of competition in the U.S. banking market until they were removed in the 1980s. Federal and state restrictions on banks' ability to branch were an important feature of the U.S. banking environment throughout the 20th century and certainly from the 1930s until the 1980s. Many states maintained restrictions on branching within their home state, and the combination of state and federal laws worked to prevent interstate branching until the 1990s. Surprisingly, given that numerous states maintained restrictive branching laws, the number of branches grew fairly rapidly during the 1950s, 1960s, and 1970s, as detailed below. In turn, population per branch declined significantly. Further, even though today in-state and interstate restrictions on branching are no longer significant, local banking market concentration is no lower now than it was before the restrictions were lifted. Even without branches, banks were able to compete for loans by locating loan production offices around the country since in-state and interstate branching restrictions did not apply to these offices. So branching restrictions may have imposed less of a burden on competition than one might imagine.

### Early History of Branching Restrictions

Branching was not a significant feature of the banking landscape until just before the turn of the 20th century. It was not specifically prohibited before this time but simply unused (Mengle 1990, 5). Early discussions of allowing national banks to branch occurred in the late 1890s, but brought opposition from bankers. Large money center banks opposed branching, fearing a loss of revenues from services provided by country banks, but smaller banks opposed branching as well (Mengle 1990, 6). By 1929, a number of states had enacted laws restricting state-chartered banks' ability to branch within their home states. The law for national banks was unclear and from the late 19th century until early in the 20th century, the views of the OCC concerning branching by national banks changed with each new Comptroller.

Shifting views of the Comptroller became irrelevant when, in 1927, the McFadden Act was enacted. The Act authorized national banks to branch within their headquarter city, but no further, in states that allowed bank branching (Mengle 1990, 7). The McFadden Act was amended by the Banking Act of 1933 to allow national banks to branch to the same extent as state banks in their home state. This meant that in states that did not grant branching privileges, national banks could not branch either. Interstate branching was de facto prohibited because the McFadden Act allowed national banks to branch only within their home state; additionally, state laws prohibited branches of out-of-state banks from forming (Mengle 1990, 3).

## Branching Restrictions, Post-Depression

While many unit (nonbranching) banks failed during the Depression, branch banks survived, encouraging some states to liberalize their branching laws. Nine states allowed statewide branching in 1929 (Mengle 1990, 6). By 1939, this number had doubled to 18. Likewise, the number of states prohibiting branching fell from 22 to 14. In addition, in 1939, 11 states allowed limited branching (for example, branching within a certain number of miles of the bank's headquarters).

These numbers changed between 1939 and 1979, but not by much. Only three additional states allowed statewide branching during these 40 years, and the number prohibiting any branching declined by one.

Between states that prohibited branching and those that allowed statewide branching were a number of states with limited branching. In several such states, limits were gradually removed before 1979. For example, in Virginia, banks were only allowed to branch within their home county and contiguous counties or cities. However, a 1962 amendment relaxed this rule. The amendment allowed bank holding companies (BHCs) to acquire banks throughout the state while retaining the branching rights of the acquired banks. A BHC could acquire small banks throughout Virginia and then add branches in all contiguous counties, bringing new competitors to banks already in these counties or opening branches in communities that previously had no headquarter or branch banks (Mengle 1989, 3–5).

Soon enough, in Virginia large BHCs formed that owned banks throughout the state, all essentially sharing the same name and back-office processing. So, after 1962, statewide branching was possible, though it was through the vehicle of bank holding company ownership. Still, multibank holding companies faced some disadvantages as compared to banking organizations composed of one bank with many branches. Each bank within a holding company had a board of directors and a somewhat independent corporate structure, imposing some additional costs. In 1978, the Virginia state legislature further liberalized branching laws by allowing banks to merge and keep their branching privileges, still without moving to full statewide branching. At this point the statewide multibank BHCs could merge their banks into one and produce a bank with branches throughout the state. Finally, in 1986, Virginia allowed de jure statewide branching so that banks could open branches anywhere in the state without first acquiring a bank in a contiguous county.

In the late 1970s and the 1980s, pressure was brought on state legislatures throughout the country to further liberalize branching laws. An important reason banks wanted to expand branching was that communications and information technologies improved, which lowered the cost of running large, far-flung branch networks. In turn, large banks gained a relative advantage in efficiency over smaller banks, encouraging bankers to argue for liberalization of branching laws so that the efficiencies might be captured. Banking companies first took advantage of these efficiencies through holding company acquisitions of banks within states and across state lines. As it became clearer that branching banks and multistate banking companies enjoyed cost advantages that allowed them to predominate, unit banking states liberalized in-state branching laws to give their home state banks the opportunity to compete with larger banks from other states. By 1990, only two states prohibited branching. Ultimately, full interstate branching was authorized by the Riegle-Neal Interstate Banking Act of 1994.

## Branching Restrictions Sidestepped

When branching restrictions were in place prior to the 1980s, they may have provided local banks competitive advantages in gathering deposits, and to some degree, in making loans to their deposit customers. One important reason is that most retail and small business customers tend to hold deposits with nearby banks or branches. If bank customers have a strong preference for local providers and outside banks are prevented from opening local branches, then local banks may enjoy some degree of monopoly power in deposit-taking. Further, there can be cost advantages to borrowing from the same institution that holds the borrower's deposits. As noted earlier, various studies have found evidence that the restrictions had negative effects on competition.

Nevertheless, competition was not impossible. Banks were (and still are) free to make loans to borrowers, regardless of the borrower's location. Accordingly, they can make loans in locations where they do not have branches, either by choice or because of regulatory restrictions. In other words, while in-state and interstate branching restrictions may have limited a bank's branches to one state, or to one portion of a state, the bank could make loans to borrowers anywhere in the country.

In order to lend more easily to borrowers distant from bank headquarters or branches, loan production offices (LPOs) were opened. Such offices, which could be located throughout the United States, could not accept deposits but typically housed bank loan officers who prospected for commercial and retail loan customers in a territory surrounding the office. Of course, as mentioned earlier, the inability to accept deposits placed LPOs at a cost disadvantage compared to incumbent banks. Still, LPOs were important enough competitors to small local banks that the Independent Bankers Association of America argued strongly against continuing them when hearings were held in 1968 after the Federal Reserve first authorized them for state member banks (U.S. Congress 1968, 2–12). The OCC had authorized LPOs for national banks at an earlier date (U.S. Congress 1968, 13). A White House study estimated that in 1981 there were at least 350 LPOs operating in 20 states (Golembe 1988, 92).

### Branching Grew Regardless of Restrictions—Concentration Was Low

The number of banking offices (including both head offices and branches) grew fairly rapidly relative to population, despite branching restrictions. Branching restrictions remained largely unchanged between the 1930s and 1980, except as noted in states such as Virginia, which allowed widespread de facto branching while retaining de jure prohibitions on statewide branching. Fewer than half of all states allowed statewide branching and about one-quarter prohibited any branching. In 1950, the number of persons per bank office was 8,300. This figure had fallen to 4,300 by 1980. Following the broad liberalization of branching laws that began in 1980, population per banking office fell only a little more to 3,800 in 2004. So while branching laws in restrictive states clearly restrained competition, on average, the number of competing offices appears to have grown rapidly despite the restrictions. Still, expansion in the number of branches per person is not a completely definitive indication of enlarged competition, since some of this growth may have been driven by the growth of suburbs. If so, the number of branches might decline, while the number of competitors near one another might change little or even fall.

Data on local market concentration provide a more complete measure of market competition than the number of branches per person. Had branching restrictions severely limited competition, one might expect loosened branching regulations to have produced significant declines in local market concentration once nonlocal banks were allowed to place branches in communities that previously limited competition. Instead, average local concentration, as measured by local deposit shares, was almost completely unchanged from 1980 to the present (Moore and Siems 1998, 4).[5]

## 4. INTEREST RATE RESTRICTIONS

Just as chartering restrictions were heightened immediately following the Depression, other types of limitations were placed on banks, which tended to

---

[5] The measure used by Moore and Siems is the Hirshman-Herfindahl Index (HHI), which is the sum of the squares of every bank's deposit shares in the measured market. They create a nationwide weighted-average HHI for each year from U.S. local market HHIs.

reduce competition beginning at about the same time.[6] One important type of restriction, ceilings on interest rates, constrained banks' ability to compete with one another in pricing. Nevertheless, the competitive effects of these caps were limited.

### Interest Rate Ceilings on Deposits

The Banking Act of 1933 prohibited the payment of interest on checking accounts for national banks and state-chartered Federal Reserve member banks. It also required the Federal Reserve to regulate interest rates on time and savings deposits (Board of Governors 1933, 286). The same rules applied to nonmember banks (i.e., state-chartered banks that were not members of the Federal Reserve System) by the Banking Act of 1935. The Fed's rule that implemented these Acts was Regulation Q.

The history of these Acts indicates that legislators had several goals in mind when imposing restrictions on interest rates (Gilbert 1986, 22–23). First, some members of Congress expressed the view that interest rate competition among banks was excessive, perhaps contributing to bank failures in the 1920s and 1930s, and should be curtailed in the future. Second, the prohibition of interest on demand deposits was meant to prevent banks from sending funds gathered in their local communities on to larger city banks. Prior to these Acts, country banks often deposited their excess funds into larger correspondent banks that, of course, paid them interest on the deposits. Legislators claimed that prohibiting such interest payments would encourage country banks to reinvest the funds gathered from depositors in loans made in the local community, presaging the Community Reinvestment Act of 1977 by 40 years.[7]

The third goal of the restrictions was to prevent the liquidity problems that often accompanied seasonal funds demands of smaller banks. The agricultural cycle often meant that many country banks in agricultural regions needed funds for loans around the same time each year. In turn, these banks would attempt to withdraw funds from city banks, creating liquidity problems for the latter. Consequently, city banks necessarily curtailed lending to their nonbank customers.

The fourth goal was to lower the interest expenses of banks by enough to pay their deposit insurance premia. This was intended to overcome bank

[6] Another type of restriction that arose at the same time limited the types of products banks could offer. The Banking Act of 1933 prohibited banks from underwriting securities (Walter 1996, 19). Later, the Bank Holding Company Act of 1956 prohibited banking companies from underwriting insurance. This article does not discuss these product restrictions because there is no reason to think that such restrictions reduced the competitiveness of the banking industry. Instead, they would tend to reduce the competitiveness of the securities and insurance markets by eliminating the competition that banks would have brought to these markets.

[7] The Community Reinvestment Act is intended to encourage depository institutions to make loans in their local communities.

objection to the cost of FDIC premia, which were newly imposed by the Banking Act of 1933.

Regardless of Congress' intentions, these ceilings had little effect until the mid-1960s. Gilbert, who provides a careful review of the experience of banks under the ceilings on demand deposits and time and savings deposits, concludes that

> for the first 30 or so years of their existence, ceiling interest rates on time and savings deposits were above interest rates on Treasury securities in all but a few months, and the average interest rates paid by member banks on all time and savings deposits were below the lowest ceiling rate in effect, the rate on savings deposits. (Gilbert 1986, 25)

Under Regulation Q, the Federal Reserve set ceilings on time and savings deposits at 3 percent in late 1933. In 1934, the average rate paid by banks on time deposits was 2.4 percent (Gilbert 1986, 25). So the ceilings were 25 percent (0.6/2.4) above the rates that banks were paying. A similar spread was evident from the 1930s through the mid-1960s, indicating that the ceilings were not a binding constraint on bank competition, except perhaps for the most aggressive competition. When market rates rose for short intervals during this 30-year period such that customers demanded rates above the ceilings, the Fed raised the Regulation Q ceilings.

In the mid-1960s, as rising inflation caused market interest rates to increase significantly, Regulation Q interest ceilings did become binding. In 1966, legislation extended ceilings to thrifts—savings banks and savings and loans (Board of Governors, 1966, 1451–52). In order to encourage the flow of funds into home mortgages, the ceiling was set higher at thrifts than at banks. The hope was that the binding ceilings and the interest rate advantage afforded thrifts would encourage consumers to deposit with thrifts, and because thrifts primarily made mortgage loans, the additional thrift deposits would lead to increased mortgage lending (Gilbert 1986, 26).[8] Ceilings remained below market interest rates; in other words, they were binding from 1966 until they were removed in 1986 (Gilbert 1986, 29).

For much of this time, the spread between ceilings and market rates was small enough that the difference could be offset with noninterest payments in the form of free services and gifts, such as small home appliances (toasters, for example) and kitchenware. Essentially, banks and thrifts were using barter instead of cash interest payments. Consequently, even when binding, interest

[8] Gilbert (1986, 29–30) concludes that the diffential between the ceiling on thrifts and banks did not achieve the goal of encouraging mortgage lending. The differential was small enough so that banks could sidestep it by offering free services. Further, at times, market rates were well above the ceiling on thrift deposits. As a result, thrifts made fewer mortgage loans as growth in deposits declined.

rate restrictions may not have been anti-competitive. While banks and thrifts may have competed aggressively using services and gifts, such competition likely meant a less efficient allocation of resources. Banks and thrifts likely offered more of these services and gifts than they would have had they been free to pay market rates of interest.

Nonetheless, when inflation rose quite high in the late 1970s, barter was no longer sufficient and deposits began to move out of banks and thrifts to competitors' deposit-like accounts. The most important competitor for bank customers' funds was that of money market mutual funds, which grew from $3 billion in 1977 to $75 billion in 1980 (Board of Governors 2005a).

In response to the disintermediation, Congress passed legislation in 1980 to remove ceilings on time and savings deposits, phasing them out through 1986. With the Depository Institutions Deregulation and Monetary Control Act, Congress not only phased out all interest ceilings on time and savings deposits, but also authorized banks nationwide to pay interest on a new type of checking account available to retail customers, the Negotiable Order of Withdrawal (NOW) account. NOW accounts had previously been available only in certain states.

The zero ceiling on demand deposits, imposed in 1933, continues today. Large banks sidestepped the restriction on their ability to pay interest on deposits that smaller banks held with them by paying implicit interest in the form of services that were free of charge or below cost. Similarly, until the inflation of the late 1970s, free checking was probably sufficient to compensate retail customers. However, when inflation rose, legislation allowed banks to pay retail customers interest on checking accounts. Business customers were likewise compensated with free services, at least until inflation drove up market interest rates. Since then, banks have developed means to sidestep interest restrictions on business demand deposits using such arrangements as sweep accounts.

## Interest Rate Ceilings on Loans—Usury Ceilings

As with ceilings on deposits, government-imposed interest rate ceilings on *loans* can also limit competition. Of course, if loan rate ceilings are not binding, i.e., the government's maximum interest rate is set above the market interest rate, then they have no effect on the market. But, if binding, ceilings on loans mean that borrowers wish to borrow more than lenders are willing to lend at the ceiling rate. Borrowers will compete with one another to get the few loans that banks are willing to make at the ceiling rate.

Banks could even be forced to ration loans at the ceiling rate. In such an instance, banks would encounter the same excess demand as gas stations did during the gasoline crisis of the 1970s, with far more cars lined up for gas than there was available fuel. At the time, stations had little reason to compete with one another to draw customers, because they had more than they could handle. So with ceilings in force in banking, one can imagine the 3-6-3 rule surviving, since banks had little reason to work hard to make loans.

Interest rate ceilings on loans, in the form of state-imposed usury laws, were widespread in the post-Depression period. Usury laws set the maximum interest rates that lenders could charge borrowers domiciled in the state imposing the law.

Still, usury ceilings seem unlikely to have propagated a low level of competition in banking. As noted in Bowsher (1974, 18), for most of the period from the 1920s to the mid-1960s, "usury laws [were] ineffective because the interest ceilings were at levels above prevailing market rates." In the late 1960s and to an even greater extent in the high inflation period of the 1970s, market interest rates increased in response to rising inflation and the ceilings began to bind. For example, in 1973, usury ceilings in 22 states were at 9 percent or lower (Conference of State Bank Supervisors 1973, 109–12). With average inflation that year at 6.2 percent (measured by the consumer price index) and an average auto loan interest rate of 10.21 percent, the ceilings were clearly significant (Board of Governors, 2005b).

In the early 1970s, there is evidence that lending declined in states with binding ceilings (Bowsher 1974, 19–22), while lending increased for loans not subject to the ceilings and in states with higher ceilings. So for a period of time, banks in some states may have had little reason to compete aggressively for loan customers.

Some states with binding ceilings enacted exemptions for the loans most significantly affected by them, allowing banks and borrowers to sidestep the ceilings (Bowsher 1974, 22). States also raised the ceilings in some cases (Bowsher 1974, 19).

With double-digit inflation in 1979 and 1980, banks found a more effective means of sidestepping the ceilings. They began to move operations to states with no usury ceilings and export the higher rates allowed in those states to low-ceiling states. Specifically, banks moved to South Dakota and Delaware, both of which eliminated their usury ceiling in 1980. While typically the usury law of the borrower's home state prevails, a Supreme Court ruling allowed a loophole. In the December 1978 case of Marquette National Bank of Minneapolis v. First Omaha Service Corporation, the U.S. Supreme Court ruled that the National Bank Act granted national banks the power to export their home usury ceiling when lending to a borrower located in another state, regardless of the ceiling in the borrower's state (Athreya 2001, 11–12; Furletti 2004, 7–8). For example, soon after South Dakota eliminated its ceiling, one of the leading credit card lenders, Citibank, established a limited purpose national bank in South Dakota in which to house its credit card operation (Stein 2004). From there it could make credit card loans to a borrower in any state.

Soon after credit card banks began to export rates, many states, fearing the loss of banking business, raised or eliminated their usury ceilings. In 1975, only 3 states had no usury ceilings, and another 10 had ceilings above 15 percent on loans to individuals. By December 1981, there were 14 states with no ceiling and another 17 with a ceiling above 15 percent.

So interest rate ceilings on deposits probably had a limited effect on competition, since most of the time they were not binding. When they became binding, banks were able to compete with noninterest means of compensation, though in an inefficient manner. When noninterest means of competing for deposits failed, the ceilings were removed. Similarly, usury ceilings were not binding until the middle of the 1960s. Exemptions allowed banks to avoid them in some cases; ultimately, these ceilings either were removed or raised high enough so they were no longer binding.

## 5. NONBANK COMPETITION

While banks faced restrictions from the Depression until the 1980s, nonbanks were much less limited. These nonbanks brought strong competition by selling many of the same products as banks did. Such competition is likely to have limited banks' opportunity to earn monopoly profits or to operate inefficiently prior to the period the restrictions were removed.

During the 1970s, nonbank providers of financial products were significant competitors with banks. For example, in 1978, commercial banks held 60 percent of auto loans outstanding. Yet, finance companies (GMAC, Ford Motor Credit, and Chrysler Financial) held 21 percent of the market, and other nonbank firms, 19 percent (Rosenblum and Siegel 1983, 9). In credit card lending, the credit card issuers owned by banks, Visa and MasterCard, together accounted for $5.1 billion in outstanding balances as of 1972. At the same time, outstanding balances on Sears' credit cards alone were $4.3 billion (Rosenblum and Siegel 1983, 11). In commercial lending, banks faced stiff competition from a number of financial and nonfinancial firms, so that in 1981, 32 of the largest nonbank commercial lenders accounted for 18 percent of these firms' combined lending, plus all bank lending.

Commercial paper (unsecured debt issued by the largest corporations) proved to be another significant form of competition for banks. It offers an alternative to bank loans. Its growth was facilitated by the expanded availability of information on corporate creditworthiness made available because of improvements in information technology in the 1960s and 1970s. Between 1970 and 1980, the market grew from $33 billion in outstanding commercial paper loans to $124 billion (Board of Governors 1976, 1984).

Nonbank competition, however, preceded the 1970s. Commercial banks faced major competition for consumers' savings from insurance companies, savings and loans, the Treasury with regard to U.S. savings bonds, mutual savings banks, investment companies, and credit unions (Hodges 1966, 931). In 1947, commercial banks held 22 percent of all savings, the remainder of which was held largely by these nonbank competitors. By 1964, banks were responsible for 35 percent. Clearly, in terms of savings deposits, banks faced significant competition.

In consumer installment lending, banks have long faced strong competitors. In 1941, banks accounted for about 28 percent of consumer installment lending. By the early 1960s, this figure had grown to 40 percent. The major competitors for banks during this period were consumer finance companies, sales finance companies, credit unions, finance subsidiaries of manufacturers, savings banks, savings and loans, and insurance companies (Nadler 1966, 1129).

In the broadest terms, out of all financial intermediation, banks accounted for between 40 and 50 percent from 1957 to 1975, and between 30 and 40 percent from 1975 to 1990 (Boyd and Gertler 1990, Chart 1). Insurance companies, thrifts, brokers, dealers, investment companies, and finance companies accounted for the remainder.

The one area in which nonbank firms cannot compete is in checking accounts. Only banks, and since the late 1970s, thrifts, can offer them. Banks are protected from competition with nonbanks by state and federal laws that require a bank charter in order to offer checking accounts. Nevertheless, in the case of most deposits and all lending, banks face significant competition.

## 6. AGGREGATE DATA ON BANK COMPETITION

The previous discussion indicates that regulatory restrictions on new bank entry, on branching, and on interest rates were less than completely binding so that their effect on competition may have been modest. As a number of studies (such as Flannery 1984 and Keeley 1990) have shown, the effect was not negligible, at least of branching restrictions.

Using regression analysis, Keeley (1990, 1192) examined 85 of the largest U.S. banking companies from 1970 through 1986 and found that the liberalization of branching laws in a state is "associated with a statistically significant lower market-to-book ratio" for banks in that state. The implication of this finding is that branching restrictions protected the profits of banks operating in states with such restrictions. If a bank is earning above-normal profits, then the market value of its stock is likely to be above the book (or accounting) value of the bank, because investors, aware of this profit advantage, will bid up the stock value of such banks.

Flannery (1984, 245–47), using data from 1978, compares profits of unit banks (those with no branches) in branching states with unit banks in nonbranching states. He finds that the unit banks in nonbranching states earned 20 percent higher profits than such banks in branching states. This result supports Keeley's finding that branching restrictions protected banks from competition and allowed them to earn above-normal profits. On the other hand, Flannery finds only marginal evidence of cost differences between the two groups of unit banks, indicating that branching restrictions had less effect on bank efficiency.

If the effects of branching and other restrictions were large, one would expect some sign in aggregate bank profitability or cost data. Specifically, if restrictions were an important limit on competition, bank profits should have been higher when the restrictions were in place. Alternatively, bank profits might not have been any higher because monopoly earnings were directed toward excessive staffing, high salaries, and lavish perquisites. The analysis that follows examines bank profits, numbers of employees, and bank expenses.[9] Little evidence is found to support a hypothesis that banks had more monopoly power during the 1950s, 1960s, and 1970s when the regulations were in place than during the 1980s, 1990s, and early 2000s following their removal.

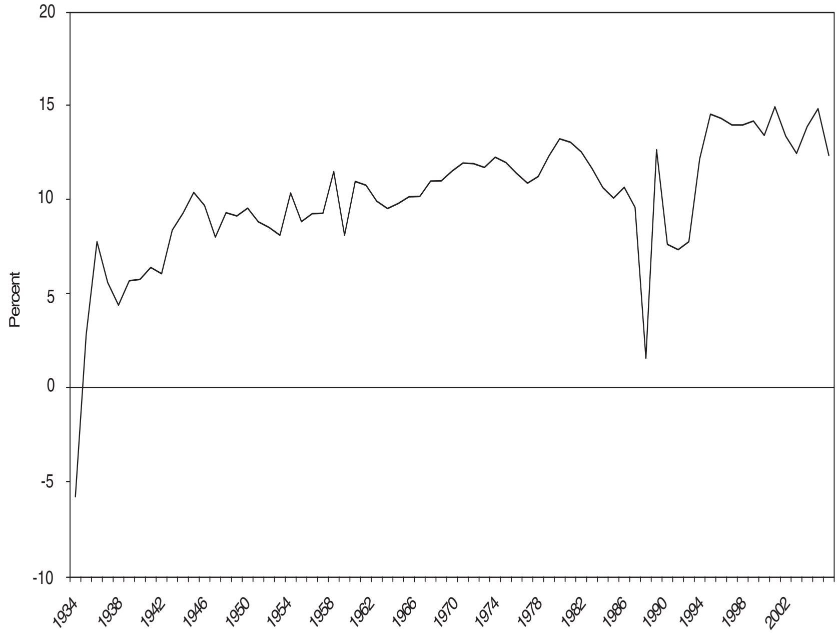
A standard measure of bank profitability is return on equity (ROE), which is net income divided by the book value of bank equity, in percentage terms. Figure 3 shows U.S. aggregate bank ROE (total net income for all banks divided by total equity—in book value terms—for all banks). By this measure, bank profits were higher in the 1950s, 1960s, and 1970s than they had been in the 1930s and 1940s. But profits were higher still in the 1990s and in the early 2000s.[10] If the tight regulations of the 1950s through the 1970s limited competition, one possible result would be high bank profits during the period, as banks took advantage of the market power the regulations granted them. Then, when the regulations were eased starting in the early to mid-1980s, one would expect profits to decline. Instead, for the period after the mid-1980s, bank profits were higher on average than in the earlier period. From 1986 through 2004, average ROE was 11.81 percent, considerably above the average return of 10.66 percent produced by banks between 1950 and 1985.[11] Therefore, these aggregate data provide no evidence that the banking industry was earning extraordinary profits during the 1950s, 1960s, and 1970s.

[9] If regulatory restrictions on banks had a significant negative effect on competition, one would expect the effect to appear as reduced banking industry productivity. Yet, productivity data are largely unavailable for the banking industry, so the following analysis focuses on profits and expenses.

[10] The difference is even greater when measuring profits by return on assets (ROA)—net income divided by assets. From 1950 to 1985, average ROA was .72 percent, and from 1986 through 2004, it was .95 percent. But this difference may be somewhat overstated. During the last 20 years, banks have increased their reliance on income from off-balance-sheet activities. As a result, present day asset growth relative to income tends to be biased downward and ROA, biased upward. ROE suffers less from this bias because banks are required to hold equity to cover off-balance-sheet exposures.

[11] Note that the highly variable ROE observations between 1987 and 1991 were largely the result of losses suffered by large banks on their emerging country lending and commercial real estate lending losses by a broader group of banks.

**Figure 3 Return on Equity—All U.S. Banks**

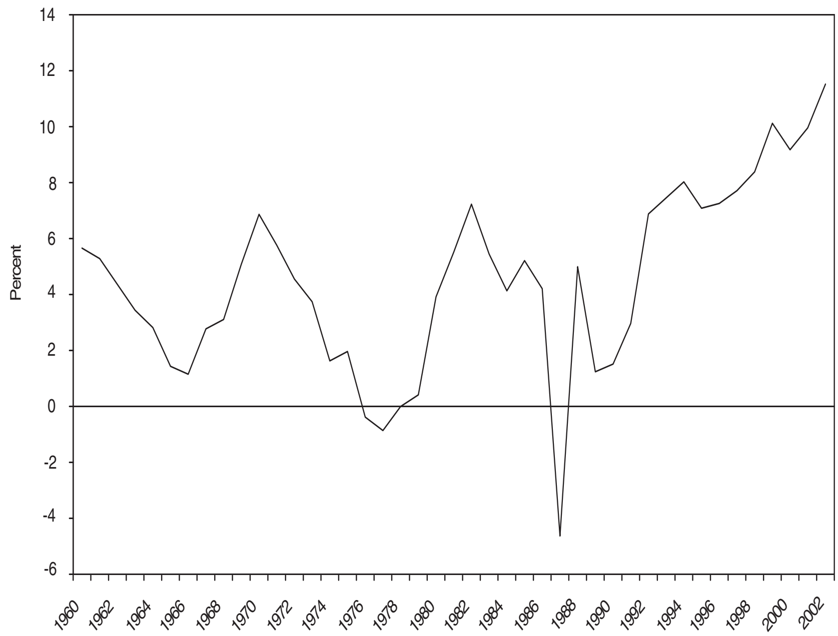



Source: Figure created from FDIC data.

Still, one might imagine that the increase in bank ROE in the 1980s and 1990s as compared to that in earlier years was simply the result of a broader trend in ROE for all corporations. If so, after adjusting for such a trend, bank profits might have been higher in the pre-1980 period, providing some evidence of monopoly profits when banking restrictions were tighter. A review of the data indicates otherwise, however. ROE for all U.S. corporations was higher in the 1980s and 1990s than in the 1960s and 1970s. Figure 4 shows bank ROE adjusted for the broad trend in ROE for all U.S. corporations by subtracting ROE for all corporations from the same ratio for banks. The figure shows that adjusted ROE for banks is as high or higher in the 1980s and 1990s than earlier. On average, adjusted ROE was 3.43 percent from 1960 through 1985 and 6.03 percent from 1986 through 2002.

Limited competition resulting from tight regulatory restrictions might have allowed banks to hire excess employees. Such excess would have allowed bank employees more leisure time, say, to be on the golf course by 3 o'clock. Figure 5 shows the ratio of number of employees to total assets. Indeed, the ratio was higher in the 1950s, 1960s, and 1970s. But the post-

**Figure 4 Bank Return on Equity Minus Return on Equity—All Corporations**

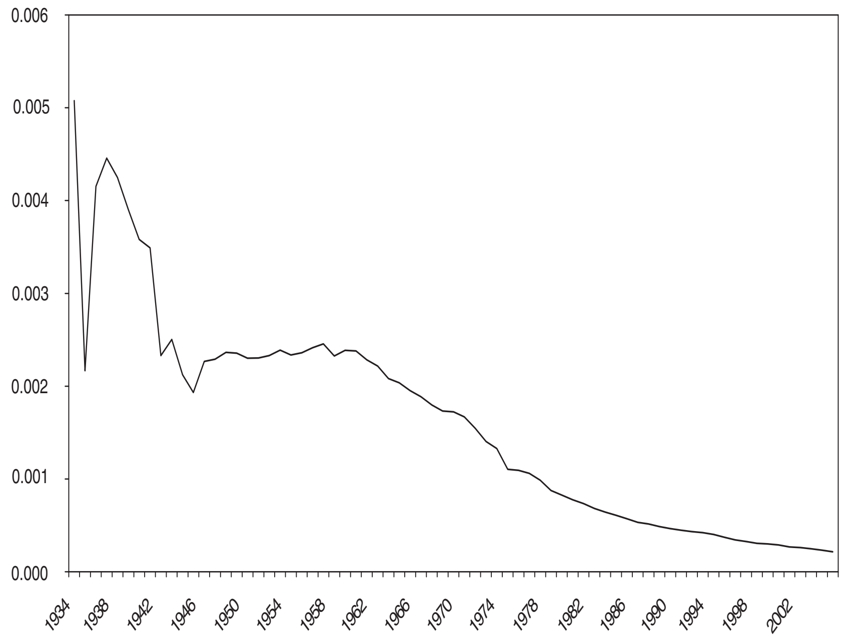



Sources: U.S. Department of Commerce, Bureau of the Census; Federal Deposit Insurance Corporation.

World War II downward trend started in 1960, well before the deregulation of banking in the mid-1980s. Certainly, this decline must have been driven largely by the growing use of computer equipment, making the average bank employee much more productive and allowing banks to reduce their staffs while increasing lending and deposit-taking. This technological trend probably far exceeded any monopoly-power-driven factor, but the bottom line here is that the data on aggregate banking employment provide no evidence of the exercise of monopoly power.

Limited competition might also have allowed banks to allocate an unusually large portion of expenses toward employees. A bank subject to limited competition would be able to pay its employees above-market salaries. Alternatively, the bank might use some of its monopoly earnings to provide excessive perquisites to its staff. Such perquisites might include providing employees with opulent offices, large expense accounts, and the latest equipment. Such practices would tend to show up as high noninterest expenses.

**Figure 5 Employees to Assets—All U.S. Banks**



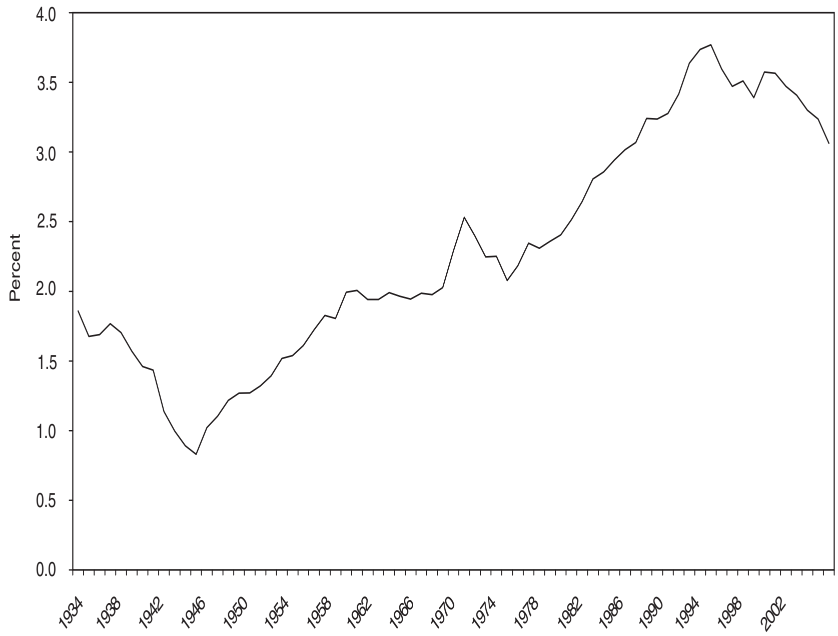

Notes: Number of employees divided by assets (thousands).

Source: Figure created from FDIC data.

Figure 6 displays the aggregate of all U.S. bank noninterest expense (which includes salaries and benefits) relative to assets. As in the previous cases (Figures 3 through 5), this figure provides no evidence to support a hypothesis that banks had unusually high expenses in the 1950s, 1960s, and 1970s. Instead, these expenses grew fairly consistently from the end of World War II until 1993, and especially rapidly from the mid-1970s until 1993.

In contrast to these other items of aggregate data, Figure 1 illustrates some data that imply an important competitive effect of regulatory restrictions. The figure shows that between 1934 and 1986, the number of U.S. banks fluctuated very little, remaining close to 14,000 banks for all of the period. This period of stability was an unusual one when compared to most of the past 200 years. The stability also coincides with the period of tight regulatory restriction of the banking industry. One could easily imagine that entry restrictions and monopoly profits were, at least in part, responsible for the stability. As

**Figure 6 Noninterest Expenses (Including Salaries and Benefits) to Assets—All U.S. Banks**




Source: Figure created from FDIC data.

discussed earlier, new bank entry, branching, and interest rate restrictions might have protected profits, thus reducing the incidence of bank failure and preventing the number of banks from declining. In fact, failures were minimal from the end of World War II until the mid-1980s. Still, as illustrated in Figure 2, entry was not unusually low, at least from the early 1960s forward, and mergers were occurring at a healthy pace, just offsetting entry. Therefore, while the number of banks was fairly stable, entry and merger was producing change.

## 7. SUMMARY

Observers often consider the period from 1950 through 1980 as one of weak competition in banking due to heavy regulatory restrictions. Indeed, a number of studies have produced evidence of monopoly profits and inefficiencies during the period and have tied these to such restrictions, most importantly to limits on branching.

Still, entry, branching, and interest rate restrictions may have had a somewhat limited effect on competition. For at least some of the period, such restrictions were either nonbinding or were sidestepped when binding. While from the 1930s through the 1950s entry restrictions may well have limited new bank formation, during the 1960s and 1970s, rates of entry were only slightly below those of the 1980s and 1990s when entry restrictions were notably loosened.

Branching prohibitions, though binding in some states, were liberal enough so that branch numbers grew fairly rapidly throughout most of the post-Depression period. Interest rate restrictions, both on deposits and loans, were not binding for much of the period during which they were in force. When they became binding, banks often found means of bypassing them, albeit inefficiently.

Finally, nonbank competitors were always present. This presence ensured that even if restrictions had limited banks' ability to compete with one another, they faced strong competition from financial institutions not subject to restriction.

Likewise, aggregate measures of bank profits and costs show little sign of the monopoly profits or the outsized expenses one might expect if the restrictions were tightly binding. Had the restrictions been more strictly enforced, the competitive impact would have been more severe. As it is, the regulatory restrictions probably had a limited effect on competition in the 1950s, 1960s, or 1970s.

## REFERENCES

Athreya, Kartik. 2001. "The Growth of Unsecured Credit: Are We Better Off?" Federal Reserve Bank of Richmond *Economic Quarterly* 87(3): 11–33.

Board of Governors of the Federal Reserve System. 1933. *Annual Report*. Washington: Board of Governors.

______________. 1966. "Interest on Deposits; Reserves of Member Banks; Open Market Operations." *Federal Reserve Bulletin* 52 (October).

______________. 1976. "Commercial Paper and Bankers Acceptances Outstanding." *Federal Reserve Bulletin* 62 (March).

______________. 1984. "Commercial Paper and Bankers Acceptances Outstanding." *Federal Reserve Bulletin* 70 (September).

______________. 2005a. "Monthly Historical Money Stock Tables, H.6

Statistical Release, Money Market Funds, RPs, and Eurodollars, Historical Data." http://www.federalreserve.gov/releases/h6/hist/h6hist7.pdf (accessed February 15, 2006).

__________. 2005b. "Consumer Credit, G.19 Statistical Release, Historical Data." http://www.federalreserve.gov/releases/g19/hist/cc_hist_tc.txt (accessed February 15, 2006).

Bowsher, Norman N. 1974. "Usury Laws: Harmful When Effective." Federal Reserve Bank of St. Louis *Review* (August): 16–23.

Boyd, John H., and Mark Gertler. 1994. "Are Banks Dead? Or Are the Reports Exaggerated?" Federal Reserve Bank of Minneapolis *Quarterly Review* 18 (3): 2–23.

Conference of State Bank Supervisors. Various years. "A Profile of State-Chartered Banking." Washington, D.C.

Flannery, Mark J. 1984. "The Social Costs of Unit Banking Restrictions." *Journal of Monetary Economics* (March) 13: 237–49.

Furletti, Mark. 2004. "The Debate Over the National Bank Act and the Preemption of State Efforts to Regulate Credit Cards." Temple Law Review 77 (1). Also available at http://www.phil.frb.org/pcc/update/fall_2004_5.html (accessed February 15, 2006).

Gilbert, R. Alton. 1986. "Requiem for Regulation Q: What It Did and Why It Passed Away." Federal Reserve Bank of St. Louis *Review* (February): 22–29.

Golembe, Carter H. 1988. "Special Constraints on Commercial Banks—Geographical Limitations." In *The Bankers' Handbook*, ed. William H. Baughn, Thomas I. Storrs, and Charls E. Walker. Homewood, Illinois: Dow Jones Irwin, Inc.

Hodges, Lauder W. 1966. "Competing for Savings and Time Deposits." In *The Bankers' Handbook*, ed. William H. Baughn and Charls E. Walker. Homewood, Illinois: Dow Jones Irwin, Inc.

Keeley, Michael C. 1990. "Deposit Insurance, Risk, and Market Power in Banking." *The American Economic Review* 80 (December): 1183–1200.

Lazarus, David. 2003. "A Deluge of Credit: S.F. Man Tallies Credit Card Offers—217 Solicitations." *San Francisco Chronicle*. Also available at http://sfgate.com/cgi-bin/article.cgi?file=/c/a/2003/03/07/BU50522.DTL (accessed February 15, 2006).

McCarthy, F. Ward. 1984. "The Evolution of the Bank Regulatory Structure: A Reappraisal." Federal Reserve Bank of Richmond *Economic Review* 70 (March/April): 3–21.

Mengle, David L. 1989. "Banking Under Changing Rules: The Fifth District Since 1970." Federal Reserve Bank of Richmond *Economic Review* 75 (March/April): 3–7.

______________. 1990. "The Case for Interstate Branch Banking." Federal Reserve Bank of Richmond *Economic Review* 76 (November/December): 3–17.

Moore, Robert R., and Thomas F. Siems. 1998. "Bank Mergers: Creating Value or Destroying Competition?" Federal Reserve Bank of Dallas *Financial Industry Issues* (Third Quarter): 1–6.

Nadler, Paul S. 1966. "Changes During the Past Decade in Commercial Banking's Position." In *The Bankers' Handbook*, ed. William H. Baughn and Charls E. Walker. Homewood, Illinois: Dow Jones Irwin, Inc.

Office of the Comptroller of the Currency. 2005. Charters: Comptroller's Licensing Manual. Washington, D.C. Available at http://www.occ.treas.gov/corpbook/group4/public/pdf/charters.pdf (accessed February 15, 2006).

Robertson, Ross M. 1995. *The Comptroller and Bank Supervision: A Historical Appraisal*. The Office of the Comptroller of the Currency, Washington, D.C.

Rosenblum, Harvey, and Diane Siegel. 1983. "Competition in Financial Services: The Impact of Nonbank Entry." Federal Reserve Bank of Chicago, *Proceedings of a Conference on Bank Structure and Competition*.

Stein, Robin. 2004. "The Ascendancy of the Credit Card Industry." Frontline, WGBH Educational Foundation. Available at http://www.pbs.org/wgbh/pages/frontline/shows/credit/more/rise.html (accessed February 15, 2006).

Sylla, Richard. 1995. "The Forgotten Private Banker." *The Freeman: Ideas on Liberty* 45 (4).

U.S. Congress. House. Committee on Banking and Currency. 1968. "Hearings Before the Committee on Banking and Currency, House of Representatives, Ninetieth Congress, Second Session, on Federal Reserve Rulings Regarding Loan Production Offices and Purchase of Operating Subsidiaries." U.S. Government Printing Office. Washington, D.C.

United States Senate, Committee on Banking, Housing, and Urban Affairs. 1980. “Majority Staff Study on Chartering of National Banks: 1970–1977.” U.S. Government Printing Office: Washington, D.C.

Walter, John R. 2005. “Depression-Era Bank Failures: The Great Contagion or the Great Shakeout?” Federal Reserve Bank of Richmond *Economic Quarterly 91* (1): 39–54.

______________. 1996. “Firewalls.” Federal Reserve Bank of Richmond *Economic Quarterly 82* (4): 15–39.

Wheelock, David C. 1993. “Government Policy and Banking Market Structure in the 1920s.” *The Journal of Economic History* 53 (December): 857–79.

White, Eugene N. 1992. *The Comptroller and the Transformation of American Banking, 1960-1990*. Comptroller of the Currency. Washington, D.C.