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James Barth

Tong Li

Wenling Lu

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Bank Regulation in the United States¹

James R. Barth^{†*}, Tong Li[†] and Wenling Lu[†]

Abstract

There have been major changes in the banking system structure and several new banking laws over time that have had major impact on banks in the USA. In response to the 1980s and early 1990s crisis, and the more recent mortgage market meltdown that began in the summer of 2007, the banking industry and regulations governing banks changed profoundly and rapidly with even more changes likely to take place. It is therefore important to delineate the nature of these changes, particularly in comparison to the pre-crisis character of the US banking system and regulatory environment. In particular, this article discusses the regulatory changes that have emerged in response to the decline in the role of banks in firms' external financing, and the rise in noninterest-generating activities; the blurring of distinctions between banks and other depository institutions, and between banking companies and other financial intermediaries; the growing complexity of banking organizations, both in a corporate hierarchy sense, and with respect to the range of activities in which they can engage; the more intense globalization of banking; and the subprime mortgage market meltdown that triggered a credit crunch and liquidity freeze that led to the worst recession in the USA since the Great Depression. (JEL codes: G21, G28 and G01)

Keywords: banks, banking regulation, bank crises, subprime mortgage markets, financial institutions.

1 Introduction

There have been major changes in the banking system structure and several new banking laws that have had a major impact on banks in the USA. In response to the 1980s and early 1990s crisis and the more recent mortgage market meltdown that began in the summer of 2007, the banking industry and regulations governing banks changed profoundly and rapidly with even more changes being proposed. It is therefore important to delineate the nature of those changes, particularly in comparison to the pre-crisis character of the US banking system and regulatory environment. In particular, we will discuss the regulatory changes that have emerged in response to the decline in the role of banks in firms' external financing, and the rise in noninterest-generating activities; the blurring of distinctions

* Lowder Eminent Scholar in Finance, Auburn University, Auburn, AL 36849-5342, USA. e-mail: barthjr@auburn.edu; jbarth@milkeninstitute.org

[†] Milken Institute, Santa Monica, CA 90401, USA. e-mail: cli@milkeninstitute.org

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between banks and other depository institutions, and between banking companies and other financial intermediaries; the growing complexity of banking organizations, both in a corporate hierarchy sense, and with respect to the range of activities in which they can engage; the more intense globalization of banking; and the subprime mortgage market meltdown that triggered a credit crunch and liquidity freeze that led to the worst recession in the USA since the Great Depression.

2 Banking regulation in historical perspective

To understand the current regulatory regime, it is important to briefly describe the early history of banks and other depository financial institutions and the evolving nature of regulation. Figure 1 contains a time sequence of the more important events covered. Though there are similarities across countries, the American depository industry has developed in a unique fashion because of specific characteristics of the USA. Unlike most other countries, the USA began as a confederation of constituent states. This situation led to a dual regulatory system, with both the states and the central government having regulatory responsibilities, and has also led to geographic restraints to various degrees over time on banks and other depository institutions.

The first official bank charter was granted to the Bank of North America in 1781 by the Continental Congress to provide financial support for the war of independence. The Bank of New York, the Bank of Massachusetts, and the Bank of Maryland subsequently received charters so that by 1790 there were four commercial banks in the USA.

After the Constitution was ratified, Congress moved to establish the First Bank of the USA in 1791. It was a federally chartered bank that acted as a central bank so as to promote a sound money and credit system. It also acted as the fiscal agent of the US Treasury and as the main depository for the country's gold and silver backing the legal currency in coin in circulation. The First Bank of the USA also made loans to state banks to assist them with any liquidity problems. Furthermore, it issued notes that served as circulating currency and tried to promote local industry. Political opposition developed because the bank was considered to be an agent of the privileged classes, and in 1811 its charter was not renewed. The Second Bank of the USA was chartered in 1816 and was similar to the First Bank, though considerably larger. It too succumbed to similar political opposition in 1836 and also was not re-chartered (Spong, 2000: p. 17). Consequently, by the 1830s, the federal government was completely out of the bank chartering and regulation business. This activity was left entirely to the states until the Civil War. Examinations were

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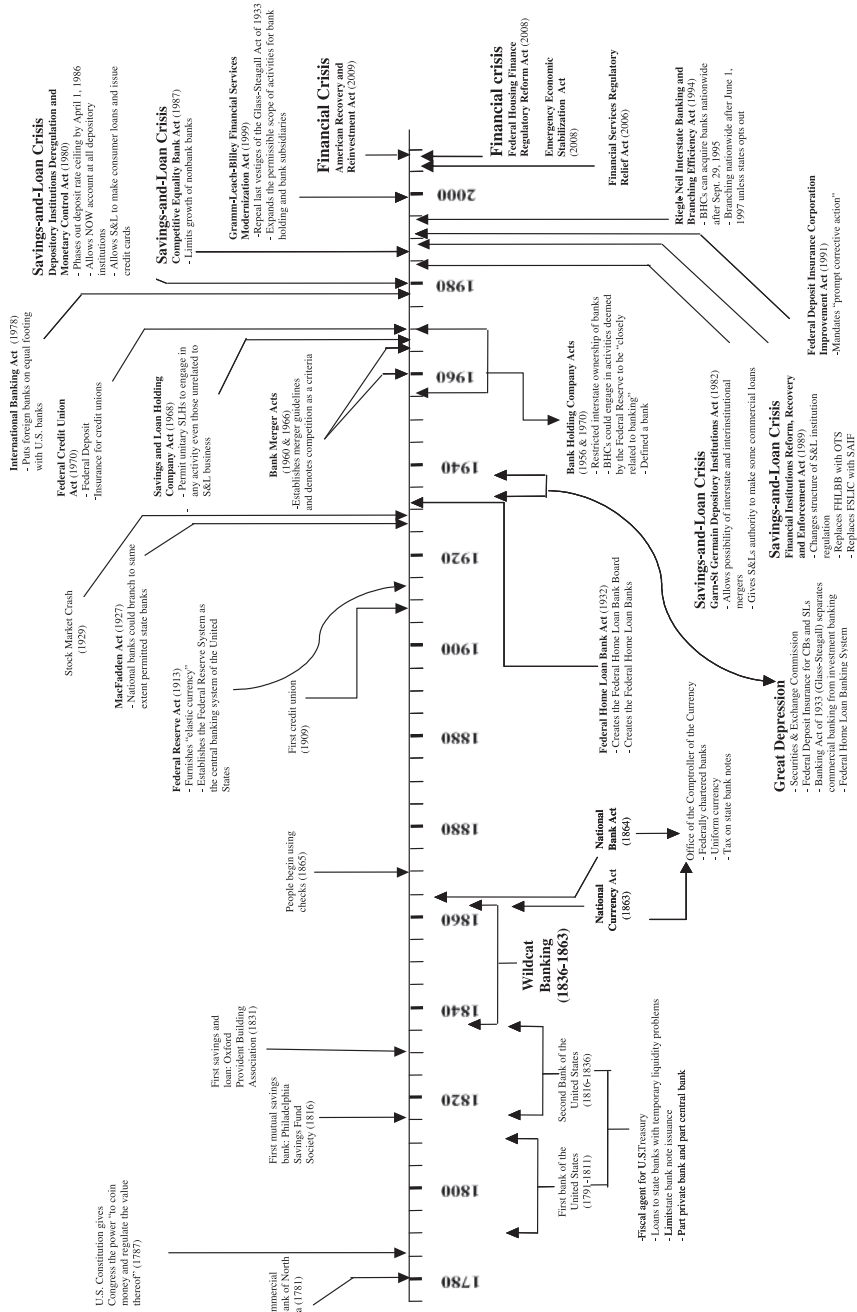


Figure 1 Historical perspective on U.S. banking structure and regulation.
Source: Authors.

infrequent and usually only done when insolvency was imminent. Bank regulation varied greatly across the different states.

Commercial banks did not provide a full range of services. They avoided long-term securities and mortgages and did not generally seek smaller time deposits. In order to fill this gap in the marketplace, the first mutual savings bank, the Philadelphia Savings Fund Society, was established in 1816. The primary purpose of savings banks was to provide a saving outlet for workers, a function not provided by commercial banks. Though in their earlier years the savings banks invested in a variety of long-term assets, overtime they concentrated on providing home mortgages until the savings and loan crisis in the 1980s. At that time, a loosening of regulations allowed savings banks to shift away from long-term mortgages as their primary assets. Historically, savings banks have been concentrated in the northeast where more states permitted the chartering of these types of institutions.

Savings and loans (S&Ls) also started in the first half of the 19th century, with the first one, the Oxford Provident Building Association, formed in Philadelphia in 1831. These organizations were usually cooperative or mutual savings and home-financing organizations. Thus they provided the services demanded by individuals that banks did not provide: savings accounts and mortgage financing. S&Ls have always been similar to savings banks but have surpassed them in importance fairly quickly (see Table 1). National chartering of S&Ls was permitted as a result of regulatory changes during the Great Depression.

The last main type of depository institution, the credit union, was first chartered in New Hampshire in 1909. It too started as a cooperative arrangement among individuals to provide financial services to members. Credit unions have historically been non-profit and thus have had tax advantages over the other types of depository institutions. Consequently, credit unions have generally been able to charge lower interest rates on loans and pay higher interest rates on deposits. This has led to criticism of their status by small commercial banks who view credit unions as competitors. Although the credit union industry has expanded its size and activities rapidly in recent decades, it still remains far less important than commercial banks (see Table 1).

As discussed earlier, the federal government was not actively involved in bank regulation after its initial entry into chartering banks in the early 1800s. The Civil War that erupted during 1860s was a major crisis and created great demands for funds by the government to finance the war against the Southern states. Consequently, the National Currency and Bank Acts of 1863 and 1864 provided the impetus for a federal system of bank chartering and supervision. The Office of the Comptroller of Currency (OCC), a new department within the Treasury Department,

was given authority to charter national banks. Currency issued by state banks, moreover, was subjected to a special tax as a result of the new Acts. The uniform currency issued by national banks had to be backed by US government bonds and thus was superior to that issued by state chartered banks.

The creation of a national chartering agency led to the unique dual banking system. Prospective bankers have a choice of regulator and some have claimed that this has led to competition among regulators to have more banks under their regulatory control by offering greater regulatory laxity. In nearly every other country, there is only one a single bank charter.

After the Civil War the banks and the financial system expanded rapidly. The USA, however, did not have a real central bank that could act in response to financial crises. In the late 19th century and the early 20th century the USA suffered numerous severe downturns in economic activity. These recessions were accompanied by runs on banks and the large commercial banks were usually called upon to rescue other banks in distress. The federal government through the OCC did regulate many of the country's banks, but many were regulated only by the states, and many functions performed by Central Bank were not available. The Panic of 1907, in particular, motivated the search for a better regulatory structure for promoting bank soundness and stability.

The result of the search was the establishment of the Federal Reserve System (Fed) as the central bank in 1913. It was organized on a decentralized basis with twelve regional banks and a Board of Governors (Board) in Washington, DC. The Fed was given regulatory powers over all national banks and those state chartered banks which elected membership in the Fed. The new central bank controlled monetary policy and handled international transactions for the federal government. The Secretary of the US Treasury sat on the Board and the power of the New York Reserve Bank President was greater than that of the Chairman of the Fed.

In banking legislation enacted in 1933 the Federal Reserve System was reorganized. The agency was granted independence from the executive branch and the power of the seven governors comprising the Board, and particularly the Chairman, was increased. Though the New York Reserve Bank was still the most important regional office and it retained certain functions, the Board in Washington became dominant. The Open Market Committee to manage monetary policy was established and consists of the seven governors and five bank presidents on a rotating basis (the New York Reserve Bank President always being a member).

The change in the organization of the Fed was one of many important banking regulatory changes in the early years of President Roosevelt's

Table 1 Number and assets of major depository financial institutions^a

Year	Commercial banks		Savings and loan associations		Savings banks		Credit unions	
	Number	Assets (US\$ millions)	Number	Assets (US\$ millions)	Number	Assets (US\$ millions)	Number	Assets (US\$ millions)
1800	n.a.	n.a.	0	0	0	0	0	0
1810	88	n.a.	0	0	0	0	0	0
1820	297	30	0	0	10	1 ^b	0	0
1830	293	34	0	0	36	7 ^b	0	0
1850	716	489	n.a.	n.a.	108	43 ^b	0	0
1860	1284	851	n.a.	n.a.	278	149 ^b	0	0
1870	1420	1231	n.a.	n.a.	517	550 ^b	0	0
1880	2726	2517	n.a.	n.a.	629	882	0	0
1890	7280	4612	n.a.	n.a.	921	1743	0	0
1900	12427	9059	5356	571	626	2328	0	0
1905	18152	14542	5264	629	615	2969	0	0
1910	24514	19324	5869	932	637	3598	n.a.	n.a.
1915	27390	24106	6806	1484	627	4257	n.a.	n.a.
1920	30291	47509	8633	2520	618	5586	n.a.	n.a.
1925	28442	54401	12403	5509	610	7831	n.a.	n.a.
1930	23679	64125	11777	8829	594	10164	1244 ^c	34 ^c
1935	15488	48905	10266	5875	559	11046	2894	50
1940	14534	67804	7521	5733	542	11925	9224	249

1945	14 126	146 245	6149	8747	534	15 924	8823	415
1950	14 146	156 914	5992	16 893	530	22 252	10 586	1005
1955	13 780	199 244	6071	37 656	528	30 382	16 192	2743
1960	13 503	243 274	5320	71 476	516	39 598	20 094	5651
1965	13 805	356 110	6185	129 580	505	56 383	22 109	10 542
1970	13 690	534 932	5669	176 183	497	76 373	23 687	17 872
1975	14 657	974 700	4931	338 200	476	121 100	22 677	37 554
1980	14 870	1 543 500	4613	629 800	460	166 600	21 465	68 974
1985	15 282	2 731 000	3246	1 069 547	403	157 400	17 654	137 462
1990	12 347	3 389 490	2815 ^e	1 259 178 ^e	— ^e	— ^e	14 549	216 874
1995	9942	4 312 677	2030 ^e	1 025 742 ^e	— ^e	— ^e	12 209	316 178
2000	8315	6 244 298	1589 ^e	1 217 338 ^e	— ^e	— ^e	10 684	449 799
2005	7527	9 040 333	1305 ^e	1 876 841	— ^e	— ^e	8695	678 700
2008	7085	12 310 922	1220 ^e	1 532 374	— ^e	— ^e	7806	813 400

Note: n.a. = not available.

^aData before 1975 are for year ending 30 June. Data after 1975 are for year ending 31 December.

^bDeposits rather than assets.

^cData in 1931.

^dData in 2002.

^eSavings & Loan Associations and Savings Banks Combined.

Sources: Federal Deposit Insurance Corporation; National Credit Union Administration; US Department of Commerce; and Bureau of the Census.

administration between 1933 and 1934 in response to the Great Depression which was enveloping the country. The most important change was the establishment of federal deposit insurance through the Federal Deposit Insurance Corporation (FDIC) to maintain consumer confidence in the banking system that had been shaken at the time. Banks were failing at an unprecedented pace. When a bank appeared to be in trouble, depositors would start a “run” on the bank in order to withdraw their deposits that were paid on a first come-first served basis so long as assets were available. These withdrawals would force many marginal institutions into insolvency when being forced to sell assets at fire-sale prices. Deposit insurance would eliminate such bank runs by providing confidence for individuals that their deposit would not be lost if a bank failed. The FDIC initially provided insurance for deposits up to \$2500. Banks were charged a flat rate deposit insurance premium that did not take into account the riskiness of the bank. This limit has been increased over time and in 2008 was \$100 000 until the most recent crisis in the USA, when in October 2008 the limit was temporarily increased to \$250 000 per depositor until yearend 2013. (Separate deposit insurance funds were established in 1934 for S&Ls and in 1970 for credit unions that also currently provide the same coverage as that provided for banks.)

The National Banking Act of 1933 is often called the Glass-Steagall Act, so named after the main congressional framers of the legislation. The statute separated commercial banking from investment banking. Prior to its passage the historic separation of the two industries had been weakening as banks, spurred by favorable rulings by the OCC, increasingly engaged in investment banking activities. Many observers connected this development with the increase in bank failures even though evidence of such a connection has not been very convincing. Recent evidence has indicated that commercial banks during this time period actually performed better than investment banks in underwriting securities. The search for scapegoats for the Great Depression was most likely the driving force that led to the passage of the Act. The restrictions on the mixing of commercial and investment banking were mainly intended to minimize conflicts of interest between the two types of activities when performed by a single entity. The underlying rationale of this separation over time came under increased scrutiny. The Fed in 1987 permitted selected large banks to underwrite securities that previously they were not permitted to do and in 1999 the legal restrictions were finally removed with the passage of the Gramm-Leach-Bliley Act (GLBA).

The final major financial regulatory restriction imposed in the 1930s was interest rate ceilings on deposits. These ceilings were imposed to protect institutions from excessive competition. The Fed was authorized to impose interest rate ceilings through Regulation Q in 1937. Payment of interest on

demand deposits was prohibited and a mechanism for placing ceilings on interest paid on time and savings deposits was established. In 1966 interest rate ceilings were extended to thrift institutions (S&Ls, savings banks and credit unions). In the early years of these restrictions, the market interest rate was below the ceiling rate so that the ceilings did not have any economic impact. With the high inflation rates of the 1970s and early 1980s, however, market rates rose far above the ceilings (even after they had been adjusted upward) and this led to substantial disintermediation for both banks and thrifts. Banks were able to obtain funds no longer available from deposits through liability management techniques, such as issuing commercial paper, Eurodollar deposits, borrowing on the federal funds market, and repurchase agreements. The interest rate ceilings stimulated the development of alternative investment vehicles for depositors, such as money market funds offered by non-banking institutions competing with banks and other depository institutions. To counter the outflow of funds from the depository institutions, the federal regulators were forced to allow the establishment of new instruments offering market returns, the most important of these being the \$10,000 six-month certificate of deposit with an interest rate pegged to the six-month Treasury bill rate. The interest rate ceilings were eventually removed except for demand deposits.

Until the 1930s, thrift institutions were limited in expanding geographically because they only were permitted to have state charters. This meant that these institutions could not operate in states that did not specifically charter that type of institution. This was remedied for S&Ls in 1933 and for credit unions in 1934 when they were allowed to obtain federal charters. This was not permitted for savings banks until 1978 and thus the savings banks grew at a much slower pace than did the other two types of institutions.

2.1 The Bank Holding Act of 1970

The regulation of bank holding companies was changed in 1970 because banks had found ways to avoid regulation imposed by the Bank Holding Company Act of 1956. The earlier act defined a bank holding company (BHC) as a corporation controlling two or more banks and severely restricted the non-banking activities of bank holding companies. In the late 1960s many of the nation's largest banks formed one-bank holding companies, and through the one BHC structure, which was not subject to regulation by the Fed, expanded activity into non-banking areas. Another important advantage of the holding company format was the ability to raise funds through the issuance of commercial paper. In addition, a number of non-banking firms controlled single banks. To this point in time the main use of the BHC structure had been to avoid restrictive

branching rules within states by approximating a branching system through a multi-bank holding company that could control several banks operating in different locations throughout a state.

The 1970 Act removed this loophole in the law and redefined the BHC as a corporation controlling one or more banks. The Fed was given responsibility for determining which non-banking activities would be appropriate under the criterion of being closely related to banking. All non-permissible activities had to be divested by the end of 1980.

2.2 The International Banking Act of 1978

Banking has become an international industry and no longer are banks confined to the borders of their home country. Because of the rapid growth of foreign banks in the USA, there was increased political pressure to restrict their growth. Domestic banks argued that foreign banks had several competitive advantages over them. Foreign banks could operate banking offices in more than one state and also were not subject to the non-banking provisions of the Bank Holding Company Acts. Legislators worried that restrictions placed on foreign banks in the USA could lead to retaliatory action against foreign branches of US banks by other countries.

The International Banking Act of 1978 (IBA) adopted an approach whereby foreign banks would be treated in the same fashion as domestic banks, so-called national treatment. The passage of this Act restricted foreign banks in a number of ways. As of July 1978, foreign banks could no longer establish offices outside their declared home state. The Fed was authorized to impose reserve requirements on agencies and branches of foreign banks and FDIC insurance was required for foreign banks taking retail deposits. Previously, foreign agencies (which are not permitted to accept deposits) and foreign branches were free of most regulation and thus had a competitive advantage over domestic banks. Finally, foreign banks with agencies and branches in the USA were made subject to the non-banking restrictions of the Bank Holding Company Acts.

2.3 The Depository Institutions Deregulation and Monetary Control Act of 1980

In 1980 Congress passed the most important piece of banking legislation since the 1930s. The Depository Institutions Deregulation and Monetary Control Act (DIDMCA) made many fundamental changes in the banking system. The Act authorized all depository institutions throughout the USA to offer negotiable orders of withdrawal (NOW) accounts. These depository accounts are essentially, but not legally, demand deposits

which pay interest and thus circumvent the 1933 restriction on interest on demand deposits. The Act also phased out deposit interest rate ceilings over a 6-year period, eliminated state usury ceilings on mortgages (unless a state adopted a new ceiling before April 1983) and prohibited state usury ceilings for business and agricultural loans above \$25 000.

As a result of DIDMCA, all transaction accounts at depository institutions were subjected to reserve requirements set by the Fed. Prior to this change, only banks that were members of the Fed were subject to the reserve requirements. Non-member banks were subject to the reserve requirements of their respective states that were more lenient in that all states permitted reserves to be held in demand deposits at other banks (these deposits serve as payment for correspondent bank services) and many states permitted reserves to be held in interest-bearing US Treasury and municipal securities. In contrast, the Fed only permitted reserves to be held in non-interest-earning deposits at the Fed and in cash. Costs were imposed on non-member banks and other depository institutions insofar as earning assets had to be converted to non-interest-earning status to meet the Fed's reserve requirements. To alleviate the costs imposed, all depository institutions were provided access to the Fed's discount or borrowing window. More recently, the Financial Services Regulatory Relief Act of 2006 authorized the Fed to begin paying interest on required and excess reserves held by or on behalf of depository institutions beginning 1 October 2011. The Emergency Economic Stabilization Act (EESA) of 2008 accelerated the effective date of payment to 1 October 2008.

DIDMCA, moreover, required the Fed to establish a system of fees for its services instead of providing them "free" as had been previously done. This, along with a decrease in the level of required reserves, greatly altered the operating cost structure for banks with respect to the central banking system.

The final major change instituted by DIDMCA involved expansion of the powers of thrift institutions. Federal credit unions were authorized to make residential real estate loans and Federal S&Ls were given expanded investment authority and greater lending flexibility. The latter institutions were also allowed to issue credit cards and were given trust powers. These provisions enabled thrift institutions to compete more effectively with banks and also alleviated some portfolio problems they had faced because of the restrictions on their permissible activities. The Garn-St Germain Act of 1982 extended the initiatives of DIDMCA. The asset powers of both S&Ls and savings banks were expanded further, thereby further blurring the distinctions among the different types of depository institutions.

2.4 Geographic coverage

American banks, unlike banks in most other countries, have traditionally been limited as to where they can establish offices. Each state specifies the branching restrictions for banks in that state. Originally, when the establishment of national banks was allowed, they could not have any branches. In 1863 this might not have been that important, but with improvements in transportation, communication, and technology, it increasingly became important for banks to be able to expand geographically. The McFadden Act of 1927 and its modification in the Banking Act of 1933 allowed national banks to follow the branching rules for state-chartered banks in the state where the national bank is located. Branching across state lines was not permitted, however. Prior to passage of the Bank Holding Company Act of 1956, banking organizations could only circumvent interstate restrictions through multi-bank holding company arrangements across state boundaries. This Act through a grandfather clause permitted those bank holding companies with multi-state operations to maintain their affiliates but prohibited any new expansion across state lines.

Banks obtaining state charters were confined to operating within the state granting the charter and national banks were prohibited from branching. The McFadden Act of 1927 finally permitted national banks to branch within their home city if the state-chartered banks were allowed this degree of branching. The Banking Act of 1933 equalized branching opportunities for national and state banks by permitting national banks to branch anywhere within the state that state-chartered banks were allowed to branch. Since state banks were confined to individual states, national banks were also confined to individual states by these two laws. In 1956 no states expressly permitted banks from other states to enter.

With the large number of failures of S&Ls and banks in the 1980s regulators were intent on maintaining the solvency of the federal deposit insurance funds for these institutions. With banks and S&Ls confined to single states, in many cases the regulators could not find sufficient viable candidates to take over failed institutions and thus reduce resolution costs. Consequently, in the early 1980s, interstate acquisition of failed banks and S&Ls was permitted, thus helping protect the resources of the insurance funds. This has been one of the most important ways in which the country's largest banks until more recently were able to expand across the country.

Though the Douglas Amendment of the Bank Holding Company Act allowed states to pass laws permitting entry by out-of-state bank holding companies, no state showed interest until Maine passed a law in 1978.

There was no entry into Maine and no action by other states until 1982 when both New York and Alaska passed laws permitting entry from out-of-state bank holding companies. Most states passed similar laws soon thereafter. Ultimately, the District of Columbia and all states except Hawaii enacted legislation permitting some type of interstate activity. The laws, however, varied greatly. Some states permitted nationwide entry without restrictions while others required reciprocity for their banks from the home state of the entering BHC. A number of states combined into regional compacts permitting entry only from states within the region. The most important of these compacts was the Southeast compact (Barth et al., 1996).

2.5 Long-term trends in US banking

Table 2 presents the changing composition of the US financial system between financial intermediaries and the capital markets as represented by bonds and equities [also see Berger et al., 1995]. After 1900 there is a substantial growth of the assets of financial intermediaries, equities, and various types of debt. The share of financial intermediaries in the entire post-1900 period appears to remain above 50%. The largest distributional change is across the debt categories. In the last decade the growth of corporate debt has allowed it to surpass both federal government and state and local government debt.

There have been big changes within the distribution of assets across different types of financial intermediaries. Although not shown, the share of commercial banks was as high as 71% in 1860, but has decreased to 27% at the end of 2008. The major increase in share is in the other institutions category. Within this category two types of institutions have increased their shares of assets dramatically in recent years, pension plans and mutual funds. Note that both of these types of institutions invest heavily in capital market instruments, such as stocks and bonds, and thus make it appear even more than is the case that the USA is shifting away from a bank-based to a capital markets-based financial system. The asset rankings of financial institutions, however, underestimate the economic importance of the commercial banks. The large banks, in particular, are heavily engaged in off-balance sheet activity, such as loan commitments and derivatives. These do not appear on the balance sheet, but are quite important. Another major trend is the rapid growth of S&Ls from 1945 to 1985 and then the rapid shrinking of their share of assets due to the crisis the industry faced in the early 1990s (Barth, 1991). From 1995 these institutions are combined with the savings banks since they differ very little in terms of activities. Most recently, there has been substantial growth in the so-called shadow banking system. This includes

Table 2 Changing composition of the U.S. financial system: financial intermediaries and capital markets (US\$ billions)

	Financial intermediaries	Equity market capitalization	Bonds outstanding			<i>Total financial system assets</i>	
			Total	Federal government	State local		Corporate
1860	1	N/A	0.1	0.1	N/A	N/A	1
1880	5	6	6	2	1	3	17
1900	15	14	8	1	2 ^a	5	37
1929	110	187	76	16	13	47	373
1933	90	33 ^b	89	24	17	48	212
1945	247	88 ^c	290	251	12	27	625
1955	450	235 ^c	413	230	46	136	1097
1965	986	568 ^c	669	262	103	305	2224
1975	2411	714 ^c	1527	444	219	864	4652
1985	8168	2325	4845	1590	678	2578	15 339
1995	18 708	6858	8817	3637	1047	4134	34 384
2000	31 771	15 104	11 172	3385	1198	6589	58 047
2005	43 461	18 512	15 022	4702	1855	8466	76 996
2008	50 059	11 738	19 747	6362	2232	11 154	81 545

^a1902 data.^bData for New York Stock Exchange (NYSE) only.^cData for NYSE and American Stock Exchange (AMEX).

Sources: 1880–1929, Goldsmith (1985); 1933–1975, Global Financial Data; 1985, *Emerging Stock Markets Factbook*, International Finance Corporation (IFC); 1995–2008, *Global Stock Markets Factbook*, Standard & Poor's; 2003, Global Financial Data and New York Stock Exchange; *Historical Statistics of the United States, Colonial Times to 1957*, U.S. Bureau of the Census; *Flow of Funds Accounts of the United States*, Board of Governors of the Federal Reserve System; and Barth and Regalia (1988).

special investment vehicles that are set up by various financial institutions through which various types of on-balance-sheet assets can be taken off the balance sheets and securitized as well as non-depository financial firms such as private equity funds and hedge funds.

The number and assets of the four main depository institutions have changed substantially since 1800. But commercial banks have always been the most important of these institutions in terms of both numbers and assets. Note also that since 1985 there has been a reduction in the number of all types of institutions. Some of this reduction was largely due to the failure of institutions, but most of the reduction has been caused by mergers, many of which have been allowed by the liberalization of bank acquisitions across state lines.

3 The post 1980s and early 1990s crisis developments

The US banking industry emerged from the crisis of the 1980s and early 1990s facing a significantly different environment than that in which it operated in the pre-crisis period. The environment had changed in part because of legislative and regulatory responses to the crisis. In particular, the greater emphasis on risk-based supervision, arising in part out of the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991, has encouraged banks to measure and manage risk exposures more precisely. At the same time, other major forces, resulting in significant changes in the structure and nature of banking, have emerged and/or accelerated during the post-crisis period. These include deregulation, the growing complexity of banking organizations, globalization and technological change.

3.1 Deregulation

Two major legislative measures—the Riegle-Neal Interstate Banking and Branching Efficiency Act (“Riegle-Neal”), and the GLBA—enacted in the post-crisis period share two major attributes. First, both have been broadly characterized as “ratifying” significant structural changes, or changes in the range of permissible activities in which banks engage, that had manifested themselves over a long period of time (DeYoung et al., 2004: p. 96; Barth et al., 2000); and second, both nevertheless have stimulated further significant changes in banking system structure and activities.

The Riegle-Neal Act, enacted on 29 September 1994, effectively repealed the McFadden Act. It was implemented in two phases. In the first phase, begun a year after the enactment date, BHCs were allowed to acquire a bank in any state—but not establish or acquire a branch—subject to several conditions.² The second phase of the implementation of Riegle-Neal began on 1 June 1997. As from that date forward, a BHC was free to consolidate its interstate banks into a branch network, and banks (both within a holding company and independent) were allowed to branch across state lines by acquiring another bank across state lines and turning the acquired bank into a branch. *De novo* branching (i.e. branching into a state other than by acquiring/merging with an existing bank) was permissible as of 1 June 1997 also, provided state law specifically authorized this form of entry.

² The conditions are as follows: (i) BHC must be adequately capitalized and adequately managed; (ii) the BHC’s community reinvestment record must pass a review by the Board; (iii) the acquisition must not leave the acquiring company in control of more than 10% of nationwide deposits or 30% of deposits in the state; and (iv) the bank to be acquired must meet any age requirement (i.e. in terms of years in existence), up to 5 years, established under state law.

Riegle-Neal represented a significant legal step in dismantling long-standing geographic restrictions on banking. However, it is worthwhile pointing out that such restrictions had been undergoing a long-term process of erosion on a state-by-state, piecemeal basis. Some states had enacted legislation to allow interstate banking via merger, provided the acquiring bank's home state allowed similar access to the state being entered. Such "national reciprocity" had a more limited counterpart in "regional compacts", which provided for bank acquisitions by out-of-state banks, but only from other states within the compact. A few states even had "national, no reciprocity" interstate banking provision (i.e. banks from anywhere else in the country could enter the state, whether or not the home state of the entering (via merger) bank had reciprocating legislation). Hence, as Riegle-Neal was being enacted, only one state—Hawaii—completely prohibited interstate expansion.

Nevertheless, subsequent to the enactment of Riegle-Neal there has been a big increase in merger activity, much of it influenced by the Act. Indeed, as DeYoung *et al.* (2004) point out, the immediate post-Riegle-Neal enactment period saw the "highest-ever 5-year run of bank mergers in US history, in terms of both the number and the value of the banks acquired" (DeYoung *et al.*, 2004: p. 96). Krainer and Lopez (2003) and Schuerman (2004) suggest that much of this merger activity was motivated in part by the desire to increase geographic risk diversification by spreading operations across states and, presumably, across banking markets. Morgan and Samolyk (2003) find empirical support for this hypothesis.

Like Riegle-Neal, the GLBA was a capstone to a decades-long process to counter restrictive laws. Enacted in November 1999, GLBA widened the range of activities in which banks and their holding companies can engage. In so doing, GLBA repealed significant parts of the Glass-Steagall Act separating commercial banking from the securities business, as well as parts of the Bank Holding Company Act of 1956 separating commercial banking from the insurance business (Barth *et al.*, 2000). Thus, GLBA permits a holding company to offer banking, securities, and insurance, as had been the case before the Great Depression.

Figure 2 shows pre-GLBA and still permissible organizational structure and Figure 3 shows post-GLBA for a more complex banking organization, and hence the changes in permissible activities, available as result of its passage. GLBA permits a BHC to become a Financial Holding Company (FHC).³ A FHC, via subsidiaries, can engage in a much wider range of activities than BHCs, including a full range of securities,

³ Foreign banking organizations subject to the Bank Holding Company Act can also elect to become FHCs. See Board of Governors of the Federal Reserve System (2003) for a detailed explanation.

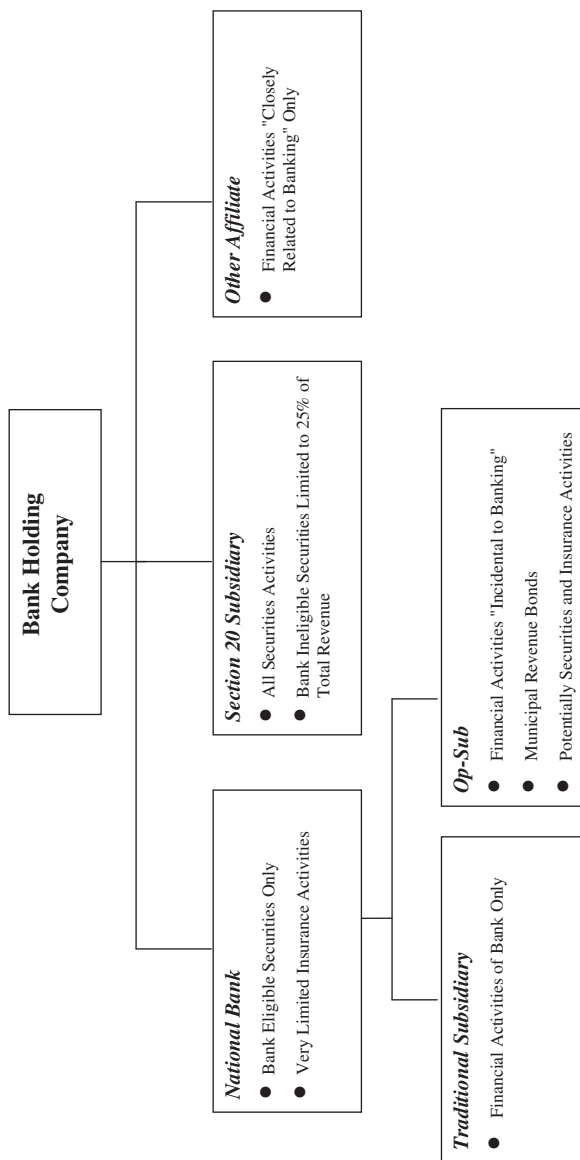


Figure 2 Bank permissible activities and organizational structure—Pre-GLBA.

Source: Authors.

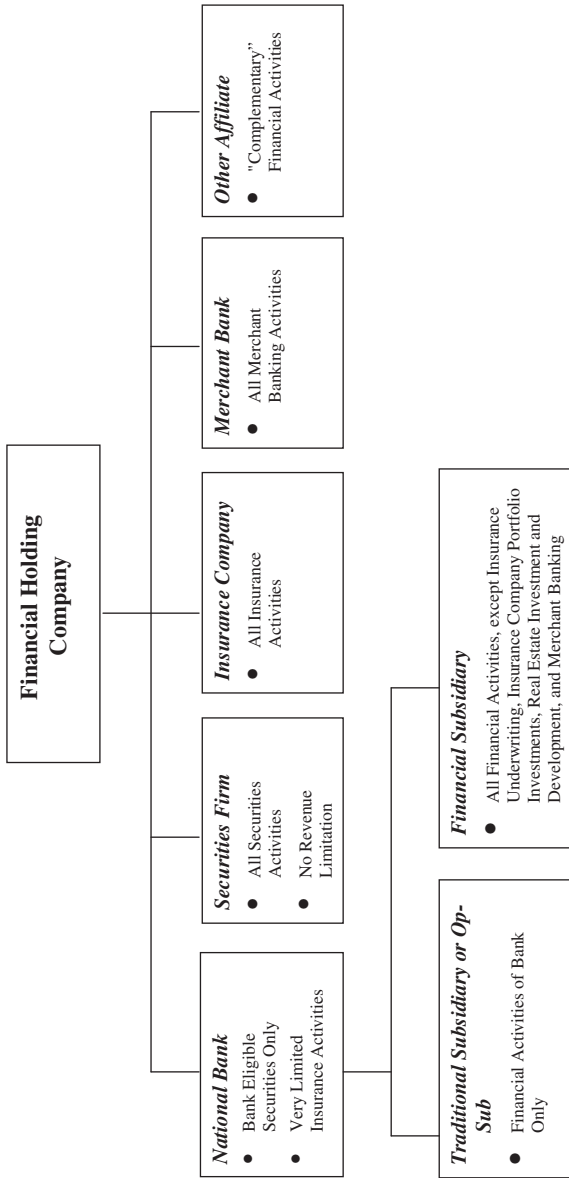


Figure 3 Bank permissible activities and organizational structure: Post-GLBA.
Source: Authors.

insurance, and merchant banking activities. But the mixing of banking and commerce is strictly prohibited.

3.2 Growing complexity of banking organizations

The Riegle-Neal Act and GLBA were major deregulatory efforts which coincided with, and reinforced, the broad and accelerating trend toward more complex banking organizations. The trend to greater complexity in banking organizations can be thought to have two related dimensions: consolidation and conglomeration. More broadly, the nature of banking activities has become more complex as banks have shifted emphasis from traditional deposit-taking and lending activities to nontraditional activities such as derivatives and structured investment vehicles.

Consolidation of the banking industry in the USA has proceeded since the early 1980s, and has been well-documented and much analyzed. From a peak of almost 15 000 banking organizations in the early 1980s, the US banking industry has consolidated to under 8000 in 2008. Mergers of separately chartered subsidiary banks within bank holding companies has accounted for the single biggest element of this consolidation, but thousands of small independent banks also were merged out of existence.

In addition to rising asset and deposit shares for the largest banking companies, many of the largest banking companies have greatly expanded the range of activities in which they engage, to the point where “conglomeration” has become an issue of note. Conglomeration refers to housing under one corporate roof what had traditionally been fairly distinct bank and non-bank financial activities.

An additional dimension of conglomeration is the growing complexity of the corporate organization of large bank-centered organizations. In the hierarchical organization of Citigroup, for example, Citibank, the “lead bank” in the organization, stands four levels below the FHC heading the organization. In turn, Citibank has numerous direct subsidiaries engaged in banking and other activities permissible to banks, and these subsidiaries in turn also have numerous subsidiaries. During the most recent crisis that began in the summer of 2007, it was ultimately decided by the federal government that a number of financial institutions, including Citigroup, were too big, too complex or too important to be allowed to fail.

A broader reflection of the growing complexity of banking is in the change in the nature of banking business. Perhaps the single most revealing yardstick illustrating this trend is the proportion of bank revenue accounted for by noninterest income (i.e. income not from traditional

lending activities). The long-run trend in noninterest income as a percent of net operating revenue for the banking industry has risen substantially since the late 1970s, when noninterest income accounted for less than 20% of net operating revenue. As of end of the first quarter of 2009, this proportion had more than doubled, to 48%.

3.3 Globalization

A third major trend characterizing the period after the 1980s-and-early-1990s banking crisis is globalization. White (2004) identifies two aspects of globalization: (i) “the increasing integration of domestic and international financial markets” and (ii) “the increasing international presence of major banks and other financial intermediaries”. He provides indirect evidence of the increasing international integration of banking by showing the growth of cross-border transactions in bonds and equities (i.e. the gross purchases and sales of bonds and equities between residents and non-residents). International comparisons provided by White show that the substantial increase in cross-border financial transactions for the USA actually was fairly modest compared to other developed countries, including Japan, Italy, and France.

White’s second aspect of increasing globalization of banking is the increased presence of major banks. This aspect, in turn, has two dimensions. The first is the presence of foreign banks in the host country. In the case of the USA, subsequent to the passage of the IBA in 1978, foreign bank entry into the US banking market increased steadily, particularly as measured by the share of business loans accounted for by foreign-owned banks. More recently, the foreign bank share of US bank assets have settled to levels below the peaks of the early 1990s, in part because US banks have more successfully competed for a larger share of a growing banking business pie. Nevertheless, Boyd and De Nicolo (2003) observe that relative to other developed countries, foreign bank activity in the USA is quite strong.

The second dimension of international banking presence is of course foreign banking activities of banks headquartered in the home country. Large US banks in particular have long histories of international banking activities. One way to illustrate the importance of foreign banking activities to US banks is to consider the share of total bank business accounted for by such activities. In the case of Citigroup, for example, 42% of its assets are foreign-based, 74% of its net revenue comes from foreign activities, and 52% of its employees are located outside the USA as of 2008. In a complementary vein, Van der Zwet (2003) shows that for the top five financial companies in the USA, 31% of revenues come from foreign-based activities.

3.4 Technological innovation

Changes in laws and regulations have made expansion into new geographic and product areas possible for banks; competitive pressures, including globalization, have spurred banks to grasp these new opportunities. However, it has been, and continues to be, technological innovation that makes it possible for banking companies to actualize their aspirations. Two interrelated developments characterize technological innovations: improvements in telecommunications and data management tools, and innovations in “financial engineering”. Together these forces have resulted in new banking products and business methods, and in new methods of delivering banking services. Indeed, DeYoung et al. (2004: p. 96) observe that “the true breaking story of the 1990s was the widespread adoption of new financial and information technologies by almost all US banks”.

Improvements in telecommunications and data management tools include continuing improvement in computing power, as well as the development and improvement of networks, including the Internet, for conveying information with increasing rapidity. Information technologies have always shaped the production and delivery of banking services and molded the structure of the industry because information is the essence of banking. Indeed, banks were among the first businesses to make wide-scale application of mainframe computers (Kamihachi, 1999). And banking is the most information technology-intensive industry in the USA, as measured by the ratio of computer equipment and software to value added (Triplett and Bosworth, 2003). More recently, richer and speedier access to customer information is allowing banks to manage customer information with increasing effectiveness, and to cross-sell additional financial services.

In a complementary fashion, innovations in financial engineering have been eagerly sought by, and applied successfully within the banking industry. Financial engineering centers on the “unbundling” of financial instruments into component parts, as for example in the division of the traditional mortgage loan into principal, interest, and servicing components. Subsequently, components are repackaging into new instruments, allowing for a more precise identification and pricing of risk. As markets expand for the trade in such new products, risk is allocated across the financial system more efficiently, in accordance with differing risk appetites of participants. Of course, as the most recent crisis demonstrates, financial instruments are simply tools and it is always possible that such tools may be misused.

One of the most significant categories of new financial products to emerge, and thrive, as a result of both financial engineering and vast improvements in information management capabilities is derivatives.

Using notional value of derivatives contracts as a measure, banks' derivatives activities increased more than sixteen-fold between 1990 and 2008, to \$212 trillion. The ratio of notional value of derivatives contracts to total bank assets increased from two times total assets to over 17 times total assets over the 1990–2008 period. However, the banking industry's derivatives activities are highly concentrated among five large banks, which account for 96% of the total. A major concern that arose during the crisis of the late 2000s was the trading and settlement risks in the over-the-counter (OTC) credit default swap market. This has led the Federal Reserve Bank of New York to push for a central clearing house for this market.

Another important example of innovative financial engineering profoundly affecting banking is securitization. Securitization is the process of pooling loans with similar characteristics and repackaging the pooled loans into securities that are then sold to investors. One important type of securitization, asset-backed securities (ABSs), has become particularly important for banks. ABSs give investors a claim on the interest and principal payments generated by the pool of loans on which they are based. Initially, a bank (or other lender) begins the securitization process by creating a special purpose entity, to which it transfers ownership of a portfolio of similar-type loans (e.g. mortgage or auto loans). Ownership shares in the special purpose entity are then sold to investors, creating a “pass-through” security; or, alternatively, the bank can retain ownership of the special purpose entity and issue securities that yield investors interest and principal payments after these are collected from borrowers of the loans that have been pooled (a “pay-through” security). Subsequently, the bank can use the proceeds to make new loans.

As Ergungor (2003) points out, issuance of (non-government sponsored enterprise or non-GSE) asset-backed securities had been negligible until the mid-1980s, when minimum capital requirements for banks were increased by federal regulators. Subsequently, the advent of Basel I in the late 1980s significantly increased the incentive for banks to find a way to reduce loans held on the balance sheet, in order to reduce the impact of capital requirements. ABSs provided a solution to this problem, and their issuance increased as a consequence. Furthermore, after an Appeals Court ruled in support of an OCC decision in 1985 that banks' securitization activities did not violate the Glass-Steagall Act prohibitions on securities dealings (Ergungor, 2003), the total amount outstanding from private issuers of ABSs soared from \$10 billion in third quarter of 1984, and peaked at \$4.55 trillion in the third quarter of 2007, before declining to \$3.94 trillion in the first quarter of 2009.

The ability to securitize loans has had a significant impact on banks. For example, ABSs now account for roughly the same share as do consumer

loans held on banks' balance sheets. Since 1998, an equal or greater proportion of bank credit card loans have been securitized than kept on the balance sheet. Furthermore, Freddie Mac and Fannie Mae securitize about half of all home mortgage loans. These institutions were established in large part to provide greater funding for housing available to low- and moderate-income individuals as well as underserved areas. It might also be noted that Fannie Mae was taken off the federal budget in 1968 to better address the issue of "redlining". This particular term refers to a practice that originated in the 1930s when the Federal Housing Administration used a red marker to identify neighborhoods by risk. However, such a blunt way of identifying risk could lead to discrimination against individuals when everybody in particular neighborhoods was treated as being equally risky. This practice was outlawed by the Community Reinvestment Act (CRA) of 1977. CRA's goal is to help ensure that all banking institutions insured by the FDIC make credit available to the lower-income communities in which they are chartered.

Serious problems in the housing market, discussed in the next section, and the associated weakness in the financial condition of these two government sponsored enterprises (GSEs), resulted in a new and independent regulator—the Federal Housing Finance Agency (FHFA)—being established in July 2008 to oversee their operations and those of the Federal Home Loan Banks.

4 Subprime mortgage market meltdown

In the summer of 2007, substantial problems began to emerge in the subprime loan market when several subprime mortgage lenders filed for bankruptcy (see Barth et al., 2009). Although financial firms most closely involved in the subprime market suffered the heaviest losses, other firms also suffered as credit and liquidity problems spread throughout the financial sector. More specifically, Bear Stearns spent \$3.2 billion in June 2007 to bail out two of its hedge funds that suffered losses from the collapsing the sub-prime mortgage market. Subsequently, in early August 2007, American Home mortgage, one of the largest home loan providers filed for bankruptcy. A few days later BNP Paribas, a French bank, suspended three hedge funds worth €2 billion citing the growing problem in the subprime mortgage market. Then at the end of the month, Countrywide, the leading subprime lender, raised \$2 billion in capital from Bank of America in an attempt to shore up its deteriorating financial condition, and was subsequently acquired by Bank of America.

As the financial turmoil continued into 2008, the federal government invoked some existing but seldom-used powers to contain the damage.

In March 2008, the Fed provided a \$29 billion loan to help JPMorgan Chase acquire Bear Stearns when that firm suddenly collapsed. But months later, the Fed flip-flopped when it refused to bail Lehman Brothers out of similar financial difficulties and the firm was forced to file for bankruptcy in September 2008. (Of the three remaining big investment banks, Merrill Lynch was acquired by Bank of America and Goldman Sachs and Morgan Stanley were allowed to convert to banking holding companies.) Just 2 days later, the Fed flip-flopped again when it extended an \$85 billion loan to the faltering insurance giant American International Group (AIG), in exchange for a 79% ownership stake. A month later, the Fed agreed to extend AIG an additional lifeline of up to \$37.8 billion in cash collateral in exchange for investment-grade, fixed-income securities. Then again in the following two months, AIG received another \$20.9 billion loan from the Fed and \$40 billion in capital from Treasury.

The government also took action to support the mortgage market. In July 2008, the Housing and Economic Recovery Act authorized the Federal Housing Authority to guarantee up to \$300 billion in new thirty-year fixed-rate mortgages for subprime borrowers. The Act also provided temporary authority to the Treasury Secretary to purchase any obligations and other securities in any amounts issued by Fannie Mae and Freddie Mac. But by 7 September 2008, both institutions had deteriorated sufficiently that they were placed into conservatorship, or effectively nationalized, to ensure that they would remain solvent. These two GSEs had been allowed to operate with far more assets per dollar of equity capital than other financial institutions (see Barth *et al.*, 2009: pp. 163–165). At the same time, the Treasury announced a temporary program to purchase Fannie Mae and Freddie Mac mortgage-backed securities to help make more mortgage financing available to home buyers.

Despite all of these government interventions, the financial panic worsened and in October 2008 the Emergency Economic Stabilization Act was passed. It granted the Treasury unprecedented powers to use up to \$700 billion to stabilize the financial sector. The bailout plan also raised the limit on bank deposits secured by the FDIC from \$100 000 to \$250 000 per depositor, as already noted. Furthermore, the government announced it was insuring individual investors against losses in money market mutual funds when one such fund “broke the buck”.

From 28 October 2008 to 14 August 2009, Treasury had injected \$204 billion in capital into 668 financial institutions, and 36 institutions had repaid \$70 billion. The FDIC had also extended unlimited insurance coverage to all noninterest-bearing transaction accounts. The Fed also took steps to force down home mortgage rates by agreeing to buy housing-related securities issued and guaranteed by Fannie Mae, Freddie Mac,

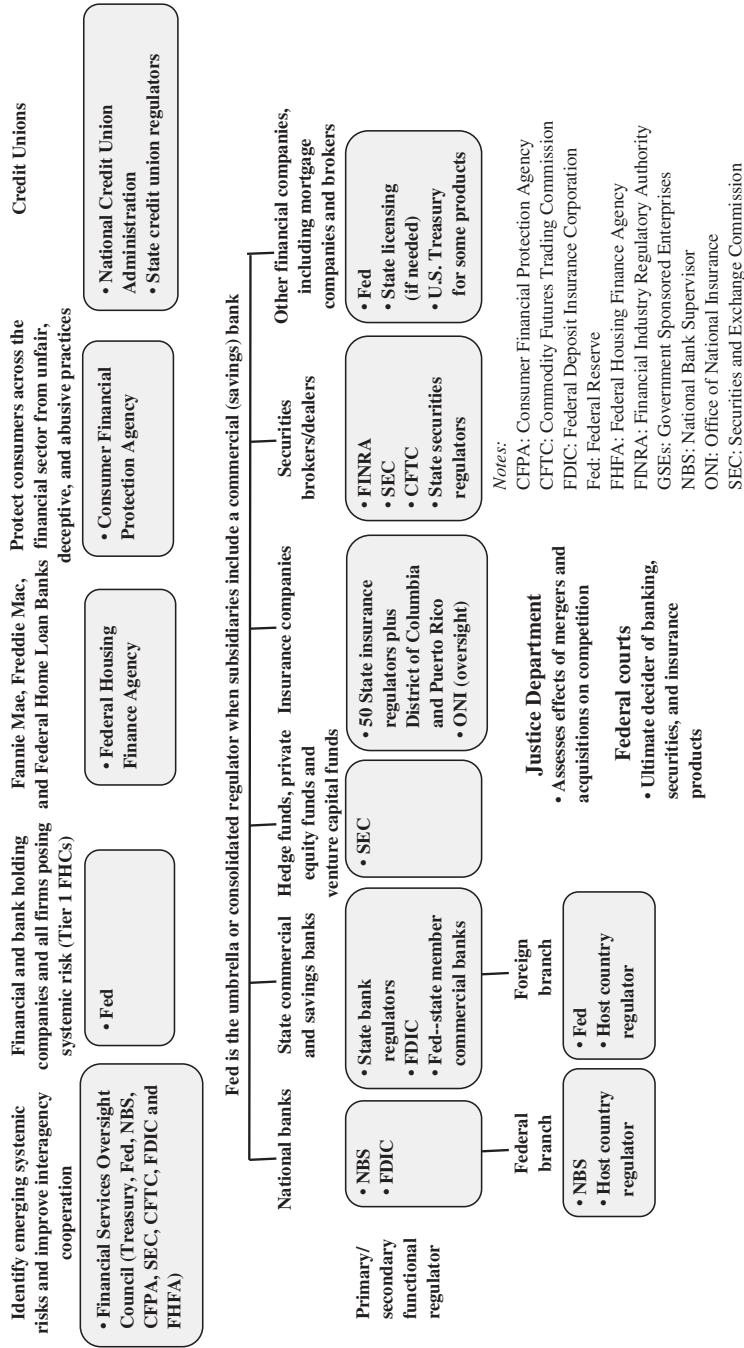


Figure 4 Proposed U.S. regulatory regime.
Source: Authors.

Ginnie Mae and Federal Home Loan Banks as well as lending money against securities backed by car loans, student loans, credit card debt and small-business loans. In addition, beginning on 18 September 2007, the Fed lowered its target federal funds rate ten times, from 5.25% to a low of 0–0.25% on 26 December 2008.

Despite all these efforts in response to the crisis in the financial sector, they do not address the issue of the appropriate regulatory structure to prevent a similar crisis in the future (see Herring and Litan, 1995 and Kaufman and Kroszner, 1996 for early discussions of designing an appropriate bank regulation with the context of the overall financial system). Yet, reform is sorely needed, as called for by former Treasury Secretary Paulson in the *Blueprint for A Modernized Financial Regulatory Structure* issued in March 2008. More recently, President Obama also called for regulatory reform in *Financial Regulatory Reform: A New Foundation* issued in June 2009. Figure 4 clearly demonstrates the US regulatory structure has multiple and overlapping authorities, which results in inconsistent and costly regulation. As indicated earlier, this structure has evolved over time in a piecemeal fashion mainly in response to various financial crises and hence does not reflect a coherent framework for addressing the current banking and financial environment more broadly. President Obama proposal for regulatory reform creates a new Financial Services Oversight Council to focus on systemic risk in the financial sector with the Fed given new powers to supervise all firms posing such risk. It also creates a Consumer Financial Protection Agency to protect consumers across the financial sector from unfair, deceptive and abusive practices. The only regulatory agency that is eliminated is the Office of Thrift Supervision, which would be merged into the OCC. Although such a proposal is unlikely to be implemented any time soon, at the very least it is generating needed discussion that may eventually lead to a more modern and effective regulatory regime.

5 Conclusion

This article has traced the evolving regulatory regime governing banks in the USA over the past two centuries. It has been shown that nearly all of the important regulations were put in place in response to various crises over time rather to prevent them from occurring or mitigating their effects should they occur. As a result, the current structure consists of multiple, overlapping, costly and inconsistent regulation. If one were starting from scratch, one would scrap the current structure and instead conduct a careful and thorough assessment of the causes of financial crises so as to determine how best to reform and modify regulation over time in response

to a changing banking landscape. This would entail identifying market failures and then deciding upon the most appropriate regulations to ameliorate them.

The most recent financial crisis certainly provides ample evidence that allowing financial institutions to grow on the basis of excessive leverage is a business model doomed to failure. The same applies to allowing individuals to borrow money to purchase homes without a down payment and without recourse on the assumption that everything will be fine so long as home prices only go up. Also, information asymmetries may cause problems such as when fairly complex financial products are sold and securitized in the marketplace. Information about the riskiness of such products may be available to those who sell them, but not available to those who ultimately purchase them. This can lead to firms receiving fees for originating financial products and other firms receiving fees for rating them without a proper assessment of their riskiness and therefore appropriate prices. Regulations should be designed to address perverse incentives that can create financial problems and asymmetries in information that can do the same. At the same time, there has to be a careful balance between government regulation and market discipline to promote a well-functioning banking system (see Barth et al., 2004, Barth et al., 2006a and Barth et al., 2006b).

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