Chapter 10

Banking Industry: Structure and Competition

PREVIEW

The operations of individual banks (how they acquire, use, and manage funds to make a profit) are roughly similar throughout the world. In all countries, banks are financial intermediaries in the business of earning profits. When you consider the structure and operation of the banking industry as a whole, however, the United States is in a class by itself. In most countries, four or five large banks typically dominate the banking industry, but in the United States there are on the order of 8,000 commercial banks, 1,500 savings and loan associations, 400 mutual savings banks, and 10,000 credit unions.

Is more better? Does this diversity mean that the American banking system is more competitive and therefore more economically efficient and sound than banking systems in other countries? What in the American economic and political system explains this large number of banking institutions? In this chapter, we try to answer these questions by examining the historical trends in the banking industry and its overall structure.

We start by examining the historical development of the banking system and how financial innovation has increased the competitive environment for the banking industry and is causing fundamental changes in it. We then go on to look at the commercial banking industry in detail and then discuss the thrift industry, which includes savings and loan associations, mutual savings banks, and credit unions. We spend more time on commercial banks because they are by far the largest depository institutions, accounting for over two-thirds of the deposits in the banking system. In addition to looking at our domestic banking system, we also examine the forces behind the growth in international banking to see how it has affected us in the United States.

Historical Development of the Banking System

The modern commercial banking industry in the Unted States began when the Bank of North America was chartered in Philadelphia in 1782. With the success of this bank, other banks opened for business, and the American banking industry was off and running. (As a study aid, Figure 1 provides a time line of the most important dates in the history of American banking before World War II.)

A major controversy involving the industry in its early years was whether the federal government or the states should charter banks. The Federalists, particularly Alexander Hamilton, advocated greater centralized control of banking and federal

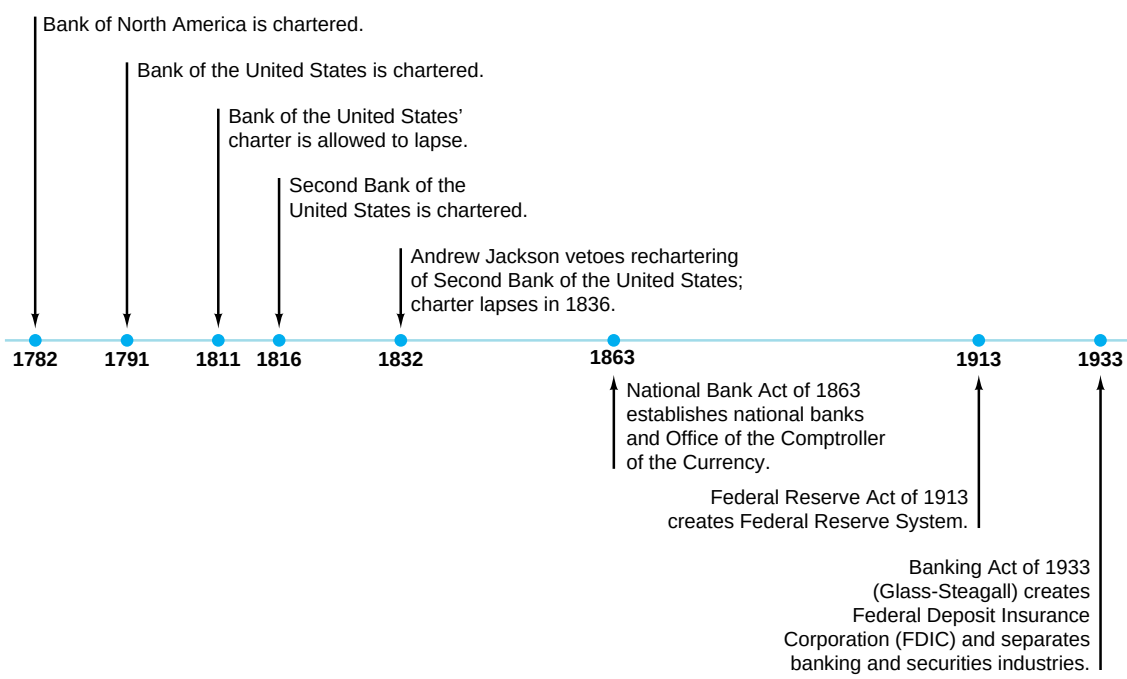


FIGURE 1 Time Line of the Early History of Commercial Banking in the United States

The government agency that oversees the banking system and is responsible for the amount of money and credit supplied in the economy; in the United States, the Federal Reserve System.

chartering of banks. Their efforts led to the creation in 1791 of the Bank of the United States, which had elements of both a private and a **central bank**, a government institution that has responsibility for the amount of money and credit supplied in the economy as a whole. Agricultural and other interests, however, were quite suspicious of centralized power and hence advocated chartering by the states. Furthermore, their distrust of moneyed interests in the big cities led to political pressures to eliminate the Bank of the United States, and in 1811 their efforts met with success, when its charter was not renewed. Because of abuses by state banks and the clear need for a central bank to help the federal government raise funds during the War of 1812, Congress was stimulated to create the Second Bank of the United States in 1816. Tensions between advocates and opponents of centralized banking power were a recurrent theme during the operation of this second attempt at central banking in the United States, and with the election of Andrew Jackson, a strong advocate of states' rights, the fate of the Second Bank was sealed. After the election in 1832, Jackson vetoed the rechartering of the Second Bank of the United States as a national bank, and its charter lapsed in 1836.

Until 1863, all commercial banks in the United States were chartered by the banking commission of the state in which each operated. No national currency existed, and banks obtained funds primarily by issuing *banknotes* (currency circulated by the banks that could be redeemed for gold). Because banking regulations were

extremely lax in many states, banks regularly failed due to fraud or lack of sufficient bank capital; their banknotes became worthless.

To eliminate the abuses of the state-chartered banks (called **state banks**), the National Bank Act of 1863 (and subsequent amendments to it) created a new banking system of federally chartered banks (called **national banks**), supervised by the Office of the Comptroller of the Currency, a department of the U.S. Treasury. This legislation was originally intended to dry up sources of funds to state banks by imposing a prohibitive tax on their banknotes while leaving the banknotes of the federally chartered banks untaxed. The state banks cleverly escaped extinction by acquiring funds through deposits. As a result, today the United States has a **dual banking system** in which banks supervised by the federal government and banks supervised by the states operate side by side.

Central banking did not reappear in this country until the Federal Reserve System (the Fed) was created in 1913 to promote an even safer banking system. All national banks were required to become members of the Federal Reserve System and became subject to a new set of regulations issued by the Fed. State banks could choose (but were not required) to become members of the system, and most did not because of the high costs of membership stemming from the Fed's regulations.

During the Great Depression years 1930–1933, some 9,000 bank failures wiped out the savings of many depositors at commercial banks. To prevent future depositor losses from such failures, banking legislation in 1933 established the Federal Deposit Insurance Corporation (FDIC), which provided federal insurance on bank deposits. Member banks of the Federal Reserve System were required to purchase FDIC insurance for their depositors, and non–Federal Reserve commercial banks could choose to buy this insurance (almost all of them did). The purchase of FDIC insurance made banks subject to another set of regulations imposed by the FDIC.

www.fdic.gov/bank/index.htm
The FDIC gathers data about individual financial institutions and the banking industry.

Because investment banking activities of the commercial banks were blamed for many bank failures, provisions in the banking legislation in 1933 (also known as the Glass-Steagall Act) prohibited commercial banks from underwriting or dealing in corporate securities (though allowing them to sell new issues of government securities) and limited banks to the purchase of debt securities approved by the bank regulatory agencies. Likewise, it prohibited investment banks from engaging in commercial banking activities. In effect, the Glass-Steagall Act separated the activities of commercial banks from those of the securities industry.

Under the conditions of the Glass-Steagall Act, which was repealed in 1999, commercial banks had to sell off their investment banking operations. The First National Bank of Boston, for example, spun off its investment banking operations into the First Boston Corporation, now part of one of the most important investment banking firms in America, Credit Suisse First Boston. Investment banking firms typically discontinued their deposit business, although J. P. Morgan discontinued its investment banking business and reorganized as a commercial bank; however, some senior officers of J. P. Morgan went on to organize Morgan Stanley, another one of the largest investment banking firms today.

Multiple Regulatory Agencies

Commercial bank regulation in the United States has developed into a crazy quilt of multiple regulatory agencies with overlapping jurisdictions. The Office of the Comptroller of the Currency has the primary supervisory responsibility for the 2,100 national banks that own more than half of the assets in the commercial banking system. The Federal Reserve and the state banking authorities have joint primary responsibility for the 1,200 state banks that are members of the Federal Reserve System. The Fed also

has regulatory responsibility over companies that own one or more banks (called **bank holding companies**) and secondary responsibility for the national banks. The FDIC and the state banking authorities jointly supervise the 5,800 state banks that have FDIC insurance but are not members of the Federal Reserve System. The state banking authorities have sole jurisdiction over the fewer than 500 state banks without FDIC insurance. (Such banks hold less than 0.2% of the deposits in the commercial banking system.)

If you find the U.S. bank regulatory system confusing, imagine how confusing it is for the banks, which have to deal with multiple regulatory agencies. Several proposals have been raised by the U.S. Treasury to rectify this situation by centralizing the regulation of all depository institutions under one independent agency. However, none of these proposals has been successful in Congress, and whether there will be regulatory consolidation in the future is highly uncertain.

Financial Innovation and the Evolution of the Banking Industry

To understand how the banking industry has evolved over time, we must first understand the process of financial innovation, which has transformed the entire financial system. Like other industries, the financial industry is in business to earn profits by selling its products. If a soap company perceives that there is a need in the marketplace for a laundry detergent with fabric softener, it develops a product to fit the need. Similarly, to maximize their profits, financial institutions develop new products to satisfy their own needs as well as those of their customers; in other words, innovation—which can be extremely beneficial to the economy—is driven by the desire to get (or stay) rich. This view of the innovation process leads to the following simple analysis: ***A change in the financial environment will stimulate a search by financial institutions for innovations that are likely to be profitable.***

Starting in the 1960s, individuals and financial institutions operating in financial markets were confronted with drastic changes in the economic environment: Inflation and interest rates climbed sharply and became harder to predict, a situation that changed demand conditions in financial markets. The rapid advance in computer technology changed supply conditions. In addition, financial regulations became more burdensome. Financial institutions found that many of the old ways of doing business were no longer profitable; the financial services and products they had been offering to the public were not selling. Many financial intermediaries found that they were no longer able to acquire funds with their traditional financial instruments, and without these funds they would soon be out of business. To survive in the new economic environment, financial institutions had to research and develop new products and services that would meet customer needs and prove profitable, a process referred to as **financial engineering**. In their case, necessity was the mother of innovation.

Our discussion of why financial innovation occurs suggests that there are three basic types of financial innovation: responses to changes in demand conditions, responses to changes in supply conditions, and avoidance of regulations. Now that we have a framework for understanding why financial institutions produce innovations, let's look at examples of how financial institutions in their search for profits have produced financial innovations of the three basic types.

Responses to Changes in Demand Conditions: Interest Rate Volatility

The most significant change in the economic environment that altered the demand for financial products in recent years has been the dramatic increase in the volatility of interest rates. In the 1950s, the interest rate on three-month Treasury bills fluctuated between 1.0% and 3.5%; in the 1970s, it fluctuated between 4.0% and 11.5%; in the 1980s, it ranged from 5% to over 15%. Large fluctuations in interest rates lead to substantial capital gains or losses and greater uncertainty about returns on investments. Recall that the risk that is related to the uncertainty about interest-rate movements and returns is called *interest-rate risk*, and high volatility of interest rates, such as we saw in the 1970s and 1980s, leads to a higher level of interest-rate risk.

We would expect the increase in interest-rate risk to increase the demand for financial products and services that could reduce that risk. This change in the economic environment would thus stimulate a search for profitable innovations by financial institutions that meet this new demand and would spur the creation of new financial instruments that help lower interest-rate risk. Two examples of financial innovations that appeared in the 1970s confirm this prediction: the development of adjustable-rate mortgages and financial derivations.

Adjustable-Rate Mortgages. Like other investors, financial institutions find that lending is more attractive if interest-rate risk is lower. They would not want to make a mortgage loan at a 10% interest rate and two months later find that they could obtain 12% in interest on the same mortgage. To reduce interest-rate risk, in 1975 savings and loans in California began to issue adjustable-rate mortgages; that is, mortgage loans on which the interest rate changes when a market interest rate (usually the Treasury bill rate) changes. Initially, an adjustable-rate mortgage might have a 5% interest rate. In six months, this interest rate might increase or decrease by the amount of the increase or decrease in, say, the six-month Treasury bill rate, and the mortgage payment would change. Because adjustable-rate mortgages allow mortgage-issuing institutions to earn higher interest rates on mortgages when rates rise, profits are kept higher during these periods.

This attractive feature of adjustable-rate mortgages has encouraged mortgage-issuing institutions to issue adjustable-rate mortgages with lower initial interest rates than on conventional fixed-rate mortgages, making them popular with many households. However, because the mortgage payment on a variable-rate mortgage can increase, many households continue to prefer fixed-rate mortgages. Hence both types of mortgages are widespread.

Financial Derivatives. Given the greater demand for the reduction of interest-rate risk, commodity exchanges such as the Chicago Board of Trade recognized that if they could develop a product that would help investors and financial institutions to protect themselves from, or **hedge**, interest-rate risk, then they could make profits by selling this new instrument. **Futures contracts**, in which the seller agrees to provide a certain standardized commodity to the buyer on a specific future date at an agreed-on price, had been around for a long time. Officials at the Chicago Board of Trade realized that if they created futures contracts in financial instruments, which are called **financial derivatives** because their payoffs are linked to previously issued securities, they could be used to hedge risk. Thus in 1975, financial derivatives were born. We will study financial derivatives later in the book, in Chapter 13.

Responses to Changes in Supply Conditions: Information Technology

The most important source of the changes in supply conditions that stimulate financial innovation has been the improvement in computer and telecommunications technology. This technology, called *information technology*, has had two effects. First, it has lowered the cost of processing financial transactions, making it profitable for financial institutions to create new financial products and services for the public. Second, it has made it easier for investors to acquire information, thereby making it easier for firms to issue securities. The rapid developments in information technology have resulted in many new financial products and services that we examine here.

Bank Credit and Debit Cards. Credit cards have been around since well before World War II. Many individual stores (Sears, Macy's, Goldwater's) institutionalized charge accounts by providing customers with credit cards that allowed them to make purchases at these stores without cash. Nationwide credit cards were not established until after World War II, when Diners Club developed one to be used in restaurants all over the country (and abroad). Similar credit card programs were started by American Express and Carte Blanche, but because of the high cost of operating these programs, cards were issued only to selected persons and businesses that could afford expensive purchases.

A firm issuing credit cards earns income from loans it makes to credit card holders and from payments made by stores on credit card purchases (a percentage of the purchase price, say 5%). A credit card program's costs arise from loan defaults, stolen cards, and the expense involved in processing credit card transactions.

Seeing the success of Diners Club, American Express, and Carte Blanche, bankers wanted to share in the profitable credit card business. Several commercial banks attempted to expand the credit card business to a wider market in the 1950s, but the cost per transaction of running these programs was so high that their early attempts failed.

In the late 1960s, improved computer technology, which lowered the transaction costs for providing credit card services, made it more likely that bank credit card programs would be profitable. The banks tried to enter this business again, and this time their efforts led to the creation of two successful bank credit card programs: BankAmericard (originally started by the Bank of America but now an independent organization called Visa) and MasterCharge (now MasterCard, run by the Interbank Card Association). These programs have become phenomenally successful; more than 200 million of their cards are in use. Indeed, bank credit cards have been so profitable that nonfinancial institutions such as Sears (which launched the Discover card), General Motors, and AT&T have also entered the credit card business. Consumers have benefited because credit cards are more widely accepted than checks to pay for purchases (particularly abroad), and they allow consumers to take out loans more easily.

The success of bank credit cards has led these institutions to come up with a new financial innovation, *debit cards*. Debit cards often look just like credit cards and can be used to make purchases in an identical fashion. However, in contrast to credit cards, which extend the purchaser a loan that does not have to be paid off immediately, a debit card purchase is immediately deducted from the card holder's bank account. Debit cards depend even more on low costs of processing transactions, since their profits are generated entirely from the fees paid by merchants on debit card purchases at their stores. Debit cards have grown increasingly popular in recent years.

Electronic Banking. The wonders of modern computer technology have also enabled banks to lower the cost of bank transactions by having the customer interact with an

electronic banking (e-banking) facility rather than with a human being. One important form of an e-banking facility is the **automated teller machine (ATM)**, an electronic machine that allows customers to get cash, make deposits, transfer funds from one account to another, and check balances. The ATM has the advantage that it does not have to be paid overtime and never sleeps, thus being available for use 24 hours a day. Not only does this result in cheaper transactions for the bank, but it also provides more convenience for the customer. Furthermore, because of their low cost, ATMs can be put at locations other than a bank or its branches, further increasing customer convenience. The low cost of ATMs has meant that they have sprung up everywhere and now number over 250,000 in the United States alone. Furthermore, it is now as easy to get foreign currency from an ATM when you are traveling in Europe as it is to get cash from your local bank. In addition, transactions with ATMs are so much cheaper for the bank than ones conducted with human tellers that some banks charge customers less if they use the ATM than if they use a human teller.

With the drop in the cost of telecommunications, banks have developed another financial innovation, *home banking*. It is now cost-effective for banks to set up an electronic banking facility in which the bank's customer is linked up with the bank's computer to carry out transactions by using either a telephone or a personal computer. Now a bank's customers can conduct many of their bank transactions without ever leaving the comfort of home. The advantage for the customer is the convenience of home banking, while banks find that the cost of transactions is substantially less than having the customer come to the bank. The success of ATMs and home banking has led to another innovation, the **automated banking machine (ABM)**, which combines in one location an ATM, an Internet connection to the bank's web site, and a telephone link to customer service.

With the decline in the price of personal computers and their increasing presence in the home, we have seen a further innovation in the home banking area, the appearance of a new type of banking institution, the **virtual bank**, a bank that has no physical location but rather exists only in cyberspace. In 1995, Security First Network Bank, based in Atlanta but now owned by Royal Bank of Canada, became the first virtual bank, planning to offer an array of banking services on the Internet—accepting checking account and savings deposits, selling certificates of deposits, issuing ATM cards, providing bill-paying facilities, and so on. The virtual bank thus takes home banking one step further, enabling the customer to have a full set of banking services at home 24 hours a day. In 1996, Bank of America and Wells Fargo entered the virtual banking market, to be followed by many others, with Bank of America now being the largest Internet bank in the United States. Will virtual banking be the predominant form of banking in the future (see Box 1)?

Junk Bonds. Before the advent of computers and advanced telecommunications, it was difficult to acquire information about the financial situation of firms that might want to sell securities. Because of the difficulty in screening out bad from good credit risks, the only firms that were able to sell bonds were very well established corporations that had high credit ratings.[1] Before the 1980s, then, only corporations that could issue bonds with ratings of Baa or above could raise funds by selling newly issued bonds. Some firms that had fallen on bad times, so-called *fallen angels*, had previously

[1]The discussion of adverse selection problems in Chapter 8 provides a more detailed analysis of why only well-established firms with high credit ratings were able to sell securities.

Box 1: E-Finance

Will "Clicks" Dominate "Bricks" in the Banking Industry?

With the advent of virtual banks ("clicks") and the convenience they provide, a key question is whether they will become the primary form in which banks do their business, eliminating the need for physical bank branches ("bricks") as the main delivery mechanism for banking services. Indeed, will stand-alone Internet banks be the wave of the future?

The answer seems to be no. Internet-only banks such as Wingspan (owned by Bank One), First-e (Dublin-based), and Egg (a British Internet-only bank owned by Prudential) have had disappointing revenue growth and profits. The result is that pure online banking has not been the success that proponents had hoped for. Why has Internet banking been a disappointment?

There have been several strikes against Internet banking. First, bank depositors want to know that their savings are secure, and so are reluctant to put their money into new institutions without a long track record. Second, customers worry about the security of their online transactions and whether their transactions will truly be kept private. Traditional banks are viewed as being more secure and trustworthy in terms of releasing private information. Third, customers may prefer services provided by physical branches. For example, banking customers seem to prefer to purchase long-term savings products face-to-face. Fourth, Internet banking has run into technical problems—server crashes, slow connections over phone lines, mistakes in conducting transactions—that will probably diminish over time as technology improves.

The wave of the future thus does not appear to be pure Internet banks. Instead it looks like "clicks and bricks" will be the predominant form of banking, in which online banking is used to complement the services provided by traditional banks. Nonetheless, the delivery of banking services is undergoing massive changes, with more and more banking services delivered over the Internet and the number of physical bank branches likely to decline in the future.

issued long-term corporate bonds that now had ratings that had fallen below Baa, bonds that were pejoratively dubbed "junk bonds."

With the improvement in information technology in the 1970s, it became easier for investors to screen out bad from good credit risks, thus making it more likely that they would buy long-term debt securities from less well known corporations with lower credit ratings. With this change in supply conditions, we would expect that some smart individual would pioneer the concept of selling new public issues of junk bonds, not for fallen angels but for companies that had not yet achieved investment-grade status. This is exactly what Michael Milken of Drexel Burnham, an investment banking firm, started to do in 1977. Junk bonds became an important factor in the corporate bond market, with the amount outstanding exceeding $200 billion by the late 1980s. Although there was a sharp slowdown in activity in the junk bond market after Milken was indicted for securities law violations in 1989, it heated up again in the 1990s.

Commercial Paper Market. *Commercial paper* is a short-term debt security issued by large banks and corporations. The commercial paper market has undergone tremendous growth since 1970, when there was $33 billion outstanding, to over $1.3 trillion outstanding at the end of 2002. Indeed, commercial paper has been one of the fastest-growing money market instruments.

Improvements in information technology also help provide an explanation for the rapid rise of the commercial paper market. We have seen that the improvement in information technology made it easier for investors to screen out bad from good credit risks, thus making it easier for corporations to issue debt securities. Not only did this make it easier for corporations to issue long-term debt securities as in the junk bond market, but it also meant that they could raise funds by issuing short-term debt securities like commercial paper more easily. Many corporations that used to do their short-term borrowing from banks now frequently raise short-term funds in the commercial paper market instead.

The development of money market mutual funds has been another factor in the rapid growth in the commercial paper market. Because money market mutual funds need to hold liquid, high-quality, short-term assets such as commercial paper, the growth of assets in these funds to around $2.1 trillion has created a ready market in commercial paper. The growth of pension and other large funds that invest in commercial paper has also stimulated the growth of this market.

Securitization. An important example of a financial innovation arising from improvements in both transaction and information technology is securitization, one of the most important financial innovations in the past two decades. **Securitization** is the process of transforming otherwise illiquid financial assets (such as residential mortgages, auto loans, and credit card receivables), which have typically been the bread and butter of banking institutions, into marketable capital market securities. As we have seen, improvements in the ability to acquire information have made it easier to sell marketable capital market securities. In addition, with low transaction costs because of improvements in computer technology, financial institutions find that they can cheaply bundle together a portfolio of loans (such as mortgages) with varying small denominations (often less than $100,000), collect the interest and principal payments on the mortgages in the bundle, and then "pass them through" (pay them out) to third parties. By dividing the portfolio of loans into standardized amounts, the financial institution can then sell the claims to these interest and principal payments to third parties as securities. The standardized amounts of these securitized loans make them liquid securities, and the fact that they are made up of a bundle of loans helps diversify risk, making them desirable. The financial institution selling the securitized loans makes a profit by servicing the loans (collecting the interest and principal payments and paying them out) and charging a fee to the third party for this service.

Avoidance of Existing Regulations

The process of financial innovation we have discussed so far is much like innovation in other areas of the economy: It occurs in response to changes in demand and supply conditions. However, because the financial industry is more heavily regulated than other industries, government regulation is a much greater spur to innovation in this industry. Government regulation leads to financial innovation by creating incentives for firms to skirt regulations that restrict their ability to earn profits. Edward Kane, an economist at Boston College, describes this process of avoiding regulations as "loophole mining." The economic analysis of innovation suggests that when the economic environment changes such that regulatory constraints are so burdensome that large profits can be made by avoiding them, loophole mining and innovation are more likely to occur.

Because banking is one of the most heavily regulated industries in America, loophole mining is especially likely to occur. The rise in inflation and interest rates from

the late 1960s to 1980 made the regulatory constraints imposed on this industry even more burdensome, leading to financial innovation.

Two sets of regulations have seriously restricted the ability of banks to make profits: reserve requirements that force banks to keep a certain fraction of their deposits as reserves (vault cash and deposits in the Federal Reserve System) and restrictions on the interest rates that can be paid on deposits. For the following reasons, these regulations have been major forces behind financial innovation.

1. Reserve requirements. The key to understanding why reserve requirements led to financial innovation is to recognize that they act, in effect, as a tax on deposits. Because the Fed does not pay interest on reserves, the opportunity cost of holding them is the interest that a bank could otherwise earn by lending the reserves out. For each dollar of deposits, reserve requirements therefore impose a cost on the bank equal to the interest rate, i, that could be earned if the reserves could be lent out times the fraction of deposits required as reserves, r. The cost of $i \times r$ imposed on the bank is just like a tax on bank deposits of $i \times r$.

It is a great tradition to avoid taxes if possible, and banks also play this game. Just as taxpayers look for loopholes to lower their tax bills, banks seek to increase their profits by mining loopholes and by producing financial innovations that allow them to escape the tax on deposits imposed by reserve requirements.

2. Restrictions on interest paid on deposits. Until 1980, legislation prohibited banks in most states from paying interest on checking account deposits, and through Regulation Q, the Fed set maximum limits on the interest rate that could be paid on time deposits. To this day, banks are not allowed to pay interest on corporate checking accounts. The desire to avoid these **deposit rate ceilings** also led to financial innovations.

If market interest rates rose above the maximum rates that banks paid on time deposits under Regulation Q, depositors withdrew funds from banks to put them into higher-yielding securities. This loss of deposits from the banking system restricted the amount of funds that banks could lend (called **disintermediation**) and thus limited bank profits. Banks had an incentive to get around deposit rate ceilings, because by so doing, they could acquire more funds to make loans and earn higher profits.

We can now look at how the desire to avoid restrictions on interest payments and the tax effect of reserve requirements led to two important financial innovations.

Money Market Mutual Funds. Money market mutual funds issue shares that are redeemable at a fixed price (usually $1) by writing checks. For example, if you buy 5,000 shares for $5,000, the money market fund uses these funds to invest in short-term money market securities (Treasury bills, certificates of deposit, commercial paper) that provide you with interest payments. In addition, you are able to write checks up to the $5,000 held as shares in the money market fund. Although money market fund shares effectively function as checking account deposits that earn interest, they are not legally deposits and so are not subject to reserve requirements or prohibitions on interest payments. For this reason, they can pay higher interest rates than deposits at banks.

The first money market mutual fund was created by two Wall Street mavericks, Bruce Bent and Henry Brown, in 1971. However, the low market interest rates from 1971 to 1977 (which were just slightly above Regulation Q ceilings of 5.25 to 5.5%) kept them from being particularly advantageous relative to bank deposits. In early 1978, the situation changed rapidly as market interest rates began to climb over 10%,

well above the 5.5% maximum interest rates payable on savings accounts and time deposits under Regulation Q. In 1977, money market mutual funds had assets under $4 billion; in 1978, their assets climbed to close to $10 billion; in 1979, to over $40 billion; and in 1982, to $230 billion. Currently, their assets are around $2 trillion. To say the least, money market mutual funds have been a successful financial innovation, which is exactly what we would have predicted to occur in the late 1970s and early 1980s when interest rates soared beyond Regulation Q ceilings.

Sweep Accounts. Another innovation that enables banks to avoid the "tax" from reserve requirements is the **sweep account**. In this arrangement, any balances above a certain amount in a corporation's checking account at the end of a business day are "swept out" of the account and invested in overnight securities that pay the corporation interest. Because the "swept out" funds are no longer classified as checkable deposits, they are not subject to reserve requirements and thus are not "taxed." They also have the advantage that they allow banks in effect to pay interest on these corporate checking accounts, which otherwise is not allowed under existing regulations. Because sweep accounts have become so popular, they have lowered the amount of required reserves to the degree that most banking institutions do not find reserve requirements binding: In other words, they voluntarily hold more reserves than they are required to.

The financial innovation of sweep accounts is particularly interesting because it was stimulated not only by the desire to avoid a costly regulation, but also by a change in supply conditions: in this case, information technology. Without low-cost computers to process inexpensively the additional transactions required by these accounts, this innovation would not have been profitable and therefore would not have been developed. Technological factors often combine with other incentives, such as the desire to get around a regulation, to produce innovation.

Financial Innovation and the Decline of Traditional Banking

The traditional financial intermediation role of banking has been to make long-term loans and to fund them by issuing short-term deposits, a process of asset transformation commonly referred to as "borrowing short and lending long." Here we examine how financial innovations have created a more competitive environment for the banking industry, causing the industry to change dramatically, with its traditional banking business going into decline.

www.financialservicefacts.org/international/INT-1.htm

Learn about the number of employees and the current profitability of commercial banks and saving institutions.

In the United States, the importance of commercial banks as a source of funds to nonfinancial borrowers has shrunk dramatically. As we can see in Figure 2, in 1974, commercial banks provided close to 40% of these funds; by 2002, their market share was down to below 30%. The decline in market share for thrift institutions has been even more precipitous: from more than 20% in the late 1970s to 6% today. Another way of viewing the declining role of banking in traditional financial intermediation is to look at the size of banks' balance sheet assets relative to those of other financial intermediaries (see Table 1 in Chapter 12, page 289). Commercial banks' share of total financial intermediary assets has fallen from about 40% in the 1960–1980 period to 30% by the end of 2002. Similarly, the share of total financial intermediary assets held by thrift institutions has declined even more from the 20% level of the 1960–1980 period to about 5% by 2002.

Clearly, the traditional financial intermediation role of banking, whereby banks make loans that are funded with deposits, is no longer as important in our financial system. However, the decline in the market share of banks in total lending and total financial intermediary assets does not necessarily indicate that the banking industry is

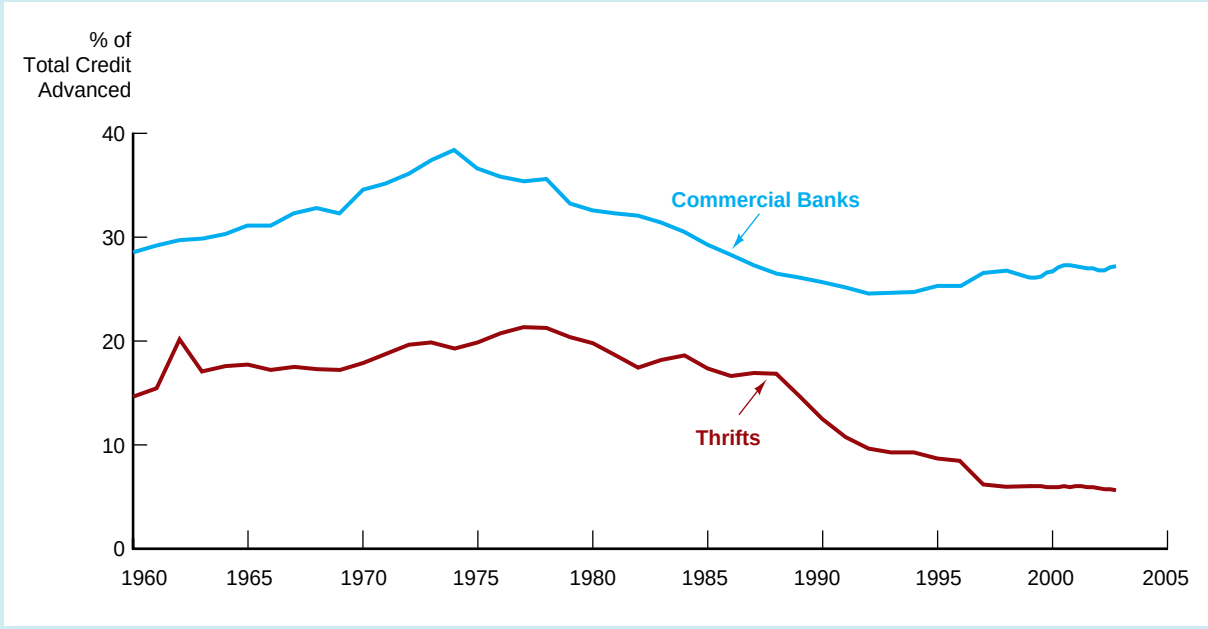


FIGURE 2 Bank Share of Total Nonfinancial Borrowing, 1960–2002

Source: Federal Reserve Flow of Funds Accounts; Federal Reserve *Bulletin*.

in decline. There is no evidence of a declining trend in bank profitability. However, overall bank profitability is not a good indicator of the profitability of traditional banking, because it includes an increasing amount of income from nontraditional off-balance-sheet activities, discussed in Chapter 9. Noninterest income derived from off-balance-sheet activities, as a share of total banking income, increased from around 7% in 1980 to more than 45% of total bank income today. Given that the overall profitability of banks has not risen, the increase in income from off-balance-sheet activities implies that the profitability of traditional banking business has declined. This decline in profitability then explains why banks have been reducing their traditional business.

To understand why traditional banking business has declined in both size and profitability, we need to look at how the financial innovations described earlier have caused banks to suffer declines in their cost advantages in acquiring funds, that is, on the liabilities side of their balance sheet, while at the same time they have lost income advantages on the assets side of their balance sheet. The simultaneous decline of cost and income advantages has resulted in reduced profitability of traditional banking and an effort by banks to leave this business and engage in new and more profitable activities.

Decline in Cost Advantages in Acquiring Funds (Liabilities). Until 1980, banks were subject to deposit rate ceilings that restricted them from paying any interest on checkable deposits and (under Regulation Q) limited them to paying a maximum interest rate of a little over 5% on time deposits. Until the 1960s, these restrictions worked to the

banks' advantage because their major source of funds (over 60%) was checkable deposits, and the zero interest cost on these deposits meant that the banks had a very low cost of funds. Unfortunately, this cost advantage for banks did not last. The rise in inflation from the late 1960s on led to higher interest rates, which made investors more sensitive to yield differentials on different assets. The result was the so-called disintermediation process, in which people began to take their money out of banks, with their low interest rates on both checkable and time deposits, and began to seek out higher-yielding investments. Also, as we have seen, at the same time, attempts to get around deposit rate ceilings and reserve requirements led to the financial innovation of money market mutual funds, which put the banks at an even further disadvantage because depositors could now obtain checking account–like services while earning high interest on their money market mutual fund accounts. One manifestation of these changes in the financial system was that the low-cost source of funds, checkable deposits, declined dramatically in importance for banks, falling from over 60% of bank liabilities to below 10% today.

The growing difficulty for banks in raising funds led to their supporting legislation in the 1980s that eliminated Regulation Q ceilings on time deposit interest rates and allowed checkable deposit accounts that paid interest. Although these changes in regulation helped make banks more competitive in their quest for funds, it also meant that their cost of acquiring funds had risen substantially, thereby reducing their earlier cost advantage over other financial institutions.

Decline in Income Advantages on Uses of Funds (Assets). The loss of cost advantages on the liabilities side of the balance sheet for American banks is one reason that they have become less competitive, but they have also been hit by a decline in income advantages on the assets side from the financial innovations we discussed earlier—junk bonds, securitization, and the rise of the commercial paper market.

We have seen that improvements in information technology have made it easier for firms to issue securities directly to the public. This has meant that instead of going to banks to finance short-term credit needs, many of the banks' best business customers now find it cheaper to go instead to the commercial paper market for funds. The loss of this competitive advantage for banks is evident in the fact that before 1970, nonfinancial commercial paper equaled less than 5% of commercial and industrial bank loans, whereas the figure has risen to 16% today. In addition, this growth in the commercial paper market has allowed finance companies, which depend primarily on commercial paper to acquire funds, to expand their operations at the expense of banks. Finance companies, which lend to many of the same businesses that borrow from banks, have increased their market share relative to banks: Before 1980, finance company loans to business equaled about 30% of commercial and industrial bank loans; currently, they are over 45%.

The rise of the junk bond market has also eaten into banks' loan business. Improvements in information technology have made it easier for corporations to sell their bonds to the public directly, thereby bypassing banks. Although Fortune 500 companies started taking this route in the 1970s, now lower-quality corporate borrowers are using banks less often because they have access to the junk bond market.

We have also seen that improvements in computer technology have led to securitization, whereby illiquid financial assets such as bank loans and mortgages are transformed into marketable securities. Computers enable other financial institutions to originate loans because they can now accurately evaluate credit risk with statistical

methods, while computers have lowered transaction costs, making it possible to bundle these loans and sell them as securities. When default risk can be easily evaluated with computers, banks no longer have an advantage in making loans. Without their former advantages, banks have lost loan business to other financial institutions even though the banks themselves are involved in the process of securitization. Securitization has been a particular problem for mortgage-issuing institutions such as S&Ls, because most residential mortgages are now securitized.

Banks' Responses. In any industry, a decline in profitability usually results in exit from the industry (often due to widespread bankruptcies) and a shrinkage of market share. This occurred in the banking industry in the United States during the 1980s via consolidations and bank failures (discussed in the next chapter).

In an attempt to survive and maintain adequate profit levels, many U.S. banks face two alternatives. First, they can attempt to maintain their traditional lending activity by expanding into new and riskier areas of lending. For example, U.S. banks increased their risk taking by placing a greater percentage of their total funds in commercial real estate loans, traditionally a riskier type of loan. In addition, they increased lending for corporate takeovers and leveraged buyouts, which are highly leveraged transaction loans. The decline in the profitability of banks' traditional business may thus have helped lead to the crisis in banking in the 1980s and early 1990s that we discuss in the next chapter.

The second way banks have sought to maintain former profit levels is to pursue new off-balance-sheet activities that are more profitable. U.S. commercial banks did this during the early 1980s, more than doubling the share of their income coming from off-balance-sheet, noninterest-income activities. This strategy, however, has generated concerns about what activities are proper for banks and whether nontraditional activities might be riskier, and thus result in excessive risk-taking by banks.

The decline of banks' traditional business has thus meant that the banking industry has been driven to seek out new lines of business. This could be beneficial because by so doing, banks can keep vibrant and healthy. Indeed, bank profitability has been high in recent years, and nontraditional, off-balance-sheet activities have been playing an important role in the resurgence of bank profits. However, there is a danger that the new directions in banking could lead to increased risk taking, and thus the decline in traditional banking requires regulators to be more vigilant. It also poses new challenges for bank regulators, who, as we will see in Chapter 11, must now be far more concerned about banks' off-balance-sheet activities.

Decline of Traditional Banking in Other Industrialized Countries. Forces similar to those in the United States have been leading to the decline of traditional banking in other industrialized countries. The loss of banks' monopoly power over depositors has occurred outside the United States as well. Financial innovation and deregulation are occurring worldwide and have created attractive alternatives for both depositors and borrowers. In Japan, for example, deregulation has opened a wide array of new financial instruments to the public, causing a disintermediation process similar to that in the United States. In European countries, innovations have steadily eroded the barriers that have traditionally protected banks from competition.

In other countries, banks have also faced increased competition from the expansion of securities markets. Both financial deregulation and fundamental economic

forces in other countries have improved the availability of information in securities markets, making it easier and less costly for firms to finance their activities by issuing securities rather than going to banks. Further, even in countries where securities markets have not grown, banks have still lost loan business because their best corporate customers have had increasing access to foreign and offshore capital markets, such as the Eurobond market. In smaller economies, like Australia, which still do not have well-developed corporate bond or commercial paper markets, banks have lost loan business to international securities markets. In addition, the same forces that drove the securitization process in the United States are at work in other countries and will undercut the profitability of traditional banking in these countries as well. The United States is not unique in seeing its banks face a more difficult competitive environment. Thus, although the decline of traditional banking has occurred earlier in the United States than in other countries, the same forces are causing a decline in traditional banking abroad.

Structure of the U.S. Commercial Banking Industry

www.fdic.gov/bank/statistical/statistics/index.html
Visit this web site to gather statistics on the banking industry.

There are approximately 8,000 commercial banks in the United States, far more than in any other country in the world. As Table 1 indicates, we have an extraordinary number of small banks. Ten percent of the banks have less than $25 million in assets. Far more typical is the size distribution in Canada or the United Kingdom, where five or fewer banks dominate the industry. In contrast, the ten largest commercial banks in the United States (listed in Table 2) together hold just 58% of the assets in their industry.

Most industries in the United States have far fewer firms than the commercial banking industry; typically, large firms tend to dominate these industries to a greater extent than in the commercial banking industry. (Consider the computer software

Table 1 Size Distribution of Insured Commercial Banks, September 30, 2002

Assets	Number of Banks	Share of Banks (%)	Share of Assets Held (%)
Less than $25 million	796	10.0	0.2
$25–$50 million	1,421	17.9	0.8
$50–$100 million	2,068	26.1	2.2
$100–$500 million	2,868	36.2	8.6
$500 million–$1 billion	381	4.8	3.7
$1–$10 billion	319	4.0	13.2
More than $10 billion	80	1.0	71.3
Total	7,933	100.0	100.0

Source: www.fdic.gov/bank/statistical/statistics/0209/allstru.html.

Table 2 Ten Largest U.S. Banks, February 2003

Bank	Assets ($ millions)	Share of All Commercial Bank Assets (%)
1. Citibank, National Association, New York	1,057,657	15.19
2. JP Morgan Chase, New York	712,508	10.23
3. Bank of America, National Association, Charlotte, N.C.	619,921	8.90
4. Wachovia National Bank, Charlotte, N.C.	319,853	4.59
5. Wells Fargo, National Association, San Francisco	311,509	4.47
6. Bank One, National Association, Chicago	262,947	3.77
7. Taunus Corporation, New York	235,867	3.39
8. Fleet National Bank, Providence, R.I.	192,032	2.76
9. ABN Amro, North America, Chicago	174,451	2.50
10. US Bancorp, Minneapolis, Minnesota	164,745	2.36
Total	4,051,490	58.16

Source: www.infoplease.com/pia/A0763206.html.

industry, which is dominated by Microsoft, or the automobile industry, which is dominated by General Motors, Ford, Daimler-Chrysler, Toyota, and Honda.) Does the large number of banks in the commercial banking industry and the absence of a few dominant firms suggest that commercial banking is more competitive than other industries?

Restrictions on Branching

The presence of so many commercial banks in the United States actually reflects past regulations that restricted the ability of these financial institutions to open **branches** (additional offices for the conduct of banking operations). Each state had its own regulations on the type and number of branches that a bank could open. Regulations on both coasts, for example, tended to allow banks to open branches throughout a state; in the middle part of the country, regulations on branching were more restrictive. The McFadden Act of 1927, which was designed to put national banks and state banks on an equal footing (and the Douglas Amendment of 1956, which closed a loophole in the McFadden Act) effectively prohibited banks from branching across state lines and forced all national banks to conform to the branching regulations in the state of their location.

The McFadden Act and state branching regulations constituted strong anticompetitive forces in the commercial banking industry, allowing many small banks to stay in existence, because larger banks were prevented from opening a branch nearby. If competition is beneficial to society, why have regulations restricting branching arisen in America? The simplest explanation is that the American public has historically been hostile to large banks. States with the most restrictive branching regulations were typically ones in which populist antibank sentiment was strongest in the nineteenth cen-

tury. (These states usually had large farming populations whose relations with banks periodically became tempestuous when banks would foreclose on farmers who couldn't pay their debts.) The legacy of nineteenth-century politics was a banking system with restrictive branching regulations and hence an inordinate number of small banks. However, as we will see later in this chapter, branching restrictions have been eliminated, and we are heading toward nationwide banking.

Response to Branching Restrictions

An important feature of the U.S. banking industry is that competition can be repressed by regulation but not completely quashed. As we saw earlier in this chapter, the existence of restrictive regulation stimulates financial innovations that get around these regulations in the banks' search for profits. Regulations restricting branching have stimulated similar economic forces and have promoted the development of two financial innovations: bank holding companies and automated teller machines.

Bank Holding Companies. A holding company is a corporation that owns several different companies. This form of corporate ownership has important advantages for banks. It has allowed them to circumvent restrictive branching regulations, because the holding company can own a controlling interest in several banks even if branching is not permitted. Furthermore, a bank holding company can engage in other activities related to banking, such as the provision of investment advice, data processing and transmission services, leasing, credit card services, and servicing of loans in other states.

The growth of the bank holding companies has been dramatic over the past three decades. Today bank holding companies own almost all large banks, and over 90% of all commercial bank deposits are held in banks owned by holding companies.

Automated Teller Machines. Another financial innovation that avoided the restrictions on branching is the automated teller machine (ATM). Banks realized that if they did not own or rent the ATM, but instead let it be owned by someone else and paid for each transaction with a fee, the ATM would probably not be considered a branch of the bank and thus would not be subject to branching regulations. This is exactly what the regulatory agencies and courts in most states concluded. Because they enable banks to widen their markets, a number of these shared facilities (such as Cirrus and NYCE) have been established nationwide. Furthermore, even when an ATM is owned by a bank, states typically have special provisions that allow wider establishment of ATMs than is permissible for traditional "brick and mortar" branches.

As we saw earlier in this chapter, avoiding regulation was not the only reason for the development of the ATM. The advent of cheaper computer and telecommunications technology enabled banks to provide ATMs at low cost, making them a profitable innovation. This example further illustrates that technological factors often combine with incentives such as the desire to avoid restrictive regulations like branching restrictions to produce financial innovation.

Bank Consolidation and Nationwide Banking

As we can see in Figure 3, after a remarkable period of stability from 1934 to the mid-1980s, the number of commercial banks began to fall dramatically. Why has this sudden decline taken place?

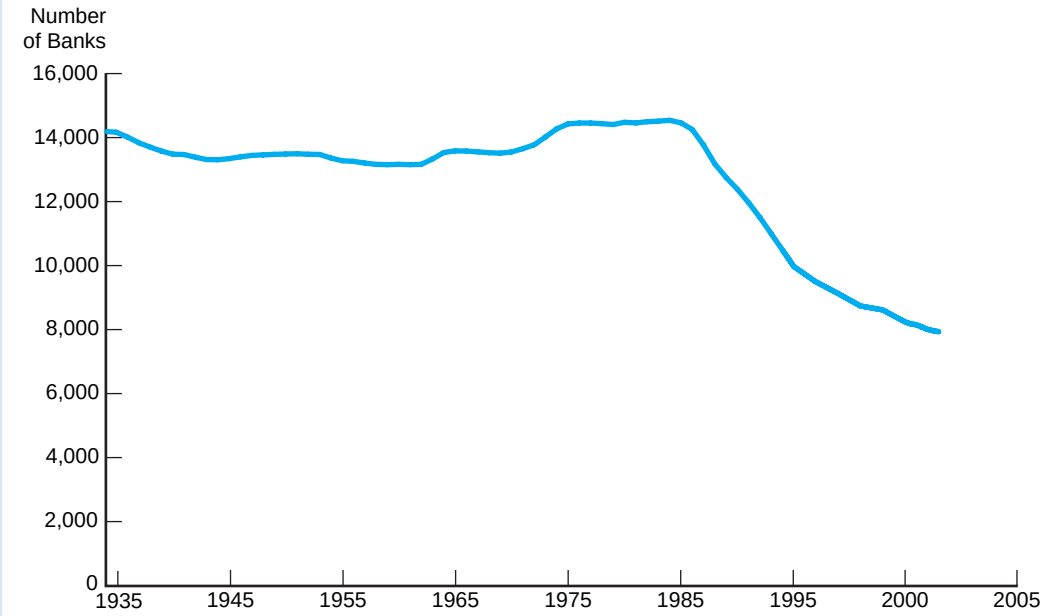


FIGURE 3 Number of Insured Commercial Banks in the United States, 1934–2002

Source: www2.fdic.gov/qbp/qbpSelect.asp?menuitem=STAT.

The banking industry hit some hard times in the 1980s and early 1990s, with bank failures running at a rate of over 100 per year from 1985 to 1992 (more on this later in the chapter and in Chapter 11). But bank failures are only part of the story. In the years 1985–1992, the number of banks declined by 3,000—more than double the number of failures. And in the period 1992–2002, when the banking industry returned to health, the number of commercial banks declined by a little over 4,100, less than 5% of which were bank failures, and most of these were of small banks. Thus we see that bank failures played an important, though not predominant, role in the decline in the number of banks in the 1985–1992 period and an almost negligible role in the decline in the number of banks since then.

So what explains the rest of the story? The answer is bank consolidation. Banks have been merging to create larger entities or have been buying up other banks. This gives rise to a new question: Why has bank consolidation been taking place in recent years?

As we have seen, loophole mining by banks has reduced the effectiveness of branching restrictions, with the result that many states have recognized that it would be in their best interest if they allowed ownership of banks across state lines. The result has been the formation of reciprocal regional compacts in which banks in one state are allowed to own banks in other states in the region. In 1975, Maine enacted the first interstate banking legislation that allowed out-of-state bank holding companies to purchase banks in that state. In 1982, Massachusetts enacted a regional compact with other New England states to allow interstate banking, and many other regional com-

pacts were adopted thereafter until by the early 1990s, almost all states allowed some form of interstate banking.

With the barriers to interstate banking breaking down in the early 1980s, banks recognized that they could gain the benefits of diversification because they would now be able to make loans in many states rather than just one. This gave them the advantage that if one state's economy was weak, another in which they operated might be strong, thus decreasing the likelihood that loans in different states would default at the same time. In addition, allowing banks to own banks in other states meant that they could take advantage of economies of scale by increasing their size through out-of-state acquisition of banks or by merging with banks in other states. Mergers and acquisitions explain the first phase of banking consolidation, which has played such an important role in the decline in the number of banks since 1985. Another result of the loosening of restrictions on interstate branching is the development of a new class of bank, the so-called **superregional banks**, bank holding companies that have begun to rival the money center banks in size but whose headquarters are not in one of the money center cities (New York, Chicago, and San Francisco). Examples of these superregional banks are Bank of America of Charlotte, North Carolina, and Banc One of Columbus, Ohio.

Not surprisingly, the advent of the Web and improved computer technology is another factor driving bank consolidation. Economies of scale have increased, because large upfront investments are required to set up many information technology platforms for financial institutions (see Box 2). To take advantage of these economies of scale, banks have needed to get bigger, and this development has led to additional

Box 2: E-Finance

Information Technology and Bank Consolidation

Achieving low costs in banking requires huge investments in information technology. In turn, such enormous investments require a business line of very large scale. This has been particularly true in the credit card business in recent years, in which huge technology investments have been made to provide customers with convenient web sites and to develop better systems to handle processing and risk analysis for both credit and fraud risk. The result has been substantial consolidation: As recently as 1995, the top five banking institutions issuing credit cards held less than 40% of total credit card debt, while today this number is above 60%.

Information technology has also spurred increasing consolidation of the bank custody business. Banks hold the actual certificate for investors when they purchase a stock or bond and provide data on the value of these securities and how much risk an investor is facing. Because this business is also computer-intensive, it also requires very large-scale investments in computer technology in order for the bank to offer these services at competitive rates. The percentage of assets at the top ten custody banks has therefore risen from 40% in 1990 to more than 90% today.

The increasing importance of e-finance, in which the computer is playing a more central role in delivering financial services, is bringing tremendous changes to the structure of the banking industry. Although banks are more than willing to offer a full range of products to their customers, they no longer find it profitable to produce all of them. Instead, they are contracting out the business, a practice that will lead to further consolidation of technology-intensive banking businesses in the future.

consolidation. Information technology has also been increasing **economies of scope**, the ability to use one resource to provide many different products and services. For example, details about the quality and creditworthiness of firms not only inform decisions about whether to make loans to them, but also can be useful in determining at what price their shares should trade. Similarly, once you have marketed one financial product to an investor, you probably know how to market another. Business people describe economies of scope by saying that there are "synergies" between different lines of business, and information technology is making these synergies more likely. The result is that consolidation is taking place not only to make financial institutions bigger, but also to increase the combination of products and services they can provide. This consolidation has had two consequences. First, different types of financial intermediaries are encroaching on each other's territory, making them more alike. Second, consolidation has led to the development of what the Federal Reserve has named **large, complex, banking organizations (LCBOs)**. This development has been facilitated by the repeal of the Glass-Steagall restrictions on combinations of banking and other financial service industries discussed in the next section.

The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994

Banking consolidation has been given further stimulus by the passage in 1994 of the Riegle-Neal Interstate Banking and Branching Efficiency Act. This legislation expands the regional compacts to the entire nation and overturns the McFadden Act and Douglas Amendment's prohibition of interstate banking. Not only does this act allow bank holding companies to acquire banks in any other state, notwithstanding any state laws to the contrary, but bank holding companies can merge the banks they own into one bank with branches in different states. States also have the option of opting out of interstate branching, a choice only Texas has made.

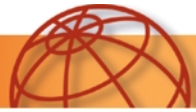
The Riegle-Neal Act finally establishes the basis for a true nationwide banking system. Although interstate banking was accomplished previously by out-of-state purchase of banks by bank holding companies, up until 1994 interstate branching was virtually nonexistent, because very few states had enacted interstate branching legislation. Allowing banks to conduct interstate banking through branching is especially important, because many bankers feel that economies of scale cannot be fully exploited through the bank holding company structure, but only through branching networks in which all of the bank's operations are fully coordinated.

Nationwide banks are now emerging. With the merger in 1998 of Bank of America and NationsBank, which created the first bank with branches on both coasts, consolidation in the banking industry is leading to banking organizations with operations in almost all of the fifty states.

What Will the Structure of the U.S. Banking Industry Look Like in the Future?

With true nationwide banking in the U.S. becoming a reality, the benefits of bank consolidation for the banking industry have increased substantially, thus driving the next phase of mergers and acquisitions and accelerating the decline in the number of commercial banks. With great changes occurring in the structure of this industry, the question naturally arises: What will the industry look like in ten years?

One view is that the industry will become more like that in many other countries (see Box 3) and we will end up with only a couple of hundred banks. A more extreme view is that the industry will look like that of Canada or the United Kingdom, with a few large banks dominating the industry. Research on this question, however, comes up with a different answer. The structure of the U.S. banking industry will still be unique, but not to the degree it once was. Most experts predict that



Box 3: Global

Comparison of Banking Structure in the United States and Abroad

The structure of the commercial banking industry in the United States is radically different from that in other industrialized nations. The United States is the only country that is just now developing a true national banking system in which banks have branches throughout the country. One result is that there are many more banks in the United States than in other industrialized countries. In contrast to the United States, which has on the order of 8,000 commercial banks, every other industrialized country has well under 1,000. Japan, for example, has fewer than 100 commercial banks—a mere fraction of the number in the United States, even though its economy and population are half the size of the United States. Another result of the past restrictions on branching in the United States is that our banks tend to be much smaller than those in other countries.

the consolidation surge will settle down as the U.S. banking industry approaches several thousand, rather than several hundred, banks.[2]

Banking consolidation will result not only in a smaller number of banks, but as the mergers between Chase Manhattan Bank and Chemical Bank and between Bank of America and NationsBank suggest, a shift in assets from smaller banks to larger banks as well. Within ten years, the share of bank assets in banks with less than $100 million in assets is expected to halve, while the amount at the so-called megabanks, those with over $100 billion in assets, is expected to more than double. Indeed, some analysts have predicted that we won't have long to wait before the first trillion-dollar bank emerges in the United States.

Are Bank Consolidation and Nationwide Banking Good Things?

Advocates of nationwide banking believe that it will produce more efficient banks and a healthier banking system less prone to bank failures. However, critics of bank consolidation fear that it will eliminate small banks, referred to as *community banks*, and that this will result in less lending to small businesses. In addition, they worry that a few banks will come to dominate the industry, making the banking business less competitive.

Most economists are skeptical of these criticisms of bank consolidation. As we have seen, research indicates that even after bank consolidation is completed, the United States will still have plenty of banks. The banking industry will thus remain highly competitive, probably even more so than now considering that banks that have been protected from competition from out-of-state banks will now have to compete with them vigorously to stay in business.

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[2]For example, see Allen N. Berger, Anil K. Kashyap, and Joseph Scalise, "The Transformation of the U.S. Banking Industry: What a Long, Strange Trip It's Been," *Brookings Papers on Economic Activity* 2 (1995): 55–201, and Timothy Hannan and Stephen Rhoades, "Future U.S. Banking Structure, 1990–2010," *Antitrust Bulletin* 37 (1992) 737–798. For a more detailed treatment of the bank consolidation process taking place in the United States, see Frederic S. Mishkin, "Bank Consolidation: A Central Banker's Perspective," in *Mergers of Financial Institutions*, ed. Yakov Amihud and Geoffrey Wood (Boston: Kluwer Academic Publishers, 1998), pp. 3–19.

It also does not look as though community banks will disappear. When New York State liberalized branching laws in 1962, there were fears that community banks upstate would be driven from the market by the big New York City banks. Not only did this not happen, but some of the big boys found that the small banks were able to run rings around them in the local markets. Similarly, California, which has had unrestricted statewide branching for a long time, continues to have a thriving number of community banks.

Economists see some important benefits of bank consolidation and nationwide banking. The elimination of geographic restrictions on banking will increase competition and drive inefficient banks out of business, thus raising the efficiency of the banking sector. The move to larger banking organizations also means that there will be some increase in efficiency because they can take advantage of economies of scale and scope. The increased diversification of banks' loan portfolios may lower the probability of a banking crisis in the future. In the 1980s and early 1990s, bank failures were often concentrated in states with weak economies. For example, after the decline in oil prices in 1986, all the major commercial banks in Texas, which had been very profitable, now found themselves in trouble. At that time, banks in New England were doing fine. However, when the 1990–1991 recession hit New England hard, New England banks started failing. With nationwide banking, a bank could make loans in both New England and Texas and would thus be less likely to fail, because when loans go sour in one location, they would likely be doing well in the other. Thus nationwide banking is seen as a major step toward creating a banking system that is less prone to banking crises.

Two concerns remain about the effects of bank consolidation—that it may lead to a reduction in lending to small businesses and that banks rushing to expand into new geographic markets may take increased risks leading to bank failures. The jury is still out on these concerns, but most economists see the benefits of bank consolidation and nationwide banking as outweighing the costs.

Separation of the Banking and Other Financial Service Industries

Another important feature of the structure of the banking industry in the United States until recently was the separation of the banking and other financial services industries—such as securities, insurance, and real estate—mandated by the Glass-Steagall Act of 1933. As pointed out earlier in the chapter, Glass-Steagall allowed commercial banks to sell new offerings of government securities but prohibited them from underwriting corporate securities or from engaging in brokerage activities. It also prevented banks from engaging in insurance and real estate activities. In turn, it prevented investment banks and insurance companies from engaging in commercial banking activities and thus protected banks from competition.

Erosion of Glass-Steagall

Despite the Glass-Steagall prohibitions, the pursuit of profits and financial innovation stimulated both banks and other financial institutions to bypass the intent of the Glass-Steagall Act and encroach on each other's traditional territory. Brokerage firms engaged in the traditional banking business of issuing deposit instruments with the development of money market mutual funds and cash management accounts. After the Federal Reserve used a loophole in Section 20 of the Glass-Steagall Act in 1987 to

allow bank holding companies to underwrite previously prohibited classes of securities, banks began to enter this business. The loophole allowed affiliates of approved commercial banks to engage in underwriting activities as long as the revenue didn't exceed a specified amount, which started at 10% but was raised to 25% of the affiliates' total revenue. After the U.S. Supreme Court validated the Fed's action in July 1988, the Federal Reserve allowed J.P. Morgan, a commercial bank holding company, to underwrite corporate debt securities (in January 1989) and to underwrite stocks (in September 1990), with the privilege extended to other bank holding companies. The regulatory agencies later allowed banks to engage in some real estate and some insurance activities.

The Gramm-Leach-Bliley Financial Services Modernization Act of 1999: Repeal of Glass-Steagall

Because restrictions on commercial banks' securities and insurance activities put American banks at a competitive disadvantage relative to foreign banks, bills to overturn Glass-Steagall appeared in almost every session of Congress in the 1990s. With the merger in 1998 of Citicorp, the second-largest bank in the United States, and Travelers Group, an insurance company that also owned the third-largest securities firm in the country (Salomon Smith Barney), the pressure to abolish Glass-Steagall became overwhelming. Legislation to eliminate Glass-Steagall finally came to fruition in 1999. This legislation, the Gramm-Leach-Bliley Financial Services Modernization Act of 1999, allows securities firms and insurance companies to purchase banks, and allows banks to underwrite insurance and securities and engage in real estate activities. Under this legislation, states retain regulatory authority over insurance activities, while the Securities and Exchange Commission continues to have oversight of securities activities. The Office of the Comptroller of the Currency has the authority to regulate bank subsidiaries engaged in securities underwriting, but the Federal Reserve continues to have the authority to oversee bank holding companies under which all real estate and insurance activities and large securities operations will be housed.

Implications for Financial Consolidation

As we have seen, the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 has stimulated consolidation of the banking industry. The financial consolidation process will be further hastened by the Gramm-Leach-Bliley Act of 1999, because the way is now open to consolidation in terms not only of the number of banking institutions, but also across financial service activities. Given that information technology is increasing economies of scope, mergers of banks with other financial service firms like that of Citicorp and Travelers should become increasingly common, and more mega-mergers are likely to be on the way. Banking institutions are becoming not only larger, but also increasingly complex, organizations, engaging in the full gamut of financial service activities.

Separation of Banking and Other Financial Services Industries Throughout the World

Not many other countries in the aftermath of the Great Depression followed the lead of the United States in separating the banking and other financial services industries. In fact, in the past this separation was the most prominent difference between banking regulation in the United States and in other countries. Around the world, there are three basic frameworks for the banking and securities industries.

The first framework is *universal banking*, which exists in Germany, the Netherlands, and Switzerland. It provides no separation at all between the banking and securities industries. In a universal banking system, commercial banks provide a full range of banking, securities, real estate, and insurance services, all within a single legal

entity. Banks are allowed to own sizable equity shares in commercial firms, and often they do.

The *British-style universal banking system*, the second framework, is found in the United Kingdom and countries with close ties to it, such as Canada and Australia, and now the United States. The British-style universal bank engages in securities underwriting, but it differs from the German-style universal bank in three ways: Separate legal subsidiaries are more common, bank equity holdings of commercial firms are less common, and combinations of banking and insurance firms are less common.

The third framework features some legal separation of the banking and other financial services industries, as in Japan. A major difference between the U.S. and Japanese banking systems is that Japanese banks are allowed to hold substantial equity stakes in commercial firms, whereas American banks cannot. In addition, most American banks use a bank-holding-company structure, but bank holding companies are illegal in Japan. Although the banking and securities industries are legally separated in Japan under Section 65 of the Japanese Securities Act, commercial banks are increasingly being allowed to engage in securities activities and like U.S. banks are thus becoming more like British-style universal banks.

Thrift Industry: Regulation and Structure

Not surprisingly, the regulation and structure of the thrift industry (savings and loan associations, mutual savings banks, and credit unions) closely parallels the regulation and structure of the commercial banking industry.

Savings and Loan Associations

Just as there is a dual banking system for commercial banks, savings and loan associations (S&Ls) can be chartered either by the federal government or by the states. Most S&Ls, whether state or federally chartered, are members of the Federal Home Loan Bank System (FHLBS). Established in 1932, the FHLBS was styled after the Federal Reserve System. It has 12 district Federal Home Loan banks, which are supervised by the Office of Thrift Supervision.

Federal deposit insurance (up to $100,000 per account) for S&Ls is provided by the Savings Association Insurance Fund, a subsidiary of the FDIC. The Office of Thrift Supervision regulates federally insured S&Ls by setting minimum capital requirements, requiring periodic reports, and examining the S&Ls. It is also the chartering agency for federally chartered S&Ls, and for these S&Ls it approves mergers and sets the rules for branching.

The branching regulations for S&Ls were more liberal than for commercial banks: In the past, almost all states permitted branching of S&Ls, and since 1980, federally chartered S&Ls were allowed to branch statewide in all states. Since 1981, mergers of financially troubled S&Ls were allowed across state lines, and nationwide branching of S&Ls is now a reality.

The FHLBS, like the Fed, makes loans to the members of the system (obtaining funds for this purpose by issuing bonds). However, in contrast to the Fed's discount loans, which are expected to be repaid quickly, the loans from the FHLBS often need not be repaid for long periods of time. In addition, the rates charged to S&Ls for these loans are often below the rates that the S&Ls must pay when they borrow in the open market. In this way, the FHLBS loan program provides a subsidy to the savings and

loan industry (and implicitly to the housing industry, since most of the S&L loans are for residential mortgages).

As we will see in the next chapter, the savings and loans experienced serious difficulties in the 1980s. Because savings and loans now engage in many of the same activities as commercial banks, many experts view having a separate charter and regulatory apparatus for S&Ls an anachronism that no longer makes sense.

Mutual Savings Banks

Of the 400 or so mutual savings banks, approximately half are chartered by states. Although the mutual savings banks are primarily regulated by the states in which they are located, the majority have their deposits insured by the FDIC up to the limit of $100,000 per account; these banks are also subject to many of the FDIC's regulations for state-chartered banks. As a rule, the mutual savings banks whose deposits are not insured by the FDIC have their deposits insured by state insurance funds.

The branching regulations for mutual savings banks are determined by the states in which they operate. Because these regulations are not too restrictive, there are few mutual savings banks with assets of less than $25 million.

Credit Unions

Credit unions are small cooperative lending institutions organized around a particular group of individuals with a common bond (union members or employees of a particular firm). They are the only financial institutions that are tax-exempt and can be chartered either by the states or by the federal government; over half are federally chartered. The National Credit Union Administration (NCUA) issues federal charters and regulates federally chartered credit unions by setting minimum capital requirements, requiring periodic reports, and examining the credit unions. Federal deposit insurance (up to the $100,000-per-account limit) is provided to both federally-chartered and state-chartered credit unions by a subsidiary of the NCUA, the National Credit Union Share Insurance Fund (NCUSIF). Since the majority of credit union lending is for consumer loans with fairly short terms to maturity, they did not suffer the financial difficulties of the S&Ls and mutual savings banks.

Because their members share a common bond, credit unions are typically quite small; most hold less than $10 million of assets. In addition, their ties to a particular industry or company make them more likely to fail when large numbers of workers in that industry or company are laid off and have trouble making loan payments. Recent regulatory changes allow individual credit unions to cater to a more diverse group of people by interpreting the common bond requirement less strictly, and this has encouraged an expansion in the size of credit unions that may help reduce credit union failures in the future.

Often a credit union's shareholders are dispersed over many states, and sometimes even worldwide, so branching across state lines and into other countries is permitted for federally chartered credit unions. The Navy Federal Credit Union, for example, whose shareholders are members of the U.S. Navy and Marine Corps, has branches throughout the world.

International Banking

In 1960, only eight U.S. banks operated branches in foreign countries, and their total assets were less than $4 billion. Currently, around 100 American banks have branches

abroad, with assets totaling over $500 billion. The spectacular growth in international banking can be explained by three factors.

First is the rapid growth in international trade and multinational (worldwide) corporations that has occurred since 1960. When American firms operate abroad, they need banking services in foreign countries to help finance international trade. For example, they might need a loan in a foreign currency to operate a factory abroad. And when they sell goods abroad, they need to have a bank exchange the foreign currency they have received for their goods into dollars. Although these firms could use foreign banks to provide them with these international banking services, many of them prefer to do business with the U.S. banks with which they have established long-term relationships and which understand American business customs and practices. As international trade has grown, international banking has grown with it.

Second, American banks have been able to earn substantial profits by being very active in global investment banking, in which they underwrite foreign securities. They also sell insurance abroad, and they derive substantial profits from these investment banking and insurance activities.

Third, American banks have wanted to tap into the large pool of dollar-denominated deposits in foreign countries known as Eurodollars. To understand the structure of U.S. banking overseas, let us first look at the Eurodollar market, an important source of growth for international banking.

Eurodollar Market

Eurodollars are created when deposits in accounts in the United States are transferred to a bank outside the country and are kept in the form of dollars. (For a discussion of the birth of the Eurodollar, see Box 4.) For example, if Rolls-Royce PLC deposits a $1 million check, written on an account at an American bank, in its bank in London—specifying that the deposit is payable in dollars—$1 million in Eurodollars is created.[3] Over 90% of Eurodollar deposits are time deposits, more than half of them certificates of deposit with maturities of 30 days or more. The total amount of Eurodollars outstanding is on the order of $4.4 trillion, making the Eurodollar market one of the most important financial markets in the world economy.

Why would companies like Rolls-Royce want to hold dollar deposits outside the United States? First, the dollar is the most widely used currency in international trade, so Rolls-Royce might want to hold deposits in dollars to conduct its international transactions. Second, Eurodollars are "offshore" deposits—they are held in countries that will not subject them to regulations such as reserve requirements or restrictions (called *capital controls*) on taking the deposits outside the country.[4]

The main center of the Eurodollar market is London, a major international financial center for hundreds of years. Eurodollars are also held outside Europe in locations that provide offshore status to these deposits—for example, Singapore, the Bahamas, and the Cayman Islands.

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[3]Note that the London bank keeps the $1 million on deposit at the American bank, so the creation of Eurodollars has not caused a reduction in the amount of bank deposits in the United States.

[4]Although most offshore deposits are denominated in dollars, some are also denominated in other currencies. Collectively, these offshore deposits are referred to as Eurocurrencies. A Japanese yen-denominated deposit held in London, for example, is called a Euroyen.

Box 4: Global

Ironic Birth of the Eurodollar Market

One of capitalism's great ironies is that the Eurodollar market, one of the most important financial markets used by capitalists, was fathered by the Soviet Union. In the early 1950s, during the height of the Cold War, the Soviets had accumulated a substantial amount of dollar balances held by banks in the United States. Because the Russians feared that the U.S. government might freeze these assets in the United States, they wanted to move the deposits to Europe, where they would be safe from expropriation. (This fear was not unjustified—consider the U.S. freeze on Iranian assets in 1979 and Iraqi assets in 1990.) However, they also wanted to keep the deposits in dollars so that they could be used in their international transactions. The solution to the problem was to transfer the deposits to European banks but to keep the deposits denominated in dollars. When the Soviets did this, the Eurodollar was born.

The minimum transaction in the Eurodollar market is typically $1 million, and approximately 75% of Eurodollar deposits are held by banks. Plainly, you and I are unlikely to come into direct contact with Eurodollars. The Eurodollar market is, however, an important source of funds to U.S. banks, whose borrowing of these deposits is over $100 billion. Rather than using an intermediary and borrowing all the deposits from foreign banks, American banks decided that they could earn higher profits by opening their own branches abroad to attract these deposits. Consequently, the Eurodollar market has been an important stimulus to U.S. banking overseas.

Structure of U.S. Banking Overseas

U.S. banks have most of their foreign branches in Latin America, the Far East, the Caribbean, and London. The largest volume of assets is held by branches in London, because it is a major international financial center and the central location for the Eurodollar market. Latin America and the Far East have many branches because of the importance of U.S. trade with these regions. Parts of the Caribbean (especially the Bahamas and the Cayman Islands) have become important as tax havens, with minimal taxation and few restrictive regulations. In actuality, the bank branches in the Bahamas and the Cayman Islands are "shell operations" because they function primarily as bookkeeping centers and do not provide normal banking services.

An alternative corporate structure for U.S. banks that operate overseas is the **Edge Act corporation**, a special subsidiary engaged primarily in international banking. U.S. banks (through their holding companies) can also own a controlling interest in foreign banks and in foreign companies that provide financial services, such as finance companies. The international activities of U.S. banking organizations are governed primarily by the Federal Reserve's Regulation K.

In late 1981, the Federal Reserve approved the creation of **international banking facilities (IBFs)** within the United States that can accept time deposits from foreigners but are not subject to either reserve requirements or restrictions on interest payments. IBFs are also allowed to make loans to foreigners, but they are not allowed to make loans to domestic residents. States have encouraged the establishment of IBFs by exempting them from state and local taxes. In essence, IBFs are treated like foreign

branches of U.S. banks and are not subject to domestic regulations and taxes. The purpose of establishing IBFs is to encourage American and foreign banks to do more banking business in the United States rather than abroad. From this point of view, IBFs were a success: Their assets climbed to nearly $200 billion in the first two years, but have currently fallen to below $100 billion.

Foreign Banks in the United States

The growth in international trade has not only encouraged U.S. banks to open offices overseas, but has also encouraged foreign banks to establish offices in the United States. Foreign banks have been extremely successful in the United States. Currently, they hold more than 10% of total U.S. bank assets and do a large portion of all U.S. bank lending, with nearly a 19% market share for lending to U.S. corporations.

Foreign banks engage in banking activities in the United States by operating an agency office of the foreign bank, a subsidiary U.S. bank, or a branch of the foreign bank. An agency office can lend and transfer funds in the United States, but it cannot accept deposits from domestic residents. Agency offices have the advantage of not being subject to regulations that apply to full-service banking offices (such as requirements for FDIC insurance). A subsidiary U.S. bank is just like any other U.S. bank (it may even have an American-sounding name) and is subject to the same regulations, but it is owned by the foreign bank. A branch of a foreign bank bears the foreign bank's name and is usually a full-service office. Foreign banks may also form Edge Act corporations and IBFs.

Before 1978, foreign banks were not subject to many regulations that applied to domestic banks: They could open branches across state lines and were not expected to meet reserve requirements, for example. The passage of the International Banking Act of 1978, however, put foreign and domestic banks on a more equal footing. Now foreign banks may open new full-service branches only in the state they designate as their home state or in states that allow the entry of out-of-state banks. Limited-service branches and agency offices in any other state are permitted, however, and foreign banks are allowed to retain any full-service branches opened before ratification of the International Banking Act of 1978.

The internationalization of banking, both by U.S. banks going abroad and by foreign banks entering the United States, has meant that financial markets throughout the world have become more integrated. As a result, there is a growing trend toward international coordination of bank regulation, one example of which is the 1988 Basel agreement to standardize minimum capital requirements in industrialized countries, discussed in Chapter 11. Financial market integration has also encouraged bank consolidation abroad, culminating in the creation of the first trillion-dollar bank with the proposed merger of the Industrial Bank of Japan, Dai-Ichi Kangyo Bank, and Fuji Bank, announced in August 1999, but which took place in 2002. Another development has been the importance of foreign banks in international banking. As is shown in Table 3, in 2002, eight of the ten largest banks in the world were foreign. The implications of this financial market integration for the operation of our economy is examined further in Chapter 20 when we discuss the international financial system in more detail.

Table 3 Ten Largest Banks in the World, 2002

Bank	Assets (U.S. $ millions)
1. Mizuho Holdings, Japan	1,281,389
2. Citigroup, U.S.	1,057,657
3. Mitsubishi Tokyo Financial Group, Japan	854,749
4. Deutsche Bank, Germany	815,126
5. Allianz, Germany	805,433
6. UBS, Switzerland	753,833
7. BNP, France	734,833
8. HSBC Holdings, U.K.	694,590
9. J.P. Morgan & Chase Company, U.S.	712,508
10. Bayerische Hypo-Und Vereinsbanken, Germany	638,544

Source: American Banker, 167 (132): 17, July 12, 2002.

Summary

1. The history of banking in the United States has left us with a dual banking system, with commercial banks chartered by the states and the federal government. Multiple agencies regulate commercial banks: the Office of the Comptroller, the Federal Reserve, the FDIC, and the state banking authorities.
2. A change in the economic environment will stimulate financial institutions to search for financial innovations. Changes in demand conditions, especially the rise in interest-rate risk; changes in supply conditions, especially improvements in information technology; and the desire to avoid costly regulations have been major driving forces behind financial innovation. Financial innovation has caused banks to suffer declines in cost advantages in acquiring funds and in income advantages on their assets. The resulting squeeze has hurt profitability in banks' traditional lines of business and has led to a decline in traditional banking.
3. Restrictive state branching regulations and the McFadden Act, which prohibited branching across state lines, led to a large number of small commercial banks. The large number of commercial banks in the United States reflected the past *lack* of competition, not the presence of vigorous competition. Bank holding companies and ATMs were important responses to branching restrictions that weakened the restrictions' anticompetitive effect.
4. Since the mid-1980s, bank consolidation has been occurring at a rapid pace. The first phase of bank consolidation was the result of bank failures and the reduced effectiveness of branching restrictions. The second phase has been stimulated by information technology and the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, which establishes the basis for a nationwide banking system. Once banking consolidation has settled down, we are likely to be left with a banking system with several thousand banks. Most economists believe that the benefits of bank consolidation and nationwide banking will outweigh the costs.
5. The Glass-Steagall Act separated commercial banking from the securities industry. Legislation in 1999,

however, repealed the Glass-Steagall Act, removing the separation of these industries.

6. The regulation and structure of the thrift industry (savings and loan associations, mutual savings banks, and credit unions) parallel closely the regulation and structure of the commercial banking industry. Savings and loans are primarily regulated by the Office of Thrift Supervision, and deposit insurance is administered by the FDIC. Mutual savings banks are regulated by the states, and federal deposit insurance is provided by the FDIC. Credit unions are regulated by the National Credit Union Administration, and deposit insurance is provided by the National Credit Union Share Insurance Fund.
7. With the rapid growth of world trade since 1960, international banking has grown dramatically. United States banks engage in international banking activities by opening branches abroad, owning controlling interests in foreign banks, forming Edge Act corporations, and operating international banking facilities (IBFs) located in the United States. Foreign banks operate in the United States by owning a subsidiary American bank or by operating branches or agency offices in the United States.

Key Terms

automated banking machine (ABM), p. 235
automated teller machine (ATM), p. 235
bank holding companies, p. 232
branches, p. 244
central bank, p. 230
deposit rate ceilings, p. 238
disintermediation, p. 238
dual banking system, p. 231
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Edge Act corporation, p. 255
financial derivatives, p. 233
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international banking facilities (IBFs), p. 255
large, complex, banking organizations (LCBOs), p. 248
national banks, p. 231
securitization, p. 237
state banks, p. 231
superregional banks, p. 247
sweep account, p. 239
virtual bank, p. 235

Questions and Problems

Questions marked with an asterisk are answered at the end of the book in an appendix, "Answers to Selected Questions and Problems."

1. Why was the United States one of the last of the major industrialized countries to have a central bank?
*2. Which regulatory agency has the primary responsibility for supervising the following categories of commercial banks?
   a. National banks
   b. Bank holding companies
   c. Non–Federal Reserve state banks
   d. Federal Reserve member state banks
3. "The commercial banking industry in Canada is less competitive than the commercial banking industry in the United States because in Canada only a few large banks dominate the industry, while in the United States there are around 8,000 commercial banks." Is this statement true, false, or uncertain? Explain your answer.
*4. Why did new technology make it harder to enforce limitations on bank branching?
5. Why has there been such a dramatic increase in bank holding companies?
*6. Why is there a higher percentage of banks with under $25 million of assets among commercial banks than among savings and loans and mutual savings banks?

7. Unlike commercial banks, savings and loans, and mutual savings banks, credit unions did not have restrictions on locating branches in other states. Why, then, are credit unions typically smaller than the other depository institutions?

*8. What incentives have regulatory agencies created to encourage international banking? Why have they done this?

9. How could the approval of international banking facilities (IBFs) by the Fed in 1981 have reduced employment in the banking industry in Europe?

*10. If the bank at which you keep your checking account is owned by Saudi Arabians, should you worry that your deposits are less safe than if the bank were owned by Americans?

11. If reserve requirements were eliminated in the future, as some economists advocate, what effects would this have on the size of money market mutual funds?

*12. Why have banks been losing cost advantages in acquiring funds in recent years?

13. "If inflation had not risen in the 1960s and 1970s, the banking industry might be healthier today." Is this statement true, false, or uncertain? Explain your answer.

*14. Why have banks been losing income advantages on their assets in recent years?

15. "The invention of the computer is the major factor behind the decline of the banking industry." Is this statement true, false, or uncertain? Explain your answer.

Web Exercises

1. Go to www.fdic.gov/bank/statistical/statistics/index.html. Select "Highlights and Trends." Choose "Number of FDIC-Insured Commercial Banks and Trust Companies." Looking at the trend in bank branches, does the public appear to have more or less access to banking facilities? How many banks were there in 1934 and how many are there now? Does the graph indicate that the trend toward consolidation is continuing?

2. Despite the regulations that protect banks from failure, some do fail. Go to www2.fdic.gov/hsob/. Select the tab labeled "Bank and Thrift Failures." How many bank failures occurred in the U.S. during the most recent complete calendar year? What were the total assets held by the banks that failed? How many banks failed in 1937?