



C H A P T E R 6

BUILDING A SAFER FINANCIAL SYSTEM

From the ashes of the Great Depression, our leaders built a national system of financial regulation. Before 1933, there was no national regulator for stock and bond markets, no required disclosure by public firms, no national oversight of mutual funds or investment advisors, no insurance for bank depositors, and few restrictions on the activities of banks or other financial institutions. By 1940, landmark legislation had created the Securities and Exchange Commission, the Federal Deposit Insurance Corporation, new and important powers for the Federal Reserve, and disclosure requirements for virtually every major player in financial markets. The pieces of this regulatory structure fit together in a relatively cohesive whole, and the United States enjoyed a long period of relative financial calm. In the 60 years before the Great Depression, our Nation experienced seven episodes of financial panic, in which many banks were forced to shut their windows and declined to redeem deposit accounts. In the nearly 80 years since the Depression, not a single financial crisis has risen to that level.

Although the system of regulation put together during the Depression served us well for many years, warning signs appeared periodically. The savings and loan crisis of the late 1980s and early 1990s showed how banking regulation itself can have unintended consequences. At that time, deregulation coupled with generous deposit insurance combined to create a dangerous pattern of risk-taking that eventually led to a large Federal bailout of the financial system. In 1998, the collapse of Long-Term Capital Management highlighted gaps in the regulatory structure and induced the Federal Reserve Bank of New York to organize an unprecedented private rescue of an unregulated hedge fund. In 2001, the collapse of Enron laid bare the complexity of the financial operations at seemingly nonfinancial corporations and posed new challenges for accountants, policymakers, and analysts. Regulatory changes in the past 30 years responded to the specific weaknesses demonstrated by these crises, but these changes were incremental and lacked

a strategic plan. Throughout this period, the architecture created after the Great Depression was becoming increasingly inadequate to handle ongoing financial innovation. It was in this vacuum that financial innovation accelerated during the first decade of the 21st century.

The weaknesses in our outdated regulatory system nearly drove our economy into a second Great Depression. After the bankruptcy of Lehman Brothers in September 2008, credit markets froze and the Federal Government was forced to embark on increasingly aggressive intervention in financial markets. But as bad as the situation was, it could have been much worse. Courage and creativity during the depths of the crisis, and forceful stewardship by the Administration in the aftermath, have enabled our Nation to escape a second Great Depression. Chapter 2 of this report discusses the major elements of the Administration's recovery plan. This chapter focuses on the long-term changes necessary to prevent future crises.

WHAT IS FINANCIAL INTERMEDIATION?

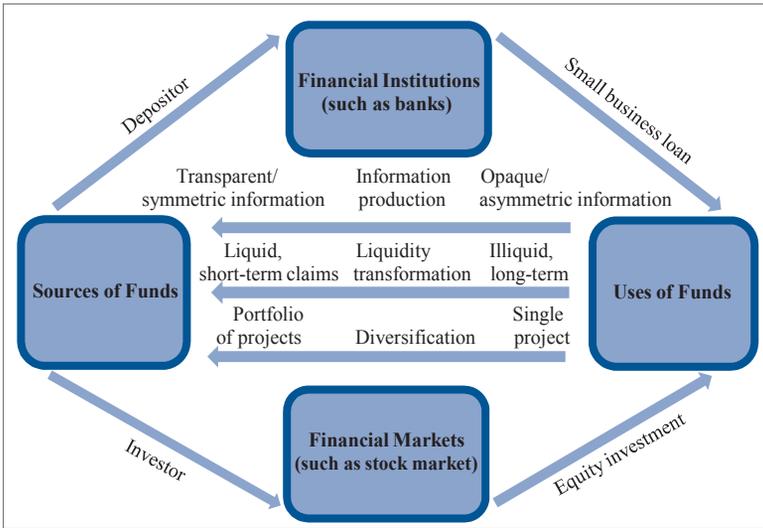
Suppose that the world woke up tomorrow to find all the banks gone, along with insurance companies, investment banks, mutual funds, and all the other institutions where ordinary people put their savings. What would happen? In the short run, people could keep their savings in mattresses and piggy banks, and the only apparent losses would be the forgone interest and dividends. But with no easy way to get the savings from piggy banks into productive investment, the economy would face bigger problems very quickly. Entrepreneurs with ideas would find it difficult to get capital. Large companies in need of money to restructure their operations would have no way to borrow against their future earnings. Young families would have no way to buy a house until they had personally saved enough to afford the whole thing. Our system of financial intermediation makes possible all those activities, and the infrastructure to perform that function is necessarily complex and costly.

The Economics of Financial Intermediation

Figure 6-1 is a simplified diagram of the main function of financial intermediation: transforming savings into investment. The ultimate source of funds is shown on the left: individuals and institutions that have the final claim on wealth and wish to save some of it for the future. The ultimate use of funds is shown on the right: the productive activities that need funds for investment. The middle of the diagram can be classified as "financial intermediation." Financial intermediation uses either markets (like the stock market) or institutions (like a bank) to channel savings into investment.

In each of these cases, financial intermediaries provide three important services: information production, liquidity transformation, and diversification. The paragraphs that follow use a concrete investment example to explain these services and define the terms used in the figure.

Figure 6-1
Financial Intermediation: Saving into Investment



Suppose that an entrepreneur has an idea for a new company (right side of figure) to develop a new cancer treatment. The science behind this business is specialized and complicated. He could directly approach a wealthy individual with savings (left side of figure) and ask for an investment in his company. The potential investor would immediately face two difficult problems. The first is that she does not know the quality of the entrepreneur's idea. The entrepreneur is likely to know much more about the science than does the potential investor. Maybe the entrepreneur has already asked more than 100 potential investors and been turned down by all of them. Maybe he knows that the idea has little chance of commercial success but wants to try anyway for humanitarian reasons. The investor knows none of these things and cannot learn about them without putting in real effort. In this case, there would be asymmetric information between the investor and the entrepreneur at the time of the potential investment: economists call this a problem of adverse selection.

The second problem faced by the investor is that, after she makes the investment, she needs some way to monitor the entrepreneur and make sure he is using the money in the most efficient way. Perhaps the entrepreneur

will decide to use the money for some other business or research purpose. How will the investor know? Even worse, what is to prevent the entrepreneur from using the funds for his personal benefit or taking the money without putting in any effort? In this case, there would be additional asymmetric information introduced after the investment was made: economists call this a problem of moral hazard.

To solve these adverse selection and moral hazard problems, the investor will need to expend some resources. She will need to study the technology, evaluate its chances for scientific and commercial success, and then carefully watch over the entrepreneur after the investment is made. These activities are difficult and costly, and there is no reason to believe that a typical source of funds (whose main qualification is that she has money to invest) would also be the best person to solve these problems. One important service of financial intermediation is to efficiently solve the adverse selection and moral hazard problems that come with the transformation of savings into investment. This chapter refers to this service as information production.

The second main service of financial intermediation is liquidity transformation. Consider how long it takes to develop a cancer treatment. In the United States, all new drug treatments must pass through a complex regulatory review stretched over many years. Even if a drug is eventually approved, the path to commercial success can take many more years. Most investors do not want to wait that long to see any return on their money. Individual investors have uncertain liquidity needs—jobs can be lost, family members can get sick—and even institutional investors are subject to performance evaluation over short periods. Overall, investment projects tend to have long production times, while investment sources prefer to have easy access to their money. Somebody, somewhere, must be willing to absorb the liquidity needs of the economy. In practice, these needs are provided by liquidity transformation: financial institutions and markets transform long-term (illiquid) investment projects into short-term (liquid) claims.

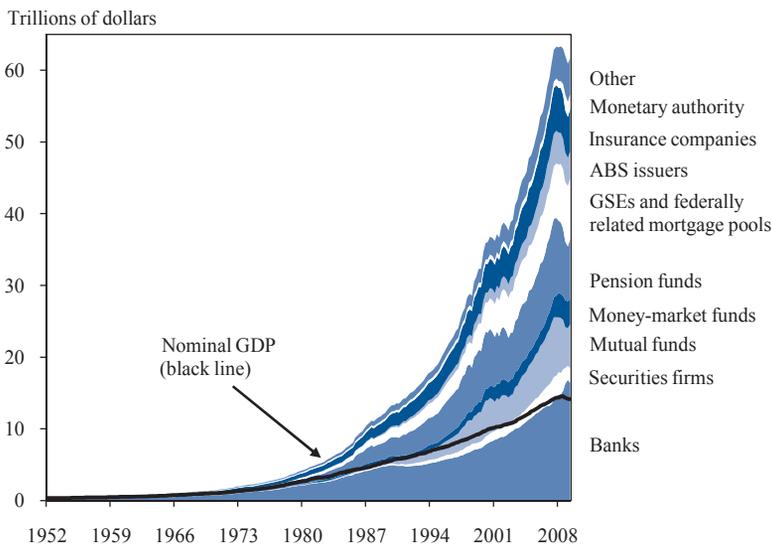
Liquidity transformation is also important for another, more worrisome, reason: it is the main source of the fragility that can lead to a financial crisis. Because most intermediaries have illiquid assets and liquid liabilities, any broad-based attempt by creditors to call liabilities at the same time creates an impossible situation for the intermediary. The classic example is a bank run, where holders of deposits (liquid liabilities) all “run” at the same time to withdraw their funds, leaving banks unable to sell the illiquid business loans and mortgages quickly enough to meet these demands. The same process can occur in a wide variety of nonbank institutions, as is discussed at length later in this chapter.

The third main service of financial intermediation is diversification. A single investment project can be very risky. In the case of the drug company, no investor would want her entire net worth riding on the success of just one technological project. Individual investors can minimize their risk by purchasing a diversified portfolio of investments. If, for example, an investor could pay 1 percent of the costs for 100 different drug-development projects, then her overall portfolio risk would be greatly reduced. Further diversification is achieved by dedicating only a small share of a portfolio to any given industry or country. Such diversification is a main service of most financial institutions, which take funds from many small sources and then invest across a wide variety of projects.

Types of Financial Intermediaries

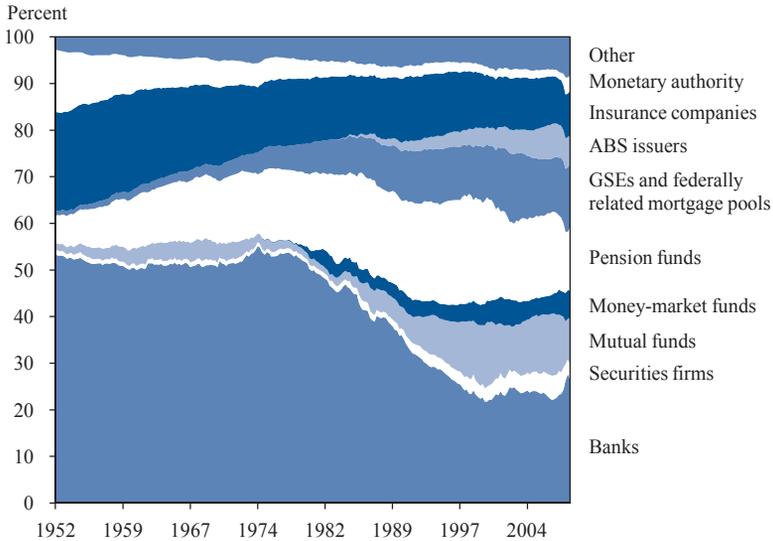
Figure 6-2 plots nominal gross domestic product (GDP) in the United States against the total assets in the financial sector and a long list of institutional types, including banks, securities firms, mutual funds, money-market funds, mortgage pools, asset-backed-securities (ABS) issuers, insurance companies, and pension funds. Figure 6-3 plots the same set of intermediaries, this time as a percentage of the total assets held by the entire financial

Figure 6-2
Financial Sector Assets



Sources: Federal Reserve Board, Flow of Funds; Department of Commerce (Bureau of Economic Analysis), National Income and Product Accounts Table 1.1.5.

Figure 6-3
Share of Financial Sector Assets by Type



Source: Federal Reserve Board, Flow of Funds.

sector. All of these financial data are from the Federal Reserve’s Flow of Funds.

These figures show several important trends. First, assets in the financial sector have grown much faster than GDP: from 1952 to 2009, nominal GDP grew by 4,000 percent and financial sector assets grew by 16,000 percent. This trend is important to remember in considering the regulation of finance. It would be helpful to know if the ratio of financial assets to GDP is “too big” or “too small,” but no good evidence permits such a conclusion. Furthermore, modern developments in the financial system have allowed each dollar of underlying assets to multiply many times across an increasing chain of financial intermediation, so that any measurement of gross assets (as in Figure 6-2) is misleading as a measure of the “importance” of the financial sector. The concept of increasing intermediation chains is discussed later for specific institutional types.

A second important trend is that the assets held by banks grew at approximately the same rate as GDP. Nevertheless, because the overall size of the financial sector has increased, the percentage of financial sector assets held by banks has fallen over time. Third, Figure 6-3 shows the rising share of assets held by mutual funds, government sponsored enterprises (GSEs) and federally related mortgage pools, and issuers of asset-backed securities. Some of this growth can be attributed to the lengthening of the financial intermediation chain, as pension funds delegate asset management to

mutual funds, banks sell mortgages to mortgage pools, and money-market funds purchase securities from these pools.

Three long-standing institutional types are banks, securities firms, and insurance companies. Banks, including commercial banks, bank holding companies, savings institutions (thrifts), and credit unions, are still the largest component of the financial sector, with \$16.5 trillion in assets as of June 2009. Although bank assets represent 26.7 percent of the financial sector, their share has fallen precipitously since 1952, when it was 53.2 percent. Securities firms, also known as investment banks or broker-dealers, had \$2.0 trillion in assets, comprising 3.2 percent of the sector in June 2009. This percentage was down considerably from an average of 5.1 percent in 2007, because most of the largest securities firms went bankrupt, were acquired by banks, or formally converted to banks during the crisis. Insurance companies have \$5.9 trillion in assets, comprising 9.5 percent of the sector as of June 2009.

Mutual funds and pension funds are a second layer of intermediation, often standing in between investors and another institution or market. Mutual funds had \$9.7 trillion in assets, comprising 15.7 percent of the sector, in June 2009, up from only 1.6 percent in 1952 and 3.1 percent in 1980. Mutual funds take money from retail investors and invest in public securities. An important subgroup of mutual funds are money-market funds (MMFs), which are broken out separately in these figures and in the underlying Federal Reserve data. In 1990, MMFs held less than \$500 billion in assets; by June 2009, their total assets were \$3.6 trillion, comprising 5.8 percent of total financial assets. MMFs invest only in relatively safe, short-term assets. Pension funds are a large and growing share of the sector, with assets of \$8.3 trillion making up 13.5 percent of total financial assets in June 2009. Many pension assets are reinvested in mutual funds, so they show up twice in the overall totals. Thus, some of the growth in overall sector assets is driven by this extra step of intermediation.

The next category in Figure 6-2 is GSEs and federally related mortgage pools, with \$8.4 trillion in assets in June 2009. Beginning in the 1930s, various nonbank sources emerged to buy mortgages on the secondary market. By the end of the 1970s, federally related mortgage pools—which include those established by GSEs known as Fannie Mae and Freddie Mac—had almost \$100 billion in assets. The growth of GSEs added an extra layer to the financial intermediation of mortgages. Here, the bank provides a loan to a borrower but then resells this loan to a GSE. The bank may hold debt securities issued by the GSE, and the GSE creates a pool that holds the mortgage.

In addition to those created by GSEs, private mortgage pools, focusing on “subprime” borrowers, have grown substantially in the past 10 years.

These private mortgage pools issue securities backed by the mortgages; these securities, known as mortgage-backed securities (MBSs), are purchased and held by mutual funds or other financial intermediaries. They are one type of an asset-backed security managed by an ABS issuer. ABS issuers do not confine themselves to mortgages; they also pool and securitize auto loans, student loans, credit card debt, and many other types of debt. Twenty years ago, few ABS issuers existed, but by June 2009 they held \$3.8 trillion in assets and comprised 6.2 percent of total financial sector assets.

The remaining categories in Figures 6-2 and 6-3 are the monetary authority (the Federal Reserve) and “other.” As discussed in Chapter 2, the assets of the monetary authority increased rapidly during the crisis, but the increase is expected to be reversed as the Federal Reserve exits from its emergency programs and begins reducing the large stock of long-term securities it had purchased. The “other” category includes special purpose vehicles created to manage the emergency lending programs and various other minor groups of intermediaries.

Hedge funds are an increasingly important financial intermediary, but they are not included in Figures 6-2 and 6-3. Because of a lack of data on domestic hedge funds, the Federal Reserve classifies such funds as part of the household sector and computes the assets of this sector as a residual after everything else is added together and subtracted from total assets. The Federal Reserve is unable to get a clean number for hedge funds because they are largely unregulated private investment pools that are not required to report their holdings to any official source. Unofficial sources estimate the amount of assets held by hedge funds to have been \$1.7 trillion in 2008, but in the absence of regulatory oversight, this estimate is less reliable than the other totals shown in Figure 6-2 (Hedge Fund Research 2009).

THE REGULATION OF FINANCIAL INTERMEDIATION IN THE UNITED STATES

Private institutions and markets should clearly play the central role in financial intermediation. But government also has a role. Economists generally favor government regulation of markets that exhibit a market failure of some kind. This chapter has already discussed two types of market failure: adverse selection and moral hazard. Both can be classified as special cases of asymmetric information, where different parties to a contract do not have the same information. The financial intermediation system alleviates asymmetric-information problems between savers and investors, but information can also be asymmetric between buyers and sellers of financial services. Just as physicians almost always know more than patients about medicine,

and lawyers more than their clients about law, banks and financial advisors should be expected to know more than their investors about investment opportunities. For this reason, there will always be a consumer protection basis for some government regulation of financial services.

Consumer protection was an important motivation for several important pieces of Depression-era legislation. The first two, the Securities Act of 1933 and the Securities Exchange Act of 1934, set forth a long list of requirements for issuing and trading public securities. The list included many types of public disclosure that persist to this day, including information about executive compensation, stockholdings, balance sheets, and income statements. The 1934 Act also created the Securities and Exchange Commission (SEC), the agency responsible for enforcing the new rules. These securities laws were the first Federal laws to regulate organized financial exchanges.

With regulated markets came the growth of intermediaries to service them. These intermediaries gained Federal oversight with the Investment Advisers Act of 1940 (for publicly available investment advisory services) and the Investment Company Act of 1940 (for mutual funds). In total, these four pieces of legislation enacted between 1933 and 1940 represented a huge change in the regulatory structure of financial markets and in most cases can be considered attempts to lessen adverse selection and moral hazard problems between investors, intermediaries, and investments.

Depression-era laws also strengthened the national system of bank regulation, adding new elements to a long pre-Depression history of Federal regulation. Beginning with the National Bank Act of 1864, federally chartered banks have been examined regularly for capital adequacy. State-chartered banks received similar examinations from both state and Federal banking agencies. Such examinations are a form of microprudential regulation, with a focus on the safety and soundness of individual institutions in isolation and with the aim of reducing asymmetric-information problems. Few bank depositors have the time or incentive to conduct detailed reviews of their banks. When regulators conduct periodic reviews and publicize the results, they create a public good of information about the safety and soundness of individual banks. Furthermore, examinations and regulations can constrain excessive risk-taking by federally insured institutions, a moral hazard problem faced by the government, rather than by bank depositors, in part because of deposit insurance.

The microprudential approach, however, is not well suited to handle risks to the entire financial system. The next section of this chapter discusses in detail the spread of crises. For now, it is sufficient to think of a crisis as an occasion when there is a sudden increase in the asymmetric-information problem in the financial system, as can happen after a large economic shock

or the failure of a major bank. The microprudential system of bank examination can alleviate asymmetric-information problems in normal times, but because the government relies on careful periodic examinations, staggered across banks, it does not have the capacity to examine all banks quickly after a shock or to evaluate the risk that a single bank failure will have on other institutions. Faced with a large economic shock, bank customers can rationally fear for the safety of their deposits. Since the upside of leaving one's money at a bank in such a situation is relatively small, but the downside—losing all one's money—is large, it is individually rational for depositors to withdraw their money when uncertainty increases. What is rational for individual depositors, however, puts an impossible strain on the whole banking system, since the liquidity transformation performed by banks cannot be quickly reversed; the illiquid loans and mortgages held by banks cannot immediately be returned to all depositors as cash.

One partial solution to the liquidity problem during banking crises is to create a “lender of last resort.” This lender stands ready to make cash loans to banks that are backed by illiquid collateral: essentially, this lender serves as a new layer of liquidity transformation above the banks. This form of macroprudential policy was the traditional solution to banking crises in Europe in the 19th century but did not come to the United States until the Federal Reserve Act of 1913 created the first version of the Federal Reserve System as a lender of last resort.

But a lender of last resort, by itself, is unable to prevent bank runs across the entire system. Even illiquid collateral must be given a value by the lender—by law the Federal Reserve can only make secured loans—and if the entire system is failing at the same time, there may be no way for a central bank to estimate reasonable valuations quickly enough. A lender of last resort is designed to solve liquidity problems, not solvency problems, but in a severe crisis, these two problems can become inextricably tied together. (This problem arose during the current crisis, when Lehman Brothers was unable to provide enough collateral to qualify for sufficient Federal Reserve loans.) During the Great Depression, some 9,000 bank failures occurred between 1930 and 1933, well above the number of failures in earlier panics. Shortly after taking office in 1933, President Franklin Roosevelt gave his first “fireside chat” and implied a government guarantee for all bank deposits. The Banking Act of 1933 made the guarantee explicit by creating deposit insurance through a new agency, the Federal Deposit Insurance Corporation (FDIC). In the 75 years that followed, the United States averaged fewer than 30 commercial bank failures a year. The FDIC is a crucial piece of macroprudential regulation in that it provides a guarantee to all insured banks, regardless of the condition of any specific bank. Within the account limits

of FDIC insurance, no depositor needs to worry about the soundness of her bank; thus, the FDIC guarantee eliminates most asymmetric-information problems that could lead to bank runs.

A constant tension in macroprudential regulation is that the attempt to prevent bank runs can itself lead to new forms of moral hazard. Because they have deposit insurance, small depositors no longer need to monitor the safety of their banks; therefore, unless regulators are watching carefully, the banks may take excessive risks with no fear of losing deposits. This latent problem was exacerbated during the 1980s by deregulation in the thrift industry. Following this deregulation, thrift institutions began aggressively seeking out deposits by paying ever-higher interest rates and then intermediating these deposits into speculative investments. This strategy allowed thrifts to use FDIC insurance to gamble for solvency, and when the investments failed, a wave of thrift failures swept through Texas, the Midwest, and New England in the 1980s and early 1990s. This wave, now known as the savings and loan crisis, represented the first significant increase in bank failures since the Great Depression. The failures, it should be noted, were not caused by bank runs—they were not driven by a liquidity mismatch between deposits and loans. Deposit insurance remained intact, and no insured deposit lost any money. Rather, the bank failures were caused by the insolvency of the banks, as they gambled and lost with (effectively) government money. Nevertheless, even in the absence of bank runs, many economists believe that the savings and loan crisis contributed to the “credit crunch” and recession of 1990–91.

There has been no fundamental restructuring of the Nation’s financial regulatory system since the Great Depression. All changes since that time have been piecemeal responses to specific events, added individually onto the original superstructure. That regulatory stasis has led to four major gaps in the current system. First, many of the newer financial institutions—hedge funds, mortgage pools, asset-backed-securities issuers—have grown rapidly while being subject to only minimal Federal regulation. These new institutions suffer from many of the asymmetric-information problems that banks faced before the Depression-era reforms. Second, overlapping jurisdictions and mandates have led to regulatory competition between agencies and regulatory “shopping” by institutions. Such competition is yet another form of moral hazard—now centered on the regulators themselves. Third, regulators operate separately in functional silos of banking, insurance, and securities. Many of the largest institutions perform all these activities at once but are not subject to robust consolidated regulation and supervision. And finally, most of the regulatory system is microprudential and focused on the safety and soundness of specific institutions. No regulator is tasked with

taking a macroprudential approach, which attempts to monitor, recognize, and alleviate risks to the financial system as a whole. Such macroprudential regulation would require explicit rules for the orderly resolution of all large financial institutions, not just the banks currently resolved by the FDIC. In short, because of these four gaps, the failure of one institution imposes negative externalities on others, and there is no coherent system for fixing these externalities.

Of the four gaps, the last requires the most urgent reform and the biggest change in regulatory thinking. The financial crisis made clear how rapidly failures can spread across institutions and affect the whole system. A primary challenge of macroprudential regulation is to recognize such “contagion” and categorize and counteract all the different ways it can manifest. The next section of the chapter turns to this task.

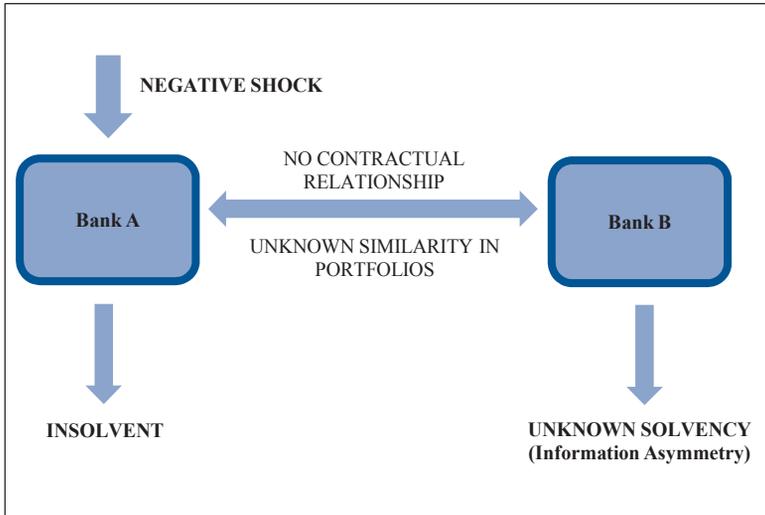
FINANCIAL CRISES: THE COLLAPSE OF FINANCIAL INTERMEDIATION

A financial crisis is a collapse of financial intermediation. In a crisis, the ability of the financial system to move savings into investment is severely impaired. In an extreme crisis, banks close their doors, financial markets shut down, businesses are unable to finance their operations, and households are challenged to find credit. A financial crisis can be triggered by events that are completely external to the financial system. If a large macroeconomic shock hits all banks at the same time, regulators can do little to control the damage. Some crises, however, are triggered or exacerbated by shocks to a small group of institutions that then spread to others. This spread, known as contagion, is a form of negative externality imposed by distressed institutions. The recent financial crisis involved three different types of contagion, referred to in this chapter as confidence contagion, counterparty contagion, and coordination contagion. A macroprudential regulator must have the tools to handle all three.

Confidence Contagion

The classic example of a “run on the bank” is shown in Figure 6-4. Banks are mostly financed by deposits, which are then lent out as loans to businesses and mortgages for homeowners. A bank’s balance sheet has a maturity mismatch between assets (the loans) and liabilities (the deposits): the loans are long term, with payments coming over many years, while the deposits are short term and can be withdrawn at any time. The liquidity transformation service of the bank works in ordinary times but breaks down if all the depositors ask for their money back at the same time.

Figure 6-4
Confidence Contagion



Suppose, for example, a depositor in Bank A hears a rumor that other depositors in Bank A are withdrawing their funds. He does not know the explanation. It might be that Bank A has a problem with solvency, that a fair accounting would show that its liabilities exceed its assets. Typically, a depositor does not have the necessary information to form an accurate judgment about solvency. So what does he do? The safe thing, in the absence of deposit insurance, is to go to the bank and take out his money. Perhaps these other depositors know something that he does not. If he waits too long, the bank will be out of cash and unable to redeem his account.

It is easy to see how the run at Bank A could lead to runs at other banks. The public spectacle of long lines of depositors waiting outside a bank is enough to make other banks' customers nervous—the negative externality on confidence. Perhaps Bank A had many real estate loans in some trouble area, and Bank B has an unknown number of similar loans. The issue here is that bank depositors do not want to take the risk of leaving their money in a failing bank. Unlike stock market investors, who expect to take risks and face complicated problems in forecasting the future path of company profits, bank depositors want their money to be safe and do not want to spend an enormous amount of time making sure that it is. The information production service of banks cannot quickly be replaced if the bank is in trouble. Banks, therefore, have historically been subject to runs, and the runs have spread quickly across banks, a phenomenon called confidence contagion.

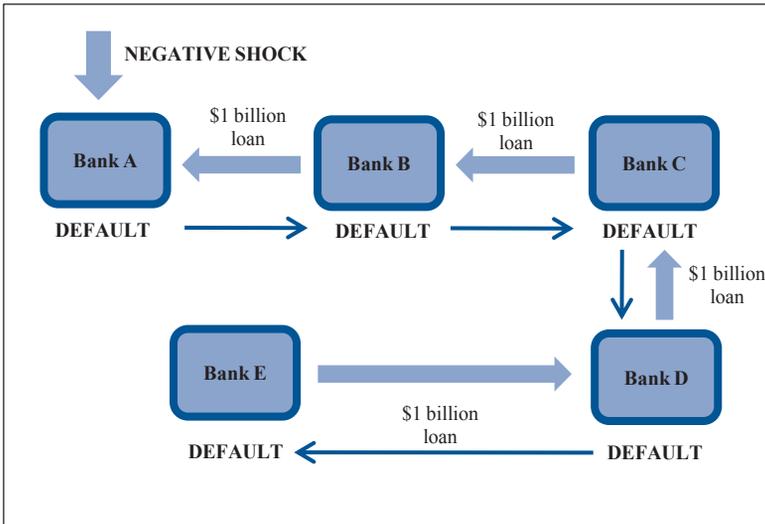
Classic bank runs were commonplace in the United States before (and during) the Great Depression. In the post-FDIC world, bank failure has become a problem of insolvency, not illiquidity. FDIC insurance works almost perfectly up to a current limit of \$250,000 for each account. What happens above this limit? What of the many corporations and investors who want a safe place to put their million-dollar and billion-dollar deposits? In the absence of insured accounts at this level, they choose such alternatives as money-market funds, collateralized short-term loans to financial institutions, and complex derivative transactions. In each of these cases, the effort to find safe, liquid investments can lead to situations that look identical to a classic bank run, but with different players. When a single investment bank (Bear Stearns in March 2008) or money-market fund (the Reserve Fund in September 2008) gets into solvency trouble, confidence can quickly erode at similar institutions. Macroprudential regulation must stop this confidence contagion or, at least, contain it to one segment of the financial system.

Counterparty Contagion

Counterparty contagion is illustrated in Figure 6-5. Here, Bank A owes \$1 billion to Bank B, which owes \$1 billion to Bank C, with this same debt going through the alphabet to Bank E. When Bank A goes out of business owing money to Bank B, then Bank B cannot pay Bank C. To the extent that Bank C lacks the information or the ability to insure against the failure of Bank A, that failure imposes an externality. One failure could lead to defaults all the way to Bank E. Such contagion seems particularly wasteful, because most of it could be averted by getting rid of all the steps in the middle: the only banks here with net exposure are Banks A and E; once the middle is eliminated, all that is left is a \$1 billion debt of A to E.

Derivatives are an important modern vehicle for counterparty chains. A derivative is any security whose value is based completely on the value of one or more reference assets, rates, or indexes. For example, a simple derivative could be constructed as the promise by Party B to pay \$1 to Party A if and only if the stock price of Company XYZ is above \$200 a share on December 31, 2012. This contract is a derivative because its payoff is completely “derived” from the value of XYZ stock; the contract has no meaning that is independent of XYZ stock. Things begin to grow more complicated when Party A and Party B begin to make offsetting trades with other parties, creating counterparty exposures among the group of market participants. For example, Party B, having taken on the risk that XYZ will climb above \$200 a share, may at some point decide to offset this risk by purchasing a similar option from Party C. Eventually, Party C makes the reverse trade with Party D, and soon the chain can extend across the alphabet.

Figure 6-5
Counterparty Contagion

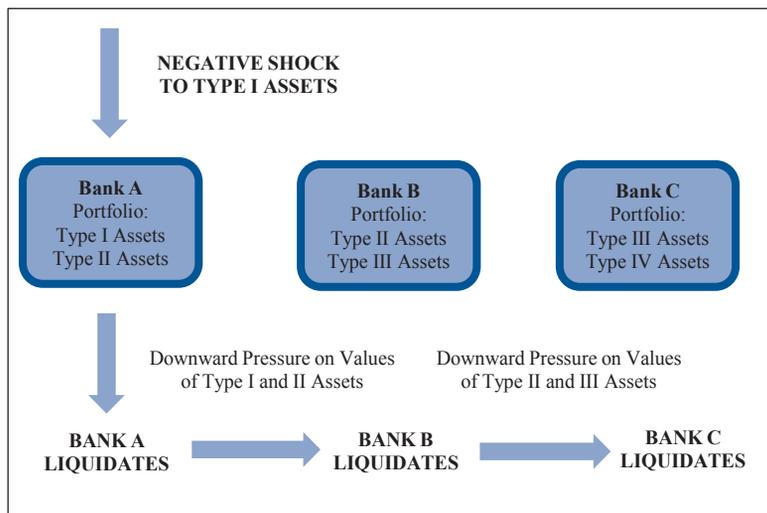


Coordination Contagion

Coordination contagion is illustrated in Figure 6-6. Here, Bank A owns many assets of Type I and Type II; Bank B owns many assets of Type II and Type III; and Bank C owns many assets of Type III and Type IV. Suppose that a negative shock to the value of Type I assets threatens the solvency of Bank A. In an effort to remain in business, Bank A begins to liquidate its portfolio by selling Type I and Type II assets. As is typical for banks, these underlying assets are relatively illiquid, so it is difficult for Bank A to sell substantial quantities without depressing the price of the assets. As the prices of Type II assets fall, Bank B is in a quandary. The market value of its assets is falling, and the regulators of Bank B may insist that it reduce its leverage or raise more capital. Bank B may then sell Type II and Type III assets to achieve this goal. Again, it is easy to see how this process could flow through the alphabet. Here the process is called coordination contagion because it is driven by the coordinated holdings of the banks, rather than by confidence of investors (in any particular bank) or the chains of contractual relationships (among banks) that lead to counterparty contagion. The externality occurs here only because the underlying assets are illiquid. With this illiquidity, the transactions of each player can significantly affect the price, and the forced sale by one bank harms all the others that own these assets.

Coordination contagion is exacerbated if failing institutions are forced to liquidate their positions quickly. In the fall of 2008, many large financial institutions had significant holdings of subprime housing and other

Figure 6-6
Coordination Contagion



structured instruments on their balance sheets. With capital scarce and uncertainty about the value of these assets high, distressed institutions faced pressure to sell these assets. If the most desperate institutions sold first, then the depressed prices of these sales would then place pressure on other institutions to mark down the values of these assets on their balance sheets, further exacerbating the problem. One partial solution to this coordination contagion would be to allow the most distressed institutions to exit their positions slowly, so as not to further destabilize the illiquid market for these assets. Such slow exits can be enabled by taking failing institutions into a form of receivership or conservatorship, an enhanced “resolution authority” for nonbank financial institutions that would be analogous to the FDIC process for failing depository institutions.

PREVENTING FUTURE CRISES: REGULATORY REFORM

The Financial Stability Plan and other policies to address the current crisis described in Chapter 2 have had a positive short-run effect on the financial system. To prevent future crises and achieve long-term stability, however, it will be necessary to fill the gaps in the current regulatory system. The Administration is working closely with Congress to build a regulatory

system for the 21st century.¹ The plan for regulatory reform has five key parts, each covering a different aspect of the financial intermediation system illustrated by Figure 6-1. The parts of the plan are discussed below, with references back to the relevant sections of Figure 6-1.

Promote Robust Supervision and Regulation of Financial Firms

If the recent financial crisis has proven anything, it is that we have outgrown our Depression-era financial regulatory system. Although most of the largest, most interconnected, and most highly leveraged financial firms were subject to some form of supervision and regulation before the crisis, those forms of oversight proved inadequate and inconsistent. The financial institutions at the top of Figure 6-1 are a varied group that is no longer dominated by traditional commercial banks. A modern regulatory system must account for the entire group.

Three primary weaknesses inherent in the current system led to the crisis. First, capital and liquidity requirements for institutions were simply not high enough. Regulation failed because firms were not required to hold sufficient capital to cover trading assets, high-risk loans, and off-balance-sheet commitments, or to hold increased capital during good times in preparation for bad times. Nor were firms required to plan for liquidity shortages.

Second, various agencies shared responsibility for supervising the consolidated operations of large financial firms. This fragmentation of supervisory responsibility, in addition to loopholes in the legal definition of a “bank,” made it possible for owners of banks and other insured depository institutions to shop for the most lenient regulator.

Finally, other types of financial institutions were subject to insufficient government oversight. Money-market funds were vulnerable to runs, but unlike their banking cousins, they lacked both regulators and insurers. Major investment banks were subject to a regulatory regime through the SEC that is now moot, since large independent investment banks no longer exist. Meanwhile, hedge funds and other private pools of capital operated completely outside the existing supervisory framework.

In combination, these three sets of weaknesses increased the likelihood that some firms would fail and made it less likely that problems at these firms would be detected early. This was a breakdown in the supervision under current authority over individual institutions. But glaring problems were also created by a lack of focus on large, interconnected, and highly leveraged institutions that could inflict harm both on the financial system and on the

¹ This section is based heavily on the Administration’s white paper on financial reform (Department of the Treasury 2009).

economy if they failed. No regulators were tasked with responsibility for contagion, whether from confidence, counterparties, or coordination.

To solve these problems and ensure the long-term health of the financial system, the government must create a new foundation for the regulation of financial institutions. To do that, the Administration will promote more robust and consistent regulatory standards for all financial institutions. Not only should similar financial institutions face the same supervisory and regulatory standards, but the system can contain no gaps, loopholes, or opportunities for arbitrage.

The Administration has also proposed creating a Financial Services Oversight Council (FSOC). This body, chaired by the Secretary of the Treasury, would facilitate coordination of policy and resolution of disputes and identify emerging risks and gaps in supervision in firms and market activities. The heads of the principal Federal financial regulators would be members of the Council, which would benefit from a permanent staff at the Department of the Treasury.

Finally, the Federal Reserve's current supervisory authority for bank holding companies must evolve along with the financial system. Regardless of whether they own an insured depository institution, all large, interconnected firms whose failure may threaten the stability of the entire system should be subject to consolidated supervision by the Federal Reserve. To that end, the Administration proposes creating a single point of accountability for the consolidated supervision of all companies that own a bank. These firms should not be allowed or able to escape oversight of their risky activities by manipulating their legal structures.

Taken together, these proposals will help reduce the weaknesses in the financial regulatory system by more stringently regulating the largest, most interconnected, and most highly leveraged institutions. In effect, the Administration's proposals would operate on the simple principle that firms that could pose higher risks should be subject to higher standards. Furthermore, both the Federal Reserve and the FSOC would operate through a macroprudential prism and be wary of contagion in all its forms.

Establish Comprehensive Regulation of Financial Markets

The financial crisis followed a long and remarkable period of growth and innovation in the Nation's financial markets. These new financial markets, found in the bottom part of Figure 6-1, still rely on regulation put together in response to the Great Depression, when stocks and bonds were the main financial products for which there were significant markets. But over time, new financial instruments allowed credit risks to be spread widely, enabling investors to diversify their portfolios in new ways and

allowing banks to shed exposures that once would have had to remain on their balance sheets. As discussed earlier, securitization allowed mortgages and other loans to be aggregated with similar loans, segmented, and sold in tranches to a large and diverse pool of new investors with varied risk preferences. Credit derivatives created a way for banks to transfer much of their credit exposure to third parties without the outright selling of the underlying assets. At the time, this innovation in the distribution of risk was perceived to increase financial stability, promote efficiency, and contribute to a better allocation of resources.

Far from transparently distributing risk, however, the innovations often resulted in opaque and complex risk concentrations. Furthermore, the innovations arose too rapidly for the market's infrastructure, which consists of payment, clearing, and settlement systems, to accommodate them, and for the Nation's financial supervisors to keep up with them. Furthermore, many individual financial institutions' risk management systems failed to keep up. The result was a disastrous buildup of risk in the over-the-counter (OTC) derivatives markets. In the run-up to the crisis, many believed these markets would distribute risk to those most able to bear it. Instead, these markets became a major source of counterparty contagion during the crisis.

In response to these problems, the Administration proposes creating a more coherent and coordinated regulatory framework for the markets for OTC derivatives and asset-backed securities. The Administration's proposal, which aims to improve both transparency and market discipline, would impose record-keeping and reporting requirements on all OTC derivatives. The Administration further proposes strengthening the prudential regulation of all dealers in the OTC derivative markets and requiring all standardized OTC derivative transactions to be executed in regulated and transparent venues and cleared through regulated central counterparties. The primary goal of these regulatory changes is to reduce the possibility of the sort of counterparty contagion seen in the recent crisis. Moving activity to a centralized clearinghouse can effectively break the chain of failures by netting out middleman parties. A successful clearinghouse can reduce the counterparty contagion illustrated in Figure 6-5 to a single debt owned by Bank A to Bank E, thus sparing Banks B, C, and D from the problems.

The Administration has also proposed enhancing the Federal Reserve's authority over market infrastructure to reduce the potential for contagion among financial firms and markets. After all, even a clearinghouse can fail, and regulators must be alert to this danger. Finally, the Administration proposes harmonizing the statutory and regulatory regimes between the futures and securities markets. Although important distinctions exist between the two, many differences in regulation between them are no longer

justifiable. In particular, the growth and innovation in derivatives and derivatives markets have highlighted the need to address gaps and inconsistencies in the regulation of these products by the Commodity Futures Trading Commission (CFTC) and the SEC. In October 2009, the SEC and the CFTC issued a joint report identifying major areas necessary to reconcile their regulatory approaches and outlining a series of regulatory and statutory recommendations to narrow or where possible eliminate those differences.

Provide the Government with the Tools It Needs to Manage Financial Crises

During the recent crisis, the financial system was strained by the failure or near-failure of some of the largest and most interconnected financial firms. Thanks to lessons learned from past crises, the current system already has strong procedures for handling bank failure. However, when a bank holding company or other nonbank financial firm is in severe distress, it has only two options: obtain outside capital or file for bankruptcy. In a normal economic climate, these options would be suitable and would pose no consequences for broader financial stability. However, during a crisis, distressed institutions may be hard-pressed to raise sufficient private capital. Thus, if a large, interconnected bank holding company or other nonbank financial firm nears failure during a financial crisis, its only two options are untenable: to obtain emergency funding from the U.S. Government, as in the case of AIG; or to file for bankruptcy, as in the case of Lehman Brothers. Neither option manages the resolution of the firm in a manner that limits damage to the broader economy at minimal cost to the taxpayer.

This situation is unacceptable. A way must be found to address the potential failure of a bank holding company or other nonbank financial firm when the stability of the financial system is at risk. To solve this issue, the Administration proposes creating a new authority modeled on the existing authority of the FDIC. The Administration has also proposed that the Federal Reserve Board receive prior written approval from the Secretary of the Treasury for emergency lending under its “unusual and exigent circumstances” authority to improve accountability in the use of other crisis tools. The goal of these proposals is to allow for an orderly resolution of all large institutions—not just banks—so that the coordination contagion depicted in Figure 6-6 does not again threaten the entire financial system. Taking nonbank financial institutions into receivership or conservatorship would make it possible to sell assets slowly and with minimal disruption to the values of similar assets at otherwise healthy institutions.

Raise International Regulatory Standards and Improve International Cooperation

The system in Figure 6-1 cannot be managed by one country alone, because its interconnections are global. As the recent crisis has illustrated, financial stress can spread quickly and easily across borders. Yet regulation is still set largely in a national context and has failed to effectively adapt. Without consistent supervision and regulation, rational financial institutions will see opportunity in this situation and move their activities to jurisdictions with looser standards. This can create a “race to the bottom” situation.

The United States is addressing this issue by playing a strong leadership role in efforts to coordinate international financial policy through the Group of Twenty (G-20), the G-20’s newly established Financial Stability Board, and the Basel Committee on Banking Supervision. The goal is to promote international initiatives compatible with the domestic regulatory reforms described in this report. These efforts have already borne fruit. In September, the G-20 met in Pittsburgh and agreed in principle to this goal. And while those processes are ongoing, significant progress has been made in agreements strengthening prudential requirements, including capital and liquidity standards; expanding the scope of regulation to nonbank financial institutions, hedge funds, and over-the-counter derivatives markets; and reinforcing international cooperation on the supervision of globally active firms.

Protect Consumers and Investors from Financial Abuse

Before the financial crisis, numerous Federal and state regulations protected consumers against fraud and promoted understanding of financial products like credit cards and mortgages. But as abusive practices spread, particularly in the subprime and nontraditional mortgage markets, the Nation’s outdated regulatory framework proved inadequate in crucial ways. Although multiple agencies now have authority over consumer protection in financial products, the supervisory framework for enforcing those regulations has significant shortcomings rooted in history. State and Federal banking regulators have a primary mission to promote safe and sound banking practices—placing consumer protection in a subordinate position—while other agencies have a clear mission but limited tools and jurisdiction. In the run-up to the financial crisis, mortgage companies and other firms outside of the purview of bank regulation exploited the lack of clear accountability by selling subprime mortgages that were overly complicated and unsuited to borrowers’ particular financial situations. Banks and

thrifts eventually followed suit, with disastrous results for consumers and the financial system at large.

In 2009, Congress, the Administration, and numerous financial regulators took significant measures to address some of the most obvious inadequacies in the consumer protection framework. One notable achievement was the Credit Card Accountability, Responsibility, and Disclosure Act, signed into law by the President on May 22, 2009. This Act outlaws some of the most unfair and deceptive practices in the credit card industry. For example, it requires that payments be applied to the balances with the highest interest rate first; bans retroactive increases in interest rates for reasons having nothing to do with the cardholder's record with the credit card; prohibits a variety of gimmicks with due dates and "double-cycle fees"; and requires clearer disclosure and ensures consumer choice.

However, given the weaknesses that the recent financial crisis highlighted, it is clear that the consumer protection system needs comprehensive reform across all markets. For that reason the Administration has proposed creating a single regulatory agency, a Consumer Financial Protection Agency (CFPA), with the authority and accountability to make sure that consumer protection regulations are written fairly and enforced vigorously. The CFPA should reduce gaps in Federal supervision and enforcement, improve coordination with the states, set higher standards for financial intermediaries, and promote consistent regulation of similar products.

CONCLUSION

Our Nation's system of financial intermediation is a powerful engine for economic growth. Productive investment projects are risky, complex to evaluate and monitor, and require long periods of waiting with no returns and illiquid capital. Investors who provide the funds for these projects would be far less willing to do so if they had to absorb all these risks and costs. Bridging the gap between savings and investment requires the efforts of millions of talented professionals collectively performing the services of information production, liquidity transformation, and diversification. In the recent financial crisis this complex system broke down.

To prevent another such crisis from paralyzing our economy, the Administration has embarked on an ambitious plan to modernize the framework of financial regulation. The keystone of the new framework is an emphasis on macroprudential regulation. The regulatory system's past focus on individual institutions served the Nation well for many decades but is now outdated. A modern system that can meet the needs of the 21st century must have the tools to monitor and regulate the interconnections that cause financial crises.

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