15 The Financial Crisis and the Great Recession

The financial crisis that commenced in 2007 and its aftermath have been widely referred to as the "Great Recession"—and with good reason. From its beginning until its nadir in 2009, it was responsible for the destruction of nearly $20 trillion worth of financial assets owned by U.S. households. During this time, the U.S. unemployment rate rose from 4.7 percent to 10 percent (not counting the discouraged and marginally attached workers discussed in Chapter 7). By 2010, college graduates fortunate enough to find a job were, on average, earning 17.5 percent less than their counterparts before the crisis—and experts were predicting that such a decline in earnings would persist for more than a decade.

The crisis also spread beyond U.S. borders. As consumption and income declined in the United States, many countries experienced a significant reduction in exports as well as a decline in the investments that they held in the United States. As a result, global GDP declined by 2 percent in 2009. It has been estimated that between 50 million and 100 million people around the world either fell into, or were prevented from escaping, extreme poverty due to the crisis. Why did this happen? Why were its effects so long-lasting? What lessons can be learned for the future? These are complicated questions to which this chapter provides some answers.

1. Prelude to a Crisis

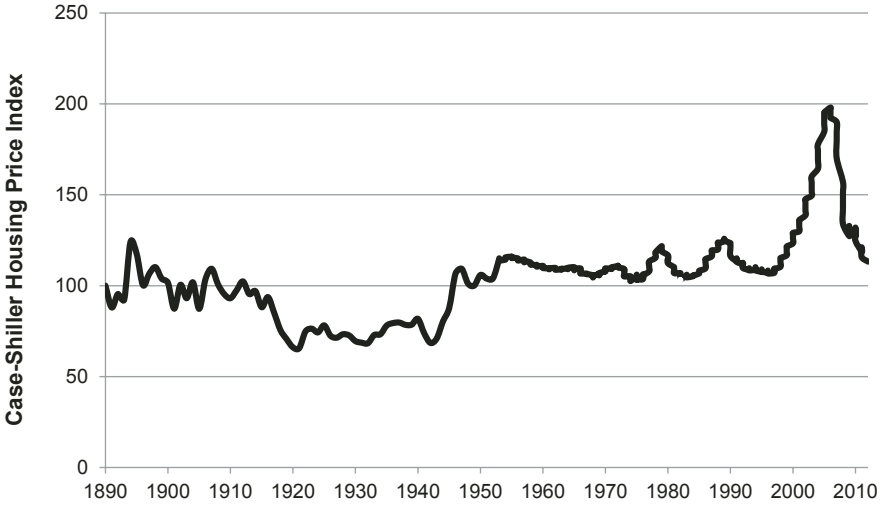
In retrospect, perhaps it is not difficult to see that something "big" was going to happen. We were living in strange times. The federal funds rate, and interest rates in general, were at historic lows. The extremely low mortgage rates were particularly important, because they motivated an unprecedented rush to buy real estate. Even people who ordinarily would have little hope of obtaining a mortgage got in on the action. As record numbers of consumers bought homes and investment properties, housing prices surged. Most people—realtors in particular—did not appear to think that house prices could ever go down again.

1.1 The Housing Bubble

The housing bubble was an archetypal bubble. Like others before it, this bubble began innocently enough, as an increase in demand for real estate. As we learned in Chapter 4, an increase in market demand tends to increase prices, and the housing market proved no exception. Unfortunately, the increase in home prices fed a speculative frenzy, and millions rushed to buy, believing that prices could only go in one direction—up! The buyers included not only would-be homeowners, but also speculators who were buying simply with an interest in "flipping" the property (reselling at a higher price). The naive view exhibited by so many is characteristic of earlier bubbles, during which the lessons of the past was ignored.

To obtain a sense of the magnitude of the housing bubble, consider that average real home prices—that is, adjusting for inflation—were only 2 percent higher in 1997 than a century

Figure 15.1 **Historical Housing Prices**



This graph shows the real (inflation-adjusted) cost of housing over the long term, with an index of 100 representing the average cost over the twentieth century. The graph shows fluctuation in real housing prices, with dips around 25 percent below average in the 1920s and '30s, upward spikes of only about 25 percent in later parts of the twentieth century, and then a spike that nearly doubled average house prices in the early years of the twenty-first century.

Source: Shiller dataset. www.econ.yale.edu/~shiller/data.htm

earlier (Figure 15.1). But prices skyrocketed starting in the late 1990s, and by the time they peaked in 2006 the average price of a house was nearly *twice* the long-term average price in the previous century. And the subsequent collapse was such that a mere six years later, prices had reverted to their long-term trend.

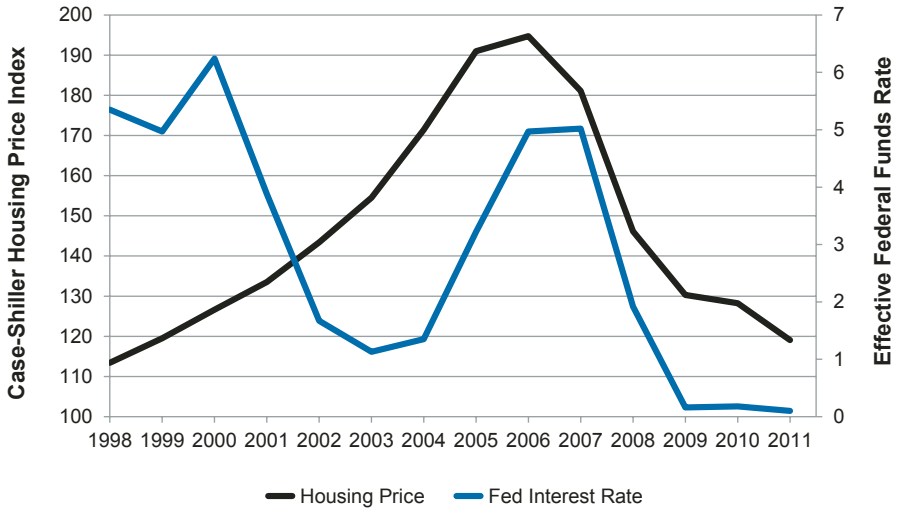
What fed the speculative flurry that gave rise to such a massive bubble? In part, it was the bubble immediately preceding it—the "dot-com" bubble in technology stocks (discussed in Chapter 4). Even after a bubble bursts—and the dot-com bubble deflated from 2000 to 2003—there are winners as well as losers. Many beneficiaries of the dot-com bubble perceived themselves as considerably better off than a few years earlier and spent their newfound wealth on, among other things, bigger and more expensive houses. Demand for houses persisted, and even grew, despite continually increasing prices that, perversely, only confirmed expectations of continually rising prices. The result was an upward spiral of self-fulfilling speculative price hikes.

Yet the illusion of prosperity created by the dot-com bubble only begins to explain the property bubble that succeeded it. Another major factor was the unprecedented access to credit in the form of mortgages. During the mid-1990s, U.S. households borrowed an annual average of approximately $200 billion in the form of mortgages for home purchases. The figure rose abruptly to $500 billion for the period 1998–2002 and to $1 trillion from 2003 to 2006. While widespread access to credit is arguably critical for a vibrant economy, an exceedingly rapid increase in borrowing has, throughout history, been among the most consistent determinants of financial crises. By inflating bubbles, credit booms have invariably led to financial busts.

The key Federal Reserve interest rates—particularly the federal funds rate—are decisive in regulating credit availability. We saw in Chapter 12 how the Fed uses monetary policy to control interest rates; the critical point to remember in this context is that changes in the Fed's key rates percolate through the economy, because banks that can borrow at lower rates will also lend at lower rates and vice-versa. The 2001 recession that followed the collapse of the dot-com bubble prompted the Fed, led by Chairman Alan Greenspan, to steadily lower the target federal funds rate from 6 percent to 1.75 percent. The Fed kept the rate low and in the summer of 2003 lowered it still further—to 1 percent, its lowest level in 50 years. The low federal funds rate in turn led to rate reductions across the board, including the rates for loans and home mortgages. These reductions fueled the borrowing binge that caused real estate prices to spiral upward (Figure 15.2).

Mortgage rates hit a 50-year low of just over 5 percent in 2003, and borrowing to finance home purchases consequently skyrocketed. There was also a second, less well understood, channel

Figure 15.2 **Housing Bubble and Credit Access**



The effective federal funds rate, shown on the right hand vertical axis, plummeted from 2000 until 2004. Although it then began to move back up, the momentum of the housing bubble continued till a softening in housing prices began to be apparent in 2006.

Sources: Federal Reserve (www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html/ and www.federalreserve.gov/releases/h15/data.html); Shiller dataset, www.econ.yale.edu/~shiller/data/ie_data.xls

through which low rates contributed to the housing bubble. To understand it, you must keep in mind that while low interest rates are attractive to borrowers, they are decidedly unattractive to lenders. Here we are speaking not so much of the commercial banks that are extending mortgages to their customers—because the rate they charge, however low, is always considerably higher than the rate that they must pay to depositors—as of other financial institutions (such as investment banks) or high-net-worth individuals who are seeking higher returns on their money. With the repeal of the Glass-Steagall Act provision separating commercial and investment banking, many more financial players were now able to participate in the mortgage market.

In this period, the early twenty-first century, U.S. Treasury bonds of all types were paying very low rates, and stocks were still not performing well on account of the bursting of the dot-com bubble. Financial investors who had grown accustomed to the much higher returns on their money that were available in previous decades were therefore struggling to find more profitable ways to invest their money. Meanwhile, a rapidly growing number of prospective homebuyers were seeking mortgages at favorable rates. Traditionally, home mortgages involved only the borrower, on one side, and the bank that provided the funds, on the other. But this was to change, as investment banks now saw a unique opportunity to meet both investor and homebuyer interests with a single financial product: a mortgage-backed security (MBS).

mortgage-backed security (MBS): a security composed of a bundle of many home mortgages issued by independent banks

A **mortgage-backed security** is a bundle of independently issued home mortgages that an investor may buy in order to obtain a share of the mortgage interest payments; you could think of it as something like a mutual fund, but containing mortgages instead of stocks or government bonds. The investor also takes on the default risk from the individual mortgages that make up the MBS—that is, the risk that the homebuyers might not be able to make their mortgage payments. This risk varies from case to case, and here is where matters become a bit more complex.

Each MBS is divided into tiers or tranches, with the "senior" tranche the first to be paid in the event of mortgage defaults (hence, the safest). The "lowest tranche" is the riskiest but is correspondingly paid a higher return. Essentially, MBSs are a kind of derivative, constructed by mathematically proficient analysts who are paid to calculate the appropriate risk-return balance for each of the individual tranches.*

*As noted in Chapter 7, derivatives are a financial instrument whose value is "derived" from the value of another, underlying asset. In this the underlying asset is the original home mortgage.

Since the advent of MBSs in the 1990s, banks increasingly acted as intermediaries that made housing loans and then bundled the mortgages together to be sold for a fee to investors. In the early 2000s, MBSs offered more attractive rates of return to investors than many types of bonds, both because of the Fed's continued low interest rates and the fact that mortgages generally pay higher interest rates than most other types of loans. Private investment banks were selling large quantities of MBSs, and the share of residential mortgages that were bundled into MBSs grew from 50 percent in 1995 to more than 80 percent by 2008.

collateralized debt obligation: an investment product that packages together numerous assets including mortgage-backed securities

But financial institutions then went even further. They developed another type of security known as a **collateralized debt obligation** (CDO), which is an even more complex investment product. It packages together a variety of loans, including, especially, MBSs—thus making it a "bundle of bundles" of mortgages. As in the case of MBSs, a hierarchy of tranches is available, each carrying a calculated risk-return balance. The complexity of the bundling that was involved meant that even the analysts entrusted with the construction of CDOs did not always fully understand them, and certainly the investors who bought them, and many of the financial executives who approved their use, had little idea of the risks involved.

credit default swap: a security that is effectively an insurance policy against defaults related to MBSs and CDOs

After packaging mortgages into MBSs, and MBSs into CDOs, investment banks also sought to further insure the most senior tranches of each of them against default risk. Companies such as American International Group (AIG) sold what are known as **credit default swaps** (CDSs), which are a form of insurance policy against defaults related to MBSs or CDOs. In such an arrangement, the buyer of the CDS (usually an investment bank) pays a fee to the seller (an insurance company), which agrees to cover losses in case of a default.

During the early 2000s, it became an increasingly common practice to sell CDSs to insure the top tranches of MBSs and CDOs. Anyone can enter the market to buy a CDS; when one buys the CDS without owning the debt or mortgage that it insures, it is known as a "naked" CDS. Critics have argued that naked CDSs should be banned—likening them to buying fire insurance on your neighbor's home—because the owner of the CDS in this case would gain if the investment defaults on its payments. The European Parliament indeed saw it this way when, in 2011, it banned naked CDSs on European government debt.

To feed the escalating demand for higher returns, investment banks started offering MBSs and CDOs, with the risk to be insured by CDSs. Yet in order to satisfy demand for the new products, it was important to maintain a large nationwide pool of home mortgages. And here a problem emerged. Despite the historically low interest rates and unprecedented access to credit, it seemed that new loans could not be issued quickly enough to fulfill investor demand for the new bundled securities. In order to persuade even more people to become homeowners, banks needed not only to continue offering low rates but also to relax some of their lending criteria. This was to be a critical factor in the subprime crisis.

1.2 THE SUBPRIME CRISIS

Subprime borrower: a would-be homebuyer whose creditworthiness is low because he or she already has a high level of debt, a low income, or a poor credit record

Although unbridled optimism about home prices and cheap credit contributed their fair share to the housing bubble, the expansion and deflation of the bubble could not have been so dramatic or damaging in the absence of an extraordinary buildup of risky lending. Mortgages not only became available to a higher number of homebuyers but to a different kind of homebuyer: the **"subprime" borrower**, a person likely to have greater difficulty paying off a mortgage.

Banks typically classify subprime borrowers as individuals who may have difficulty replaying the loan for any or all of the following reasons: high level of debt, relatively low income, or a poor credit record. Historically, banks have either turned down the subprime borrower or charged him/her a higher interest rate to compensate for the increased lending risk.

During the housing bubble, both restrictions were relaxed: The criteria for mortgage eligibility were loosened, and the interest rate charged to subprime borrowers was lowered. The number of subprime mortgages soared. In 2002, less than 10 percent of U.S. mortgages

were subprime; a mere three years later, approximately 25 percent were. While the housing bubble was inflating, many commentators exulted that homeownership was becoming a reality for many for whom it had previously been only a dream. The argument lost credibility several years later, however, when the housing bubble burst. Subprime credit evaporated, and countless borrowers, unable to keep up with their mortgage payments, faced foreclosure.

Evidence supports the claim that the explosion of subprime lending intensified both the rise and the fall of the entire housing bubble. As noted above, mortgage borrowing doubled from an annual average of $500 billion from 1998 to 2002 to $1 trillion in the 2003–6 period. The rapid increase can be attributed largely to the proliferation of subprime lending. When housing prices finally started turning downward in 2006, continuing mortgage payments became especially difficult for subprime borrowers. The resulting wave of subprime foreclosures hastened the downward spiral of prices, because they created a glut in housing supply. Meanwhile, a widespread tightening of credit at this time led to a drop in demand. An increase in supply coupled with a drop in demand is a recipe for lower prices, and that is precisely what was observed after the bubble burst.

Discussion Questions

1. People often refer to the housing "bubble" and even the housing "crisis." Is an increase in the average price of homes not a good thing? What if prices are rising more rapidly than in the past? Explain.
2. Would you prefer interest rates in the economy to be high or low? On what does it depend? Who benefitted from low interest rates during the inflation of the housing bubble? How did the low interest rates create problems?

2. Economic Impacts of the Crisis

In Chapters 7 and 11, we discussed the relationship between the financial and the "real" economies. The financial crisis clearly demonstrated the importance of this relationship. The disappearance of immense financial wealth in the immediate aftermath of the crisis spilled over into the real economy. As people had less wealth, they were apt to spend less. (This is what we identified as the "wealth effect" in Chapter 13). Even those who preferred to continue spending often found that banks were suddenly much more reluctant to lend them money. Less spending resulted in sharply lower output and a weaker labor market, as our circular flow analysis suggests. (As noted in Chapter 13, Keynesian economists argue that, were it not for an active government policy and the existing social safety net, things could have been much worse.)

2.1 Unemployment and the Vicious Recessionary Spiral

As a consequence of the crisis, the U.S. economy lost nearly 9 million jobs from 2007 to 2009. Over a particular eight-month period spanning 2008 and 2009, the *average* U.S. household lost nearly $100,000 from its property and retirement portfolio values combined. Approximately 11 million homebuyers faced foreclosure from 2008 to mid-2012, accounting for about one of every four mortgages in the United States. Tens of millions were made poorer, if not "officially" poor. Clearly, the massive loss of speculative financial wealth on Wall Street (much of it related to depressed MBS, CDO, and CDS values) translated to a comparable loss of *real* wealth on "Main Street." The financial crisis had turned into a broad-based economic crisis.

Although many families experienced hardship, certain groups were affected disproportionately. Young people, for example, suffered a heavy impact from the unemployment crisis. Each year brought a new wave of recent graduates into the workforce, adding to the masses of young people already facing dismal job prospects. Certain industries, such as

construction and manufacturing, were hit particularly hard. Construction unemployment rates nearly tripled from 2007 to 2010, while manufacturing unemployment jumped from 4.3 percent in 2007 to 12.1 percent in 2009.

The economic impact of the financial crisis persisted for an unusually long period. The unemployment rate remained above 7 percent through late 2013 (see Box 15.1). Why was this? As we saw in earlier chapters, the circular flow economy can, in difficult times, produce a vicious cycle. Unemployed workers generally have less income to spend. Families facing income losses and needing financial assistance can ordinarily borrow money—but after the financial crisis of 2007–8, banks and financial institutions introduced tougher standards for credit card loans and. **home equity loans,** in which an equity stake in a home is posted as collateral. This led to a "credit crunch" in which families and business were unable to obtain loans.

home equity loan: a loan that permits a borrower to offer his or her home (or their equity stake in it) as collateral in case of failure to repay the loan

Many families were therefore compelled to cut their spending further; in the period from 2008 to 2011, U.S. consumers on average reported spending $175 per month less than they would have in the absence of a recession. Many employers, suddenly facing lower profits, fired workers, contributing to a vicious unemployment cycle. While the values of MBSs and other newfangled securities seemed to plunge overnight, it took much longer for the ensuing credit contraction to affect business bottom lines, employment decisions, and consumer spending. Thus the crisis that began in 2007 led to a recession and very slow recovery that lasted more than five years.

BOX 15.1 THE COSTS OF LONG-TERM UNEMPLOYMENT

The long-term unemployment that followed the Great Recession was unprecedented since the 1930s, and has exacted a huge human and economic cost.

> Long-term unemployment is experienced disproportionately by the young, the old, the less educated, an African-American and Latino workers. While older workers are less likely to be laid off than younger workers, they are about half as likely to be rehired. [As a result] the number of unemployed people between ages 50 and 65 has more than doubled.
>
> The result is nothing short of a national emergency. Millions of workers have been disconnected from the work force, and possibly even from society. If they are not reconnected, the costs to them and to society will be grim (Baker and Hassett, 2012).

Research indicates a 50 to 100 percent increase in death rates for older male workers in the years following a job loss. One reason for this higher mortality is suicide. The longer the period of unemployment, the higher the risk of suicide. Joblessness is also linked to higher rates of serious disease and higher probability of divorce. Effects last into the next generation; children whose fathers lose a job have lower annual earning as adults than those whose fathers do not experience unemployment.

In the aftermath of the Great Recession, a slow recovery has seen lower job gains for men than women. By 2013, women's total private sector employment was slightly higher than before the recession, but jobs for men still lagged 3 percentage points below their previous levels.

Work-sharing programs that encourage companies to cut hours rather than payrolls, as well as retraining and re-employment programs, could help to mitigate the cost of long-term unemployment. Unfortunately, many state governments have taken the opposite approach, cutting aid to the unemployed. In 2013 North Carolina, with one of the highest jobless rates in the nation, cut both the duration and amount of unemployment benefits. According to economist Paul Krugman, this is "counterproductive as well as cruel—it will lead to lower spending, worsening the economic situation, and destroying more jobs."

Sources: Dean Baker and Kevin Hassett, "The Human Disaster of Unemployment," *New York Times*, May 13, 2012; Floyd Norris, "Gender Gaps Appear as Employment Recovers from the Recession," *New York Times*, July 13, 2013; Paul Krugman, "War on the Unemployed," *New York Times*, June 20, 2013.

Modern economies are, in a certain sense, more vulnerable to events in finance than they were in the past. Due in large part to the proliferation of mutual funds and their increased availability in employee retirement accounts, a higher percentage of the population than ever before have a financial stake in the stock and bond markets.

Today, even if financial instability is mostly speculative in nature and does not have a direct economic cause, it produces very real economic effects because consumers who feel poorer spend less money, potentially triggering a downturn characterized by reduced economic output and high unemployment. As we saw in Chapter 13, a leftward shift in the *AD* curve during the financial crisis decreased GDP and produced widespread fears of deflation.

Income and wealth inequality, already severe before the crisis, only intensified after it. While the wealthiest members of society lost the most in dollar terms (although much of it was recovered by 2010), the lower and middle classes, on average, lost a far greater share of their existing wealth. From mid-2007 to early 2009, U.S. families lost $10.9 trillion in financial investments related to stocks and bonds, amounting to an average loss of nearly $100,000 per household. More than half of U.S. households held retirement accounts whose value plummeted during the crisis, wrecking the retirement plans of millions of middle-class families. From 2007 through 2010, the median household lost nearly 40 percent of owned wealth, effectively undoing 18 years of wealth accumulation. And the poorest 25 percent suffered the most; their average household net worth fell to zero.

2.2 The Great Depression and the Great Recession Compared

Calling the period after the financial crisis the "Great Recession" invites comparison with the other "great" economic downturn of the past century, the Great Depression. What makes the Great Recession different from previous recessions is the duration of the downturn. During most of the twentieth century, after about 1940, a recession was an almost predictable business cycle downturn followed, after a few quarters, by a solid economic recovery. Although the NBER declared the latest recession "officially" over by 2009, the slow pace of recovery in the job market, continued foreclosures, and a continued sense of despondency among the general public made many feel that the "recession" continued much longer. Even after 2009, most of the damaging effects of recession lingered, especially for the long-term unemployed and for new entrants into the labor market.*

Are the current downturn and the Great Depression comparable? Followers of historical trends point out that both periods were preceded by about ten years of apparent economic strength. Those who remember the dot-com bubble that preceded the one in housing may not know that Americans experienced a similar asset bubble during the 1920s. Many banks were starting to diversify their services, moving into real estate and other relatively risky investments, potentially contributing to the bubble. Not unlike the more recent period, in the 1920s people were feeling optimistic and were therefore spending, many immoderately, driving prices up. Average annual economic growth during the 1920s is estimated to have been more than 4 percent, so things were looking good. Yet, as also occurred before the current downturn, the rapidly inflating asset bubble in the 1920s, most manifest in the main stock indexes like the Dow Jones Industrials (not in housing), inevitably collapsed.

In terms of possible factors that caused each economic downturn, the two periods may have been more similar than different. But in terms of economic consequences, the differences are noteworthy, and the principal reason relates to government regulation, automatic stabilizers, and discretionary fiscal and monetary policy. For example, thousands of banks failed in the early years of the Great Depression, causing millions of depositors to lose their savings. In contrast, there was not a single such case in the aftermath of the recent crisis. Some banks

*Remember from Chapter 9 that a recession technically ends as soon as GDP stops falling and starts rising again, but that unemployment may continue to rise for some time after this.

did fail (though far fewer than in the 1930s), but depositors' accounts were protected by the Federal Deposit Insurance Corporation (FDIC). In response to the crisis, the insurance limit for deposits was raised from $100,000 to $250,000, helping to prevent any depositor panic.

The existence of a government-financed "social safety net" also made a major difference. Not only was the unemployment rate at the nadir of the financial crisis much lower than during the depths of the Great Depression (10 percent compared to 25 percent), but the unemployed were eligible for "extended benefits" of up to 99 weeks during the worst period of the recession (reduced to 73 weeks in 2012). There was no unemployment insurance during the Great Depression, nor did food stamps exist.

Such benefits enabled many of those involuntarily jobless to function during the worst part of the recent downturn, keeping consumption levels, and the broader economy, more or less stable despite the slow job recovery. The absence of such basic government support during the 1930s consigned millions to misery and prolonged the depression. In addition to the existence of automatic stabilizers, such as unemployment and food stamps, aggressive expansionary fiscal and monetary policies were put in place by the federal government and the Fed, starting in late 2008 (discussed in detail below).

Broad statistics support the conclusion that, for all the difficulties caused by the Great Recession, they were significantly less than those during the Great Depression. Our present economy, for example, moved into its recovery phase a mere year and a half after the financial collapse; during the Great Depression it took almost four years. Because of the social safety net that is in place now, consumption remained relatively stable, and deflation was averted (average prices actually rose nearly 2 percent from 2007 to 2009). In contrast, during the early years of the Great Depression, prices declined by more than 25 percent. And while the Dow Jones Industrials average lost slightly more than half its peak value in late 2008, it lost nearly 90 percent of its value after the market collapsed in 1929.

The principal difference, then, between the two periods is the existence of a social safety net, government regulations to protect ordinary Americans, and activist macroeconomic policy. It is no coincidence that programs such as Social Security, food stamps, and unemployment insurance were introduced in the 1930s under the administration of Franklin D. Roosevelt. For all the anxiety over deregulation and the reduction in the social safety net over the past three decades, the financial crisis laid bare the importance of a government presence in the economy. Government programs, first instituted in the 1930s, kept the current downturn from becoming far worse.

Discussion Questions

1. Do you think changes in the value of "paper assets" like stocks and bonds, or even of homes, should have real economic effects? Why? Why do you think that employment suffered from the disappearance of so much financial wealth following the financial crisis?
2. Do you think that the Great Recession is nearly as bad as the Great Depression was? In what ways is it similar to it? In what ways was it different? Do you know any stories of family members who lived through the Great Depression?

3. UNDERLYING CAUSES OF THE FINANCIAL CRISIS

Many factors were behind the Great Recession. We have reviewed the fact that many unqualified borrowers were permitted—often actively encouraged—to buy homes that they could not afford. Other factors include the determination of large banks and the "titans" of finance to maintain high returns for their loans and investments, in the process downplaying that risks were often, in the end, borne by others. Their ability to do so was greatly increased by a trend towards deregulation of industries, including finance. Economic globalization also provided fuel for the crisis, and allowed it to spread more rapidly. These factors combined to produce other effects on the character of the macroeconomy. These other effects range from growing inequality among the U.S. population, to the structure and functioning of large economic institutions, to global trends and issues.

3.1 Inequality

In the three decades before the 2007 crisis, the income gap between rich and poor members of the U.S. population widened to levels not seen since the 1920s. During the last two decades of the twentieth century, rising income inequality was mostly due not to real income declines for the poor and middle classes but to relative gains for the wealthy. The low and middle-income groups were gaining in absolute terms; the problem was merely to keep pace with the rich. But starting around 1999, things changed. The median U.S. household income began a real decline, signifying that the low and middle classes were now losing in absolute terms as well. The majority of U.S. families now faced difficulty even maintaining their customary level of consumption.

Policymakers could address the growing disconnect between rising consumption expectations by the low- and middle-income groups and their decreasing real incomes in three ways. The first was the "laissez-faire" option of doing nothing and hoping that market forces would, over time, diminish income inequality. The second option was to alter the tax and spending mix in a way that some income could be either directly or indirectly channeled toward the relatively poor. The third option was to encourage credit expansion and set lower interest rate targets, in the hope that families who did not otherwise possess sufficient income to meet their spending needs might borrow to make up the difference. In practice, policymakers rejected the second option of redistributing income in favor of a combination of the first and third options: do nothing about growing inequality, but facilitate greater borrowing on the part of middle-class and low-income families.

And borrow they did. As mentioned earlier, even the "subprime" families got in on the action, often buying homes that they could not realistically afford. Moreover, countless U.S. families—subprime or otherwise—exploited the opportunity to take out home equity loans on generous terms. The trend had broad bipartisan support; indeed, many policymakers greeted it with optimism rather than skepticism. It seemed to be a clever way of addressing the economy's need for sustained consumer spending while avoiding the thornier issue of inequality or unpopular government action.

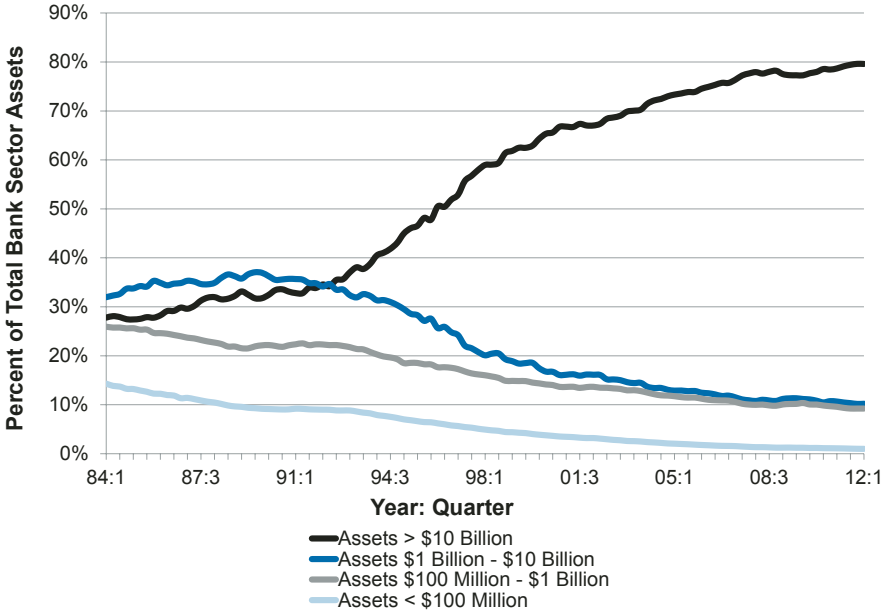
In the years preceding the crisis, the approach appeared to bear fruit. Consumption continued to increase despite declining incomes. Expectation of continued appreciation in their home's value doubtless encouraged families to spend more money than they had. But the numbers contained what should have been a warning. In 1980, for example, U.S. households held an average debt level equal to about 60 percent of disposable income; in 2007 this figure exceeded 130 percent. As a result, there was a sharp increase in the number of families who found themselves unable to continue paying their mortgages. For the many thousands whose home values dropped in the subsequent collapse, it often became more economically practical to default and face foreclosure than to continue to pay, because the monthly payments would continue to reflect the original, and often much higher, value of the home.

Lower interest rates during these years undoubtedly fueled the credit expansion. But household indebtedness might have ballooned even without such stimulus. A widespread perception of falling living standards, largely a consequence of income inequality, was probably sufficient to provoke a rapid increase in demand for loans.

3.2 Bank Size and Deregulation

Many believe that the immense size of some of the leading U.S. banks was one of the causes of the financial crisis. There is little question that banks have gotten much bigger and that banking sector assets have become more concentrated. Since around 1980, the steadily increasing frequency of bank mergers has led to a growing number of large banks. From 1984 to 2007, the number of banks with more than $10 billion in assets increased fivefold, from 24 to 119, and the share of banking sector assets held by large banks increased from 28 to more than 75 percent (Figure 15.3). The consolidation continues to this day. As recently as

Figure 15.3 **Increasing Bank Size**



This graph shows the proportion of bank assets held by banks of different sizes. Over a 16-year period, while medium-sized banks gradually declined in proportion of assets held, smaller banks lost ground even faster. The proportion of banks in the largest size category rose from below 30 percent to nearly 80 percent.

Source: Federal Deposit Insurance Corporation (www2.fdic.gov/qbp/); www.fdic.gov/bank/statistical/stats/2012dec/industry.html

2010, the 19 largest banks held more than 60 percent of the assets of the sector, and the six largest of them held assets equal to two-thirds of U.S. GDP.

Both geographic and sectoral factors contributed to the consolidation. Before the 1980s, most states had strict regulations forbidding out-of-state banks from owning subsidiary banks within their borders. The point was to impede excessive bank growth. But, beginning in 1980, with the Reagan administration's promotion of a deregulatory agenda, this began to change More states allowed their banks to merge with banks from outside the state. In 1994, Congress passed the Riegle-Neal Banking and Branching Efficiency Act, which effectively sanctioned and strengthened the deregulatory trend already in motion for more than a decade.

Perhaps more important, however, were the sectoral changes that banking deregulation permitted. Ever since the Great Depression, customer bank accounts had been protected by the Glass-Steagall Act (see Chapter 11), which separated commercial and investment banking activities, essentially preventing commercial banks from engaging in risky investments and investment banks from holding deposits. The separation between the two was gradually eroded through the 1980s and 1990s, with the Fed becoming increasingly lenient about which activities were permitted for commercial banks. In 1999 the Financial Services Modernization Act (FSMA) effectively overturned Glass-Steagall, allowing large financial companies to engage in commercial and investment banking as well as insurance. This act, perhaps more than any other piece of legislation, contributed to the increase in the number of "megabanks," notable among them being Citigroup, the largest financial company in the world.

Among other important deregulatory policies were the gradual loosening of restrictions on capital across borders, a congressional ban on the regulation of credit default swaps, an agreement to allow banks to measure the riskiness of their own products, and increases in the amount of leverage permitted to investment banks. The last of these was especially pernicious. Allowing banks greater leverage meant that they could borrow huge sums at generously low rates of interest and invest the borrowed funds in the shaky bond products discussed earlier. Deregulation thus magnified the ultimate effects of the crisis.

economies of scale: benefits that occur when the long run average cost of production falls as the size of the enterprise increases

At the time many argued that the financial deregulation trend augured well, claiming that large banks are less prone to risk than small ones and therefore have less of a destabilizing effect on the economy. A large bank would, for instance, lend to borrowers who are more geographically dispersed, thereby making it less vulnerable to locally concentrated defaults. Also, according to this argument, a large bank faces less risk because it possesses a greater diversity of income sources (e.g., stocks and real estate, in addition to loans) than a traditional small bank. Supporters also make so-called **economies of scale** arguments, stating that a larger size would allow a bank to operate more efficiently by allowing it to cut costs in many areas. On the other side were those who argued that, insofar as such claims were true, it meant that only large banks were free to take on offsetting degrees of high risk elsewhere by, for example, leveraging highly in order to invest vast sums in potentially risky assets. Empirical studies have generally supported the latter claim.

"too big to fail": when a company grows so large that its failure would cause widespread economic harm in terms of lost jobs and diminished asset values

The principal argument against excessively large banks is related to what is known as "too big to fail." "**Too big to fail"** does not mean that it is impossible for a large bank to fail; as the financial crisis made painfully obvious, it is all too possible. What it means is that it is possible for an enterprise to grow to such a size that its subsequent failure would harm not only the shareholders but also the public at large. Municipalities or counties, for example, will often offer generous deals (e.g., tax breaks) to large companies headquartered in the area, in the interest of keeping them—and the local jobs that they provide—from disappearing. The main differences in the case of the banking sector are that the problem is of a much larger scale and that it does not only affect employment.

Large banks count many other large companies among their creditors, so the failure and eventual bankruptcy of any one of them could cause a "domino effect," in which the inability of one to pay some large amounts to other creditors could jeopardize the financial standing of others, with potentially catastrophic spillover effects. It was such a fear that prompted federal regulators to "bail out" large financial companies like Citigroup, Bank of America, and AIG (via grants, loans, or assisted mergers). Although many people did not like the idea of the U.S. government's granting so much assistance to failed banks—which had failed due mostly to recklessness, not poor fortune—it was generally agreed that the alternative—a potential economic collapse—was much worse.

moral hazard: the creation of perverse incentives that encourage excessive risk taking because of protections against losses from that risk

Despite agreeing with the decision, many banking industry critics point out that we would not have faced the problem in the first place if banks had not been permitted to grow "too big." They argue that after banks (or companies in any sector of our economy) become aware that they are "too big," they have an incentive to take on greater risks, anticipating that they will lose very little regardless of the outcome of their ventures. If the ventures fail to pay off, the large banks would be first in line for government assistance in the form of a bailout. The creation of such perverse incentives is what economists refer to as **moral hazard** .

The moral hazard created by "too big to fail" in effect divorced the public's interests from those of the banks, creating a situation in which the pensions or portfolios owned by many millions of households suffered large losses while major banks were bailed out. In 2008, Congress passed the Troubled Asset Relief Program (TARP), which authorized the U.S. Treasury to spend as much as $700 billion in loans, stock purchases, and asset buyouts for insolvent banks, in addition to earlier loans provided by the Fed. This served mostly to assist the "too big" banks; for example, the Treasury spent $220 billion to purchase stock from the 19 largest financial companies but only $41 billion for all other banks.

In its defense, the Treasury pointed out in 2012 that not only had 94 percent of its TARP investments had been repaid but that the value of those investments had increased by $19 billion. Nevertheless, taxpayer money had been used to shoulder $700 billion worth of risk. Although the TARP investments turned out favorably this time, the fact that it was even needed vividly illustrates the dangers of a banking sector that is "too big to fail."

3.3 MISGUIDED CORPORATE INCENTIVE STRUCTURE

Although the existence of "megabanks" encouraged financial risk taking, bank managers were facing a changing payment structure that would similarly distort their incentives. Before the 1990s, compensation for bank chief executive officers (CEOs) was mostly unrelated to company fortunes. That is, they were generally paid a salary that would grow at a rate comparable to that of many other employees. If the company performed especially poorly, the CEO might lose his/her job, but otherwise the CEO's salary remained unaffected by company performance.

More recent views, including those taught in business schools, increasingly supported the idea that executive compensation packages should include performance incentives. CEO pay started to come more in the form of stock options, and bonuses were more frequently tied to the company stock value. The rationale for the changes was that they would give CEOs a greater incentive to take steps that would ensure a good return for the company shareholders. Many believed that rapid growth in the stock value would be a reflection of the CEO's ability and understanding of risk.

The new pay structure, however well-intended, generated unexpected problems. If CEOs were to be evaluated primarily on the basis of company stock price, they would be motivated to focus on short-term gains in this area, ignoring long-term risks. They would be compensated handsomely—in terms of both the number of stock options and bonus size—if the stock price went up, even if the increase was not sustainable. The CEO might well have left the company before the long-run damage became evident. In the case of the housing bubble, any self-interested CEO could have profited even if he suspected that the rapid increase in home prices could not last. The new pay structure created an incentive for gambling on risky mortgages. It became apparent only later that such an incentive-based pay structure was another example of moral hazard (see Box 15.2).

From 2000 to 2007, the period during which the housing bubble was inflating, Lehman Brothers (which was to be the sole "megabank" to be allowed to fail during the crisis) and Bear Stearns (which also went out of business but was taken over by Bank of America

BOX 15.2 CEO PAY AND TAX LOOPHOLES

According to a 2012 report by the Institute for Policy Studies (IPS), various current tax provisions encourage excessive CEO pay. According to the report:

> The four most direct tax subsidies for excessive executive pay cost taxpayers an estimated $14.4 billion per year—$46 for every American man, woman, and child. That amount could also cover the annual cost of hiring 211,732 elementary-school teachers, or provide Pell Grants of $5,500 to 2,591,021 college students.

The largest of these tax provisions relates to a company's ability to claim a tax deduction for executive pay. A 1993 law limits this deduction to $1 million annually for direct compensation, but there are no deductibility limits placed on "performance-based" pay in the form of stock options. In 2011 Larry Ellison, the CEO of Oracle, received more than $76 million in performance-based pay, and the company did not have to pay any federal taxes on this amount.

Representative Barbara Lee, Democrat of California, has introduced legislation, the Income Equity Act (HR 382), that would limit a company's ability to deduct CEO pay to 25 times the salary of the company's lowest-paid worker. Her bill would not limit the amount that a company could pay its CEO, just the amount that would be tax deductible. The bill "would encourage corporations to raise pay at the bottom of the corporate pay ladder. The greater the pay for a company's lowest-paid worker, the higher the tax-deductible pay for the company's highest-paid executives."

Source: Sarah Anderson, Chuck Collins, Scott Klinger, and Sam Pizzigati, "The CEO Hands in Uncle Sam's Pocket, Executive Excess 2012, 19th Annual Executive Pay Survey," IPS, August 16, 2012.

under pressure from the Fed, thereby technically avoiding bankruptcy) paid their CEOs $61 million and $87 million respectively in bonuses, with both citing unprecedented increases in their stock price as justification. These CEOs also earned $461 million and $289 million respectively from exercising their stock options during this time. During this period, the companies were engaging in the unsustainable borrowing that would lead to their collapse. By the time the game was up in 2007, and the share prices plummeted, the CEOs had already become immensely wealthy and were under no obligation to return the funds.

It may not be self-evident *why* shareholders would allow for such a skewed incentive structure if it actually threatened their share values. Could it be that the inherent moral hazard in such a pay structure did not occur to anyone? It is highly unlikely. The fact is that shareholders in major companies do not actually possess much influence over CEOs. The boards of directors of companies have historically acted, in theory at least, on behalf of shareholders. And one "action" is determining CEO compensation.

In practice, and especially in recent years, company boards tend to be more aligned with CEO interests than with those of the shareholders whom they are presumed to represent. In some companies, CEOs hold sway over board members' compensation and re-election prospects, generating an incentive for "mutual favors." Moreover, many bank CEOs sit on the boards of other banks, providing ample opportunity for board members to cater to CEO interests, and vice versa. Therefore it should be no surprise that some CEOs were allowed to profit greatly from short-term growth, to the great cost of not only shareholders but also the population at large.

3.4 Globalization and Long-Term Economic Trends

Events originating outside the United States also contributed to the financial crisis, some of which go back several decades. First, the progressive globalization of labor markets took its toll on U.S. workers. Beginning around the late 1960s, the United States started to rely more on foreign countries (e.g., China and Mexico) for production of consumer goods, because these countries, which pay a far lower average wage, could produce them at a lower price. We noted in Chapter 7 that the U.S. manufacturing sector has been in decline from about this time, and in Chapter 8 that real wages in the United States have failed to keep up with gains in productivity since the 1970s. This trend was facilitated by a gradual weakening of labor unions. In the mid-1960s, about one-third of all employees were in a labor union; today only about 12 percent of public sector workers are, and 7 percent in the private sector.

Partly as a result of stagnating wages, middle-class households began to take on greater amounts of credit. Household debt outstanding (mostly mortgage or credit card debt) in 1971 totaled 44.1 percent of GDP; it rose steadily for three and a half decades and peaked in 2007 at more than twice that—98.4 percent. Middle-class wages and incomes were not keeping up with consumption patterns, but easy credit access permitted the average American to live beyond his/her means for many years. And those who owned homes benefited even more during the housing boom, as it became possible to finance further consumption by more borrowing against a more valuable property.

Another factor was the persistent U.S. current account deficits. Although the United States did not consistently import more than it exported until the mid-1980s, from then on the current account grew ever more unbalanced. The deficit increased from about 1 percent of GDP in 1990 to 6 percent in 2006, causing a massive inflow of foreign money that, as we saw in Chapter 14, is necessary to keep international financial flows "in balance." The flood of foreign money was invested in a variety of U.S. assets, intensifying the asset price inflation that was already occurring. Some of it was used to purchase Treasury bonds, but much of it financed borrowing by U.S. homeowners or was directly invested in stocks, MBSs, and CDOs.

One major consequence of the foreign savings inflow was that it reinforced the lowering of interest rates. Recalling the classical model of the loanable funds market first discussed in

Chapter 9, the inflow substantially increased supply (a rightward shift of the supply curve), thereby leading to a reduction in the interest rate. We have already seen that low interest rates can potentially induce an increase in the level of real domestic investment, which historically leads to healthy economic growth and domestic employment. But lower interest rates can also play a decisive role in inflating bubbles by fueling consumption and provoking excessive leveraging for purposes of financial speculation. In the case of the foreign inflows resulting from U.S. current account deficits, it is not possible to know with certainty whether they would have been sufficient, on their own, to produce a financial bubble in the United States, but we do know that they played an important role.

By the time the housing bubble was close to bursting, the financial sector had been deregulated to an extent not seen since before the Great Depression. Globalization only served to reinforce the inflation of the bubble. Movement of capital by investment banks and hedge funds across borders is only lightly regulated. So the problems discussed earlier, in which there was inadequate oversight of bank investments and loans—and of the management of risk—were magnified because there was no such oversight at all when it came to capital investments from overseas. Because foreign investors were parking their excess funds in the U.S. financial system (recall that that they had these funds in no small part as a result of years of trade surpluses with the United States), investment banks and hedge funds possessed more capital with which to take on more risk and more debt (with historically low interest rates serving as another incentive), in order to multiply their returns.

How did finance come to play such an important role in the economy? One possible explanation is that the steady decline in U.S. manufacturing made it increasingly difficult to obtain an attractive return on investments in companies that were manufacturing real products. This downward trend may, at least in part, explain the proliferation of arcane financial products, as discussed earlier. Because expected returns in industry were relatively low, many financial investments seemed to promise attractive returns (if only in the short run). As we have seen, bubbles are inflated when investors desperate for high returns sink their money into assets with highly questionable foundations, causing their price to rise rapidly, which in turn draws in further investors.

Discussion Questions

1. Have you seen anything in the news in recent weeks about the regulation of banking and finance? Do you think, in general, that it is a good idea to allow banks and financial institutions to conduct their business with minimal government interference? Why or why not?
2. Did the financial crisis mostly have to do with banks? Homebuyers? International economics? What do you think is the most important factor that explains it?

4. REMEDIES AND IDEAS FOR AVERTING FUTURE CRISES

The financial crisis called for both short- and long-term responses. Many believe that it was critical, in the short term, to restore at least some semblance of stability to the financial system, lest it collapse and bring the broader economy down with it. This urgent need prompted the government to act, by bailing out the institutions deemed most systemically important to the health of the economy and by instituting a "stimulus" program of federal spending. The Fed joined in as well, actively purchasing not only Treasury bonds but also securities such as MBSs through its "quantitative easing" program (as discussed in Chapter 12).

After the worst had been averted, attention turned to the long-term question—how to prevent future financial crises. This is a more difficult issue. One possible solution is to reverse, at least partially, some of the financial deregulation that helped lead to the crisis. Many have supported calls for more regulation of the financial sector, and some reforms have been implemented, although there has been opposition both from some who think that they go too far and from others who believe that they do not go far enough.

4.1 Fiscal and Monetary Responses

After the emergency measures taken to forestall a complete economic collapse in late 2008, there remained the task of stimulating the economy, especially with the goal of creating rapid job growth. To this end, Congress passed the American Recovery and Reinvestment Act (ARRA), an $831 billion government-spending bill. Whether the amount was big enough or too big remains an open question. But independent analysts estimate that ARRA created between 1.5 million and 7.9 million new jobs from 2009 to 2012. Nevertheless, employment growth remained lackluster through 2013, with the unemployment rate remaining above 7 percent.

Moreover, as we have seen, when the government ramps up spending without a corresponding tax increase, the result is a swelling deficit, increasing the overall national debt. Some critics contend that this policy will lead to even greater problems in the long term (we review the issue of deficits and debt in Chapter 16). But one indisputable consequence of the crisis, and the bill that followed, is that Keynesian economics once again became an important influence in U.S. policy-making.

While the federal government was rapidly boosting spending, many state and local governments were doing the precise opposite. The drop in household income resulting from mass layoffs and stagnant wages meant that state and local governments could collect less tax revenue, resulting in the sharpest drop in state tax revenue in U.S. history. State budget deficits ballooned, peaking at a total of $191 billion in 2010 and remaining high at $55 billion even for fiscal year 2013.

You may recall from Chapter 10 that while the federal deficit often seeks to stabilize the macroeconomy by pursuing countercyclical policy (i.e., deficit spending when times are bad, budget balance or surplus* when the economy recovers), states and municipalities—mostly because they are not empowered to create their own money—do the exact opposite. States did receive federal assistance as part of ARRA, but it covered only about 40 percent of their budget shortfalls from 2009 to 2011. To make up the rest, by 2012 46 states had cut spending on services while 30 states had increased taxes. Although fiscally prudent, both policies countervail economic recovery efforts, and some analysts estimate that these "anti-Keynesian" state policies have cost U.S. workers more than 4 million jobs from 2009 to 2012, undercutting the reported job gains from the federal stimulus program.

In the area of monetary policy, the Fed embarked on a stimulus plan that is unprecedented in nature. Immediately after the collapse of Lehman Brothers in 2008, the Fed purchased billions of dollars' worth of shaky assets, including mortgage-backed securities that had lost the majority of their value. The result was that the assets on its balance sheet jumped from about $950 billion in 2007 to more than $2.5 trillion in 2008.**

As discussed in Chapter 12, Fed purchases of securities effectively increases the money supply, because holding more reserves enables banks to offer more loans to the public. The principal difference between quantitative easing and open market operations is that while the latter involves the purchase of government Treasury bonds, the former means that the Fed is buying distressed assets. As of early 2013, the Fed's asset holdings approached $3 trillion, with a significant fraction uncharacteristically invested in assets of questionable value. In the fall of 2012, Fed chair Ben Bernanke announced the third round of quantitative easing (dubbed QE3), through which the Fed committed to purchasing $40 billion in MBSs per month.

These expansionary monetary policies had a major effect in promoting economic recovery, including in the housing market (see Box 15.3). But employing monetary policy to stimulate the economy has limitations; as noted earlier, one could flood the economy with money, but if consumers and businesses remain pessimistic, the existence of more money does not necessarily lead to increases in consumption or investment. Despite the Fed's very

*Or at least smaller deficits, facilitated by rising tax revenues.

**In "quantitative easing," the Fed purchases MBSs from banks and credits them with fresh reserves.

BOX 15.3 HOUSING PRICES HEADED BACK UP

Although Figure 15.1 shows housing prices declining from their 2006 peak, more recent data indicate that housing price are headed back up. Over the 12 months from March 2012 to February 2013, the Case-Shiller index of housing prices was up 9.3 percent. That was the biggest 12-month gain in the index since May 2006, shortly after the index indicated record-high home prices.

> The index showed a 12-month decline in prices almost every month over a five-year period through May 2012. But every month since then has shown a gain in home prices, and each month's gain has been stronger than the one that came before. "Despite some recent mixed economic reports for March, housing continues to be one of the brighter spots in the economy," said David Blitzer, chairman of the index committee at S&P Dow Jones Indices.

While rising housing prices are a sign of an economic recovery, some economists worry that the recent rapid rise in home prices could be problematic. Stan Humphries, chief economist for real estate Web site Zillow, said that "regardless what data you look at, home values are clearly rising at an unsustainable pace."

> Mike Larson, real estate analyst at Weiss Research, said he's concerned that much of the increase is being driven by investors flooding into some markets to buy homes in order to rent them out, outbidding the potential homeowners who want to live in a home. "Prices are not at bubblicious levels, but you're talking about a trend that can be destabilizing," he said.

The biggest increase in housing prices was in Phoenix, AZ, a city particularly hard-hit during the financial crisis, where prices increased by 23 percent. Some neighborhoods in the city saw housing prices rise by 40 percent. According to Dean Baker, codirector of the Center for Economic and Policy Research, these dramatic price increases were being driven by speculators. He noted that in the housing markets most hurt by the bursting of the housing bubble, there was a danger that new bubbles will form. "The end of this round of speculation is not likely to be much prettier for the areas affected than the end of the last round," he said.

Source: Chris Isidore, "Home Price Rise Continues to Pick up Speed," CNN Money, April 30, 2013. http://money.cnn.com/2013/04/30/news/economy/home-prices/index.html

expansionary policies, banks remain fairly reluctant to lend their excess reserves, except to their most creditworthy borrowers.

In addition, some fear that the Fed, through its efforts, is inadvertently inflating a new bubble. Wall Street, for example, appears ebullient at the efforts of both the fiscal and monetary authorities to reverse the economic decline; stock indexes rose to record levels in 2013. At the same time, there was a rush into "junk bonds"—corporate bonds considered at moderate to high risk of default—because of their relatively high interest rates. And we should not forget that sustained low interest rates are always an invitation for speculators to leverage their investment positions inexpensively, as some have returned to doing.

4.2 THE DODD-FRANK BILL

The deregulation that preceded the financial crisis had been developed over many decades. Starting in the 1980s, many government regulations that had been in place for decades were eliminated. The premise for deregulation was the belief that companies would benefit from less government intrusion in their affairs and that the broader economy would gain from an improvement in investment incentives. As we have noted, important deregulatory legislation, such as the Financial Services Modernization Act—which effectively overturned Glass-Steagall—were adopted, generally with bipartisan support, during the 1990s and 2000s.

But in late 2008 the political atmosphere changed rather abruptly. Suddenly, a clamor arose for regulatory reform to protect Americans from the recklessness of the financial sector, which only intensified after the first recipients of government assistance were revealed to be the financial companies themselves. The principal change arising from the call for reform was the

2010 Dodd-Frank Wall Street Reform and Consumer Protection Act (hereafter Dodd-Frank), cosponsored by Senator Chris Dodd (D-CT) and Representative Barney Frank (D-MA), which seeks to address many of the causes of the financial crisis.

First, Dodd-Frank addresses the deteriorating lending standards that encouraged subprime loans and pumped air into the housing bubble. This legislation requires that financial companies that seek to lend money to prospective homeowners use minimum criteria (related to, e.g., credit history and income and debt levels) to determine whether the candidate for a mortgage can reasonably be expected to repay.

More important, the law seeks to put a halt to so-called predatory lending, which was increasingly common in the last years of the housing bubble. Predatory lending describes the practice in which financial companies target individuals whom they *know* are unlikely to repay a mortgage. Dodd-Frank creates a new Consumer Financial Protection Bureau (www.consumerfinance.gov/) that protects vulnerable borrowers but also monitors loosely regulated lenders known for predatory practices. In July 2013, the Bureau became fully operational with the appointment of a permanent director.

Another key feature of Dodd-Frank is that it directly confronts the moral hazard inherent in the financial system and its pay structure. In order to reduce the extent to which commercial banks transfer risk to investment banks through the use of MBSs and other securities, the legislation requires commercial banks to be exposed to a minimum amount of the mortgage default risk. For securitized subprime mortgages, they must hold at least 5 percent of the default risk for each MBS by keeping some of the higher-risk mortgages on their books. Dodd-Frank, moreover, puts restrictions on CDSs, requiring companies that seek to insure senior tranches of MBSs or CDOs to post more collateral to back up their value. The idea is to discourage the reckless insuring of securities that are more risky than they appear to be.

Dodd-Frank also takes on ratings agencies like Moody's and Standard and Poor's, the companies that rate a great variety of debt and debt-related securities to give investors a clear picture of the riskiness of the asset. The new legislation requires the agencies to disclose the method used to rate each security, in hopes of increasing transparency for investors. It partially addresses conflict of interest concerns stemming from the fact that the agencies are regularly paid by the banks that they rate, possibly creating an incentive to understate the risk of certain securities. Nevertheless, Dodd-Frank does not prohibit ratings agencies from being paid by the firms that they rate.

The legislation also limits the amount of leverage permitted to large financial firms. As noted earlier, the instability leading to the crisis was magnified by the fact that firms were allowed to borrow amounts so high that they intensified the artificial rise in asset prices.

Perhaps most important, the Dodd-Frank bill takes on the issue of "too big to fail." It uses the designation "systemically important" for financial companies that hold assets in excess of $50 billion (of which there are currently almost 40) and subjects them to Fed-imposed restrictions on their activities that are more stringent than those faced by smaller firms. Such restrictions include lower leverage limits and greater transparency. The law also seeks to restrict further growth. For example, it forbids any merger that allows a single firm to hold more than 10 percent of the liabilities of the entire financial sector. One of its weaknesses, however, is that it does not prevent medium-size firms from becoming large enough to be "systemically important."

In addressing corporate pay structure, Dodd-Frank also calls for the Securities and Exchange Commission to ensure that corporate board members who determine CEO compensation do not have private interests in the company that might give them an incentive to favor higher CEO pay over broad shareholder interests.

4.3 Beyond Dodd-Frank

Like most historic pieces of legislation, the Dodd-Frank bill has received no shortage of criticism. A familiar argument against it is one that is commonly heard about regulation in

general: that the bill creates significant costs for financial firms, slowing down business and job creation. Another point of criticism is that the legislation is too complex, perhaps even contradictory.

A third argument made against Dodd-Frank is that it has been "watered down" to a great extent by intense lobbying efforts by the financial industry itself—suggesting, in effect, that the regulators are under the influence of the regulated. One salient example supporting this claim is the fact that, in 2012, regulators decided that new CDS regulations would not apply to firms that sell less than $8 billion in CDSs per year, where the original document set the threshold at a mere $100 million, or one-eightieth the amount. Because of this change, which was a direct result of pressure from the finance lobby, the overwhelming majority of companies are exempt from CDS regulations.

As of late 2013, only 40 percent of the rules provided for in Dodd-Frank had been adopted in final form. In the process, a number of them had been watered down or eliminated due to pressure from the financial industry. Dodd-Frank also encountered problems globally, as foreign countries protested aspects that affected their financial companies.

Opposition to Dodd-Frank is not, however, limited to Wall Street. Although much of the public favors reform and greater regulation of the financial industry, many remain opposed to or at least highly skeptical of Dodd-Frank. Polls indicate that nearly half the U.S. population believes that the legislation would do more to protect the financial industry than consumers. In other words, the public seems to be aware that some "watering down" has already taken place and is mistrustful of the government's ability or will to protect the public interest.

The fact that in 2011 financial companies spent more than $150 million on lobbying certainly supports that impression, but observers have also emphasized that some of the weaknesses in Dodd-Frank were present even before lobbyists began to exercise their influence. These weaknesses include the bill's failure to restrict banks from *becoming* "too big to fail" and to prohibit companies from paying the agencies that rate their securities.

In order to go beyond Dodd-Frank, we must ask not merely how to limit the social harm of private finance but also how to redirect finance to the goal of increasing overall benefits to society. One obvious way would be to reverse course in the direction of smaller and more specialized banks, along the lines of the renowned Glass-Steagall Act. Free market principles align with the idea that banks should be "small enough to fail." In other words, market competition should weed out the weak or inferior banks, and in the process the banking system would be made more robust.

A system based on small banks would highlight the important economic role that they already play. Despite holding barely 10 percent of total banking sector assets, small banks provide more than one-third of all small business loans in the United States. This is a critically important service, because small businesses have created over two-thirds of new jobs in the United States since the early 1990s. If regulation similar to Glass-Steagall were reintroduced, banks could also revert to offering more specialized services. Commercial banks, for example, could limit their functions to holding funds for depositors and offering mortgages to creditworthy borrowers. Investment banks could continue to offer their clients higher-return securities but not be permitted to hold customer deposits (for which the temptation to comingle with riskier assets might prove irresistible).

Such a change, in effect a return to traditional banking, would require addressing the heavy influence in government that is arguably responsible for the deregulation in the first place: the veritable "revolving door" through which some of the "big players" in finance subsequently take on important government posts, and vice-versa. When an important figure in the financial world is granted a position of power in Washington, government almost inevitably becomes just a bit more "friendly" to finance—that is, more likely to reduce or eliminate certain financial regulations. Attempts to block this door have included proposed requirements that individuals must wait a significant number of years between the time that

they leave a government position in which they can affect legislation on industry sectors and when they begin to work in those sectors.

Another means of redirecting finance to serve society would be to ask investors to pay a modest tax each time that they complete a financial transaction. Keynes proposed such a tax in 1936—at a time when the role of finance vis-à-vis the real economy was minuscule compared to today—as a way of discouraging the short-term speculation that makes the price of company stock highly volatile. Decades later, another prominent economist, the Nobel laureate James Tobin, also argued that financial transactions, particularly currency trades, should be taxed. His idea was that each transaction be taxed at a low rate, but that speculators would end up paying much more than long-term investors because they buy and sell securities much more frequently. Today, the term "Tobin tax" is used to refer to any proposed financial transaction tax.

Studies estimate that a financial transactions tax of a fraction of a percentage point would generate billions of dollars in revenue and that a tax of merely 1 percent on each transaction would generate revenue of 1 percent to 2.5 percent of global GDP! The European Commission has adopted a tax on all stock, bond, and derivative trading in the European Union beginning in 2014, and Canada has passed legislation that proposes to implement a Tobin tax if enough other countries agree to participate.

In future, the financial sector will continue to be the focus of an extensive debate about regulation, transparency, and the political power of large financial institutions. Economic theory cannot provide definitive answers to these questions, but as this chapter has shown, many of the macro economic analyses that we have developed are very relevant to understanding and evaluating these issues.

Discussion Questions

1. What is "quantitative easing"? Can you think of anything you learned earlier in the book to which it is related? What do you think are the main advantages and disadvantages of such a policy?
2. What would you think about a proposal to tax financial transactions? Would you prefer it to an income or a sales tax? Why or why not?

Review Questions

1. What was the nature of the housing bubble experienced in the early to mid-2000s? What were its main causes?
2. What is "subprime" lending? How did it contribute to the bubble and the subsequent financial crisis?
3. How can a collapse of the U.S housing market and weakness in the banking system cause an economic recession and unemployment?
4. How is the recent economic downturn similar to the Great Depression? How is it different?
5. What are mortgage-backed securities? Collateralized debt obligations? Credit default swaps? Are these "investments" in the traditional sense?
6. Did social inequality play a part in inflating the bubble that led to the 2007 financial crisis? If so, how?
7. What is financial deregulation? How important is it in explaining the financial crisis?
8. Explain "too big to fail" and why it is a potential economic problem in any economic setting. How is "too big to fail" related to moral hazard?
9. Are short-term individual incentives for corporate officers consistent or in conflict with long-run interests of their companies and the economy as a whole?
10. In what ways did globalization contribute to the financial crisis?
11. What have been the principal fiscal and monetary responses to the recession to date? What have been the results thus far?
12. What is the purpose of the Dodd-Frank bill? What are its main provisions? Has it been favorably received?
13. What is the Tobin tax? How might the putting into practice of such an idea effectively prevent a repeat of the recent crisis?

EXERCISES

1. For this exercise you need to locate housing price index data for specific states. Begin at the Federal Housing Finance Agency website (www.fhfa.gov) and select the "State HPI Data" link from the "House Price Index" tab. Select various states to get a better understanding of how the housing market in the U.S. has evolved over the past twenty years (you may want to repeat the three state comparison multiple times to get a larger sense of the experiences of different states, but make sure that at some point you look at states like Nevada and/or Florida and that you spend some time thinking about what the numbers mean.) Now write a short summary of what you've learned. Make sure that you incorporate some specific data into your summary.
2. How does the Great Recession compare to recent economic downturns? To explore this question in further detail, begin at the National Bureau of Economic Research website (www.nber.org).
   a. Select "Business Cycle Dates" from the "Data" tab at the NBER site and then record the starting dates (peaks) and ending dates (troughs) for the last four recessions. Assemble these dates in a table.
   b. Now gather some macroeconomic data. You can do this at the Federal Reserve Economic Database (http://research.stlouisfed.org/fred2/). Using the "National Income & Product Accounts" under the "National Accounts" tab within "Categories," locate Real Gross Domestic Product data for each peak and each trough in your table. Record these numbers in a new table. Calculate the percentage change in Real GDP from peak to trough for each of the last four recessions. Report these results in your new table.
   c. Return to the categories page at the FRED website. Select the "Current Population Survey (Household Survey)" link under the "Population, Employment, & Labor Markets" category. Select the "unemployment rate" series and record the numbers for each peak and each trough for each of the last four recessions. Organize these data in a table.
   d. Review your tables and calculations. Write a concise summary comparing the Great Recession to the previous three recessions. Make sure that you incorporate specific numbers into your summary.
3. The chapter identifies a series of contributing factors in its exploration of the underlying causes of the financial crisis. Identify the major factors and state which you think were most important.
4. What is the meaning of moral hazard? Give some examples of moral hazard, as discussed in the text, or others that you can think of.
5. Match each concept in Column A with a definition or example in Column B.

Column A	Column B
Mortgage-backed security	When a company grows so large that its failure would cause widespread economic harm in terms of lost jobs and diminished asset values
Collateralized debt obligation	A loan that permits a borrower to offer his or her home (or their equity stake in it) as collateral in case of failure to repay the loan
Credit default swap	A security that is effectively an insurance policy against defaults related to MBSs and CDOs
Sub-prime buyer	A would-be home-buyer whose credit-worthiness is suspect because he or she already has a high level of debt, and/or a low income, and/or a poor credit record
Home equity loan	Benefits that occur when the long run average cost of production falls as the size of the enterprise increases
"Laissez-faire"	The Fed purchases MBSs from banks, and credits them with fresh reserves
Economies of scale	An investment product that packages together numerous assets, including MBSs
Too-big-to-fail	doing nothing
Moral hazard	A security composed of a bundle of many home mortgages issued by independent banks
"Quantitative easing"	The lack of any incentive to guard against a risk when you are protected against it