What I want to talk about in these four lectures is the Federal Reserve and the financial crisis. My thinking about this is conditioned by my experience as an economic historian. When one talks about the issues that occurred over the past few years, I think it makes the most sense to consider them in the broader context of central banking as it has been practiced over the centuries. So, even though I am going to focus in these lectures quite a bit on the financial crisis and how the Fed responded, I need to go back and look at the broader context. As I talk about the Fed, I will talk about the origin and mission of central banks in general; in looking at previous financial crises, most notably the Great Depression, you will see how that mission informed the Fed’s actions and decisions.

In this first lecture, I will not touch on the current crisis at all. Instead, I will talk about what central banks are, what they do, and how central banking got started in the United States. I will talk about how the Fed engaged with its first great challenge, the Great Depression of the 1930s. In the second lecture, I will pick up the history from there. I will review developments in central banking and with the Federal Reserve after World War II, talking about the conquest of inflation, the Great Moderation, and other developments that occurred after 1945. But in that lecture I will also spend
a good bit of time talking about the buildup to the crisis and some of the factors that led to the crisis of 2008–2009. In lecture three, I will turn to more recent events. I will talk about the intense phase of the financial crisis, its causes, its implications, and particularly the response to the crisis by the Federal Reserve and by other policymakers. And then, in the final lecture I will look at the aftermath. I will talk about the recession that followed the crisis, the policy response of the Fed (including monetary policy), the broader response in terms of the changes in financial regulation, and a little bit of forward-looking discussion about how this experience will change how central banks operate and how the Federal Reserve will operate in the future.

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So let’s talk in general about what a central bank is. If you have some background in economics you know that a central bank is not a regular bank; it is a government agency, and it stands at the center of a country’s monetary and financial system. Central banks are very important institutions; they have helped to guide the development of modern financial and monetary systems and they play a major role in economic policy. There have been various arrangements over the years, but today virtually all countries have central banks: the Federal Reserve in the United States, the Bank of Japan, the Bank of Canada, and so on. The main exception is in cases where there is a currency union, where a number of countries collectively share a central bank. By far the most important example of that is the European Central Bank, which is the central bank for seventeen European countries that share the euro as their common currency. But even in that case, each of the participating countries does have its own central bank, which is part of the overall system of the euro.
Central banks are now ubiquitous; even the smallest countries typically have central banks.

What do central banks do? What is their mission? It is convenient to talk about two broad aspects of what central banks do. The first is to try to achieve macroeconomic stability. By that I mean achieving stable growth in the economy, avoiding big swings—recessions and the like—and keeping inflation low and stable. That is the economic function of a central bank. The other function of central banks, which is going to get a lot of attention in these lectures, is to maintain financial stability. Central banks try to keep the financial system working normally and, in particular, they try to either prevent or mitigate financial panics or financial crises.

What are the tools that central banks use to achieve these two broad objectives? In very simple terms, there are basically two sets of tools. On the economic stability side, the main tool is monetary policy. In normal times, for example, the Fed can raise or lower short-term interest rates. It does that by buying and selling securities in the open market. Usually, if the economy is growing too slowly or inflation is falling too low, the Fed can stimulate the economy by lowering interest rates. Lower interest rates feed through to a broad range of other interest rates, which encourages spending on acquiring homes, for example, and on construction, investment by firms, and so on. Lower interest rates generate more demand, more spending, and more investment in the economy, and that creates more thrust in growth. And similarly, if the economy is growing too hot, if inflation is becoming a problem, then the normal tool of central bank is to raise interest rates. Raising the overnight interest rate that the Fed charges banks to lend money, known in the United States as the federal funds rate, feeds higher interest rates through the system. This helps to slow the economy by raising the cost of borrowing, of buying a house or a car, or of investing in capi-
tal goods, reducing pressure on an overheating economy. Monetary policy is the basic tool that central banks have used for many years to try to keep the economy on a more or less even keel in terms of both growth and inflation.

The main tool of central banks for dealing with financial panics or financial crises is a little less familiar: the provision of liquidity. In order to address financial stability concerns, one thing that central banks can do is make short-term loans to financial institutions. As I will explain, providing short-term credit to financial institutions during a period of panic or crisis can help calm the market, can help stabilize those institutions, and can help mitigate or end a financial crisis. This activity is known as the "lender of last resort" tool. If financial markets are disrupted and financial institutions do not have alternative sources of funding, then the central bank stands ready to serve as the lender of last resort, providing liquidity and thereby helping to stabilize the financial system.

There is a third tool that most central banks (including the Fed) have, which is financial regulation and supervision. Central banks usually play a role in supervising the banking system, assessing the extent of risk in their portfolios, making sure their practices are sound and, in that way, trying to keep the financial system healthy. To the extent that a financial system can be kept healthy and its risk-taking within reasonable bounds, then the chance of a financial crisis occurring in the first place is reduced. This activity is not unique to central banks, however. In the United States, for example, there are a number of different agencies, such as the Federal Deposit Insurance Corporation (FDIC) and the Office of the Comptroller of the Currency, that work with the Fed in supervising the financial system. Because this is not unique to central banks, I will downplay this for the moment and focus on our two principal tools: monetary policy and lender of last resort activities.
Where do central banks come from? One thing people do not appreciate is that central banking is not a new development. It has been around for a very long time. The Swedes set up a central bank in 1668, three and a half centuries ago. The Bank of England was founded in 1694, and was for many decades, if not centuries, the most important and influential central bank in the world. France established a central bank in 1800. So central bank theory and practice is not a new thing. We have been thinking about these issues collectively as an economics profession and in other contexts for many years.

I need to talk a little bit about what a financial panic is. In general, a financial panic is sparked by a loss of confidence in an institution. The best way to explain this is to give a familiar example. If you have seen the movie *It’s a Wonderful Life*, you know that one of the problems Jimmy Stewart’s character runs into as a banker is a threatened run on his institution. What is a run? Imagine a situation like Jimmy Stewart’s, before there was deposit insurance and the FDIC. And imagine you have a bank on the corner, just a regular commercial bank; let’s call it the First Bank of Washington, D.C. This bank makes loans to businesses and the like, and it finances itself by taking deposits from the public. These deposits are called demand deposits, which means that depositors can pull out their money anytime they want, which is important because people use deposits for ordinary activities, like shopping.

Now imagine what would happen if, for some reason, a rumor goes around that this bank has made some bad loans and is losing money. As a depositor, you say to yourself, “Well, I don’t know if

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1 The Bank of England was not set up from scratch as a full-fledged central bank; it was originally a private institution that acquired some of the functions of a central bank, such as issuing money and serving as lender of last resort. But over time, central banks became essentially government institutions, as they all are today.
this rumor is true or not. But what I do know is that if I wait and everybody else pulls out their money and I’m the last person in line, I may end up with nothing.” So, what are you going to do? You are going to go to the bank and say, “I’m not sure if this rumor is true or not, but, knowing that everybody else is going to pull their deposits out of the bank, I’m going to pull my money out now.” And so, depositors line up to pull out their cash.

Now, no bank holds cash equal to all its deposits; it puts that cash into loans. So the only way the bank can pay off the depositors, once it goes through its minimal cash reserves, is to sell or otherwise dispose of its loans. But it is very hard to sell a commercial loan; it takes time, and you usually have to sell it at a discount. Before a bank even gets around to doing that, depositors are at the door asking, “Where is my money?” So a panic can be a self-fulfilling prophecy, leading the bank to fail; it will have to sell off its assets at a discount price and, ultimately, many depositors might lose money, as happened in the Great Depression.

Panics can be a serious problem. If one bank is having problems, people at the bank next door may begin to worry about problems at their bank. And so, a bank run can lead to widespread bank runs or a banking panic more broadly. Sometimes, pre-FDIC, banks would respond to a panic or a run by refusing to pay out deposits; they would just say, “No more; we’re closing the window.” So the restriction on the access of depositors to their money was another bad outcome and caused problems for people who had to make a payroll or buy groceries. Many banks would fail and, beyond that, banking panics often spread into other markets; they were often associated with stock market crashes, for example. And all those things together, as you might expect, were bad for the economy.

A financial panic can occur anytime you have an institution that has longer-term illiquid assets—illiquid in the sense that it takes time and effort to sell those loans—and is financed on the other
side of the balance sheet by short-term liabilities, such as deposits. Anytime you have that situation, you have the possibility that the people who put their money in the bank may say, “Wait a minute, I don’t want to leave my money here; I’m pulling it out,” and you have a serious problem for the institution.

So how could the Fed have helped Jimmy Stewart? Remember that central banks act as the lender of last resort. Imagine that Jimmy Stewart is paying out the money to his depositors. He has plenty of good loans, but he cannot change those into cash, and he has people at the door demanding their money immediately. If the Federal Reserve was on the job, Jimmy Stewart could call the local Fed office and say, “Look, I have a whole bunch of good loans that I can offer as collateral; give me a cash loan against this collateral.” Then Jimmy Stewart can take the cash from the central bank, pay off his depositors, and then, so long as he really is solvent (that is, as long as his loans really are good), the run will be quelled and the panic will come to an end. So by providing short-term loans and taking collateral (the illiquid assets of the institution), central banks can put money into the system, pay off depositors and short-term lenders, calm the situation, and end the panic.

This was something the Bank of England figured out very early. In fact, a key person in the intellectual development of banking was a journalist named Walter Bagehot, who thought a lot about central banking policy. He had a dictum that during a panic central banks should lend freely to whoever comes to their door; as long as they have collateral, give them money. Central banks need to have collateral to make sure that they get their money back, and that collateral has to be good or it has to be discounted. Also, central banks need to charge a penalty interest rate so that people do not take advantage of the situation; they signal that they really need the money by being willing to pay a slightly higher interest rate. If a central bank follows Bagehot’s rule, it can stop financial panics. As a bank or
other institution finds that it is losing its funding from depositors or other short-term lenders, it borrows from the central bank. The central bank provides cash loans against collateral. The company then pays off its depositors and things calm down. Without that source of funds, without that lender of last resort activity, many institutions would have to close their doors and could go bankrupt. If they had to sell their assets at fire-sale discount prices, that would create further problems because other banks would also find the value of their assets going down. And so, panic—through fear, rumor, or declining asset values—could spread throughout the banking system. So it is very important to get in there aggressively. As a central banker, provide that short-term liquidity and avert the collapse of the system or at least serious stress on it.

Let’s talk a little bit specifically about the United States and the Federal Reserve. The Federal Reserve was founded 1914, and concerns about both macroeconomic stability and financial stability motivated the decision of Congress and President Woodrow Wilson to create it. After the Civil War and into the early 1900s, there was no central bank, so any kind of financial stability functions that could not be performed by the Treasury had to be done privately. There were some interesting examples of private attempts to create lender of last resort functions; for example, the New York Clearing House. The New York Clearing House was a private institution; it was basically a club of ordinary commercial banks in New York City. It was called the Clearing House because, initially, that is what it was; it served as a place where banks could come at the end of each day to clear checks against one another. But over time, clearing houses began to function a little bit like central banks. For example, if one bank came under a lot of pressure, the other banks might come together in the clearing house and lend money to that bank so it could pay its depositors. And so in that respect, they served as a lender of
last resort. Sometimes, the clearing houses would all agree that they were going to shut down the banking system for a week in order to look at the bank that was in trouble, evaluate its balance sheet, and determine whether it was in fact a sound bank. If it was, it would reopen and, normally, that would calm things down. So there was some private activity to stabilize the banking system.

In the end, though, these kinds of private arrangements were just not sufficient. They did not have the resources or credibility of an independent central bank. After all, people could always wonder whether the banks were acting in something other than the public interest since they were all private institutions. So it was necessary for the United States to get a lender of last resort that could stop runs on illiquid but still solvent commercial banks.

This was not a hypothetical issue. Financial panics in the United States were a very big problem in the period from the restoration of the gold standard after the Civil War in 1879 through the founding of the Federal Reserve. Figure 1 shows the number of banks closing during each of the six major banking panics during that period in the United States.

You can see that in the very severe financial panic of 1893, more than five hundred banks failed across the country, with significant consequences for the financial system and for the economy. Fewer banks failed in the panic of 1907, but the banks that did fail were larger. After the crisis of 1907, Congress began to think that maybe they needed a government agency that could address the problem of financial panics. A twenty-three-volume study was prepared for the Congress about central banking practices, and Congress moved deliberatively toward creating a central bank. The new central bank was finally established in 1914, after yet another serious financial panic. So financial stability concerns were a major reason that Congress decided to create a central bank in the early twentieth century.
But remember that the other major mission of central banks is monetary and economic stability. For most of the period from after the Civil War until the 1930s, the United States was on a gold standard. What is a gold standard? It is a monetary system in which the value of the currency is fixed in terms of gold; for example, by law in the early twentieth century, the price of gold was set at $20.67 an ounce. So there was a fixed relationship between the dollar and a certain weight of gold, and that in turn helped set the money supply; it helped set the price level in the economy. There were central banks that helped manage the gold standard, but to a significant extent a true gold standard creates an automatic monetary system and is at least a partial alternative to a central bank.

Unfortunately, a gold standard is far from a perfect monetary system. For instance, it is a big waste of resources: you have to dig up tons of gold and move it to the basement of the Federal Reserve Bank in New York. Milton Friedman used to emphasize that a very serious cost of a gold standard was that all this gold was being dug
up and then put back into another hole. But there are other more serious financial and economic concerns that practical experience has shown to be part of a gold standard.

Take the effect of a gold standard on the money supply. Since the gold standard determines the money supply, there is not much scope for the central bank to use monetary policy to stabilize the economy. In particular, under a gold standard, typically the money supply goes up and interest rates go down in periods of strong economic activity, which is the reverse of what a central bank would normally do today. Because you have a gold standard that ties the money supply to gold, there is no flexibility for the central bank to lower interest rates in a recession or raise interest rates to counter inflation. Some people view that as a benefit of the gold standard—taking away the central bank’s discretion—and there is an argument to be made for that, but it does have the side effect that there was more year-to-year volatility in the economy under the gold standard than there has been in modern times. Volatility in output variability and year-to-year movements in inflation were much greater under the gold standard.

There are other concerns with the gold standard. One of the things a gold standard does is to create a system of fixed exchange rates between the currencies of countries that are on the gold standard. For example, in 1900, the value of a dollar was about twenty dollars per ounce of gold. At the same time, the British set their gold standard at roughly four British pounds per ounce of gold. Twenty dollars equals one ounce of gold, and one ounce of gold equals four British pounds, so twenty dollars equals four pounds. Basically, one pound is valued at five dollars. So essentially, if both countries are on the gold standard, the ratio of prices between the two exchange rates is fixed. There is no variability, unlike today, when the euro can go up and down against the dollar. Again, some people would argue that is beneficial, but there is at least one problem: if there are
shocks or changes in the money supply in one country and perhaps even a bad set of policies, other countries that are tied to the currency of that country will experience some of the effects.

I will give you a modern example. Today, China ties its currency to the dollar. It has become more flexible lately, but for a long time there has been a close relationship between the Chinese currency and the U.S. dollar. That means that if the Fed lowers interest rates and stimulates the U.S. economy because, say, it is in a recession, essentially monetary policy becomes easier in China as well because interest rates have to be the same in different countries with essentially the same currency. And those low interest rates may not be appropriate for China, and as a result China may experience inflation because it is essentially tied to U.S. monetary policy. So fixed exchange rates between countries tend to transmit both good and bad policies between those countries and take away the independence that individual countries have to manage their own monetary policy.

Yet another issue with the gold standard has to do with speculative attack. Normally, a central bank with a gold standard keeps only a fraction of the gold necessary to back the entire money supply. Indeed, the Bank of England was famous for keeping “a thin film of gold,” as John Maynard Keynes called it. The British central bank kept only a small amount of gold and relied on its credibility in standing by the gold standard under all circumstances, so that nobody ever challenged it about that issue. But if, for whatever reason, markets lose confidence in a central bank’s commitment to maintain the gold standard, the currency can become subject to a speculative attack. This is what happened to the British. In 1931, for a lot of good reasons, speculators lost confidence that the British pound would maintain its gold convertibility, so (just like a run on the bank) they all brought their pounds to the Bank of England and said, “Give me gold.” It did not take very long for the Bank of England to run out of gold because it did not have all the gold
it needed to support the money supply, which essentially forced Great Britain to leave the gold standard.

There is a story that while a British Treasury official was taking a bath, an aide came running in saying, “We’re off the gold standard! We’re off the gold standard!” And the official said, “I didn’t know we could do that!” But they could, and they had to. They had no choice because there was a speculative attack on the pound. Moreover, as we saw in the case of the United States, the gold standard was associated with many financial panics. The gold standard did not always assure financial stability.

Finally, one of the strengths that people cite for the gold standard is that it creates a stable value for the currency, it creates a stable inflation. That is true over very long periods. But over shorter periods, maybe up to five or ten years, you can actually have a lot of inflation (rising prices) or deflation (falling prices) with a gold standard because the amount of money in the economy varies according to things like gold strikes. So, for example, if gold is discovered in California and the amount of gold in the economy goes up, that will cause inflation, whereas if the economy is growing faster and there is a shortage of gold, that will cause deflation. So over shorter periods, a country on the gold standard frequently had both inflations and deflations. Over long periods—decades—prices were quite stable.

This was a very significant concern in the United States. In the latter part of the nineteenth century, there was a shortage of gold relative to economic growth, and since there was not enough gold—the money supply was shrinking relative to the economy—the U.S. economy was experiencing deflation, that is, prices were gradually falling over this period. This caused problems, particularly for farmers and people in other agriculture-related occupations. Think about this for a moment. If you are a farmer in Kansas and you have a mortgage that requires a fixed payment of twenty dollars each
month, the amount of money you have to pay is fixed. But how do you get the money to pay it? By growing crops and selling them in the market. Now, if you have deflation, that means that the price of your corn or cotton or grain is falling over time, but your payment to the bank stays the same. Deflation created a grinding pressure on farmers as they saw the prices of their products going down while their debt payments remained unchanged. Farmers were squeezed by this decline in their crop prices, and they recognized that this deflation was not an accident. The deflation was being caused by the gold standard.

So William Jennings Bryan ran for president on a platform the principal plank of which was the need to modify the gold standard. In particular, he wanted to add silver to the metallic system so that there would be more money in circulation and more inflation. But he spoke about this in the very eloquent way of nineteenth-century orators. He said, “You shall not press down upon the brow of labor this crown of thorns; you shall not crucify mankind upon a cross of gold.” What he was saying is that the gold standard was killing honest, hardworking farmers who were trying to make their payments to the bank and found the price of their crops going down over time.

So the gold standard created problems and was a motivation for the founding of the Federal Reserve. In 1913, finally after all the study, Congress passed the Federal Reserve Act, which established the Federal Reserve. President Wilson viewed this as the most important domestic accomplishment of his presidency. Why did they want a central bank? The Federal Reserve Act called on the newly established Fed to do two things: first, to serve as a lender of last resort and to try to mitigate the panics that banks were experiencing every few years; and second, to manage the gold standard, that is, to take the sharp edges off the gold standard to avoid sharp swings in interest rates and other macroeconomic variables.

Interestingly, the Fed was not the first attempt by Congress to create a central bank. There had been two previous attempts, one
of them suggested by Alexander Hamilton and the second somewhat later in the nineteenth century. In both cases, Congress let the central bank die. The problem was disagreement between what today we would call Main Street and Wall Street. The folks on Main Street—farmers, for example—feared that the central bank would be mainly an instrument of the moneyed interests in New York and Philadelphia and would not represent the entire country, would not be a national central bank. Both the first and the second attempts at creating a central bank failed for that reason.

Woodrow Wilson tried a different approach: he created not just a single central bank in Washington but twelve Federal Reserve banks located in major cities across the country. Figure 2 shows the twelve Federal Reserve districts (which we still have today), and each one has a Federal Reserve Bank. Then a Board of Governors in Washington, D.C., oversees the whole system. The value of this structure was that it created a central bank where everybody, in all parts of the country, would have a voice and where information about all aspects of our national economy would be heard in Washington—and that is, in fact, still the case. When the Fed makes monetary policy, it takes into account the views of the Federal Reserve banks around the country and thus has a national approach to making policy.

The Fed was established in 1914 and for a while life was not too bad. The 1920s, the so-called Roaring Twenties, was a period of great prosperity in the United States. Its economy was absolutely dominant in the world at that time because most of Europe was still in ruins from World War I. There were lots of new inventions. People gathered around the radio, and automobiles became much more available. There were a lot of new consumer durables and a

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2 Notice, by the way, how many of the little black dots are to the right. In 1914, most of the economic activity in the United States was in the eastern part of the country. Now, of course, economic activity is much more evenly spread across the country but the Federal Reserve banks are in the same locations as in 1914.
lot of economic growth during the 1920s. So the Fed had some time to get its feet wet and establish procedures.

Unfortunately, in 1929 the world was hit by the first great challenge to the Federal Reserve, the Great Depression. The U.S. stock market crashed on October 29th, and the financial crisis of the Great Depression was not just a U.S. phenomenon: it was global. Large financial institutions collapsed in Europe and other parts of the world. Perhaps the most damaging financial collapse was of the large Austrian bank called the Credit-Anstalt in 1931, which brought down many other banks in Europe. The economy contracted very sharply and the Depression lasted for what seems like an incredibly long time, from 1929 until 1941, when the United States entered the war following the attack on Pearl Harbor.

It is important to understand how deep and severe the Depression was. Figure 3 shows the stock market, and you can see at the left a vertical line showing October 1929, a very sharp decline in stock prices. This was the crash that was made famous by many writers including John Kenneth Galbraith and others, who told
colorful stories about brokers jumping out of windows. But what I want you to take from this picture is that the crash of 1929 was only the first step in what was a much more serious decline. You see how stock prices kept falling, and by mid-1932 they had fallen an incredible 85 percent from their peak. So this was much worse than just a couple of bad days in the stock market.

The real economy, the nonfinancial economy, also suffered very greatly. Figure 4a shows growth in real GDP. If the bar is above the zero line, it is a growth period. If it is below, it is a contraction period. In 1929, the economy grew by more than 5 percent and was still growing very substantially. But you can see that from 1930 to 1933, the economy contracted by very large amounts every year. So it was an enormous contraction of GDP, close to one-third overall between 1929 and 1933. At the same time, the economy was experiencing deflation (falling prices). And as you can see in figure 4b, in 1931 and 1932 prices fell by about 10 percent. So if you were a farmer who had had difficulty in the late nineteenth century, imagine what is happening to you in 1932, when crop prices are drop-
ping by half or more and you still have to make the same payment to the bank for your mortgage.

As the economy contracted, unemployment soared. We did not have the same survey of individual households in the 1930s that we have today, and so the numbers in figure 5 are estimated; they are not precise numbers. But as best we can tell, at its peak in the early 1930s, unemployment approached 25 percent. The shaded area is

Figure 4a. Real GDP, 1925–1934
Note: Shading represents years of the Great Depression.

Figure 4b. Consumer Price Index, 1925–1934
the recession period. Even at the end of the 1930s, before the war changed everything, unemployment was still around 13 percent.

As you might guess, with all that was going wrong in the economy, a lot of depositors ran on their banks and many banks failed. Figure 6 shows the number of bank failures in each year, and you can see an enormous spike in the early 1930s.

What caused this colossal calamity (which, I reiterate, was not just a U.S. problem but a global problem)? Germany had a worse depression than the United States, and that led more or less directly to the election of Hitler in 1933. So what happened? What caused the Great Depression? This is a tremendously important subject and has received a lot of attention from economic historians, as you might imagine. And as often is the case for very large events, there were many different causes. A few are the repercussions of World War I; problems with the international gold standard, which was being reconstructed but with a lot of problems after World War I; the famous bubble in stock prices in the late 1920s; and the financial panic that spread throughout the world. So a number of factors caused the Depression. Part of the problem was intellectual—a mat-
ter of theory rather than policy per se. In the 1930s, there was a lot of support for a way of thinking about the economy called the liquidationist theory, which posited that the 1920s had been too good a time: the economy had expanded too fast; there had been too much growth; too much credit had been extended; stock prices had gone too high. What you need when you have had a period of excess is a period of deflation, a period when all the excesses are squeezed out. This theory held that the Depression was unfortunate but necessary. We had to squeeze out all of the excesses that had accumulated in the economy in the 1920s. There is a famous statement by Andrew Mellon, who was Herbert Hoover’s secretary of the Treasury: “Liquidate labor, liquidate stocks, liquidate the farmers, liquidate real estate.” It sounds pretty heartless and I think it was, but what he was trying to convey was that we had to get rid of all of the excesses of the 1920s and bring the country back to a more fundamentally sound economy.
What was the Fed doing during this period? Unfortunately, when the Fed confronted its first major challenge in the Great Depression, it failed both on the monetary policy side and on the financial stability side. On a monetary policy side, the Fed did not ease monetary policy as you would expect it to in a period of deep recession, for a variety of reasons: because it wanted to stop stock market speculation, because it wanted to maintain the gold standard, because it believed in the liquidationist theory. And so we did not get the offset to the decline that monetary policy could have provided. And indeed, what we saw was sharply falling prices. You can argue about causes of the decline in output and employment, but when you see 10 percent declines in the price level, you know monetary policy is much too tight. So deflation was an important part of the problem because it bankrupted farmers and others who relied on selling products to pay fixed debts. To make things even worse, as I mentioned earlier, if you have a gold standard, then you have fixed exchange rates. So the Fed’s policies were essentially transmitted to other countries, which therefore also essentially came under excessively tight monetary policy and that contributed to the collapse. As I mentioned, one reason the Fed kept money tight was because it was worried about a speculative attack on the dollar. Remember that the British had faced that situation in 1931. The Fed was worried that there would be a similar attack that would drive the dollar off the gold standard. So, to preserve the gold standard, the Fed raised interest rates rather than lower them. They argued that keeping interest rates high would make U.S. investments attractive and prevent money from flowing out of the United States. But that was the wrong thing to do relative to what the economy needed. In 1933, Franklin Roosevelt abandoned the gold standard, and suddenly monetary policy became much less tight and there was a very powerful rebound in the economy in 1933 and 1934.
The other part of the Fed’s responsibility is to be lender of last resort. And once again, the Fed did not read its mandate. It responded inadequately to the bank runs, essentially allowing a tremendous decline in the banking system as many banks failed. And as a result, bank failures swept the country. A very large fraction of the nation’s banks failed; almost ten thousand banks failed in the 1930s. That continued until deposit insurance was created in 1934. Now, why did the Fed not act more aggressively as lender of last resort? Why didn’t it lend to these failing banks? Well, in some cases, the banks were really insolvent. There was not much that could be done to save them. They had made loans in agricultural areas and their loans were all going bad because of the crisis in the agricultural sector. But part of it was the Fed appeared, at least to some extent, to agree with the liquidationist theory, which said that there was too much credit; the country was overbanked; let the system contract; that was the healthy thing to do. But unfortunately, that was not the right prescription.

In 1933, Franklin Roosevelt came to power. Roosevelt had a mandate to do something about the Depression. He took a variety of actions; he was very experimental. Some of those actions were quite unsuccessful. For example, something called the National Recovery Act tried to fight deflation by requiring firms to keep their prices high. But that was not going to help without a bigger money supply. So a lot of things Roosevelt tried did not work, but he did two things that I would argue did a lot to offset the problems the Fed created. The first was the establishment of deposit insurance, the FDIC, in 1934. After that, if you were an ordinary depositor and the bank failed, you still got your money back and therefore there was no incentive to run on the banks. And in fact, once deposit insurance was established, we went from literally thousands of bank failures annually to zero. It was an incredibly effective policy. The other thing FDR did was he abandoned the gold standard. And by
abandoning the gold standard, he allowed monetary policy to be released and allowed expansion of the money supply, which ended the deflation and led to a powerful short-term rebound in 1933 and 1934. So the two most successful things that Roosevelt did were essentially offsetting the problems that the Fed created or at least exacerbated by not fulfilling its responsibilities.

So, what are the policy lessons? It was a global depression that had many causes, and the whole story requires you to look at the whole international system. But policy errors in the United States, as well as abroad, did play an important role. And in particular, the Federal Reserve failed in this first challenge in both parts of its mission. It did not use monetary policy aggressively to prevent deflation and the collapse in the economy, so it failed in its economic stability function. And it did not adequately perform its function as lender of last resort, allowing many bank failures and a resulting contraction in credit and also in the money supply. So the Fed did not fulfill its mission in that respect. These are key lessons, and we want to keep these in mind as we consider how the Fed responded to the 2008–2009 financial crisis.

Student: You mentioned the tightening of monetary policy in 1928 and 1929 to stem stock market speculation. Do you think that the Federal Reserve should have taken different actions, such as increasing margin requirements, to stem the speculation or was it wrong for them to take any action at all against the bubble?

Chairman Bernanke: That is a good question. The Fed was very concerned about the stock market and believed that it was excessively priced, and there was evidence for that. But they attacked it solely by raising interest rates without paying attention to the effect on the economy. So they wanted to bring down the stock market by raising interest rates, and of
course they succeeded! But raising interest rates had major side effects on the economy as well. So, yes, we have learned that asset price bubbles are dangerous and we want to address them if possible, but when you can address them through financial regulatory approaches, that is usually a more pinpoint approach than just raising interest rates for everything. So margin requirements are at least looking at the variety of practices. There were a lot of very risky practices by brokers in the 1920s; it was the equivalent of day traders. Every paper boy had a hot tip for you and there were not many checks and balances on trading, who can make a trade, what margin requirements were, and so on. I think the first line of attack should have been more focused on bank lending, on financial regulation, and on the functioning of the exchanges.

**Student:** I have a question on the gold standard. Given everything we know about monetary policy now and about the modern economy, why is there still some argument for returning to the gold standard, and is it even possible?

**Chairman Bernanke:** The argument has two parts. One is the desire to maintain “the value of the dollar,” that is, to have very long-term price stability. The argument is that paper money is inherently inflationary, but if we had a gold standard we would not have inflation. As I said, that is true to some extent over long periods of time. But on a year-to-year basis it is not true, and so looking at history is helpful there. The other reason advocates want to see a return to the gold standard, I think, is that it removes discretion: it does not allow the central bank to respond with monetary policy, for example to booms and busts, and the advocates of the gold standard say it is better not to give that flexibility to a central bank.

I think, though, that the gold standard would not be feasible for both practical reasons and policy reasons. On the practical
side, it is just a simple fact that there is not enough gold to meet the needs of a global gold standard, and obtaining that much gold would cost a lot. But more fundamentally, the world has changed. The reason the Bank of England could maintain the gold standard even though it had very little gold reserves was that everybody knew that the Bank’s first, second, third, and fourth priorities were staying on the gold standard and that it had no interest in any other policy objective. But once there was concern that the Bank of England might not be fully committed, then there was a speculative attack that drove it off gold. Now, economic historians argue that after World War I, labor movements became much stronger and there was a lot more concern about unemployment. Before the nineteenth century people did not even measure unemployment, and after World War I you began to get much more attention to unemployment and business cycles. So in the modern world, commitment to the gold standard would mean swearing that under no circumstances, no matter how bad unemployment got, would we do anything about it using monetary policy. And if investors had 1 percent doubt that we would follow that promise, then they would have an incentive to bring their cash and take out gold, and it would be a self-fulfilling prophecy. We have seen that problem with various kinds of fixed exchange rates that have come under attack during the financial crisis. So I understand the impulse, but if you look at history you will see that the gold standard did not work very well, and it worked particularly poorly after World War I. Indeed, there is evidence that the gold standard was one of the main reasons the Depression was so deep and long. And a striking fact is that countries that left the gold standard early and gave themselves flexibility on monetary policy recovered much more quickly than the countries that stayed on gold to the bitter end.
**Student:** You mentioned that President Roosevelt used deposit insurance to help end bank runs and also abandoned the gold standard to help end deflation. I believe that in 1936 and 1937, up until 1941, we had a double dip and the recession went on. As you have said, today we are sort of out of the recession. What things do you think we need to be careful of—things that possibly were mistakes made in the Great Depression that we should avoid today?

**Chairman Bernanke:** Right, it is not generally appreciated that the Great Depression actually was two recessions. There was a very sharp recession in 1929 to 1933; from 1933 to 1937, there was actually a decent amount of growth and the stock market recovered some; but in 1937 to 1938, there was a second recession that was not quite as serious as the first one but was still serious. There is a lot of controversy about it, but one view that was advanced early on was that the second recession came from a premature tightening of monetary and fiscal policy. In 1937 and 1938, Roosevelt was under a lot of pressure to reduce budget deficits and tighten fiscal policy. The Fed, worried about inflation, tightened monetary policy. I do not want to claim it is that simple—a lot was happening—but the early interpretation was that the reversal in policy was premature, which prevented the recovery from proceeding faster. If you accept that traditional interpretation, you need to be attentive to where the economy is and not move too quickly to reverse the policies that are helping the recovery.

**Student:** Based on a few of the graphs we saw today and other historical trends, it seems that after an economic slump, recovery often takes five or more years, as represented by the Great Depression and the oil crisis in the 1970s. Do you think it is common for unemployment to remain at high levels until sometimes a half decade after an economic slump, and that
criticisms are often premature? And how do you address these concerns in a political environment where short-term fixes rule the day?

Chairman Bernanke: Well, the Depression was an extraordinary event. There were many serious declines in economic activity in the nineteenth century, but nothing quite as deep or as long as the Great Depression. The high unemployment that lasted from 1929 until basically World War II was unusual. So we should not conclude that was a normal state of affairs. Now, more generally, some research suggests that following a financial crisis it may take longer for the economy to recover because you need to restore the health of the financial system. Some argue that may be one reason this most recent recovery is not proceeding faster than it is. But I think it is still an open question and there is a lot of discussion about that research. So no, it is not always the case. If you look at recessions in the postwar period in the United States, you see that recoveries very frequently take only a couple of years—recessions are typically followed by a faster recovery. What may be different about this episode—and again this is a subject of debate—is that, unlike the other recessions in the postwar period, this one was related to and triggered by a global financial crisis, and that may be why it is already taking longer for the economy to recover.

Student: Since you said depressions are global recessions, shouldn’t there be more global cooperation and shouldn’t central banks have a uniform type of fix they cooperate on, instead of every country turning to its own fix?

Chairman Bernanke: The Fed and the central banks did cooperate, and continue to cooperate. One of the problems in the Depression was the bad feelings left over from World War I. In the nineteenth century there was a reasonable amount of
cooperation among central banks, but in the 1920s, Germany was facing having to pay reparations, and France, England, and the United States were all bickering about war debts, and so the politics was quite bad internationally and that impeded cooperation among the central banks. Also, international central bank cooperation is probably even more important when you have fixed exchange rates. In the 1920s, you had fixed exchange rates because of the gold standard; that meant that monetary policy in one country affected everybody. That was certainly a case for more coordination, but it did not happen. At least today we have flexible exchange rates, which can adjust and tend to insulate other countries from the effects of monetary policy in a given country, so that reduces the need for coordination somewhat—but there is still, I think, a need for coordination.