

unemployment rate to impose further wage cuts on workers. Economists are usually doubtful that such admonitions to firms have much effect. But the NIRA offered firms a carrot in exchange, in effect lower competition in goods markets—under the guise of “orderly competition”—and, therefore, the potential for higher profits if they complied. The evidence suggests that the NIRA did have an effect on wage setting.

- Another factor may be that, while unemployment was still high, output growth was high as well. As a result, there were bottlenecks in production, leading firms to increase their prices given wages. Because of the sharp increase in demand, the price of raw materials was also bid up, increasing costs and again forcing firms to increase their prices given wages. In short, the effect of fast growth was to increase prices given wages, thereby reducing the deflationary pressure of unemployment.
- Yet another factor may be the perception of a “regime change” associated with the election of Roosevelt and its direct effect on inflation expectations. During its first 100 days in office, the Roosevelt administration made clear that it was committed to ending deflation. It replaced the chairman of the Federal Reserve Board, and soon after, the new chairman proceeded to decrease the interest rate. In April 1933, Roosevelt allowed the dollar to float, and the dollar quickly depreciated by 30% or more against other currencies. It is plausible that these changes in policy had an effect on expected inflation, and, in turn, an effect on actual inflation.

Why should we care about how deflation turned to inflation in the United States in 1933? Because, as you shall see next, the answer is very relevant to Japan today. How to get rid of deflation, and, in so doing, decrease the real interest rate and stimulate growth, is one of the issues confronting Japanese policymakers today.

The Japanese Slump

From the end of World War II to the beginning of the 1990s, Japan's economic performance was spectacular: From 1950 to 1973, the average growth rate was 7.4% per year. As in other OECD countries, the average growth rate decreased after 1973. But from 1973 to 1991, it was still a very respectable 4% per year, a rate higher than in most other OECD countries. As a result of this growth, Japanese output per person (in PPP prices), which was only 22% of the U.S. level in 1950, had climbed to 84% of the U.S. level in 1990.

This high growth came to an abrupt end in the early 1990s. Figure 22-9 shows the evolution of the Japanese growth rate since 1990. From 1992 to 2002, average annual growth was less than 1%—far below what it had been earlier. This long period of low growth is called the *Japanese slump*. This slump was obviously not as sharp and as deep as the Great Depression (recall from Table 22-1 that the average annual growth rate in the United States from 1929 to 1932 was -8.6%), but it was still substantial. Think of it this way: If average output growth between 1992 and 2002 had remained the same as it was during 1973 to 1991, output in Japan would have been roughly 30% higher in 2002 than it actually was.

Since 2003, the growth rate has turned positive. But, unlike in the U.S. recovery from 1933 on, the growth rate in Japan is still much lower than it was before the slump. In the best of cases, it will take many years for the Japanese economy to return to normal.

Figure 22-10 completes the macroeconomic picture by showing the behavior of the unemployment rate and inflation (using the GDP deflator) since 1990.

Some economists have argued, however, that the decrease in competition partially explains the weak recovery after 1933. Lower competition, they argued, led to higher markups, a higher natural rate of unemployment, and a lower natural level of output.

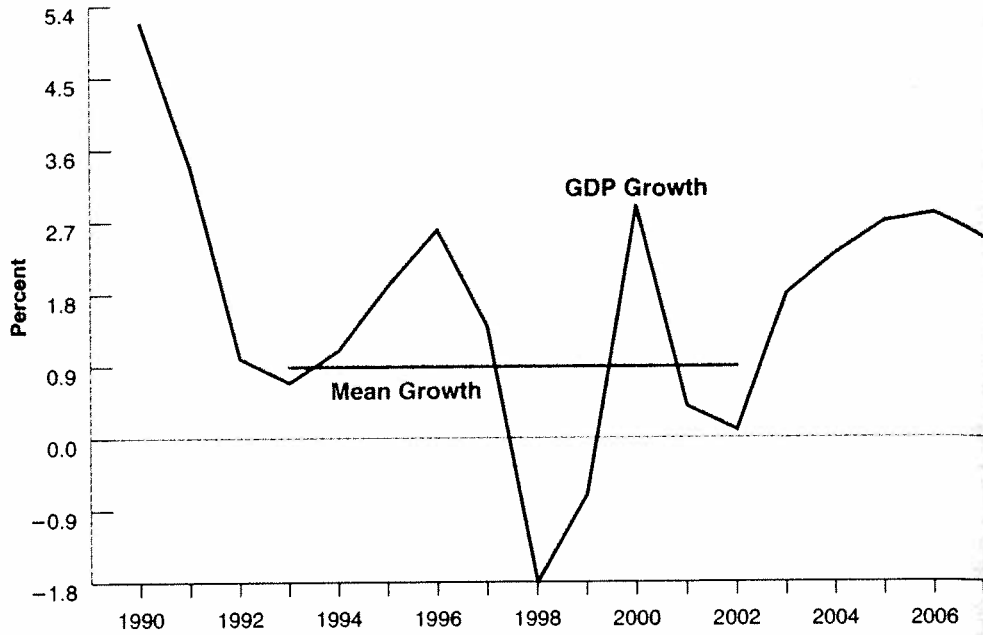
Have you forgotten the definition of GDP in PPP prices? See Chapter 10.

Figure 22-9

**The Japanese Slump:
Output Growth since
1990 (percent)**

From 1992 to 2002, average GDP growth in Japan was less than 1%.

Note: 2007 data are forecasts as of mid-2007.



Looking at the unemployment numbers, you might conclude that Japan had in fact not done too badly. True, the unemployment rate increased from 2.1% in 1990 to 5.4% in 2002; it has since declined to around 4%. But even 5.4% is still lower than the average unemployment rate in the United States over the past 40 years, and it is a rate that many European countries can only dream of achieving.

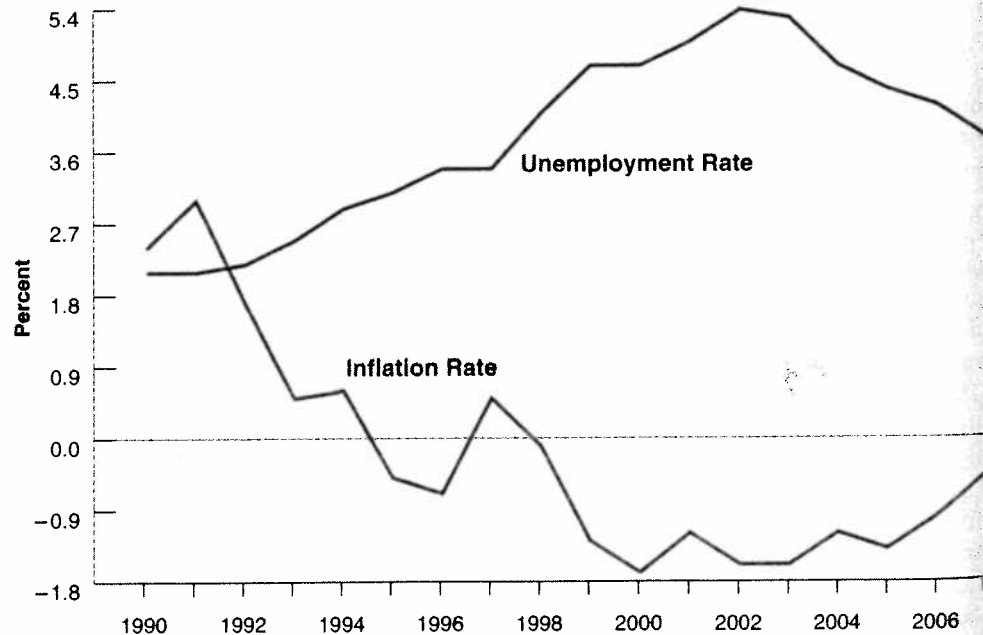
This conclusion would be wrong, however: An unemployment rate of 5% in Japan is the sign of a very depressed labor market. To see why, go back to the discussion in

Figure 22-10

**Unemployment and
Inflation in Japan
since 1990 (percent)**

Low growth in output has led to an increase in unemployment. Inflation has turned into deflation.

Note: 2007 data are forecasts as of mid-2007.



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the Focus box: “Okun’s Law across Countries” in Chapter 10. We saw there that Japanese firms offer substantial employment protection to their workers. So, when these firms experience a decrease in production, they tend to keep their workers, leading to a small effect of the decrease in output on employment. As a result, low growth has not led to a very large increase in unemployment. But it does not mean that Japan is doing well.

Turn finally to the inflation numbers. Low growth and high unemployment (by Japanese standards) have led to a steady fall in the inflation rate. Since 1995, Japan has had deflation—negative inflation—something that had not been observed in OECD countries since the Great Depression.

The numbers in Table 22-4 raise an obvious set of questions: What triggered Japan’s slump? Why did it last so long? Were monetary and fiscal policies misused, or did they fail? What are the factors behind the current recovery? These are the questions we take up in the rest of this section.

The Rise and Fall of the Nikkei

The 1980s were associated with a stock market boom in Japan: The Nikkei index, a broad index of Japanese stock prices, increased from 7,000 in 1980 to 35,000 at the end of 1989—a five-fold increase. Then, within two years, the index fell sharply—down to 16,000 at the end of 1992. It continued to decline throughout the 1990s, reaching a trough of 7,000 in 2003. The index has partially recovered since, and in mid-2007, it stands at 15,000, still less than one-half of its value at the peak.

Why did the Nikkei rise so much in the 1980s and then fall so quickly in the early 1990s? Recall from Chapter 15 there can be two reasons for a stock price to increase:

- A change in the fundamental value of the stock price, coming, for example, from an increase in current or future expected dividends. Knowing that the stock will pay higher dividends either now or in the future, investors are willing to pay more for the stock today. Consequently, its price goes up.
- A speculative bubble. Investors buy at a higher price simply because they expect the price to go even higher in the future.

◀ Recall from Chapter 15 that, in the absence of a speculative bubble, the price of a stock is equal to the expected present value of future dividends.

Figure 22-11 shows the evolution of dividends and stock prices in Japan since 1980. The upper line shows the evolution of the stock price index (the Nikkei); the lower line shows the evolution of the corresponding index for dividends. For convenience, both variables are normalized to 1 in 1980. A look at the figure yields a simple

Table 22-4 GDP, Consumption, and Investment Growth in Japan, 1988 to 1993

| Year | GDP (%) | Consumption (%) | Investment (%) |
|------|---------|-----------------|----------------|
| 1988 | 6.5 | 5.1 | 15.5 |
| 1989 | 5.3 | 4.7 | 15.0 |
| 1990 | 5.2 | 4.6 | 10.1 |
| 1991 | 3.4 | 2.9 | 4.3 |
| 1992 | 1.0 | 2.6 | -7.1 |
| 1993 | 0.2 | 1.4 | -10.3 |

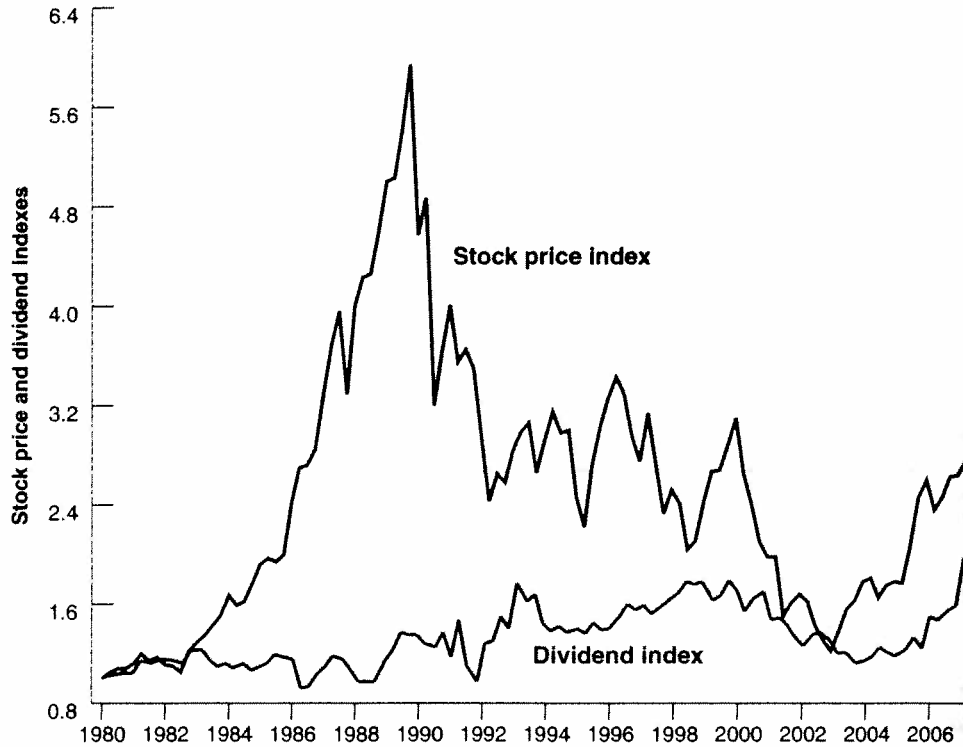
Note: Investment is private, fixed, non-residential investment.

Source: OECD *Economic Outlook*.

Figure 22-11

Stock Prices and Dividends in Japan since 1980

The increase in stock prices in the 1980s and the subsequent decrease were not associated with a parallel movement in dividends.



conclusion: While the stock price index increased in the 1980s, the dividend remained flat. This is not necessarily proof that the increase in the Nikkei was a bubble: Investors might have expected large increases in future dividends, even if current dividends were not increasing. But it strongly suggests that the increase in the Nikkei had a large bubble component and that the later fall was largely a bursting of that bubble.

See the discussion of the effects of stock prices on consumption and investment in both Chapters 16 and 17.

Whatever its origin, the rapid fall in stock prices had a major impact on spending and, in turn, a big impact on output. Table 22-4 shows the evolution of GDP growth, consumption growth, and investment growth from 1988 to 1993. Investment, which had been very strong during the rise of the Nikkei, collapsed. In contrast to the Great Depression—where consumption fell sharply after the stock market crash—consumption was less affected. But the strength in consumption was not enough to avoid a sharp decline in total spending and in GDP growth, from 6.5% in 1999 to 0.2% in 1993.

In short, there is no mystery as to how the Japanese slump started. The more difficult question to answer is why it continued for more than a decade. After all, perhaps the main lesson from the Great Depression was that macroeconomic policies could and should be used to help the economy recover. Were they used in Japan? If so, why did they fail? These are the next two questions we take up.

The Failure of Monetary and Fiscal Policy

Monetary policy was used in Japan, but it was used too late. When it was eventually used, it faced the twin problems of the liquidity trap and deflation we discussed in Section 22-1.

The point is made in Figure 22-12, which shows the evolution of the nominal interest rate and the real interest rate in Japan since 1990. (Because we do not observe

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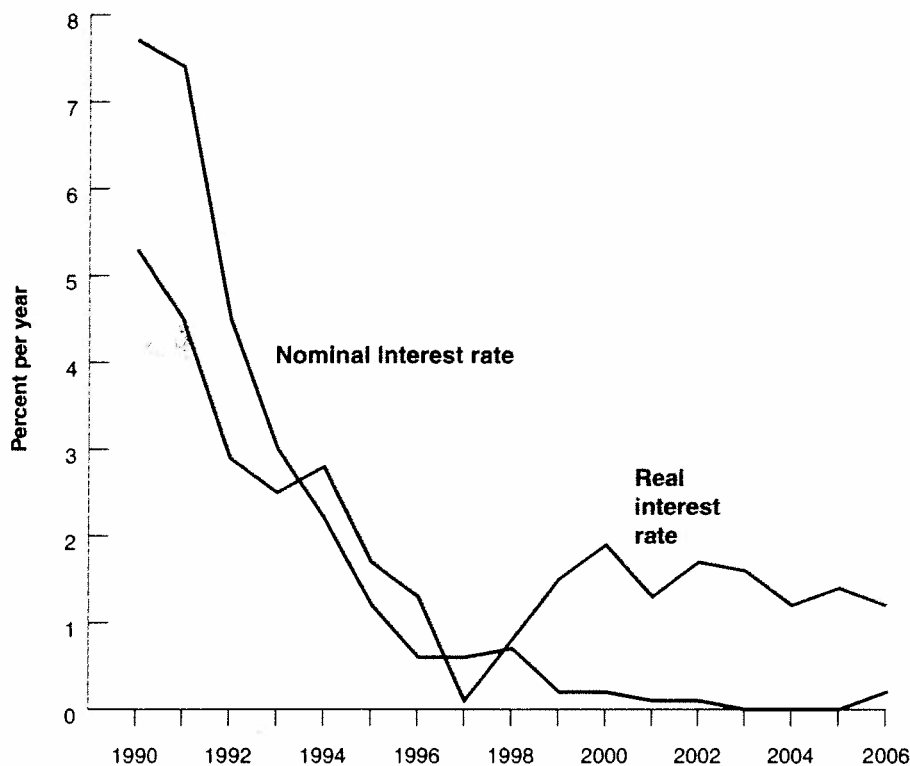


Figure 22-12

The Nominal Interest Rate and the Real Interest Rate in Japan since 1990

Japan has been in a liquidity trap since the mid-1990s: The nominal interest rate has been close to zero, and the inflation rate has been negative. Even at a zero nominal interest rate, the real interest rate has been positive.

expected inflation, I construct the real interest rate as the nominal interest rate minus actual—rather than expected—inflation.)

The nominal interest rate was high in 1990, close to 8%. This was in part because the Bank of Japan (often referred to as the *BoJ*), worried about the rise of the Nikkei, had tried to decrease stock prices by increasing the interest rate. With inflation around 2%, this nominal interest rate implied a real interest rate of about 6%. As growth slowed down, the BoJ cut the nominal interest rate. But it did so slowly, and by 1996, when the nominal interest rate was down to less than 1%, the cumulative effect of low growth was such that inflation had turned to deflation. As a result, the real interest rate was higher than the nominal interest rate. Since the mid-1990s, Japan has been in a liquidity trap. The nominal short-term interest rate has been very close to zero. At the same time, unemployment has remained high, leading to deflation and therefore to a positive real interest rate.

Fiscal policy was used as well. Figure 22-13 shows what has happened to tax revenues and to government spending as a proportion of GDP since 1990. It shows how, as the slump lasted, the Japanese government both decreased taxes and increased spending, with the budget deficit reaching 8% of GDP in 2003. Since then, the deficit has been reduced, but it remains large. Much of the increased spending has taken the form of public work projects, many of them of doubtful usefulness. But from the point of view of increasing demand, one project is as good as another, and so this increase in government spending should have contributed to an overall increase in demand.

Has it? The economists who have looked at this question have concluded that it has, but that it was just not enough to increase spending and output. Put another way, in the absence of increased government spending, output would have declined even more. Could the Japanese government have done more? Probably not. High government spending and low taxes have led to a long string of government deficits and a steady accumulation of government debt. The ratio of government debt to GDP has

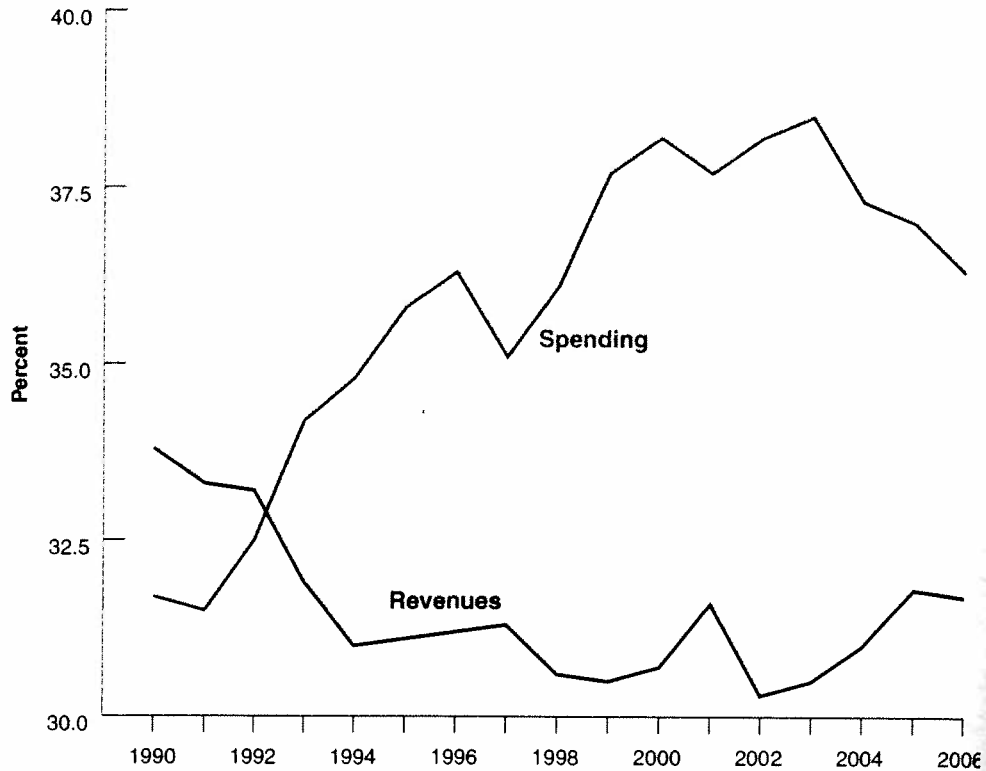
◀ Recall that the stock price depends positively on current and expected future dividends, and negatively on current and future interest rates.

◀ A joke circulating in Japan is that, by the time the Japanese economy has recovered, the entire shoreline of the Japanese archipelago will be covered in concrete.

■ **Figure 22-13**

Government Spending and Revenues (as a percentage of GDP) in Japan since 1990

Government spending increased and government revenues decreased steadily throughout the 1990s, leading to steadily larger deficits.



At an interest rate of 1% per year, a 90% debt-to-GDP ratio results in interest payments equal to 0.9% of GDP. At an interest rate of, say, 6% per year, the same debt-to-GDP ratio results in interest payments equal to 5.4% of GDP, a much heavier interest rate charge for the government.

increased from 13.0% of GDP in 1991 to 90% of GDP in 2006. With a near-zero interest rate on government bonds, interest payments on the debt are small. But if the interest rate were to increase in the future, interest payments might represent a very heavy burden on the government budget. A more expansionary fiscal policy would have led to even higher levels of debt, and the Japanese government became increasingly reluctant to do so as the slump continued.

The Japanese Recovery

Output growth in Japan has increased since 2003, and most economists cautiously predict that the recovery will continue. This raises a final question: What are the factors behind the current recovery? There appear to be two main factors.

A Regime Change in Monetary Policy

In the strange world of the liquidity trap, higher expected inflation is good. At a zero nominal interest rate, higher expected inflation implies a lower real interest rate. A lower real interest rate stimulates spending. Higher spending leads to higher output and lower unemployment.

This suggests that, even if the nominal interest rate is already equal to zero and thus cannot be reduced further, the central bank might still be able to lower the real interest rate by affecting inflation expectations. This may not be easy to do: Suppose the central bank announces an *inflation target*, a rate of inflation it will try to achieve over the next few years. If people believe the announcement, then expected inflation will indeed increase, helping the economy get out of the slump. But if people do not believe the announcement and continue to expect deflation, then deflation will continue.

Note the symmetry with our discussion in Chapter 9 of whether a central bank can achieve disinflation at little or no output cost. The answer there was: If the central bank can credibly convince people that inflation will be lower, it may be able to achieve lower inflation at little output cost.

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Therefore, the advice given to the BoJ by many economists during the second half of the 1990s was that it should try to influence and increase inflation expectations. At worst, this would not work; at best, it might get the economy out of the slump. In 2003, the new chairman of the BoJ decided to follow this advice. He announced that the BoJ was now committed to keeping the nominal interest rate equal to zero until there was strong evidence of sustained inflation. Just like in 1933 in the United States, this statement was perceived as a signal of regime change in monetary policy, and it appears to have changed inflation expectations. Although the current inflation rate is still negative, inflation is now expected to become positive in the future, and the long-term real interest rate has fallen. This appears to be one of the factors behind a strong increase in investment spending since 2003.

The Cleanup of the Banking System

It became clear in the 1990s that the banking system in Japan was in trouble. Largely as a result of the slump in output, many firms were doing poorly, and banks carried on their books many *bad loans*, loans that the borrowers were not able to repay. (Why this was and how it happened are discussed in the Focus box “The Japanese Banking Problem.”) Many “bad firms”—firms that were incurring losses and should have closed—continued to be financed by the banks and so continued to operate. At the same time, as a large proportion of bank financing continued to go to the firms with bad loans, “good firms,”—firms with good prospects and good investment projects—could not find financing and thus could not invest. In short, bad loans further depressed investment spending and thus aggregate demand. And, by keeping low-productivity firms afloat, they also reduced aggregate supply.

In such a case, the appropriate policy is clear: Banks that have made too many bad loans should be forced to either close or restructure. Firms that cannot pay their loans should be forced to do the same. These measures achieve two goals: First, they eliminate the bad firms, leading eventually—as these firms are replaced by more productive ones—to higher productivity and to a higher natural level of output. Second, they allow firms with good investment projects to find the funds they need to invest, leading to an increase in investment spending and, therefore, to an increase in demand and output.

It is equally clear, however, that such a policy is politically very risky. Restructuring or closing firms and banks leads initially to layoffs, a politically unpopular outcome, especially when unemployment is already high. For this reason, not much was done to solve the banking problem in Japan in the 1990s. Banks continued to lend to bad firms, and the proportion of bad loans steadily increased. Since 2002, however, the government has put increasing pressure on banks to reduce bad loans, and banks have, in turn, put increasing pressure on bad firms to restructure or close. The proportion of bad loans has been falling, and good firms have been increasingly able to finance investment. This is another factor behind the strong increase in investment spending since 2003.

A number of other factors are also helping Japan recover. In particular, strong output growth in the rest of Asia, particularly in China, has led to strong export growth in Japan. Even if export growth were to fall, however, the regime change in monetary policy, coupled with the cleanup of the banking system, implies that domestic spending might increase enough to sustain growth in the future. This is why most economists are now more optimistic about future growth in Japan than they have been at any other time since 1990.