

The Holy Grail of  
Macroeconomics:  
Lessons from Japan's Great Recession

*Revised and Updated*

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WILEY

John Wiley & Sons (Asia) Pte. Ltd.

## **Japan's Recession**

The recovery in Japan's economy is real, and the signs of an end to the fifteen-year recession are finally here. But it is important to remember that both fundamental and cyclical factors affect the economy. It is only in the former area—those unique problems Japan has struggled with over the past fifteen years—that a genuine recovery is evident. Cyclical or external factors, such as exchange-rate fluctuations, pressures from globalization, especially from China, and financial turmoil in the U.S., also play a role. So although recent data give cause for optimism on the fundamental side, Japan will remain subject to cyclical fluctuations and external pressures.

Chapter 1 sets out to identify the kind of recession Japan has been through, and Chapter 2 examines the ongoing recovery in detail. Global as well as cyclical economic trends are discussed in Chapters 6 and 7.

### **1. Structural problems and banking-sector issues cannot explain Japan's long recession**

**Japan's recovery did not happen because structural problems were fixed**

Much has been said about the causes of Japan's fifteen-year recession. Some have attributed it to structural problems or

to banking-sector issues; others have argued that improper monetary policy and resultant excessively high real interest rates were to blame; and still others have pointed the finger at cultural factors unique to Japan. It is probably safe to say that among non-Japanese observers, many journalists and members of the general public subscribed to the cultural or structural deficiency argument, while academics subscribed to the failure of monetary policy argument. Meanwhile, those in the financial markets subscribed to the banking problem argument as the key reason for the Japanese slowdown.

Those in the structural camp included former Federal Reserve chairman Alan Greenspan,<sup>1</sup> who argued that Japan's inability to weed out zombie companies must be the root cause of the problem, and former Prime Minister Junichiro Koizumi, whose battle cry was "No recovery without structural reform." Although the term structural reform could mean different things to different people, the reform Koizumi and his economic minister Heizo Takenaka had in mind was the Reagan-Thatcher-type supply-side reform. They pushed for supply-side reforms because the usual demand-side monetary and fiscal stimulus had apparently failed to turn the economy around. Late former Prime Minister Ryutaro Hashimoto, who resigned in August 1998, also pushed for structural reform as a means to get the economy going.

Structural problems were also blamed for the five-year German recession lasting from 2000 to 2005, the nation's worst slump since World War II. That the German economy responded so poorly to monetary stimulus from the European Central Bank (ECB) when other eurozone economies responded favorably supported arguments in favor of structural reforms in Germany.

Among those in the academic camp, Krugman (1998) argued that deflation was the root cause of Japan's difficulties, even adding that how Japan entered into deflation is immaterial.<sup>2</sup> To counter the deflation, he pushed for quantitative easing and inflation targets. This approach of not dwelling on the nature of deflation and jumping right into possible remedies was followed by Bernanke (2003), who argued for the monetization of government debt, and Svensson (2003) and Eggertsson (2003), who recommended various combinations of price-level targeting and currency depreciation. These academic authors argued in favor of more active monetary policy because the past three

decades of research into the Great Depression by authors such as Eichengreen (2004), Eichengreen and Sachs (1985), Bernanke (2000), Romer (1991), and Temin (1994) all suggested that the prolonged economic downturn and liquidity trap seen at that time could have been avoided if the U.S. central bank had injected reserves more aggressively.

Although all of these arguments have some merit, that prolonged recessions are extremely rare suggests that something must have been very different about this one. It is therefore critically important to identify the main driver of the fifteen-year recession. In doing so, I will first try to dispel some myths about what happened to Japan during the past fifteen years, and, in the process, examine the applicability of each of the preceding arguments in detail. I will start with the structural and banking arguments because they will lay a foundation for evaluating the remaining monetary policy and cultural arguments.

The slogan "no recovery without structural reform" was made popular by former Prime Minister Junichiro Koizumi, who stepped down in September 2006. I will be the first to admit that Japan suffers from numerous structural problems—after all, I provided some of the ideas that went straight into the U.S.-Japan Structural Impediments Initiative that President George H.W. Bush launched in 1991.<sup>3</sup> But they could not be the primary reason the nation remained in recession for so long. I do not for a moment believe that an earlier resolution of these problems would have jump-started the Japanese economy. Nor do I think that the privatization of the highway corporations and the post office, the two primary "structural reform" achievements of the Koizumi era, had anything to do with the economic recovery we are seeing today.

How do we know that structural issues were not at the heart of Japan's long recession? To answer this question, it is first necessary to understand the characteristics of an economy beset by structural problems.

The attempt to seek structural explanations for economic problems is not really old. It was U.S. President Ronald Reagan and British Prime Minister Margaret Thatcher who first argued that the conventional macroeconomic approach of managing aggregate demand would not solve the economic problems faced by the two countries in the late 1970s. At the time, Britain and the U.S. were veritable hotbeds of structural malaise: workers

... went on strike, factories produced defective products, and American consumers had begun buying Japanese passenger cars because the locally made alternatives were so unreliable. The Federal Reserve's attempt to stimulate the economy with aggressive monetary accommodation led to double-digit inflation, and the U.S. trade deficit steadily expanded as consumers gave up poorly made domestic goods for imports. This weighed on the dollar, and aggravated inflationary pressures. Higher inflation, in turn, caused a further devaluation of the dollar. When the Fed finally raised interest rates in a bid to curb rising prices, businesses began to put off capital investment. Such was the vicious cycle in which the U.S. became trapped.

### Structural problems point to supply-side issues

In an economy beset by structural problems, frequent strikes and other issues prevent firms from supplying quality goods at competitive prices. Such an economy typically has a large trade deficit, high inflation, and a weak currency, which lead to high interest rates that dampen the enthusiasm of businesses to invest. Its inability to supply quality goods and services stems from micro-level (i.e. structural) problems that cannot be rectified by macro-level monetary or fiscal policy.

But mainstream economists at the time believed that the problems faced by the U.S. and Britain could be solved through the proper administration of macroeconomic policy. Many mocked the supply-side reforms of Reagan and Thatcher as "voodoo economics," arguing that these policies were little more than mumbo-jumbo, and that Reagan's arguments should not be taken at face value. Most economists in Japan also held supply-side economics in contempt, deriding Reagan's policy as "cherry-blossom-drinking economics." This appellation came from the old tale of two brothers who brought a barrel of sake to sell to revelers drinking under the cherry trees, but ended up consuming the entire cask themselves, each one in turn charging his brother for a cup of rice wine, and then using the proceeds to buy a cup for himself.

Although I was 100 percent immersed in conventional economics in the late 1970s as a graduate student in economics and a doctoral fellow at the Fed, I supported Reagan because I

believed that America's economic problems could not be solved by conventional macroeconomic policy, and instead required a substantial expansion of the nation's ability to supply goods and services. I still believe that the decision I made at that time was correct. The British economy was undergoing similar problems, and there, too, Prime Minister Thatcher pushed ahead with supply-side reforms.

When Reagan took office, the U.S. suffered from double-digit inflation and unusually high interest rates: short-term rates stood at 22 percent, long-term rates at 14 percent, and 30-year fixed-rate mortgages at 17 percent. Strikes were a common occurrence, the trade deficit was large and growing, the dollar was plunging, and the nation's factories were unable to produce quality goods.

### Japan's economy suffered from a lack of demand

Japan's economic situation for the past fifteen years was almost a mirror image of that of the U.S. and Britain in the 1980s. Short- and long-term interest rates and home-mortgage rates fell to the lowest levels in history. With the exception of a September 2004 strike by the professional baseball players' union, there has been almost no industrial action in the past decade. Prices have fallen, not risen. And until recently overtaken by China and Germany, Japan boasted the world's largest trade surplus. Furthermore, the yen was so strong that in 2003 and 2004 the Japanese government carried out currency interventions totaling ¥30 trillion a year, also a record, to cap its rise.

All these data underscore that Japan's economy was characterized by ample supply but insufficient demand. Japanese products were in high demand everywhere but in their home market. The cause was not inferior products, but rather a lack of domestic demand.

At the corporate level, Japan's increasingly robust corporate earnings have gained much attention recently. Yet most of these profits derive from exports, with only a handful of companies gleaning substantial profits from the domestic market. Because domestic sales remain sluggish in spite of heavy marketing efforts, more and more businesses are allocating managerial resources to overseas markets, which boosts foreign sales and adds to the trade surplus. In short, for the past fifteen years Japan has been trapped

in a set of circumstances that are the opposite of those faced by the U.S. twenty-five years ago. There has been more than enough supply but not enough demand. So while structural problems did exist, they should not be blamed for the long recession. Exhibit 1-1 compares current Japanese economic conditions with those existing in the U.S. twenty-five years ago.

**Exhibit 1-1.** Structural problems cannot explain Japan's economic malaise

	Japan's Great Recession	U.S. during Reagan era
Short-term interest rates	0%	-22%
Long-term interest rates	-1.5%	-14%
Home mortgage rates	-3-4%	-17%
Labor issues	None	Frequent strikes
Prices	Deflation	Double-digit inflation
Balance of trade	World's largest surplus	Deficit
Exchange rate	Massive intervention to stem yen's rise	Falling sharply
<b>Basic economic conditions</b>	<b>Adequate supply but not enough demand</b>	<b>Adequate demand but not enough supply</b>

Note: Home mortgage rates are for 30-year fixed mortgages.

Source: NRI.

### Japan did not recover because banking sector problems were fixed

It has also been argued that the banking sector was chiefly responsible for the recession. According to this argument, problems in the banking sector and the resultant credit crunch choked off

the flow of money to the economy. However, if banks had been the bottleneck—in other words, if willing borrowers were being turned away by the banks—we should have observed several phenomena that are typical of credit crunches.

For a company in need of funds, the closest substitute for a bank loan is an issuance of debt on the corporate-bond market. Even though this option is available only to listed companies, more than 3,800 corporations in Japan could have issued debt or equity securities on the capital markets if they were unable to borrow from banks.

But nothing of the sort was observed during the recession. The topmost graph in Exhibit 1-2 tracks the value of Japanese corporate bonds outstanding from 1990 to the present. Since 2002, the aggregate value of bonds has been steadily declining—in other words, redemptions have exceeded new issuance. Ordinarily, this scenario would be unthinkable with interest rates at zero. Even if we allow the argument that banks for some reason refused to lend to their corporate customers, the companies themselves make the decision whether to issue bonds. If firms sought to raise funds, we should have witnessed a steep rise in the amount of outstanding corporate bonds. In the event, however, the amount outstanding of such debt fell sharply.

Additional evidence undermining this oft-heard argument is provided by the behavior of foreign banks in Japan, which unlike their Japanese rivals faced no major bad-loan problems after the collapse of the late-1980s bubble otherwise known as the Heisei bubble. If inadequate capital and a raft of bad loans did leave Japanese banks unable to lend despite healthy demand for funds from Japanese businesses, foreign banks should have enjoyed an unprecedented opportunity to penetrate the local market. Japan traditionally has a reputation as a tough nut for foreign financial institutions to crack because the choice of banker is so heavily influenced by corporate and personal relationships. If Japanese banks had actually been unwilling to lend, we should have witnessed a significant increase in lending to Japanese corporations by foreign banks, as well as a proliferation of foreign bank branches across the country. But this was not the case.

Before 1997, foreign banks needed authorization from the Ministry of Finance for each new branch in Japan. This requirement was eliminated as part of the "Big Bang" financial reforms of 1997, making it possible in principle for foreign banks to open

branches whenever and wherever they saw fit. But this change did not lead to a surge in the number of foreign bank branches in Japan. Although a few foreign lenders have expanded their share of the consumer-loan market, the middle graph in Exhibit 1-2 shows that loans outstanding at foreign banks in Japan have grown negligibly over the past dozen-odd years and actually fell sharply during several periods. This suggests that the inability of troubled Japanese banks to lend was not a bottleneck for the Japanese economy, since foreign banks were not expanding their loan business either.

A third objection to the argument that banking-sector problems caused the recession is offered by the interest rates charged by banks. Many small-and-medium-sized enterprises (SMEs) and other unlisted companies lacking access to the capital markets must rely on the banks for their funding needs. If banks—again because of inadequate capital or bad-loan problems—were constrained in their ability to lend to these companies, market forces should have driven up lending rates. If there were few willing lenders but many willing borrowers, borrowers should

have competed for the limited supply of loans by offering to pay higher interest rates.

But nothing remotely like this happened in Japan. As the bottom graph in Exhibit 1-2 makes clear, the interest rates charged by banks fell steadily over this fifteen-year period, eventually dropping to the lowest levels in history. During this period many business executives, including some from SMEs, asked me personally whether it was really all right to borrow at such low interest rates. They simply could not believe that bankers were willing to lend at such low interest rates and were concerned that there might be a hidden catch. Had banking sector problems been acting as a bottleneck for the economy, lending rates should have risen, foreign banks should have increased their share of the domestic loan market, and the corporate-bond market should have been brimming with activity. However, the complete opposite occurred.

**Japan's experience was the opposite of that of the U.S. during the early 1990s credit crunch**

**Exhibit 1-2.** Financial indicators are not consistent with the credit crunch argument



Source: Bank of Japan, *Average Contracted Interest Rates on Loans and Discounts and Principal Assets and Liabilities of Foreign Banks in Japan*; Japan Securities Dealers Association, *Issuing, Redemption and Outstanding Amounts of Bonds*.

These three phenomena are noted here because each was observed when the U.S. experienced a severe credit crunch in the early 1990s. The crunch at that time was triggered by corrections in both the leveraged buyout (LBO) and commercial real estate markets, combined with the collapse of numerous savings and loan (S&L) associations in 1989, which ultimately necessitated a \$160 billion taxpayer bailout. The corrections in the LBO and real estate markets were bad enough for the banks, but the situation was made worse by the failure of regulators to contain the earlier S&L fiasco. In response, government bank inspectors rushed to examine the health of commercial banks. Using the most stringent interpretation of the regulations, the regulators argued that many institutions were undercapitalized, thereby making the nationwide credit squeeze that lasted from 1991 to 1993 that much worse.

Faced with reduced availability of credit, listed companies in the U.S. turned to the bond market, triggering a boom in corporate-bond issuance. The market share of foreign banks in the commercial and industrial loan market also expanded sharply during this period.<sup>4</sup>

Japanese lenders were naturally among the foreign banks that benefited from this surge. At the time I was working in Tokyo, and I often received calls from high school and university classmates who were now serving as corporate treasurers for U.S. companies, and were in Tokyo on business. When I asked what they were doing in Japan, they told me that their U.S. banks had cut off their firms' credit lines, and that they were here to arrange replacement lines of credit with local institutions.

During the past fifteen years, however, hardly any Japanese company representatives were traveling to New York, Hong Kong, or Taipei in search of banks that would provide a yen credit line. It would have been easy enough for Japanese executives to travel three hours to Taipei to arrange one with a Taiwanese bank at almost the same rate they were paying in Japan. But almost none did.

Turning to the third phenomenon noted, bank lending rates, the U.S. economy was in such dire straits in 1991 that Fed chairman Alan Greenspan lowered the federal funds rate to 3 percent. But banks were unable to lend because they lacked capital, and this capital deficiency would not change no matter how much the central bank lowered short-term interest rates. With so many companies seeking to borrow, competition for the limited funds available drove up prime lending rates to 6 percent or higher. This enabled banks to pocket a 3–4 percent spread over their 3 percent cost of funds. Greenspan allowed this "fat spread" to persist for three years. For banks, this produced profit equal to more than 10 percent of their total assets. Because lenders were required to maintain capital worth 8 percent of total assets, this windfall profit completely rectified their initial capital shortage, and ended the credit crunch. With banking problems out of the way, the U.S. economy commenced a brisk recovery in 1994.

In Japan, meanwhile, conditions before the economy began to recover in 2005 were the exact opposite: bank lending rates fell steadily, the market share of foreign banks also fell, and the value of outstanding corporate bonds dropped. None of this should have happened if the credit crunch were indeed the primary cause of the nation's economic malaise. Instead, these phenomena confirm that the problems facing Japan's economy were neither structural in nature nor centered in the banking sector.

That is not to suggest that Japan's banking sector has no problems. Although Moody's financial ratings for Japanese banks

have improved somewhat, that none of the major banks was rated higher than "D" until May 2007,<sup>5</sup> when "B-" is generally considered the lowest acceptable rating for a bank, underscores the severity of the problems in the sector even after the resolution of the bad-loan crisis. But once again, it is simply not the case that an earlier resolution of these problems would have led to a quick recovery in the broader economy.

## 2. The bubble's collapse triggered a balance sheet recession

### Japan experienced a balance sheet recession in the 1990s

If Japan's fundamental problem was neither structural nor banking related, was it caused by monetary policy mistakes, as so many academics have claimed? To answer this question, one must look at a peculiar monetary phenomenon of the Japanese economy that is not discussed in any economics textbook or business book. Some readers may think this claim is exaggerated, but Japanese firms have spent the past dozen-odd years paying down debt when interest rates were at zero. One could scour the economics departments of universities and the business schools of the world, and not find a single one teaching that companies should pay down debt at a time when money is essentially free.

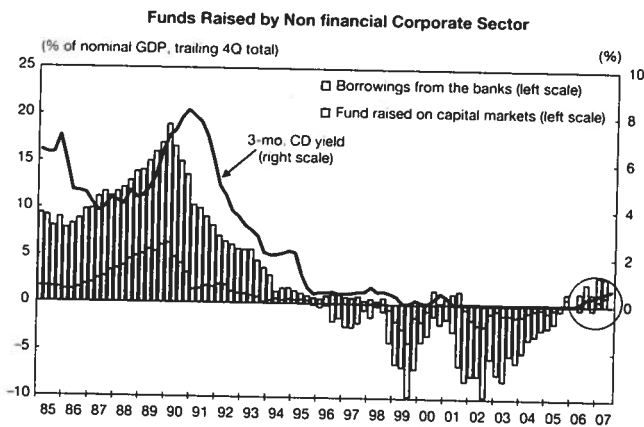
The reason they do not teach this is quite simple. According to conventional economic thinking, a company that is paying down debt at a time of zero interest rates is a company that cannot find a good use for money even when the cost of funds is zero. Such a firm, which has no reason to remain in business, should fold up shop and return the money to its shareholders, who ought to be able to find better uses for it. After all, companies exist because they are better at making money than other entities. Individuals entrust their savings—whether directly or indirectly—to firms capable of profitably investing them, in return for which they receive interest or dividend payments. This intellectual framework does not allow for an enterprise that refuses to borrow, much less one that seeks to liquidate existing debt, when interest rates and inflation rates

are both at zero. This is why no business school textbook contains such a case study.

But from about 1995, Japanese companies not only stopped taking out new loans, but actually paid back existing ones, despite short-term interest rates that were close to zero. Exhibit 1-3 plots short-term interest rates against funds procured by Japanese firms from banks and the capital markets. Interest rates were already approaching zero in 1995, yet instead of increasing their borrowing, firms accelerated their debt paydowns. Moreover, the trend to reduce fund procurement started soon after the bursting of the bubble in 1990, when Japan still had inflation. By 2002 and 2003, net debt repayment had risen to the unprecedented level of more than ¥30 trillion a year.

When companies that should be raising funds to expand their operations stop doing so en masse, and instead begin paying down existing debt, the economy loses demand in two ways: businesses are not reinvesting their cash flow, and the corporate sector is no longer borrowing and spending the savings generated by the

**Exhibit 1-3.** Japanese companies chose to pay down debt despite zero interest rates



Source: NRI, from Bank of Japan, *Monthly Report of Recent Economic and Financial Developments and Flow of Funds Accounts*; Government of Japan, Cabinet Office, *Report on National Accounts*.

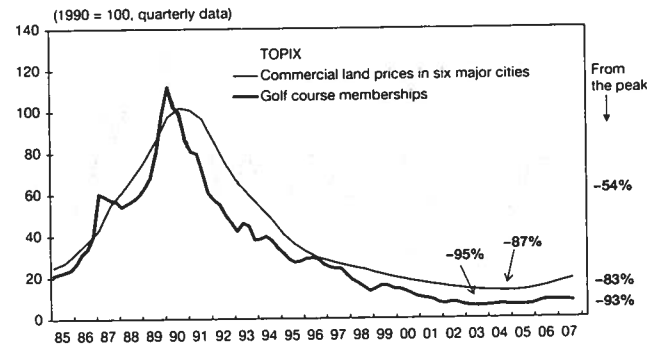
household sector. This contraction in aggregate demand causes the economy to fall into recession.

**Plunging asset prices triggered corporate balance-sheet problems**

Why then did businesses—which under ordinary circumstances seek to borrow money when interest rates fall—move to pay down debt despite interest rates at or approaching zero? The answer is that Japanese asset prices plunged in a most devastating manner for more than a decade, destroying millions of corporate balance sheets in the process. Exhibit 1-4 plots the price of commercial real estate in Japan's six largest cities, the TOPIX stock index, and the price of golf-club memberships. The Exhibit shows that stock prices, buoyed by foreign investors, fell "only" 54 percent (as of February 22, 2008) from their peak. The other two assets, which failed to attract foreign interest (at least until recently) suffered much steeper declines.

Although many members of the foreign media had a field day bashing "Japanese management" as the cause of Japanese economic ills, foreign investors were responsible for more than half of all net purchases of Japanese equities during the past fifteen

**Exhibit 1-4.** A collapse in asset prices triggered the balance sheet recession



Source: Tokyo Stock Exchange, Japan Real Estate Institute, *Nikkei Sangyo Shimbun*. As of Feb. 22, 2008.

years. The spread of online trading during the past five years has boosted the ranks of individual investors even in Japan, but most domestic investors had been burned by the bursting of the bubble in 1990, and were no longer interested in equities. In contrast, foreign investors still thought highly of Japanese companies' products and global reach, and their purchases kept Japanese stocks from falling further.

But it was a different story in markets in which foreign investors did not enter, or did not until recently. Golf-club memberships and commercial real estate had fallen 95 percent and 87 percent, respectively, from their peaks when prices bottomed in 2003 and 2004, leaving them at about one-tenth of their former values.

When the value of properties collapsed, but the loans used to buy them—or the loans obtained by using those properties as collateral—remained, companies all over Japan suddenly found that they not only lost a lot of wealth, but that their balance sheets were underwater. A business that had acquired land valued at ¥10 billion, for example, might have found itself with the land worth ¥1 billion and a residual loan balance of ¥7 billion. In other words, this asset-liability pair suddenly had a negative net worth of ¥6 billion, opening a large hole in the firm's balance sheet.

### Japanese companies moved collectively to repair balance sheets by paying down debt

When a company's liabilities exceed its assets, it is technically bankrupt. But what happened in Japan was not an ordinary bankruptcy. In a typical failure, the business—say, a manufacturer of automobiles or cameras—finds that its products are no longer selling as well as they used to. It spends more to market the products, but to no avail. Meanwhile, the corporate coffers are dwindling by the day, and eventually the company's net worth turns negative. The failure of such a business cannot be helped because the products it was founded to make are no longer sought after by the market.

But the events witnessed in Japan starting in 1990 did not follow this pattern. For most of this period, Japan boasted the world's largest trade surplus—implying that consumers all around the world still wanted to buy Japanese products, and that companies still had good technology and the ability to develop

attractive products. The nation's frequent trade friction with the U.S. during the 1990s was testimony to the quality of and strong demand for local products.

In other words, core operations—the development and marketing of products and technologies—remained healthy. Cash flow was robust, and companies were generating annual profits. Yet many of these firms had a negative net worth because of the huge hole left in their balance sheets by the plunge in domestic asset prices. Thousands—perhaps even tens of thousands—of firms fell into this category.

Whether Japanese, American, German, or Taiwanese, the manager of a firm with a healthy business and a positive cash flow, but a deeply troubled balance sheet would respond in the same way: he or she would use cash flow to pay down debt as quickly as possible. In other words, the first priority is no longer profit maximization, but debt minimization. As long as the business is generating cash, it can repay its loans. Because assets cannot assume a negative value, a firm's debt overhang will eventually disappear as long as it continues to reduce the liability. At that point the business will return to the profit-maximizing mode assumed by economics textbooks.

During this process, firms put on a bright face for outside journalists and analysts, discussing their rosy earnings prospects in the hope of diverting attention away from the balance sheet. Meanwhile, they are quietly but furiously paying down debt. They have to do so because the discovery of balance-sheet problems by people outside the company would almost certainly have serious consequences for their credit ratings. If the media reported that a company was technically insolvent, the business in question would face uproar the next day. Its banks could turn off the credit spigot, and its suppliers might refuse notes and purchases on account, and demand cash settlement, putting the firm's survival in jeopardy. It is therefore essential that the company pay down debt quietly.

The urgency of debt repayment was heightened further by the fact that Japanese firms in the late 1980s were much more highly leveraged than their U.S. or European counterparts. They had high leverage because their growth rates were higher, and the value of assets they bought with borrowed funds kept on appreciating before the bursting of the bubble. Anyone running a highly leveraged company, however, would have rushed to pay

down debt at the slightest sign of economic trouble or collapsing asset prices on the horizon. It is the only thing one can do.

Aside from managers not actively providing disclosure of the company's financial problems to outsiders, this sort of behavior is not only the correct but the responsible thing to do. Because there is nothing structurally wrong with their main businesses, given sufficient time, these firms should be able to use their cash flow to remove their debt overhang. Other stakeholders in the firm, including creditors and shareholders, will also be demanding that management do just that, since this is a problem "time" can solve, and the alternative—declaring the company insolvent—will mean huge losses for all concerned. Shareholders, for example, do not want to be told that their shares are now worth nothing, and creditors do not want to be told that their assets have turned into nonperforming loans. As long as cash flow remains positive, the problem—which is not a structural matter of inferior technology or poor management—will be resolved in time. In a nutshell, this is the process by which so many Japanese companies began paying down debt during the 1990s.

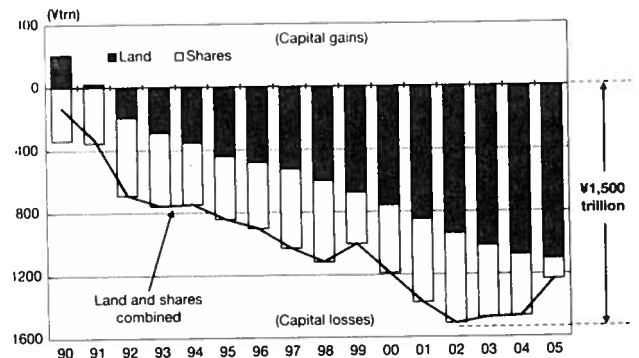
### The bubble's collapse destroyed ¥1,500 trillion in wealth

That so many firms began paying down debt all at once underscores the extent of balance-sheet damage incurred in the wake of the bubble's collapse. Exhibit 1-5 illustrates the loss in national wealth caused by falling land and stock prices starting in 1990. These two asset categories alone accounted for the unprecedented loss of ¥1,500 trillion in wealth, a figure equal to the entire nation's stock of personal financial assets.

This figure is also equivalent to three years of Japanese GDP. In effect, falling asset prices wiped out three years of national output. To the best of my knowledge, this is the greatest economic loss ever experienced by a nation in peacetime.

Japan was not the first nation to experience a huge loss of wealth during peacetime. In America's Great Depression, which began in 1929, sharp declines in the price of stocks and other assets prompted the private sector to begin paying down debt en masse. This had dire implications for the broader economy in an experience that mirrored Japan's many years later (this point

**Exhibit 1-5. Falling asset prices destroyed ¥1,500 trillion in wealth**



Source: NRI, from Government of Japan, Cabinet Office, *Annual Report on National Accounts*.

will be discussed in greater detail in Chapter 3). Americans, too, borrowed heavily to purchase everything from shares to consumer durables as share prices rose toward the peak. But after stocks and other assets plunged in value starting in October 1929, only the loans remained. Everyone rushed to reduce outstanding debt, triggering a plunge in aggregate demand. In just four years U.S. GNP fell to nearly half its 1929 peak. The unemployment rate exceeded 50 percent in large cities, and was as high as 25 percent nationwide. Shares plummeted to about an eighth of their peak value. Even so, it is estimated that the national wealth lost in this economic tragedy was equivalent to only a year's worth of 1929 GNP.<sup>6</sup> This further underscores the magnitude of the damage suffered by Japan in the wake of the Heisei bubble collapse.

### An absence of borrowers leads the economy into a contractionary equilibrium

When a nationwide plunge in asset prices eviscerates asset values, leaving only the debt behind, the private sector begins paying down debt en masse. As a result, the broader economy experiences something economists call a "fallacy of composition." This occurs when behavior that would be right for one person (or

...to an undesirable outcome when engaged in by (corporation companies). Japan's economy has suffered from this ... over the past fifteen years.

In a national economy, banks and securities houses act as intermediaries to channel household savings to corporate borrowers. Take, for example, a household with ¥1,000 of income that spends ¥900 and saves the remaining ¥100. The ¥900 that is spent becomes income for someone else, and continues to circulate in the economy. The ¥100 of savings is deposited in a bank or another financial institution, and is eventually lent to a business, which spends (invests) it. Thus the original ¥1,000 is passed on to others. The economy remains in motion because every ¥1,000 in income generates ¥1,000 (¥900 + ¥100) in expenditures.

Continuing with this example, assume that there were not enough businesses to borrow the household's ¥100 in savings, or that they only borrowed ¥80. The bank would then lower the interest rate charged on loans in an attempt to attract more borrowers. The lower interest rate would prompt some business that was hesitant to borrow at the higher rate to take out a loan for the remaining ¥20, so that the entire ¥1,000 (¥900 + ¥100) would be passed into the hands of others, and the economy would keep firing on all cylinders. Conversely, if there were a surfeit of willing borrowers, competition for funds would lead the bank to increase the rate of interest it charged, causing potential borrowers to retract their decision to borrow until exactly ¥100 was lent out. This is how a normally functioning economy works.

But in Japan there were no willing borrowers, even with interest rates at zero. This should not be surprising, because a company suffering from a debt overhang will not ask to borrow more just because loans have grown cheaper. Instead, companies paid down debt at the rate of several tens of trillion yen a year despite interest rates that were close to zero. In these conditions, the ¥100 in savings that our hypothetical household deposits with the bank will be neither borrowed nor spent. Instead, it will pile up in the form of bank deposits, for which—in spite of the banks' best efforts—there are no borrowers. As a result, only ¥900 of the original ¥1,000 is spent to become income for someone else.

Now assume that the next household also spends 90 percent of its income, which amounts to ¥810, and saves the remaining 10 percent, or ¥90. Once again, the ¥810 becomes income for others,

while the remaining ¥90 simply accumulates in the banking system because there is no one to borrow it. As this process is repeated, the initial ¥1,000 of income is reduced to ¥900, ¥810, ¥729, and so on, sending the economy into a deflationary spiral. This downturn in the economy depresses asset prices further, redoubling the urgency of businesses' efforts to pay down debt. Although repaying loans is the correct (and responsible) course of action for individual firms, when pursued by all firms at once it leads to a disastrous fallacy of composition. This is the most frightening aspect of what may be called a balance sheet recession, in which firms are no longer maximizing profits, but are minimizing debt instead.

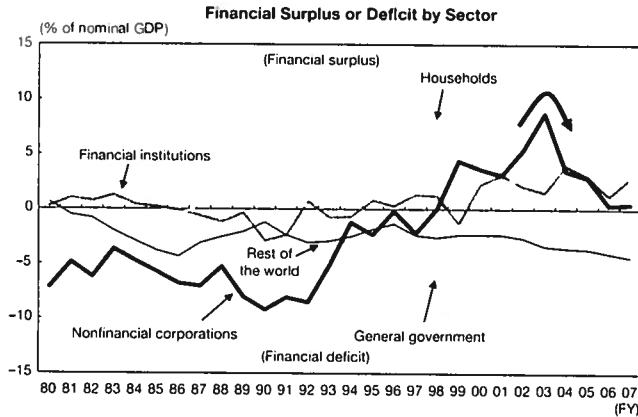
When no one is borrowing money, and all firms are striving to reduce debt despite zero interest rates, the fundamental economic mechanism responsible for channeling household savings into corporate investments ceases to function. This is exactly what happened seventy years ago in the U.S. during the Great Depression, when GNP plunged by 46 percent in just four years.

Incidentally, the example considered only household savings. In reality, aggregate demand would shrink by an amount equal to the sum of net household savings plus net debt repayment by firms. The combined sum would remain tucked away in the banking system, and serve as a leakage to the income stream as long as the shortage of borrowers persists.

### Demand from Japan's corporate sector fell by more than 20 percent of GDP

So who saved and who borrowed money in Japan during the past fifteen years? Exhibit 1-6a, compiled using flow-of-funds data, shows which sectors of the economy are saving money and which are borrowing it. Any point above the horizontal line at zero indicates net savings. Any point below this line indicates net investment. The graph contains five data series—one each for households, nonfinancial corporations, the government, financial institutions, and the rest of the world—and is constructed so that at any point in time the five series sum to zero. To eliminate potential confusion from the jumble of lines in Exhibit 1-6a, Exhibit 1-6b reduces the number of series to four by combining nonfinancial corporations and financial institutions, because both experienced similar balance-sheet problems.

**Exhibit 1-6a.** A sudden shift in corporate behavior drove post-1990 changes in the Japanese economy (1)

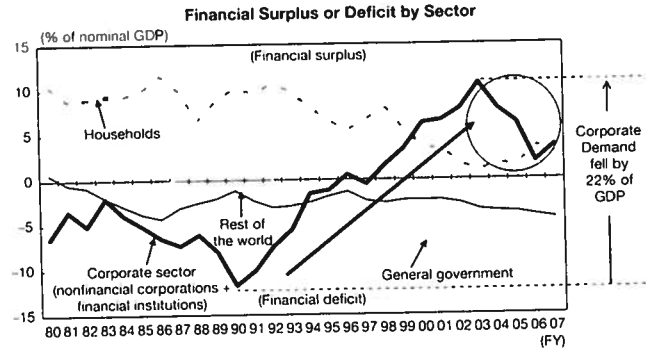


Note: Figures adjusted for the assumption of debt related to the Japan National Railways Settlement Corp. and national forest and field service special accounts (FY98) and for the impact of the FY05 privatization of the Japan Highway Public Corporation. Figures for FY07 are the sum of the four quarters from 2006/Q3 to 2007/Q2.  
 Source: Bank of Japan, *Flow of Funds Accounts*; Government of Japan, Cabinet Office, *National Accounts*.

To help readers understand what the graph tells us, consider what it should look like. In an ideal economy, the household sector would be at the top (net saver), the corporate sector would be at the bottom (net investor), and the remaining two sectors—general government and the rest of the world—would be around zero. A household-sector line near the top of the graph signifies a high savings rate for households. A corporate-sector line near the bottom of the graph means that businesses are actively borrowing and investing, resulting in a high investment rate. Finally, for the remaining two lines for the general government and rest-of-the-world sectors to be situated around zero on the graph implies that the government's budget and the country's external accounts are in balance. This represents the ideal state of affairs.

The next question is whether Japan has ever been in a position approximating this ideal state. The answer is yes, in 1990, at the peak of the Heisei bubble. At the time, Japan's household sector was located at the top of the graph, the corporate sector was at

**Exhibit 1-6b.** A sudden shift in corporate behavior drove post-1990 changes in the Japanese economy (2)



Note: Figures adjusted for the assumption of debt related to the Japan National Railways Settlement Corp. and national forest and field service special accounts (FY98) and for the impact of the FY05 privatization of the Japan Highway Public Corporation. Figures for FY07 are the sum of the four quarters from 2006/Q3 to 2007/Q2.  
 Source: Bank of Japan, *Flow of Funds Accounts*; Government of Japan, Cabinet Office, *National Accounts*.

the bottom, the rest of the world was a modest net investor (below zero), and the government sector was a modest net saver (above zero). Net investment by the rest of the world means that other countries were borrowing money from Japan—that is, Japan was running a current account surplus. Net savings by the government means that the government was running a budget surplus. In short, Japan's economy in 1990 was characterized by a high savings rate, a high investment rate, a current account surplus, and a fiscal surplus. No economy could hope for anything better than that. Somewhat earlier, in 1979, Harvard professor Ezra Vogel had written the bestseller *Japan as Number One: Lessons for America*, and in a sense the book's title was quite accurate. From a flow-of-funds standpoint, the economy in 1990 could not have been in better shape, and it is not surprising that Japan was seen as having no rivals on the world economic stage.

Unfortunately, investment in 1990 was a bubble, and everything changed when the bubble burst. First, the plunge in asset prices that began in 1990 opened a gaping hole in the corporate sector's balance sheet. As a result, funds raised by

businesses (represented by the bold line in Exhibit 1-6b) began to fall steadily, starting in 1990, as shaken companies rushed to pay down debt.

The number of companies paying down debt increased steadily, and by 1998 the corporate sector as a whole had become a net saver, pushing it above the zero line in the graph. This means that firms not only stopped procuring funds from the household sector, but actually started using their own cash flow to pay down debt. From this point onward, companies in the aggregate were paying down debt, which is a dangerous state for any economy. By 2000, businesses were actually saving more than households. The businesses that under normal circumstances would be the economy's largest borrowers had become its greatest savers, returning funds to financial institutions, rather than procuring funds. This state of affairs persisted in Japan until recently.

The corporate demand lost as a result of this shift in corporate behavior amounted to more than 20 percent of GDP (Exhibit 1-6b) from 1990 to 2003. In effect, the plunge in asset prices wiped out corporate sector demand equal to more than 20 percent of GDP. A demand loss of this magnitude will throw any economy into a recession, and this one was on track to become another Great Depression.

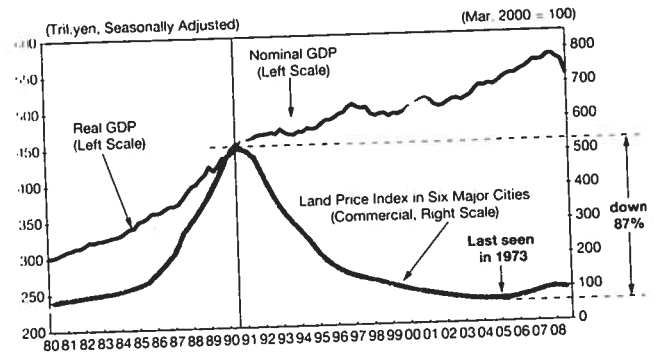
### 3. Fiscal expenditures bolstered Japan's economy

#### Why GDP did not fall after the bubble's collapse

What sets Japan's Great Recession apart from the U.S. Great Depression is that Japanese GDP stayed above bubble peak levels in both nominal and real terms despite the loss of corporate demand worth 20 percent of GDP and national wealth worth ¥1,500 trillion (Exhibit 1-7). These circumstances should have plunged the economy into a deflationary spiral like the one experienced by the U.S. during the Great Depression, leaving Japan's GDP at a fraction of its peak. Why was the actual outcome so different?

There are two reasons, both of which should be evident from Exhibit 1-6b. First, the line for the household sector, a net saver, has been falling steadily since the bubble burst. In other words, households have continually reduced their savings. This

**Exhibit 1-7.** Japan's GDP continued to grow even after the bubble burst



Source: Cabinet Office, Japan Real Estate Institute.

happened because the bubble's collapse triggered job losses, pay cuts, and the elimination of company bonuses, making it difficult for households to save as much as they wanted to.

Before 1990, Japanese consumers purchased homes and invested in their children's education based on the assumptions that they would always have jobs and their salaries would rise continuously, as they had during the previous forty-five years. Those assumptions had to be cast aside in the 1990s, however, as workers fell casualty to corporate debt repayment and restructuring efforts. But bonuses being halved or eliminated did not free employees from the need to pay mortgages or school fees. Many had to draw down past savings. The need was particularly pressing among those who lost their jobs or were forced to take significant pay cuts because of corporate restructuring.

Japanese households once boasted the highest savings rate in the world. Yet today, one in four Japanese families has no savings at all.<sup>7</sup> Although people who kept good jobs and saw their salaries rise as expected continued to save as much as before, those whose incomes fell were forced to deplete their savings. In the aggregate, therefore, household savings declined.

To return to the ¥900/¥100 example of the preceding section, households wanting to save ¥100 found themselves able to save only ¥50 because their incomes had been sharply reduced. The resulting decline in savings was hardly cause for celebration, and

was extremely unfortunate for the households involved. From a macroeconomic perspective, however, it helped to prop up the economy by reducing the amount of funds that would otherwise have been bottled up in the banking system.

### Fiscal stimulus supported Japan's economy

Even more important were developments in the government sector. The government was still running a surplus in 1990 and 1991, because tax revenues remained high in the immediate aftermath of the bubble. But the economy began to deteriorate rapidly around 1992. At the time, policymakers thought this was just another cyclical downturn, which a year or two of pump priming would take care of. Not surprisingly, this belief was eagerly embraced by the pork-barrel politicians of the ruling Liberal Democratic Party (LDP), who proposed that the government use fiscal policy to stimulate the economy by building roads and bridges.

Fiscal stimulus simply involves the government issuing bonds and spending the proceeds. In effect, the government steps in to borrow and spend the original ¥100 saved by the household sector that would otherwise have languished in the banking system. By doing so, it ensures that there will be ¥1,000 (¥900 + ¥100) in expenditures for every ¥1,000 of income, and the economy stabilizes soon after the fiscal stimulus is implemented.

At first, there was general relief that the pump priming had been successful, as the economy stabilized as expected. But when the impact of these measures wore off the next year, the economy slumped again. Why was the fiscal stimulus having only a temporary benefit? With commercial real estate prices down 87 percent from their peak, and ¥1,500 trillion in national wealth having simply vanished, companies could never have repaired their balance sheets in just a year or two. For a typical company, the process would take at least five years. For companies unfortunate enough to have bought real estate at the peak, it might take twenty. In the meantime, they will continue paying down debt as long as they have positive cash flow. As long as this process continues, they will not borrow household-sector savings, forcing the government to fill the resulting gap with an annual round of fiscal stimulus.

The result is illustrated in Exhibit 1-6b. The financial deficit of the government sector mounted sharply, leaving in its wake

the national debt we face today. But it was precisely because of these expenditures that Japan was able to sustain GDP at above peak-bubble levels despite the drastic shift in corporate behavior and a loss of national wealth equivalent to three years of GDP. Government spending played a critical role in supporting the economy, and only through these annual stimulus packages was the government able to prevent a deflationary gap from emerging. (In economics, a deflationary gap is defined as the difference between potential and actual GDP. In this writing, the term deflationary gap is used to designate the amount of household savings and net corporate debt repayment that become bottled up in the banking system due to lack of borrowers. The present definition is equivalent to the leakage to income stream, and is preferred here because it is not subject to all the estimation problems surrounding potential GDP.)

Japan was left with a large national debt. But if the government had not responded with this kind of stimulus, GDP would have fallen to between one-half and one-third of its peak—and that is in an optimistic scenario. U.S. GNP shrank by 46 percent after falling asset prices destroyed wealth worth a year's worth of 1929 GNP during the Great Depression, and the situation in Japan could easily have been much worse. This outcome was avoided only because the government decided early on to administer fiscal stimulus and continue it over many years. In the end, the government's action ensured that this doomsday scenario did not come to pass.

In summary, the private sector felt obliged to “do the right thing”—to pay down debt—which led to the fallacy of composition described. Disastrous consequences were avoided only because the government took the opposite course of action. By administering fiscal stimulus, which was also the right thing to do, the government succeeded in preventing a catastrophic decline in the nation's standard of living despite the economic crisis. In this sense, it could be argued that Japan's fiscal stimulus was one of the most successful economic policies in human history.

Unfortunately, it was not until quite recently that Japan's policymakers were able to see things in this light. It took them so long because no one had taught them that firms could be minimizing debt instead of maximizing profits when faced with daunting balance-sheet problems. Even today, few universities teach students that firms sometimes pay down debt despite zero

interest rates. And the government has yet to explain to the public that fiscal stimulus was necessary because the private sector was paying down debt, and that it was only because of this fiscal action that the nation's standard of living was maintained.

Moreover, the very success of government actions in averting an economic crisis led to a completely misguided criticism of Japanese economic policies. In particular, many casual observers of the Japanese economy, including the pre-1997 IMF, latched onto the view that the government must have spent the money inappropriately—after all, GDP remained stuck at ¥500 trillion, and the economy was unable to stage a healthy recovery despite massive economic stimulus in the form of investment in public works.

In reality, it was only because the government increased fiscal expenditures to the extent it did that the nation's standard of living did not plummet. Indeed, it is nothing less than a miracle that Japan's GDP remained at above peak bubble-era levels despite the loss of ¥1,500 trillion in national wealth and corporate demand equal to 20 percent of GDP, and it was government spending that made this miracle possible. But media representatives and the conventional-minded economists at the IMF and universities were unable to see this, and repeatedly criticized public-works investment based on the erroneous assumption that GDP would have stayed at ¥500 trillion even *without* fiscal stimulus.

### Those who averted the crisis did not become heroes

What is even more unfortunate is that, as someone once said, no one becomes a hero by preventing a crisis. In a Hollywood world, the hero is the one who saves hundreds of lives and dispatches the villain *after* the crisis has erupted and thousands have died. But if a wise individual recognizes the danger in advance, and successfully acts to avert the calamity, there is no story, no hero, and no movie. A hero needs a full-blown crisis.

Japan successfully avoided economic apocalypse for fifteen years. But from the perspective of the media, which have never grasped the essence of the problem, the government spent ¥140 trillion, and nothing happened. So they twisted the story to imply that the government wasted the money, which sparked public opposition to public-works projects. Although unnecessary roads should not be built if more socially useful projects are available,

the important thing is that the money spent over the past fifteen years—including that spent on roads and other public works—averted a potentially catastrophic deflationary spiral with an ever-shrinking GDP.

Herbert Hoover, who served as president of the U.S. during the Great Depression, was a distinguished man and a proponent of what would now be called structural reform. He argued that a plunging stock market and the losses that stock market speculators had incurred were not sufficient reasons to increase government spending. As a result of this inaction, the U.S. fell into the deflationary spiral described. GNP plunged by 46 percent in just four years, the nationwide unemployment rate rose to 25 percent, and ordinary people found themselves cast out on the streets and fighting for survival. Their number exceeded the number of actual stock market speculators by many orders of magnitude. In Japan, meanwhile, the LDP's pork-barrel politicians filled the deflationary gap created by the private sector's rush to pay down debt (which created excess savings). This is what kept Japan's Great Recession from becoming another Great Depression.

### Delaying the cap on government deposit insurance also helped avert a crisis

The other policy action by the government that averted crisis was the announcement of a blanket deposit guarantee in 1997. The U.S. in the early 1930s had neither a Federal Deposit Insurance Corporation nor even the concept of deposit insurance. With no safety net whatsoever, a problem at one bank could spark concerns about all financial institutions, ultimately leading to massive bank runs. Some 10,000 U.S. banks—more than one-third of the 25,000 lenders in existence at the time—failed between 1929 and 1933. This was a terrifying situation for anyone keeping money in a bank.

In Japan, it was not until 1997 that banking-sector problems became a national problem. When they did, the government immediately announced that it would guarantee all bank deposits. Japan had lost assets worth three years of GDP, many of which were concentrated in the banking sector. Consequently, the damage suffered by Japanese banks was far greater than that incurred by U.S. lenders seventy years ago (hence their persistently poor credit ratings). But the government successfully contained the problem

announcing as soon as the crisis broke that all deposits would be protected. This simple announcement averted a much greater loss that could have cost the nation hundreds of trillions of yen—the likely loss if a third of Japan's banks had failed. The policymakers responsible for administering fiscal stimulus and announcing an unlimited government guarantee on bank deposits were indeed the real heroes of Japan's Great Recession.

#### 4. Debt minimization and monetary policy

##### Monetary policy is impotent during a balance sheet recession

Until now our discussion has focused on fiscal policy, but the authorities have one more policy tool at their disposal: monetary policy. Economics textbooks tell us that governments manage their economies using a combination of monetary and fiscal policy. As noted at the outset, many academic economists have blamed Japan's recession squarely on what they see as the Bank of Japan's inept administration of the former. Their focus on monetary policy came about because the economic profession has increasingly favored monetary over fiscal policy, and the actual policy response to economic fluctuations in nearly all developed countries since the 1970s has been dominated by monetary policy. This emphasis has led many to argue that the Bank of Japan, which is responsible for monetary policy, should play a larger role.

During the Koizumi administration, the government, led by Heizo Takenaka, frequently demanded that the central bank increase the money supply, often threatening that the Bank of Japan's failure to do so could lead to the loss of its independence. Academic economists both inside and outside Japan have also argued ceaselessly that the recession could have been avoided had the Bank of Japan been more skilled in its administration of monetary policy. These views are frequently voiced by international bodies such as the IMF and OECD as well.

Chapter 3 will explain in detail why so many academics hold this view. But for now, all that readers need to know is that one of the key characteristics of a balance sheet recession, a phenomenon unlikely to occur more than once every several decades, is that monetary policy becomes useless. People in Japan have already

experienced this first-hand: monetary policy had no effect, even though interest rates remained at or near zero from 1995 to 2005. The stock market did not rally, and the economy did not recover. In contrast, the late 1980s asset-price bubble happened when the official discount rate stood at 2.5 percent. Yet just a few years later, in February 1993, the same policy rate of 2.5 percent had no stimulative impact whatsoever. Nor, subsequently, did an interest rate of 0 percent.

##### Monetary policy is ineffective when there is no demand for funds

This prompts the question of what caused such a dramatic change in the Japanese economy's response to monetary stimulus in the space of just a few years. The answer, in short, is that the sharp deterioration of corporate balance sheets dramatically reduced the number of willing borrowers. Although it has never been explicitly stated in the economics literature, the efficacy of monetary policy is based on a key assumption: the existence of willing borrowers in the private sector. Monetary policy loses all power if this condition is not met. When the economy overheats, for example, the central bank can respond by raising interest rates, which will cause prospective borrowers to have second thoughts, and thereby reduce demand. When the economy is weak and there is a shortage of willing borrowers, the bank can lower rates, expanding the pool of borrowers and boosting demand.

But after the bubble collapsed in Japan, not only were there no willing borrowers, but existing borrowers were paying down debt—and they were doing so when interest rates were at zero. Technically insolvent companies, struggling to pay down debt and repair balance sheets hit by the nationwide plunge in asset prices, were not interested in borrowing money, regardless how far the central bank lowered rates. In effect, the entire economy had stopped responding to interest rates. In this environment, monetary policy by itself no longer has any effect.

Yet many economists both inside and outside Japan as well as politicians like Takenaka applied a great deal of pressure to the Bank of Japan, arguing that the economy would recover if the bank would just increase the money supply by injecting more liquidity. These arguments serve only to underscore their ignorance of the actual cause of the long recession.

## The mechanism of money supply growth

Let us examine the process of money supply growth as explained in economics textbooks. It begins when the central bank, the Bank of Japan in this case, supplies liquidity to commercial banks. Ordinarily, the central bank does this by purchasing government bonds and other highly rated corporate bonds from the banks. The banks then take the proceeds from these sales and lend them out in an attempt to earn interest. This money is spent by the borrowers, and then deposited by the recipients in other banks, which place a portion of the money in reserve, and lend out the remainder. Money lent out in this fashion is spent by the borrower, and eventually ends up as a deposit in some other bank, which relends it after setting aside the necessary reserves. As this process is repeated, deposits (and loans) in the banking system steadily expand.

The amount set aside as reserves depends on two factors: the Bank of Japan's official reserve requirement and the excess reserves set aside at the bank's discretion. If banks set aside only the legally required reserves, total growth in deposits is given by a multiple equal to the reciprocal of the statutory reserve requirement. If the reserve requirement is 10 percent, for example, liquidity supplied by the Bank of Japan would eventually generate deposits equal to ten times the initial injection.

The sum of these deposits plus currency in circulation (notes and coins) is referred to as the money supply. The lion's share of the money supply, however, is accounted for by bank deposits. The ratio of the money supply to the liquidity originally injected by the central bank is called the money multiplier. In the example presented, the money multiplier would be close to ten.<sup>8</sup>

An increase in the money supply, most of which is composed of bank deposits, means the private sector has more money available to spend. That, in turn, should boost the economy. This is why economists keep close tabs on the money supply.

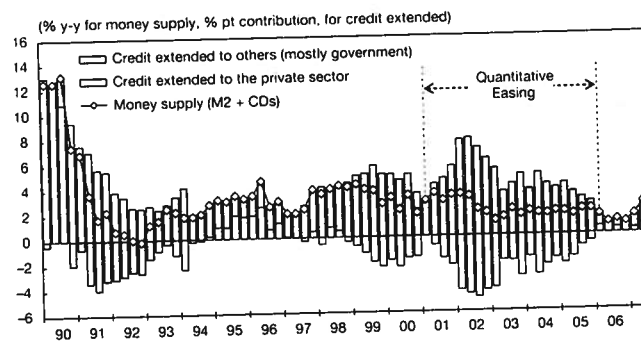
It is obvious from the preceding that there must be borrowers who are willing to take out loans if the central bank injection of liquidity is to increase the money supply. When there are no borrowers, the money supply cannot grow, because liquidity injected by the central bank cannot leave the banking system. This also means that when the entire private sector moves to pay down debt, the money multiplier process begins to reverse itself.

Companies and households typically pay down debt by withdrawing money from their bank accounts. So when the entire private sector is paying down debt, bank deposits lessen and the money supply contracts. In the absence of borrowers, debt repayment will reduce the money supply almost dollar for dollar. During the Great Depression, the U.S. money supply shrank by 13 percent as businesses and households drew down their bank deposits to pay back loans.

## Government borrowing drove money supply growth

Even though Japan's private sector was continuously paying down debt from 1998 onward, the money supply (M2 + certificates of deposit) in Japan not only failed to contract, but actually expanded at an annual rate ranging from 2 percent to 4 percent (Exhibit 1-8) during the same period. This seemingly contradictory phenomenon is explained by Exhibit 1-8, which shows the type of borrowing behind Japan's money-supply growth. The lighter bars indicate private-sector borrowing; the darker bars, other—that is, government—borrowing. Net borrowing by the private sector

**Exhibit 1-8.** Government borrowing has propped up the money supply



Note: (1) Credit extended to others = (1) public sector + (2) foreign assets (net) + (3) others. (2) Public sector = credit to central government (net) + credit to local public sector bodies + credit to public corporations. (3) Others = (money + quasi-money + CDs) - (foreign assets [net] + domestic credit). Accordingly, an increase or decrease in credit extended to others reflects the impact of increases/decreases in public sector debt, increases/decreases in commercial bank debentures, increases/decreases in financial institution deposits, and data errors.

Source: Bank of Japan, *Monetary Survey*.

turned (and stayed) negative in 1998, while net borrowing by the public sector was consistently positive.

Because the private sector is paying down debt, money flows back into the banking sector. Banks try to lend this money out, but find no willing borrowers because the private sector is intent on reducing its debt load. The government, however, is running a fiscal deficit, which it funds by issuing bonds. The banks—lacking any other borrowers—eventually end up using surplus funds to buy these bonds and earn interest. In effect, they are lending money to the government. The proceeds of the bond sales are spent on roads and bridges, and the construction firms and their workers and suppliers deposit the money in banks, thereby increasing total deposits in the system. Once again, banks try to lend this money to the private sector, are unable to do so, and eventually use it to buy government debt. The process is then repeated. This is why the money supply not only did not shrink, but actually expanded during the long recession.

### Fiscal policy determines effectiveness of monetary policy

In this sense, Japan's monetary policy and money supply have totally depended on the government's fiscal policy for the past ten years—private-sector enterprises have been paying down debt since around 1998, leaving the government as the only borrower. An increase in government borrowing produces a corresponding increase in the money supply, augmenting the effectiveness of monetary policy. If the government stops borrowing, the money supply will shrink no matter what the Bank of Japan does. In this sense, fiscal policy has been the most important determinant of the size of money supply in Japan.

Even though academic economists inside and outside Japan have bashed the Bank of Japan for not doing enough, without private-sector borrowers, only an increase in government borrowing will boost the money supply. The next time politicians demand that the Bank of Japan increase the money supply, the central bank would do well to reply that if the government wants to expand the money supply, it needs to borrow more.

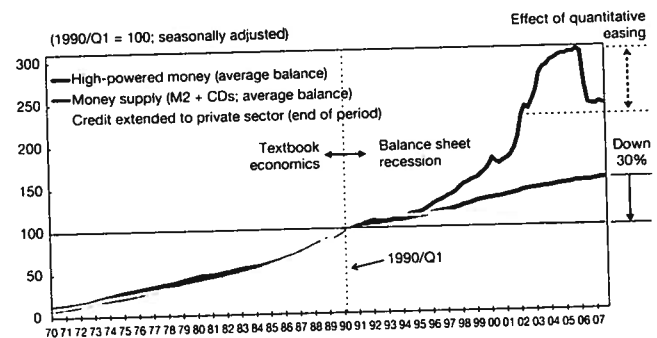
When private-sector firms have balance-sheet problems, neither the government nor the Bank of Japan can ask them to stop paying down debt. A company with debt overhang must

clean up its balance sheet as soon as possible, regardless what the government says, because it never knows when the outside world might find out about its balance-sheet woes. But if the government simply stands by and watches, the economy will fall into the kind of catastrophic deflationary spiral seen in the U.S. between 1929 and 1933. To stop this vicious circle, the government has only one option: it must do precisely the opposite of what the private sector is doing. In other words, it must borrow (and spend) the savings that the private sector can no longer use. This is what Japan ultimately chose to do, and it is why the money supply did not contract and GDP remained steady at about ¥500 trillion despite the loss of ¥1,500 trillion in national wealth and a decline in corporate demand totaling more than 20 percent of GDP.

### Conventional economic theory does not allow for corporate debt minimization

Exhibit 1-9, which tracks three key monetary aggregates over time, underscores just how different Japan's current circumstances are from those of the world found in the textbooks. The three aggregates are the money supply, private-sector credit, and cash in circulation and commercial bank reserves at the Bank of Japan.

**Exhibit 1-9.** Monetary aggregates behave totally differently under a balance sheet recession



Note: Credit extended to private sector seasonally adjusted by NRI. Adjustments made for discontinuities in line with the Bank of Japan, *Monetary Survey*. Source: Bank of Japan, *Monetary Base and Monetary Survey*.

also known as high-powered money. The first two appeared in Exhibit 1-8, and the third is a measure of liquidity supplied by the Bank of Japan.

Conventional economic theory holds that these three indicators should move together. If the central bank boosts liquidity by 10 percent, for example, bank lending and the money supply should also expand by 10 percent. From 1970 to 1990, Japan's economy behaved in just this way, and the three aggregates moved in lockstep.

But this changed in 1990, when Japan fell into a balance sheet recession, and the three monetary aggregates began to move independently of each other. At the time, the Bank of Japan was under heavy pressure from politicians and academics at home and abroad to stimulate the economy by boosting the supply of high-powered money, and it complied. Rebasing to 1990/Q1 = 100, liquidity had risen to 300 in 2005—in other words, the Bank of Japan had tripled the amount of liquidity in the system over this fifteen-year period. But the money supply—money actually available to the private sector—rose only 50 percent, and this happened only because of government borrowing (Exhibit 1-8).

Private sector credit is outstanding credit and loans extended by financial institutions to the private sector. As noted, bank deposits cannot increase without a corresponding rise in bank lending. Under ordinary circumstances, therefore, private-sector credit should be the key determinant of the money supply. But by June 2006, private-sector credit had actually fallen to 95 from 100 in 1990. This means that if the money supply was determined solely by private-sector demand for funds, Japan's money supply would be 95 instead of 150, or about 37 percent less than the current money supply. For the past fifteen years, in effect, Japan's economy has been experiencing the same difficulties faced by the U.S. during the Great Depression, when the money supply shrank by 33 percent.

Japan has avoided falling into depression-like conditions only because the government has continued to borrow and spend. Even as private-sector credit declined, the increase in credit to the public sector—that is, bank purchases of government bonds—enabled the money supply to expand, and ensured that debt repaid by the private sector did not become bottled up in the banking system. In this sense, Exhibits 1-8 and 1-9 confirm that Japan's economy has

inhabited a world uncharted by conventional economic theory: a world in which fiscal policy determines the effectiveness of monetary policy.

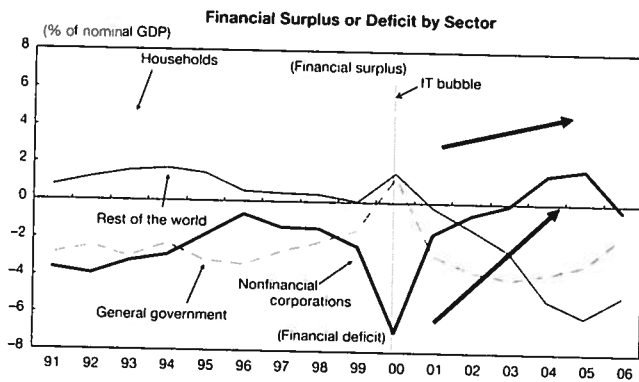
### Germany has faced the same problem

Finally, there is a cultural argument for the prolonged recession Japan had suffered. Alan Greenspan, for example, attributed Japan's inability to weed out zombie companies as the key reason for its prolonged recession. But as noted, debt repayment by companies with good cash flow produced the deflationary gap, not zombie companies with no cash flow available to pay down debt.

At the beginning of this Chapter, it was also mentioned that Germany suffered a five-year recession from 2000 to 2005, its worst slump since World War II. When one looks at the German economy from a balance sheet recession perspective, one notices that until quite recently companies in Germany were also paying down debt despite historically low interest rates. At the peak in 2005, net debt repayment amounted to 1.8 percent of GDP. Moreover, the move to pay down debt started years ago, when the German telecoms bubble burst in 2000. At that time, Germany still had inflation, just as Japan did in the early 1990s. These events are illustrated in Exhibit 1-10, which shows that Germany's prolonged recession coincided exactly with the period when German businesses were paying down debt.

German and Japanese companies began de-leveraging because the sharp fall in asset prices that followed the bubble's collapse badly damaged their balance sheets. Commercial real estate prices in Japan's six largest cities plunged 87 percent from their 1990 peak (Exhibit 1-4). Germany experienced a sharp drop in share prices as the telecoms bubble<sup>9</sup> burst in 2000, with the Neuer Markt bourse for start-ups falling 96 percent from its peak.

When asset prices plunge as they did in Japan and Germany, many companies suddenly find themselves carrying excess debt or even technically insolvent. Although technical insolvency normally means bankruptcy, it is not an ordinary bankruptcy in the sense that, in most cases, these companies still have sound businesses and positive cash flow. That both Germany and Japan are running some of the world's largest trade surpluses implies that their firms are still highly competitive, with good technology, marketing, and global customer bases.

**Exhibit 1-10.** German households and companies have been repairing their balance sheets

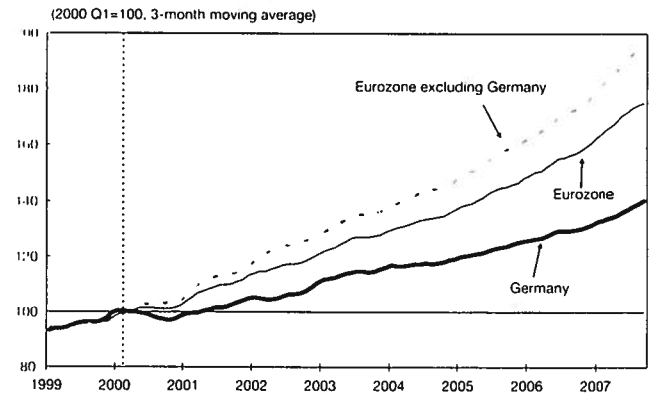
Note: Adjusted for the assumption of the Treuhand agency's debt by the Redemption fund for Inherited Liabilities in 1995.

Source: Deutsche Bundesbank (2007); Federal Statistical Office of Germany.

Regardless of their nationality, the CEOs of companies with healthy businesses but troubled balance sheets will respond in the same way: using operating cash flow to pay down debt. When many companies try to do this all at once, however, the economy is pushed into a balance sheet recession, a kind of recession that is as rare as the nationwide asset-price bubble that precedes it.

The ECB (European Central Bank) responded to economic slowdown by dropping interest rates to a postwar low, which promptly sparked housing bubbles in France, Spain, and Ireland, but not in Germany. In spite of record low interest rates, German house prices kept on falling. Money supply growth, which picked up sharply in non-German parts of the eurozone, also grew very slowly in Germany (Exhibit 1-11). All these phenomena suggest that Germany was indeed afflicted with a balance sheet recession.

This suggests that this type of recession can happen to any country after a collapse of asset prices. Indeed, the next likely candidate for a balance sheet recession is the U.S. now that its housing bubble has burst.

**Exhibit 1-11.** Money-supply growth in Germany lagged the rest of the eurozone

Note: Adjusted for discontinuity in Germany's M3.

Source: ECB, Deutsche Bundesbank

The point is that cultural differences have nothing to do with these recessions. It is the nationwide collapse of asset prices and subsequent deterioration of private-sector balance sheets that trigger prolonged recessions.

#### ENDNOTES

1. From then Federal Reserve chairman Greenspan's testimony before the Joint Economic Committee on May 21, 2003. For details, see "Q&A Transcript VIII" in Bloomberg (2003).
2. Krugman (1998), p. 172.
3. For instance, see Koo (1998).
4. McCauley and Seth (1992).
5. For details, see Moody's website: [www.moody.com](http://www.moody.com).
6. Goldsmith (1962), p. 112.
7. Central Council for Financial Services Information (2006).
8. It will be exactly ten if the public hold no notes and coins.
9. In Germany, the IT bubble was referred to as the telecoms bubble.