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R E P O R T

A Two-Part Report: A and B

NO. 27A **July 14, 2000**

WHAT HAPPENED TO JAPAN'S ECONOMY IN THE 1990S?

Arthur J. Alexander

No single factor was responsible for Japan's economic problems during the 1990s. Rather, a wide range of developments, many of which had their origins in earlier periods, can be blamed. Long-term growth has slowed to a rate typical of other advanced countries — around 2 percent annually. Overall productivity is relatively low and is lagging seriously in many high technology industries. Business has overinvested. These two factors have combined to produce rates of return that are well below those of the United States and major European countries. Finally, the financial system remains saddled with the bad loans and the wrecked balance sheets generated by the collapse of the asset-price "bubble" at the start of the 1990s.

Given these severe constraints, the bare 1 percent annual rise in real gross domestic product per capita that the Japanese economy eked out over the course of the 1990s should not be surprising. Collapsing business investment was the main cause of the drastic slowdown. That plunge was abetted by a weak banking system and, after 1996, a cutback in lending, especially to smaller firms. Huge government budget deficits helped to keep the economy from sinking even lower. However, the flood of red ink was more the result of shrinking tax revenues than of explicit policies designed to increase spending or to reduce taxes.

Since the banking system is a crucial source of financing for business as well as the channel through which monetary policy is effected, understanding the sources of the industry's difficulties — which arose mainly from loans made during the bubble period of the late 1980s that later soured — is important for future policy. Like recent banking crises in other countries, Japan's problems stemmed from a deregulated financial system that lacked the appropriate supervisory and oversight systems. Tokyo's forbearance of troubled banks and weak corporate governance ensured that the banking industry would be caught in a protracted bind; that, in turn, compounded the crisis and raised the political costs of any resolution. At the same time, a regulatory shift in 1997 reduced the moral hazard that had been created by the Ministry of Finance's guarantee that no bank would fail. The withdrawal of this assurance made banks more cautious just when their diminished capital was beginning to restrict lending.

Japan's Economy Stagnates

"Startling" is not too strong a word to use to describe the drop-off in Japan's economic performance during the 1990s. From the first quarter of 1990 to the first quarter of 2000, the annual increase in real gross domestic product per capita barely exceeded 1 percent. In contrast, inflation-adjusted growth in the 1980s averaged 3.5 percent a year. Even more amazing is the difference between the record of the last decade and the "miracle" years of the 1960s, when real annual growth approached the double-digit level (see Figure 1).

Ten-year time frames tend to average out fluctuations due to short-lived expansions and recessions as well as always present "shocks to the system." Thus, they are especially useful for bringing out broader, long-term swings in economic fortune. Japan's deceleration is obvious. Just as clear is the fact that its growth path first converged with America's and then fell slightly below it. At the same time, the commonly asserted arrival of the "new economy" is too recent to have pushed the 10-year U.S. average annual growth rate over the 2 percent threshold.

Indeed, in the general experience of rich countries, long-run growth greater than 2 percent a year is not common. According to the Penn World Tables — a set of consistent economic data for 152 countries from 1950 to 1992 — 19 economies had attained real per capita outputs greater than $10,000. After reaching this income level, annual expansion rates over 10-year periods averaged 1.75 percent. The top rate was 3.7 percent, set by Japan itself near the start of the covered period. However, Japan's performance quickly leveled off to approach that of its peers.

Although historical experience suggests that high growth numbers are rare among wealthy countries, Japan's performance in the 1990s fell below even the rich-country norm. Over that decade, Japan experienced five separate spells during which the change in real quarterly GDP was negative over two consecutive periods — a common definition of recession. Moreover, for 15 of the decade's 40 quarters, inflation-adjusted GDP contracted. In contrast, between 1955 and 1990, real GDP fell in only six quarters — and none of those declines were consecutive. In short, the 1990s were different — certainly from Japan's own postwar experience but also relative to the average trends of its counterparts.

[1]For comparison, U.S. real GDP per capita in the 1990s was about $18,000. The Penn World Tables' 19 high-income countries exclude Kuwait and Saudi Arabia, both of whose income and growth depend mainly on oil prices. Real incomes are measured in 1985 dollars. See Robert Summers and Alan Heston, "The Penn World Tables (Mark 5): An Expanded Set of International Comparisons: 1950-1988," *Quarterly Journal of Economics*, May 1991. Available at http://datacentre.chass.utoronto.ca:5680/pwt/.

Japan Economic Institute

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JEI Report (ISSN 0744-6489) is published weekly except for the New Year, Memorial Day, Labor Day, Thanksgiving and Christmas holiday weeks for $80 per year by the Japan Economic Institute of America, 1000 Connecticut Avenue, N.W., Washington, D.C. 20036. Periodicals postage paid at Washington, D.C. POSTMASTERS: Send address changes to JEI REPORT, 1000 Connecticut Avenue N.W., Washington, D.C. 20036.

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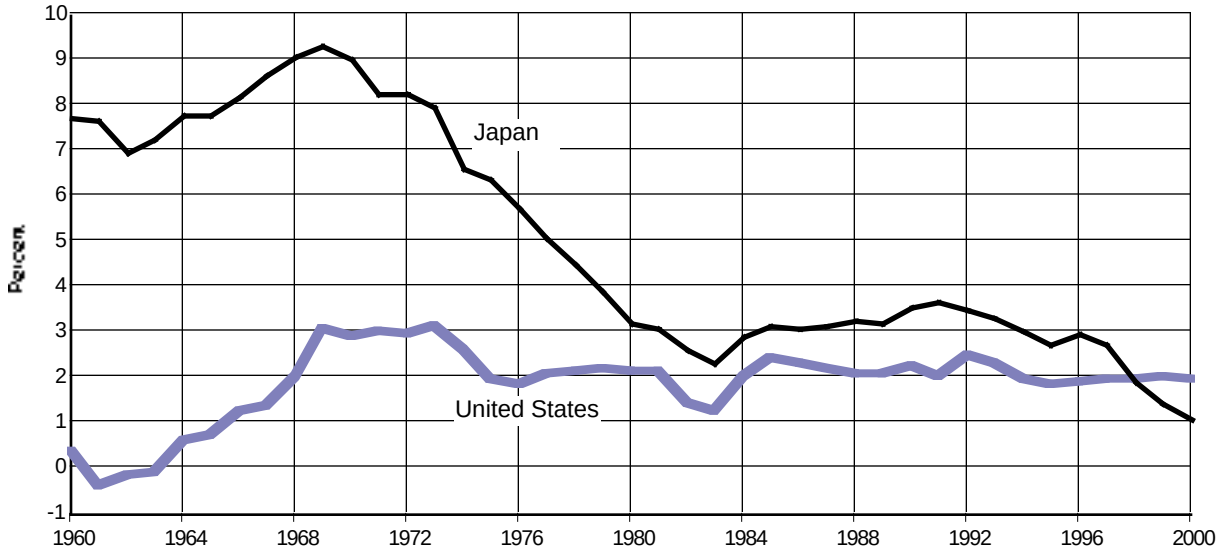
Figure 1: Average Annual Growth of Real GDP Per Capita over Preceding 10 Years in Japan and the United States, 1960-99



Sources: Management and Coordination Agency and Department of Commerce

What accounted for the stagnation of the 1990s? Commentators have offered numerous theories, including, in no particular order, an excessive investment overhang from the "bubble economy" period of the late 1980s, a crippled financial system unable to lend to businesses or consumers because of fallen asset prices after the bubble collapsed, poor regulatory oversight of a liberalized banking system, a delayed and inadequate fiscal policy response to the economy's slowdown, an insufficiently stimulative monetary policy, and a shift from a regulatory regime that encouraged moral hazard along with extravagant lending and investment to one that was less so inclined. As it happens, most of these explanations jibe with the accumulating evidence.

A growing number of studies from the International Monetary Fund and economic scholars in Japan and elsewhere have applied sophisticated theoretical and econometric tools to seek out the causes of Japan's slowdown. Outside Japan, one reason for such interest is the desire to determine if the experience of the world's second-largest economy is similar to that of other developed countries and if there are policy lessons. It turns out that what happened in Japan has parallels to the problems that other countries, particularly Finland, Norway and Sweden, endured in the 1990s. However, its recovery has been more drawn-out. Japan is not unique, but its particular combination of troubles — and the political and institutional setting — have made solutions more difficult to achieve.[2]

Components Of Aggregate Demand

A look at the components of aggregate demand is a good starting point for an analysis of the economic events of the 1990s. The main factors on the private side are consumption, residential investment, plant and equipment spending and net exports (exports minus imports). These elements contribute to changes in real GDP.

Real GDP increased at the blazing rate of 4 percent to 6 percent a year during the bubble period of the late 1980s and 1990. After the bubble burst, a sharp deceleration pushed growth over the year-earlier quarter into negative territory in the January-March 1993 period. A brief recovery in 1996 was followed by an even sharper decline that continued until 1999, when growth managed to creep back above zero.

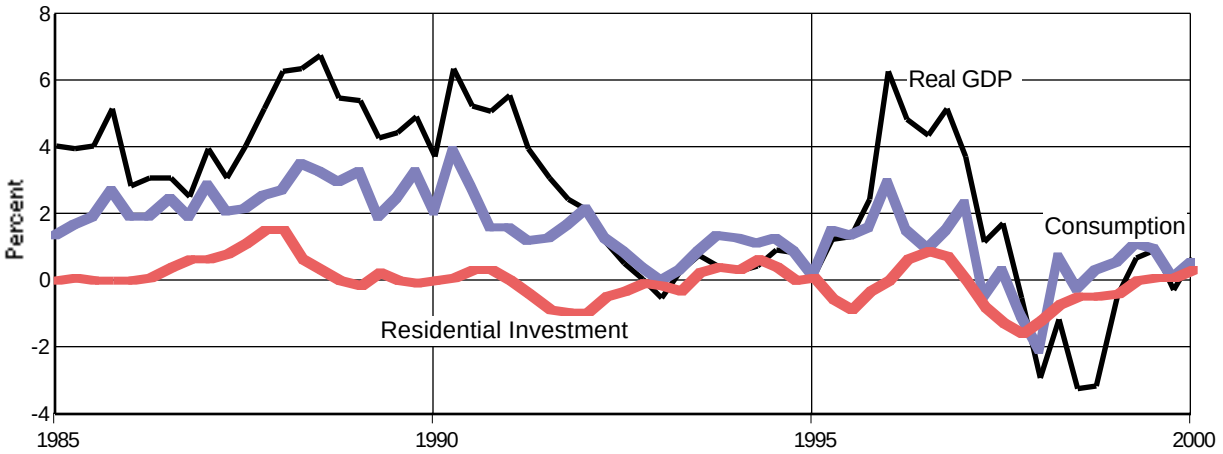
Personal consumption, the source of close to

[2]Michael Hutchison and Kathleen McDill, *Are All Banking Crises Alike? The Japanese Experience in International Comparison* (Working Paper 7253) (Cambridge, Massachusetts: National Bureau of Economic Research, July 1999).

three-fifths of aggregate demand in Japan, was a contributor, albeit declining, to growth through the mid-1990s (see Figure 2). By 1997, however, several years of economic weakness had driven employment levels down and unemployment up. As household incomes plateaued and as anxiety about future prospects crept into consumer psychology, spending weakened and exerted a drag on GDP. Within a few quarters, though, consumption on a national incomes account basis once more was a positive influence.

in the 1990s was business investment. After adding 2 to 3 points annually to inflation-adjusted GDP during the bubble period, capital spending knocked 2 points off the economy's growth rate a few years later. This dramatic plunge trimmed national output by a net 5 percent. Expenditures rebounded during the 1995-97 recovery, only to collapse at the end of the decade, making a small positive contribution in the last quarter of 1999. The resurgence in plant and equipment outlays in the late 1990s was led largely by investment in

Figure 2: Consumers' Contribution to Japan's Real GDP Growth over Year-Earlier Quarter, 1985-99



Note: The contribution to the change in GDP is equal to the change in the component from four quarters earlier divided by GDP in the earlier quarter.

Source: Economic Planning Agency

Housing investment neither added to nor subtracted much from total demand during most of the decade until 1997, when capital losses in the banking industry affected mortgage lending. Government efforts to stimulate home purchases through low interest rates and more funding for public lending institutions seemed merely to displace private efforts. From 1997 to 1999, residential investment was a drag on the economy.

Over the course of the 1990s, the contribution of net exports to real GDP growth generally varied between plus and minus 1 percentage point, although it moved marginally lower in mid-1995 after the yen hit an historic high of ¥80=$1.00 in the spring. As the yen fell in value in subsequent months, the role of net exports made a U-turn and became supportive of expansion. Then, however, it drifted back to a neutral position (see Figure 3).

The major factor affecting aggregate demand

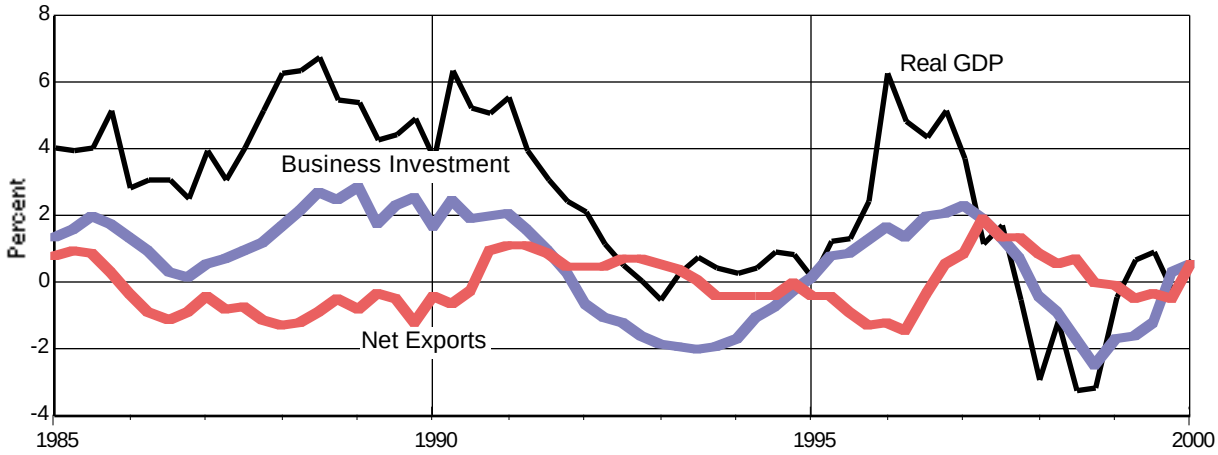
the communications industry, as the rapid expansion of the Internet and cellular telephone businesses produced a miniboom that carried along much of the rest of the economy.[3]

Analyses Of Demand And Policy

Plotting the components of GDP to examine their relative contributions to the economy's expansion or stagnation is a useful exercise. However, this approach reveals nothing about cause and effect or, given historic patterns and relationships, whether a specific movement is par for the course or is unusual. For example, changes in personal consumption will influence national

[3]For an overview of deregulation in Japan's telecommunications market, see Jon Choy, "Telecommunications In Japan: The Internet Changes The Rules, *JEI Report* No. 11A, March 17, 2000.

Figure 3: Corporate Contribution to Japan's Real GDP Growth over Year-Earlier Quarter, 1985-99



Note: The contribution to the change in GDP is equal to the change in the component from four quarters earlier divided by GDP in the earlier quarter.

Source: Economic Planning Agency

output and also will be affected by such changes because income earned in production has a strong impact on spending.

Several economists have attempted to unravel these relationships using an econometric technique known as vector autoregression. VARs consist of sets of equations in which each variable is determined by its own lagged value as well as those for all the other variables in the formula. An analysis of the residuals, the so-called shocks to the system, provides a tool for judging whether the behavior of a variable in a given period deviates markedly from the previous pattern. For example, a large residual for consumer spending would indicate an occurrence not explained by the history of changes in all of the system's variables.

VARs also are employed to estimate the impact of an independent change in one variable on the others. This approach is useful for understanding the consequences of fiscal or monetary policy. For example, a recent IMF study found that government spending has only a short-term impact on GDP. The stimulus wears off rapidly and, after about a year, national output is roughly unchanged.[4] The estimated effect of a tax cut is even smaller, with an implied multiplier of 0.2. That is, a tax cut of ¥100 would stimulate only ¥20 in additional aggregate output.

One interpretation of these results is that the Japanese public understands that today's deficits will have to be paid off in the future through higher taxes and/or lower spending, thereby leaving it no better off. The concept that borrowing has future tax implications is known as Ricardian Equivalence after early 19th-century economist David Ricardo, who developed an early version of the idea.[5] The results of econometric analyses indicate that consumers in Japan are relatively Ricardian in their behavior.

The IMF study found that real interest rates and bank lending had the biggest impact on aggregate output. Bank lending, in turn, depended significantly on asset prices. By decomposing the various shocks to the system, the author of the report concluded that the most important factor explaining the movement of GDP in Japan during the 1990s was the change in asset prices. This development accounted for most of the expansion in the bubble period and the economy's subsequent weakness.

The slowdown in bank lending was a drag on national output after about 1993. A 3 percent change in lending was associated with a 1 percent change in output. Monetary policy, acting mainly

[4]Tamim Bayoumi, "The Morning After: Explaining the Slowdown in Japanese Growth," in Tamim Bayoumi and Charles Collyns (eds.), *Post-Bubble Blues: How Japan Responded to Asset Price Collapse* (Washington, D.C.: International Monetary Fund, 1999), pp. 25-27.

[5]Ricardian Equivalence is explained in Arthur J. Alexander, "Japan's Fiscal Deficit And Debt: What Happens Next?" *JEI Report* No. 13A, April 3, 1998, p. 6.

via real interest rates, became supportive around 1996. Fiscal policy gave a significant boost to the economy in 1995 and in early 1996, but that impact quickly vanished.[6] A direct test of the theory that an excessive capital overhang led to slower growth found little econometric support, although other studies disagree with this finding.

The IMF's Tamin Bayoumi ended his analysis by remarking on the central role of financial intermediation in magnifying the impact of asset prices on the economy. Property is the main source of loan collateral, and stock prices undergird a major part of bank capital. Bank lending, in turn, affects asset prices. The importance of bank loans as the major source of investment capital for small companies has an independent effect on aggregate output.

This tightly woven system now is slowly unraveling as banks look for ways other than collateral to evaluate borrowers' capabilities to repay loans and as cross-held shares become a smaller part of bank capital. The latter is happening because stock prices have fallen. As a result, banks are selling shares in other companies and are looking for more profitable places to invest their assets. Additionally, as capital markets develop with a larger range of players and financial instruments, the importance of bank lending is shrinking even for smaller companies. Accordingly, a part of the story that was critical to the economy's performance in the 1990s may not be so important in the future.

A central point of this analysis — namely, that fiscal policy was a weak stimulator of economic activity — is supported by a second study contained in an IMF collection of research on the Japanese economy. In particularly convoluted language, the authors of this report concluded that "[t]he VAR estimations do not provide supporting evidence for the counterfactual hypothesis that activity would have been significantly weaker in the absence of the expansionary shift in the stance of fiscal policy in the 1990s."[7] In other words, fiscal policy had little effect.

The same study also found that while business investment was not influenced by fiscal policy, it did respond to changes in monetary policy as measured by real interest rates. In fact, the study's authors suggested that capital spending in the 1990s supported conjectures about the unwinding of the overinvestment of the 1980s. However, this conclusion is somewhat at odds with the results of the direct test of the capital overhang theory reported in the first IMF study.

In a separate chapter of the book, the coauthor of this study focused on the collapse of corporate investment in the 1990s. In addition to the earlier overinvestment, Ramana Ramaswamy considered the excessive debt burdens of all but the largest manufacturers, the credit crunch arising from the asset-price collapse and an overextended banking system, and the changing structure of the Japanese economy. Again, he determined that the unwinding of the capital stock overhang was the principal force behind the decline in capital spending in the 1990s. The excessive debt burdens of most firms also received a good deal of the blame. However, the possible explanation that the high investment rates of decades past depended on the fact that capital goods were becoming relatively cheaper was not supported by the evidence.[8]

The ineffectiveness of fiscal policy in Japan throughout most of the 1990s has received a good deal of attention. One frequently cited book on Japan's recent economic problems was devoted almost exclusively to this topic.[9] Figure 4 shows the real GDP contribution of government outlays, defined as consolidated central and local government current spending and investment. Government investment includes those construction projects that have made Japanese policy and politics infamous. Government current spending — the supply of services by government at all levels — can be dealt with summarily. It added (or subtracted) almost nothing to GDP during the 1990s.

The modest impact of government current

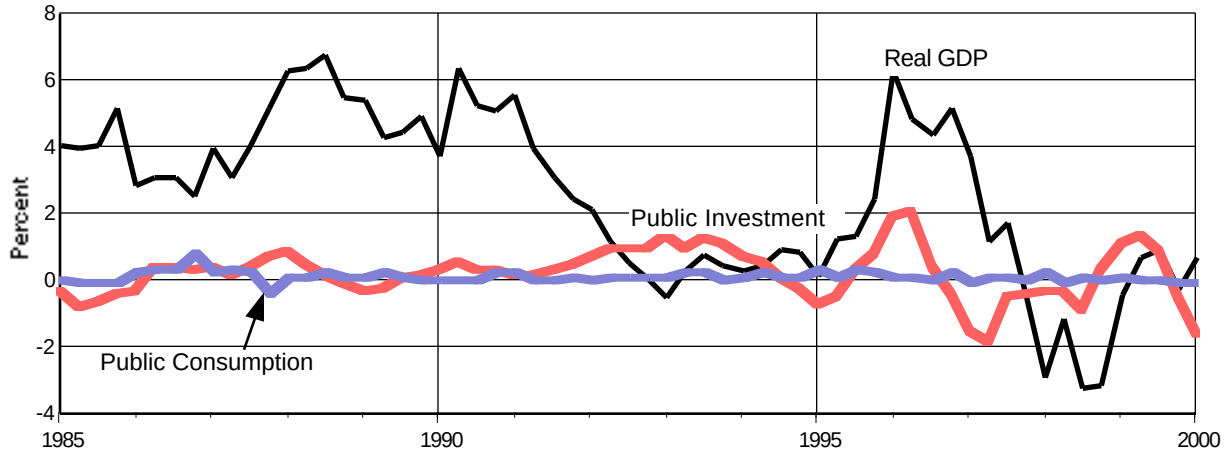
[6]Bayoumi, *op. cit.*, pp. 32-33.

[7]Ramana Ramaswamy and Christel Rendu, "Identifying the Shocks: Japan's Economic Performance in the 1990s," in Tamim Bayoumi and Charles Collyns (eds.), *Post-Bubble Blues: How Japan Responded to Asset Price Collapse* (Washington, D.C.: International Monetary Fund, 1999), pp. 48 and 58.

[8]Ramana Ramaswamy, "Explaining the Slump in Japanese Business Investment," in Tamim Bayoumi and Charles Collyns (eds.), *Post-Bubble Blues: How Japan Responded to Asset Price Collapse* (Washington, D.C.: International Monetary Fund, 1999), pp. 86-88.

[9]Adam Posen, *Restoring Japan's Economic Growth* (Washington, D.C.: Institute for International Economics, 1998).

Figure 4: Government's Contribution to Japan's Real GDP Growth over Year-Earlier Quarter, 1985-99



Note: The contribution to the change in GDP is equal to the change in the component from four quarters earlier divided by GDP in the earlier quarter.

Source: Economic Planning Agency

expenditures is a reflection of the weakness of automatic stabilizers in the Japanese fiscal system. In many countries, particularly Canada, Germany and the United Kingdom, unemployment compensation and various welfare benefits rise automatically when the economy slows down. In other words, the budget responds quickly and without the need for explicit fiscal policy decisions.

In Japan, however, these automatic stabilizers are not well-developed. Until recently, they never had to be since unemployment and a large welfare burden were not part of the country's economic structure. The need for discretionary measures to respond to recessionary strains puts greater weight on the formulation of fiscal policy and results in a bumpy adjustment process. Lags are created by the time required to evaluate the situation, create and promote policy responses, draft and pass legislation, and implement new laws.

Fiscal policy implementation became an issue in the 1990s. The near-record stimulus program of September 1995, for example, did not lead to a corresponding increase in public works. The capacity of local authorities to carry out public works projects that are mandated by the central government but not funded by it was undercut by their increasingly precarious financial positions. All too often, the stimulus packages hyped by Tokyo went unimplemented at the local level or simply offset subnational spending declines.[10]

Even given the implementation problem, the modest stimulatory and contractionary impulses of public investment still come as a surprise. Government spending added a bit to real GDP in 1993 and accounted for 2 points of growth in 1996; however, it subtracted almost as much the following year. The data on actual spending belie the headlines generated by the innumerable stimulus packages unveiled in the 1990s and their accompanying supplemental budgets. Japan, indeed, is running the highest government budget deficit of any advanced country, but this reality does not show up in spending. In fact, falling tax revenues are the cause of the record deficit.

How to measure the government deficit is itself an analytical issue. For starters, the consolidated accounts of government agencies are not reported until more than a year after the books for a particular fiscal year are closed. Thus, the information always is out of date. An additional complexity is that one or more supplementary budgets often are submitted to the Diet during a fiscal year.

Moreover, the main outlines of the government operating budget are devised almost a year before

[10] Martin Muhleisen, "Too Much of a Good Thing? The Effectiveness of Fiscal Stimulus," in Tamim Bayoumi and Charles Collyns (eds.), *Post-Bubble Blues: How Japan Responded to Asset Price Collapse* (Washington, D.C.: International Monetary Fund, 1999), pp. 118-128.

any spending occurs. Supplementary budgets are a convenient method for responding to more immediate concerns. Budgets, however, are just plans. Approved sums will not necessarily be spent, especially if financially strained local governments are key agents in the process. Likewise, budgeted revenues are not always realized. Given all these problems, another method for calculating the government's contribution to the economy would be useful.

The following calculation provides just such a tool. The means of financing government operations can be summed up in the public-sector budget equation. Any gap between government spending and government revenues must be financed and must equal the sum of net new issues of debt and the issuance of money:

$$G - T = \Delta B + \Delta M,$$

where G is government spending on current and capital transactions, T is taxes and other revenues, ΔB is the net issuance of bonds and other debt instruments and ΔM is the growth of the monetary base. Deficits, or G - T, must be financed by a combination of new borrowing and money creation. In other words, unless the government steals or seizes goods and services, shortfalls have to be funded by some mix of higher taxes, more borrowing or running the monetary authority's printing presses longer.

The budget equation offers insight into how to measure the government deficit: simply look at the increase in total net government debt and the growth of the monetary base. In recent years, less than 15 percent of Japan's deficit has been monetized — that is, covered by the expansion of the monetary base. Most debt is financed through the sale of long-term bonds. Bond sales and money-supply figures are reported monthly, thus providing a prompt and reliable window into the government's funding requirements.

The use of net debt, represented by government bonds and the monetary base, solves two other problems. Prefectural and local governments undertake a great deal of Japanese government expenditures, with the outlays funded by a combination of local taxes and debt plus transfers from the central government. Understanding the effects of fiscal policy on the economy requires consolidating these levels of the state.

Another problem is that a large proportion of government financial liabilities in Japan is owed to the government itself. When estimating the repercussions of government deficits on the economy, these intragovernmental accounts cancel out. Thus, the common statement that gross Japanese government debt equaled 121 percent of GDP in 1998 (the last year of full data availability) is correct — as far as it goes. But it does not go far enough. If the government's holdings of its own liabilities were canceled out, the net debt of central and local governments would have come to 82 percent of GDP in that year. If social security reserves were added to the list of government assets, the net debt would have dropped to only 33 percent. For purposes of examining fiscal policy, net debt excluding social security is the appropriate figure to use.

The annual budget deficit rose in terms of aggregate output by 8.3 points from 1990 to 1999 (see Figure 5). However, the ratio of government investment to GDP increased by only 2 points from 1990 to the mid-1990s and then fell by almost the same amount. In short, Japan's budget deficit did not swell mainly because of government spending on useless construction projects and other pork-barrel activities.[11]

The cause of Japan's ballooning budget deficit in the 1990s can be found on the revenue side of the ledger. Corporate and personal income taxes fell sharply during the decade (see Figure 6). The loss of tax revenues from 1990 onward amounted to 5.4 percent of GDP. Put another way, two-thirds of the increase in Japan's deficit can be attributed to falling tax collections.

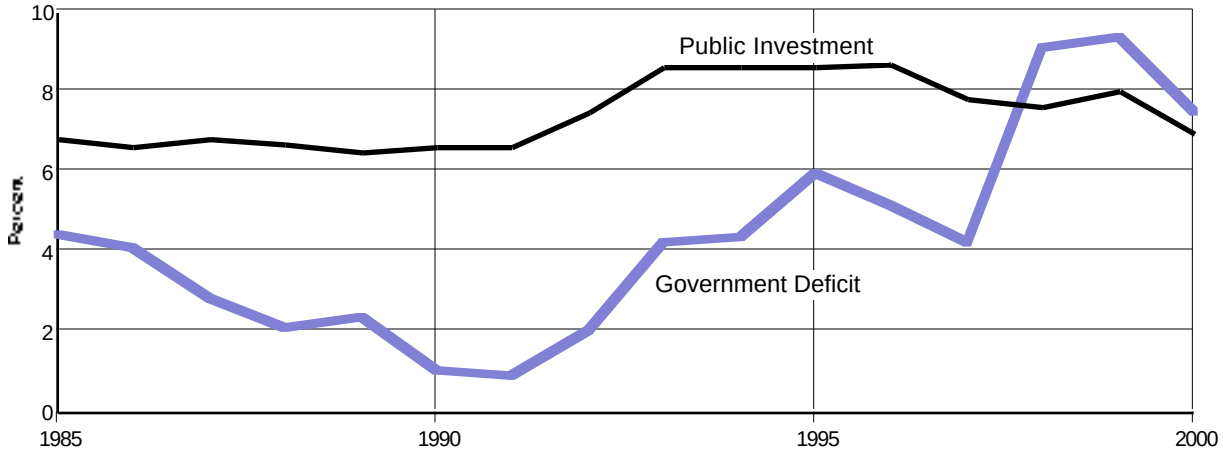
According to IMF estimates made after reviewing the various temporary and permanent tax cuts implemented in the 1990s, by 1998, only 1 point of the falloff in tax revenues could be attributed to tax policy.[12] Significantly, the downward trend in revenues was the reverse of the surge that occurred during the bubble expansion as tax receipts climbed much faster than GDP.

Several explanations for the jump in tax

[11] The importance of public works in the political economy of Japan should not be minimized since the value of this activity is an estimated five times as much as in other OECD countries. Organization for Economic Cooperation and Development, *OECD Economic Surveys: Japan, 1996-97* (Paris: 1997), p. 67.

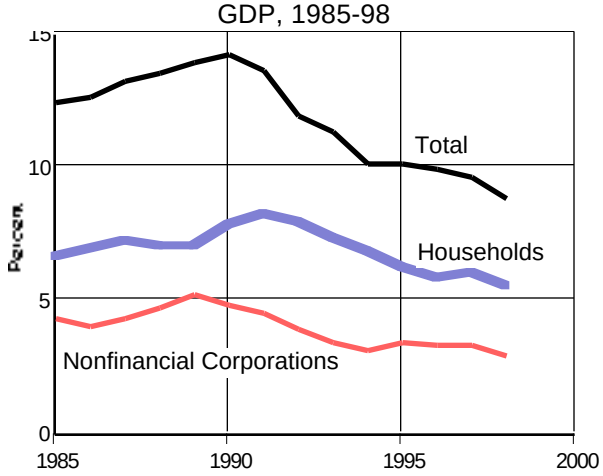
[12] Muhleisen, *op. cit.*, pp. 128-129.

Figure 5: Share of Nominal GDP of Consolidated Japanese Central and Local Government Deficits and Government Investment, 1985-99



Source: Economic Planning Agency

Figure 6: Direct Taxes Paid by Japanese Individuals and Businesses as Share of Nominal GDP, 1985-98



Source: Economic Planning Agency

revenues were put forward 10 years ago. They can be dusted off and used again simply by reversing the sign of the expected effect. One was the "bracket creep" that occurs when individuals move from one marginal tax bracket to another as a result of rising incomes. Another explanation involved the level below which no tax liability is incurred. This minimum is quite high in Japan. In 1998, it was ¥3,800,000 ($34,500 at ¥110=$1.00), meaning that almost 20 percent of the country's income earners paid no tax on their earnings. Moreover, the threshold has crept up gradually since 1984, when it stood at ¥2,360,000 ($21,500). Even though total personal incomes continued to climb slowly until the second half of 1998, most workers saw their overtime pay disappear and their bonuses shrink. Thus, more people no doubt fell below the ever-rising tax threshold.

At the same time, business accounting ensured that falling profits during the 1990s were turned into losses — at least for tax purposes. More than 60 percent of all companies declared losses in 1997 and paid no taxes.[13] Lenient tax-collection policies seemed to exacerbate the effect of creative accounting as the Liberal Democratic Party went out of its way to protect small businesses from the tax man. In addition, taxes on capital gains, which had soared along with the jump in asset prices in the late 1980s, were lost during the plunge of the 1990s. These, however, are only conjectures. As one IMF analyst concluded, the decline in tax revenues in Japan over the last decade remains unexplained.

Money And Banking

In addition to fiscal policy and its taxing and spending tools, monetary policy is the other major mechanism that governments can use to respond to an economic slowdown. For a variety of technical reasons, in recent years, monetary authorities in advanced countries have sought to influence the money supply and, in turn, economic behavior through interest rates. In the 1970s and 1980s, direct quantitative targeting of the money supply

[13] See Hiroyuki Takahashi, "Fiscal Crises In Japan's Prefectures And The Debate On Corporate Tax Reform," *JEI Report* No. 40A, October 22, 1999.

was employed on occasion, but that approach no longer is fashionable among the world's leading central bankers.

One reason that the Bank of Japan targeted interest rates rather than a broader aggregate like M_2+certificates of deposit was that during the 1990s, the money supply directly controlled by the central bank — the monetary base, which consists of banking reserves plus currency — became less correlated with other measures of money. For one thing, deregulation freed interest rates and allowed banks to expand the variety of deposits offered and the methods of lending money. This flexibility meant that the supply and demand for deposits and loans were driven more by market forces than by central bank policies. Since broader money aggregates consist mainly of deposits created by bank lending, monetary policy may have had only a weak effect in Japan, especially if banks were in no condition to lend.

Until the early 1990s, the monetary base and M_2+CDs basically moved in tandem (see Figure 7). Starting in 1995, however, the monetary base expanded at an annual rate of 5 percent to 10 percent, but the increase in M_2+CDs was well under 5 percent. In fact, after mid-1998, the growth of this money-supply measure decelerated to less than 2 percent despite the zero interest-rate policy that BOJ put in place in February 1999.

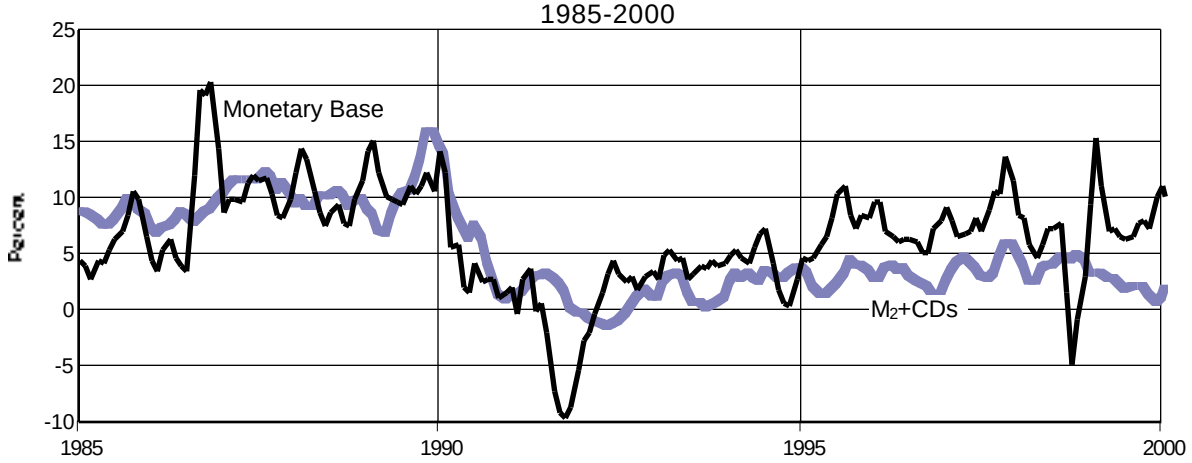
Studies of the effects of monetary policy on output in Japan have found that broad indicators of the money supply have a large impact on private investment, whereas changes in the monetary base have no measurable consequences. One explanation for this finding is that the links between the main tool of quantitative policy and the market-driven decisions that govern the creation of money broadly defined increasingly are becoming looser.

In Japan, interest rates have been shown to be a key shaper of investment decisions. A critical question, then, concerns the channels by which monetary policy is transmitted. If the banking system is the conduit, weak banks could impede the effective implementation of monetary policy.

The 1986 plunge of Japan's real interest rates (see Figure 8) — measured as the long-term prime (the lending rate for banks' most creditworthy customers) adjusted by the change over the previous 12 months in the wholesale price index — generally is seen as one of the main causes of the ballooning asset prices that followed. A policy-induced jump in real interest rates of 2 points in the 1989-90 time frame ended the asset bubble. Real interest rates generally drifted downward for the rest of the 1990s, a trend that quickened near the decade's finish as BOJ marched toward its goal of zero interest rates.

Recent IMF research on monetary policy in Japan concluded that investment is the component of aggregate demand most strongly influenced by

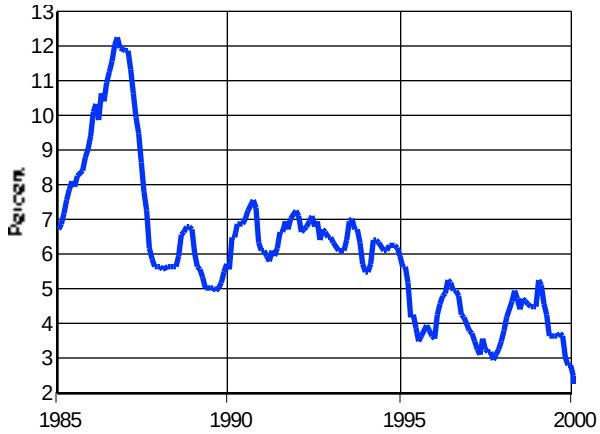
Figure 7: Monthly Change at Annual Rate of Japan's Monetary Base and M_2+Certificates of Deposit, 1985-2000



Note: Data are seasonally adjusted, centered on five-month moving averages.

Source: Bank of Japan

Figure 8: Japan's Real Interest Rates, 1985-2000



Note: Real interest rates are defined as the long-term prime rate adjusted by the 12-month change in the wholesale price index. In calculating the inflation of wholesale prices, 2 percentage points were subtracted from the index following the introduction of the consumption tax in April 1989 and its hike in April 1997. These adjustments reflect the impact on the price index of the consumption tax.

Source: Bank of Japan

real interest rates. The effects, however, are not immediate. The peak response is felt some two and a half years after an interest-rate change. Indeed, the IMF studies found that bank lending has a strong and statistically significant impact on private demand that is independent of other policy decisions. In contrast, shifts in public-sector lending are followed by opposite moves in private lending. In other words, government funds substitute almost completely for business credit, which explains why the activities of government financial institutions do not seem to have a quantifiable effect on the economy.[14]

One key conclusion of the IMF work is that bank lending in Japan is an important mechanism for transmitting monetary policy, particularly changes in interest rates:

> The importance of bank loans in financial intermediation appears to reflect the lack of alternative sources of borrowing for much of the nonfinancial sector, with neither securities markets nor loans from public-sector institutions providing a significant offset to changes in bank loans. … Banking strains may have undermined the monetary transmission mechanism over the last few years. To the extent that banks have responded to their own difficulties by reducing their loans to the private sector, such behavior will have tended to offset the benefits of monetary easing.[15]

While it is a critical finding, this statement begs the question of whether banks, in fact, reacted to their problems by reducing lending. However, several other scholars have examined the issue. Two Japanese university economists found, for example, that poor profitability explained much of the decline in investment in the 1990s. However, among smaller firms, severe borrowing conditions had significant effects on capital spending in 1997 and in 1998.[16] These scholars used the responses to questions about financial conditions contained in BOJ's quarterly *tankan* (short-term survey of business prospects) to determine the existence of a credit crunch. They concluded that the worsening credit situation in 1998 reduced the growth of investment by nearly 10 percent and trimmed GDP by 1.6 points.

To assess the credit-crunch explanation for Japan's economic slowdown in the 1990s, an IMF economist performed a statistical analysis of the capital base and the lending behavior of the 79 largest Japanese banks. Interestingly, he used as his model the literature that focused on America's bout with a sharp cutback in credit during the 1990-91 recession. The study found no evidence of a credit shortfall in Japan until 1995. In fact, weakly capitalized banks tended to increase their lending more rapidly than better capitalized institutions. However, a credit crunch clearly had emerged by 1997. Only that year did a positive correlation appear between bank capital and lending growth. A number of factors seemed to have changed in 1997. The financial system

[14] James Morsink and Tamim Bayoumi, "Monetary Policy Transmission in Japan," in Tamim Bayoumi and Charles Collyns (eds.), *Post-Bubble Blues: How Japan Responded to Asset Price Collapse* (Washington, D.C.: International Monetary Fund, 1999), pp. 150-153.

[15] *Ibid.*, p. 161.

[16] Taizo Motonishi and Hiroshi Yoshikawa, *Causes of the Long Stagnation of Japan During the 1990s: Financial or Real?* (Working Paper 7351) (Cambridge, Massachusetts: National Bureau of Economic Research, September 1999), pp. 12-14.

experienced increased distress, market scrutiny of the financial sector intensified and the regulatory regime — both official and unofficial — shifted.

The failure of several financial institutions in 1997, including one of Japan's nationwide commercial banks, reflected either an explicit decision on the part of the Ministry of Finance or its inability to avoid these outcomes. Regardless, the moral hazard pervading the financial system because of MOF's guarantee that no bank would fail suddenly was reduced. Moral hazard had encouraged excessive lending and unrestrained borrowing and investment. The 1997 bank failures injected credibility into Japan's supervisory and regulatory framework. They also prompted surviving banks to recognize that they could suffer the same fate as the closed institutions if they did not clean up their balance sheets. New lending declined sharply as a result.[17]

The author of this study and an IMF colleague extended the research to take a broader look at the Japanese banking crisis of the 1990s. In particular, they sought to place Japan's experience in the context of systemic banking crises. Among other things, they found that most of the underlying causes of Japan's problems were typical of banking crises in general. These factors included excessive asset expansion during economic boom periods, financial liberalization without improvements in regulatory mechanisms, weak corporate governance and regulatory forbearance of distressed and insolvent financial institutions.

The investigators traced the roots of Japan's banking crisis to an acceleration in deregulation and a deepening of financial markets in the late 1980s, both of which exacerbated the existing problems of overcapacity among financial services providers. Intensified competition heightened risk-taking behavior, further weakening banks. The statistical findings of David Woo's earlier paper supported the idea that weak banks engaged in a "gamble for resurrection" for most of the 1990s — behavior that loosened credit conditions more than was warranted. In this report, he and his coauthor argued that weak corporate governance and regulatory forbearance stifled any incentive on the part of banks or their customers to engage in meaningful restructuring. These factors helped to prolong the banking crisis and raised the costs of its resolution.[18]

Conclusion

Many of the sources of economic stagnation in Japan in the 1990s had their origins in earlier periods. Soaring growth rates had encouraged both high levels of investment and little attention to rates of return and profitability. Such practices, while rational under conditions of rapid expansion, became dysfunctional when growth decelerated. Likewise, a banking system and a regulatory framework that might have been appropriate under conditions of tight government control and an unsophisticated financial system no longer were adequate in the deregulated environment of the 1990s. Moreover, a fiscal system without automatic stabilizers made sense if employment always rose and unemployment was an exotic feature of other economies. When recessions finally did appear in Japan, the need for an activist fiscal policy slowed Tokyo's response.

In short, the 1990s confronted Japan with many problems simultaneously — notably, permanently slower growth, overcapacity, low returns, a banking problem of record-breaking proportions and a regulatory system unfit for more complex times. The inability of politicians and policymakers to deal with this set of issues is not surprising. Even a government with great collective economic, business and political wisdom would have had a hard time coping. Japan was not blessed with even small dollops of such acumen.

Japan, however, is fortunate to have the basic foundations of a rich and successful country. Over the next decade or so, it will fare all right. Real GDP gains will range from 1 percent to 2.5 percent a year. Attainment of the higher estimate would be a miracle in its own right for such a developed country; growth at the lower rate would be a bit less than good. Advanced economies, especially Japan, need to learn to age gracefully.

[17] David Woo, *In Search of "Capital Crunch" — Supply Factors Behind the Credit Slowdown in Japan* (Working Paper/99/3) (Washington, D.C.: International Monetary Fund, January 1999), pp. 4 and 15-16.

[18] Akihiro Kanaya and David Woo, *The Japanese Banking Crisis of the 1990s: Sources and Lessons* (Working Paper/00/7) (Washington, D.C.: International Monetary Fund, January 2000), pp. 4-5.

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The views expressed in this report are those of the author and do not necessarily represent those of the Japan Economic Institute.