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The Formation of the Bubble Economy in Japan: the 1980s

During the late 1980s the prices of assets such as shares and land soared, triggering a full-blown bubble economy. This case study describes how the 1980s international trade environment surrounding Japan, and Japan-U.S. relations in particular, led to the formation of the bubble economy^[1].

The Stagflation of the 1970s

The key economic events of the 1970s that influenced the international economy of the 1980s were the switch to floating exchange rates following the Nixon Shock of 1971 and the oil crises of 1973 and 1979.

To begin with, in August 1971, then U.S. President Nixon unilaterally announced the termination of direct convertibility of the U.S. dollars to gold. The Bretton Woods system of monetary management that had existed until then was based on the ability to exchange the U.S. dollars for gold at a fixed rate, having other countries fix the exchange rates of their currencies into the dollars in advance. With the Nixon Shock, however, the Bretton Woods system virtually ended.

Attempts were then made to re-establish the system of fixed exchange rates at new rates. In December 1971, the Smithsonian Agreement set new and lower fixed rates for the dollar. In 1973, however, the U.S., Britain, and most other developed countries switched to a system of floating exchange rates, sounding the final death knell to the Bretton Woods system.

Under the Bretton Woods system, rates of exchange of the dollar into other currencies were fixed. In the late 1960s, however, confidence in the dollar declined, and Japan began intervening in the foreign exchange market, buying the U.S. dollars and selling yen in order to maintain the fixed rate^[2]. The yen selling flooded the market with yen, leading to a sharp increase in Japan's money

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[1] “Bubbles” has a long history, with the tulip mania of the 17th century in the Netherlands being particularly famous. Once tulip bulbs started being targeted by speculators, their prices soared, to the extent that a single bulb could be exchanged for a horse or a carriage.

[2] The dollar purchases were designed to maintain the value of the dollar.

stock^[3] and laying the foundations for inflation.

Against this backdrop, the first oil crisis occurred in 1973. Soon afterwards, in 1974, almost all countries experienced inflation rates of over 10 percent^[4]. Japan was also hit by abnormally high inflation that came to be described as *kyouran bukka* [crazy prices]. Although unemployment remained low, at 1-2 percent, in 1974 the consumer price index increased 23.2 percent from the previous year (see **Figure 1**). The rise in oil prices and resultant increase in the consumer price index triggered a decline in real incomes and a drop in consumption, which led to a recession in 1974-75 (see **Figure 2**). In other words, Japan and other developed countries found themselves struggling with stagflation^[5], due to the rise in oil prices having triggered both a recession and inflation.

Later, from around 1977, the economies of developed countries began to exhibit steady recoveries. In 1979, however, the Iranian Revolution provided the spark for a second oil crisis. The 1980s therefore began amid high inflation.

The U.S. in the Early 1980s: Monetary Tightening and Reaganomics

Monetary Tightening by the FRB

One of the most significant economic indicators around 1980 was interest rates. With the aim of curbing the inflation that followed the second oil crisis of 1979, the Federal Reserve Board (FRB^[6]) moved to tighten monetary policy. In 1981 it raised the federal discount rate to 14 percent and the federal funds rate^[7] to just under 20 percent (see **Figure 3**).

These unprecedentedly high interest rates led to a worldwide contraction in credit, which, coupled with the inflation stemming from the oil crisis, pushed the U.S. economy into a severe recession, with GDP^[8] growth slipping into negative territory in 1980 and 1982 (see **Figure 2**). Unemployment, which lags behind the economic trend, climbed to around 10 percent in 1982-83 (see **Figure 4**).

Later, due to the recession and the tightening of the money stock, inflation, which had remained high for some time, began to show signs of abating. The inflation rate as measured by the CPI (consumer price index) stood at high levels in 1980 and 1981, at 13.5 percent and 10.4 percent, respectively, but in 1982 it fell to 6.2 percent and then to 3.2 percent in 1983 (see **Figure 4**).

[3] “Monet stock” used to be called the “money supply.” However, in 2008, when changes were made to the way money supply statistics were compiled, the name was changed to that used in the West.

[4] At the time, the *rettou kaizou buumu*, a campaign to “improve the Japanese archipelago,” that involved heavy government spending, excess liquidity resulting from prior monetary easing, and the first oil crisis all contributed to an acceleration in inflation.

[5] The term “stagflation” comes from the combination of “stagnation” and “inflation.”

[6] The Federal Reserve Board (FRB) oversees the federal reserve banks that operate nationwide and constitute the U.S. central banking system.

[7] The interest-free reserve deposits maintained by U.S. private banks at federal reserve banks are referred to as “federal funds.” The interest rate applied to these funds when they are borrowed from the federal reserve banks is known as the “federal funds rate.” The official discount rate, meanwhile, is the interest rate charged when ordinary city banks borrow funds from the central bank.

[8] Gross domestic product (GDP) is the total market value of all goods and services produced in a country during a certain period of time.

Reaganomics

The Reagan administration, which came to power in 1981, pursued an economic policy known as “Reaganomics” with the aim of overcoming the recession described above. Its main policy measures included (1) lower taxes on investments and personal incomes, (2) the easing or elimination of various regulations^[9], and (3) labor policies designed to encourage a change in traditional labor-management relations. Initially, the Reagan administration advocated a basic stance of small government with an emphasis on the market mechanism.

Among the policy measures mentioned above, (1) lower taxes on investments and personal incomes represented the application of supply-side economics, a school of thought that had emerged in the late 1970s. Laffer, one of the most famous of the supply-side economists, held that there existed a Laffer curve, as shown in **Figure 5**. According to this curve, if the tax rate is raised to a certain point, tax revenue increases. Beyond this point, however, tax revenue falls. Moreover, increasing the tax rate beyond this threshold imposes various disincentives on families and companies, which causes the economy to stagnate. In particular, Laffer claimed that the U.S. economy at the time was lying to the right of the graph’s peak, and that lowering taxes would not only raise tax revenue but would also lead to improvements in productivity^[10].

And with the goal of restoring U.S. prestige following defeat in the Vietnam War and achieving victory in the Cold War, the Reagan administration expanded the military expenditure through such policies as the Strategic Defense Initiative (SDI). However, because efforts to curb social security spending did not go as smoothly as planned^[11], government spending increased. Tax revenue also failed to rise as the supply-siders had claimed it would, the government ended up with a huge budget deficit (see **Figure 6**).

The U.S. Twin Deficits and the Trade Imbalance Problem

The Reaganomics-based tax cuts and the rise in government spending due to the expansion of the military increased demand just as economics textbooks predict, and the U.S. real economic growth moved from negative territory in 1982 to plus 4.5 percent in 1983, and then plus 7.2 percent in 1984 (see **Figure 2**).

On the other hand, though, high interest rates stemming from the tight-money policy that had been pursued since the end of the 1970s led to an inflow of capital from abroad and the U.S. dollar continued to appreciate until the mid-1980s (see **Figure 6** and **Figure 7**). In other words,

[9] During the 1980s, industrial organization theory received a lot of attention in the field of economics. The background to this was that it had come to be recognized that rather than camphor-like policies such as fiscal stimulus measures and monetary easing, there was a need to change the very fundamentals of industry. The idea that improving these fundamentals would require the creation of an environment in which companies could compete on level terms led to the promotion of deregulation and policies aimed at strengthening industry. The deregulation carried out by the Reagan administration in the U.S. and the Thatcher government in Britain was a reflection of these economic theories.

[10] See Iwao Nakatani (1993), *Nyumon Makurokeizaigaku* [Introduction to Macro-economics], 3rd Edition, Nippon Hyoronsha.

[11] See White Paper on the World Economy (1987 edition, Chapter 2, Section 3).

investors from outside the U.S. invested aggressively in U.S. financial products in order to take advantage of the high interest rates, which led to an inflow of capital. Moreover, to invest in these dollar-denominated U.S. financial products, they sold their own currencies and bought the U.S. dollars in the foreign exchange market, which resulted in an appreciation of the dollar.

5 The rising dollar caused local prices of U.S. exports to increase, and their price competitiveness suffered^[12]. Moreover, dollar prices of goods imported from abroad fell, triggering a sharp rise in imports^[13]. Furthermore, the Reaganomics-led expansion in domestic demand increased levels of consumption among U.S. consumers, which accelerated the rise in imports. As a result, from 10 1983 the current account^[14] deficit widened, increasing to 2.8 percent of GDP in 1985 (see **Figure 6**).

As a result, during the mid-1980s the U.S. economy became faced with the problem of “twin deficits,” i.e. a budget deficit and a current-account deficit (trade deficit)^[15]. The current-account deficit was covered using the aforementioned inflow of funds from abroad (see **Addendum: Current Account and Capital and Financial Account in the Balance of Payments**). In other words, a current-account deficit means that funds are flowing in from abroad (i.e. there is a surplus in the capital and financial account). A part of these foreign funds was used to purchase federal government bonds, which means that they were also financing the budget deficit.

The Positive Impact on Japan

From the standpoint of the Japanese economy, however, the expansion in U.S. domestic demand and the strong U.S. dollar (weak yen) was favorable because it led to an increase in exports to the U.S. The rise in these exports caused Japan’s current-account surplus (as a percentage of GDP) to expand from the beginning of the 1980s to a peak of 4.3 percent in 1986 (see **Figure 6**).

The Emergence of Protectionism

30 With the aim of reducing the current-account deficit, the U.S. Congress then began calling for protectionist measures to be taken. Although Japan-U.S. economic tensions had been an issue since the beginning of Japan’s high-growth era, the growing trade imbalance between the two countries

35 [12] For example, if the dollar appreciates (i.e. the yen depreciates) from 100 yen to 200 yen, the price in Japanese yen of a U.S. product worth one dollar will increase from 100 yen to 200 yen.

[13] Similarly, if the dollar appreciates (i.e. the yen depreciates) from 100 yen to 200 yen, the price in dollars of a Japanese product worth 1,000 yen will drop from ten dollars to five dollars.

[14] The current account consists chiefly of (1) the trade balance, which records transactions involving goods, (2) the service balance, which records transactions involving tourism, shipping, etc., and (3) the income balance, which records the payment/receipt of interest, dividends, etc.

40 [15] The trade balance, which is the major component of the current account, is closely connected to the fiscal balance. To see this connection, let us look at the following equation, which is derived from a basic equation in economics ($Y = C + I + G + EX - IM$):

$$\{(Y - C - T) - I\} + (T - G) = EX - IM$$

Y: output, C: consumption, I: (real) investment, G: government spending, T: taxes, EX: exports, IM: imports

If the balance of private-sector savings and investment $\{(Y - C - T) - I\}$ is excluded, the government’s fiscal balance $(T - G)$ and the trade balance $(EX - IM)$ are equal. $\{(Y - C - T)\}$ denotes savings.) For example, if there is a budget deficit $(T - G < 0)$, there will also be a trade deficit $(EX - IM < 0)$. Because of this close connection, deficits on both balances are referred to as “twin deficits.”

during the 1980s put the issue under the spotlight^{[16][17]}.

From the Plaza Accord to the Louvre Accord

In September 1985 the G5 (group of five developed countries: U.S., Britain, Japan, West Germany, and France) finance ministers and central bank heads met at the Plaza Hotel in New York at the request of the U.S. There they agreed to cooperate on policies to address the strong U.S. dollar and foreign trade imbalances (this agreement is known as the Plaza Accord). With regard to addressing the strength of the dollar, it was agreed that “exchange rates should better reflect fundamental economic conditions than has been the case,” that each country would intervene jointly in the foreign exchange market, and that “some further orderly appreciation of the main non-U.S. dollar currencies against the dollar is desirable”^[18]. It was also confirmed that countries with trade surplus, such as Japan and West Germany, would work to expand domestic demand, and that countries with trade deficits, such as the U.S., would work to reduce their budget deficits.

At the time, the U.S. current-account deficit had widened to over 3 percent of GDP (see **Figure 6**). Because the bulk of the current-account deficit was due to deficits in trade and services, it can be said that the excess of imports over exports was being covered by the inflow of funds (i.e. a surplus in the capital and financial account)^[19]. The world’s major economies recognized that if nothing was done about this massive current-account deficit, U.S. debt to other countries would mount, confidence in the dollar would be shaken, and the international monetary system would become unstable.

After the Plaza Accord, each country conducted a joint market intervention to sell the U.S. dollars and/or buy Deutschmarks and yen. As a result, the yen-dollar exchange rate fell from over 230 yen to the dollar at the time of the accord to under 200 yen in January the following year. By September 1986, exactly one year after the accord was signed; the dollar had plummeted to around 155 yen. The yen had appreciated and the dollar depreciated at a much faster rate than anticipated at the time of Plaza Accord (see **Figure 7**).

The High-Yen Recession

As a result, Japan experienced a recession, known as the *endaka fukyou* [high-yen recession], that lasted for 17 months between June 1985 and November 1986^[20]. It occurred because Japan’s export

[16] Tanaka (2002) describes criticism of Japan from the U.S. at the time as being of three types: criticism of the flood of exports from Japan, criticism of Japan’s massive, macro-level trade surplus, and criticism of the closed nature of the Japanese import market. See Takayuki Tanaka (2002), *Gendai Nihon Keizai – Baburu to Posuto-Baburu no Kiseki* [The Modern Japanese Economy: The Path from the Bubble to the Post-Bubble Era], Nippon Hyoronsha.

[17] Attempts by the U.S. government to suppress this protectionism were another reason for the Plaza Accord, which is described later.

[18] See the following page on the Ministry of Finance website: http://www.mof.go.jp/jouhou/kokkin/g7_600922.htm (in Japanese, accessed in September 2010).

[19] The reason that an inflow of capital is referred to as a surplus in the capital-and-financial account is that essentially loan certificates are being “exported.” Looking at it this way makes it easier to understand.

[20] This was the tenth recession since records began.

industries were adversely affected by the falling dollar and rising yen. Japan's annual real GDP growth rate slowed from 6.3 percent in 1985 to 2.8 percent in 1986 (see **Figure 2**).

The J-Curve Effect

5 However, despite the rapid rise of the yen against the U.S. dollar following the Plaza Accord, Japan's current-account surplus failed to shrink. On the contrary, it expanded further, peaking at 4.3 percent of GDP in 1986 (see **Figure 6**).

10 One of the reasons for this was the "J-curve effect." When the yen rises against the dollar, Japanese export products can be expected to become less competitive due to their prices in the U.S. dollars increasing, if the yen prices are assumed to remain constant, and the quantity of goods exported will decline. However, companies are unable to suddenly change the suppliers they source components and so on from. If this delays the reduction in the quantity imported, the value of
15 Japanese exports will actually rise in dollar terms (though their value will remain the same in yen terms). At the same time, the higher yen will push down the yen prices of imports, which can be expected to increase the quantity of imports. Initially, however, foreign manufacturers will not be able to increase production by very much to meet the extra demand, so the value of imports in yen
20 terms will fall (though it will not change in dollar terms). As a result, Japan's trade surplus will increase in terms of both yen and dollars.

At the same time, the U.S. current-account deficit continued expanding until 1987 (when it reached 3.4 percent of GDP). It finally began to shrink in 1988 (see **Figure 6**).

25 Monetary Easing in Japan

Against this backdrop, the Bank of Japan (BoJ) took steps to loosen credit with the aim of checking excessive appreciation of the yen and stimulating domestic demand to overcome the recession.
30 In January 1986, it lowered the official discount rate (now the basic discount rate and basic loan rate^[21]) from 5 percent to 4.5 percent. This marked the start of a series of five rate cuts, which lasted until February 1987 and took the official discount rate down to 2.5 percent^[22] (see **Figure 8**). However, because a plan had been formulated in 1985 to reduce the government's dependence on
35 deficit-covering bonds, the implementation of aggressive fiscal stimulus measures was delayed for some time^[23].

40 [21] Following the liberalization of interest rates in 1994, the policy rate was changed from the official discount rate to the uncollateralized call rate (i.e. the interest rate on short-term (one year or less) loans made by financial institutions in the call market). To reflect this change, from 2006 the term "official discount rate" was replaced with "basic discount rate" and "basic loan rate" in official statistics. For the sake of consistency, however, this case study uses the term "official discount rate."

[22] This rate was maintained for the next two years and three months, until May 1989.

[23] Deficit-covering government bonds, which are issued to cover national budget deficits, were first issued in 1965. No more were issued for some time after that, but they began to be issued again in 1975 following the first oil crisis. See the following page on the Ministry of Finance website: <http://www.mof.go.jp/jouhou/kokusai/policy/sengo.pdf> (in Japanese, accessed in January 2011).

The Louvre Accord

Because the dollar depreciation following the conclusion of the Plaza Accord had gone further than expected, at the Louvre conference held in February 1987 (comprising the G5 finance ministers and central bank heads), an agreement was reached to halt the decline in the value of the dollar^[24]. Nevertheless, cooperation among the countries concerned was inadequate, with some believing that the dollar needed to fall further if the U.S. trade imbalance were to be corrected. As a result, the dollar's slide could not be stopped, and in 1988 it fell to 120-130 yen (see **Figure 7**).

Black Monday

On Monday, October 19, 1987, heavy selling of both futures and cash stocks began on the New York Stock Exchange, and the Dow Jones Industrial Average (DJIA), which comprises the leading issues from various sectors, plunged 22.6 percent from its value at the end of the previous week. It came to be known as "Black Monday." The Tokyo market was also affected, with the Nikkei Stock Average dropping by 3,836.48 yen on the following day. The scale of the fall (14.9 percent compared with the previous day) was the worst in history (see **Figure 9**).

There were a number of reasons for Black Monday. One factor at the time was concern about the depreciation of the U.S. dollar. The increase in external debt accompanying the expansion in the U.S. current-account deficit damaged confidence in the dollar. Moreover, West Germany had raised short-term interest rates to stem inflation, raising the prospect of the mark rising against the dollar. This prospect also made a rise in the yen against the dollar more likely. As a result, Japanese institutional investors such as life insurance companies, which had large holdings of U.S. (i.e. dollar-denominated) assets, began to offload U.S. government bonds in order to stave off foreign-currency losses due to the plunge in the dollar. This is generally viewed as being one of the triggers for Black Monday^[25] ^[26].

Moreover, the sale of U.S. government bonds led yields on them to soar far higher than yields on equities^[27]. As a result, American investors started selling shares and buying the U.S.

[24] See the following page on the Ministry of Finance website: http://www.mof.go.jp/jouhou/kokkin/g7_620222.htm (in Japanese, accessed in September 2010).

[25] See the so-called "Brady Report." The full title is the "Report of the Presidential Task Force on Market Mechanisms" (1988), which was submitted to the President of the United States, the Secretary of the Treasury, and the Chairman of the Federal Reserve Board. For information on this subject in Japanese, see Nikkei (1985), *Zeminaaru Nihon Keizai Nyuumon* [Seminars: Introduction to the Japanese Economy]; Mitsutoshi Ito (2002), "Chouki Chouteikinri Seisaku no Seiji Keizaigaku – Genjitsu Ninshiki to Eikyouryoku Kouzou" [The Politics and Economics of the Long-Term Ultra Low Interest-Rate Policy – Recognition of Realities and the Structure of the Impact] in *Heisei Baburu no Kenkyu Ge Houkai Hen* [Research on the Heisei Bubble, Vol. 02: The Collapse], Toyo Keizai.

[26] Japanese investors became able to purchase large quantities of U.S. government bonds in 1984, following the scrapping of the "real demand principle of the exchange contract" (under which parties could only enter forward exchange transactions when they had genuine plans to purchase imports, sell exports, etc.) and "yen conversion restrictions" (which restricted the conversion of foreign currency into Japanese yen).

[27] The sale of government bonds pushed their prices down, which pushed up their yields as expressed as the difference between market price and par value.

government bonds, which led to Black Monday^[28]. Another factor that worked against stocks was that concerns about the weak dollar raised expectations that U.S. interest rates would be hiked to keep the value of the U.S. dollar^[29].

What magnified the drop, however, was the widespread use of program trading, which had become popular due to the proliferation of computers. With program trading, computers were programmed to automatically issue a sell order whenever the price of a stock fell beyond a specified range, in order to minimize losses. As a result, the selling just triggered further selling.

Moreover, two months before Black Monday, Paul Volcker had quit as chairman of the FRB and been succeeded by Alan Greenspan. Full confidence in the FRB had yet to be established, which also contributed to the emergence of a mood of unease in the market.

The Formation of the Bubble (1): Long-Term Monetary Easing in Japan

In Japan, share prices began climbing in 1986 and land values in 1987 (see **Figure 9** and **Figure 10**). These rises in asset prices were due in large part to the excessively lengthy and large-scale monetary easing of the second half of the 1980s. Even when asset prices had begun rising, the BoJ reduced the official discount rate from 3 percent to 2.5 percent in February 1987 (see **Figure 8**).

At the time, the BoJ recognized that its low-interest-rate policy was generating excessive liquidity and fueling higher asset prices^[30]. Its action to tighten credit was delayed until June 1989, when the surge in asset prices had become obvious.

Three reasons can be given for the delay in moving to tighten credit. To begin with, interest rates were kept low due to fears of a resurgent yen. As long as interest rates in Japan were kept low, investing in bonds issued in countries with high interest rates would be more attractive than purchasing Japanese bonds. As a result, the yen would be sold and the currencies of high-interest-rate countries purchased in the foreign exchange market, which would keep the yen from rising.

Secondly, due to fears of another Black Monday, the right time to start tightening credit was missed. The BoJ endeavored to mitigate the risk of investing in U.S. stocks by easing credit in

[28] Before Black Monday, the yield on 30-year U.S. government bonds was more than 10 percent, an attractive return for U.S. investors, who were not faced with foreign exchange risk.

[29] "Analysis: G20 doesn't even try to put brave face on debt mess," Reuters, 2010.

[30] In a report concerning its outlook for the economy written in the spring of 1986, the Bank of Japan wrote that "although it would be jumping the gun to say that the recent rises in prices of existing assets (land, shares, etc.) will immediately lead to higher prices, given recent monetary easing, a close watch will need to be kept on changes in the money supply." When the BoJ reduced interest rates for a third time, its outlook said that "urban land values and the prices of assets such as shares are continuing to rise and easier credit is one of the reasons for this." Furthermore, when it reduced interest rates for a fifth time, its outlook in the summer of 1987 said that "there has been an increasing focus by corporations and households on capital gains, which has encouraged trading in existing assets. Although these transactions do not lead directly to higher nominal demand, financial institutions are being flexible in providing loans to fund such transactions, which has been a major contributor to the recent sharp rise in the money supply. However, this expansion in the use of "Zai-tech" strategies and the increased appetite among financial institutions for lending is likely to indirectly result in credit continuing to be eased. Given this situation, it is undeniable that the interest-rate cuts that have been made until now have contributed to the growth in the money supply." These remarks represented a series of warnings about further easing of credit, which seemed to have already gone too far.

order to keep the yen weak and prevent the emergence of fears of a depreciation of the dollar in the future^[31] (if such fears did emerge, the yen value of U.S. shares, whose prices were denominated in dollars, could be expected to fall).

The third reason that monetary easing went on for a long time was that consumer price index had been successfully controlled due to continuous improvement of productivity and the appreciation of yen, stemming any rise in the prices of imported goods (see **Figure 1**)^[32]. In the mid-1980s, the rate of inflation as measured by the consumer price index stood at over two percent, but between 1986 and 1988 it fell below one percent. The BoJ therefore judged that there was no urgent need for monetary tightening.

Because low interest rates were maintained for a long period of time, investors and speculators were able to procure large amounts of funds at low cost.

The Formation of the Bubble (2): The Impact of Financial Liberalization

Another factor that laid the foundations for the bubble was financial liberalization and the resultant diversification in the methods used by corporations to procure and invest funds.

Changes in the Ways Companies Procured Funds

During the second half of the 1980s, financial liberalization led to a diversification in the ways companies procured and invested funds, and equity finance began to become a popular method of acquiring capital. Equity finance refers to methods of procuring funds that involve the issuance of new stock. It includes not only share issues, but also the issue of convertible bonds and bonds with stock purchase warrants^[33].

For example, when a company issues convertible bonds and borrows money, if its share price rises and the debt is converted into equity, then the company no longer needs to repay it. Moreover, if a company's share price is expected to increase, it can engage in equity finance on favorable terms.

As a result, equity finance proliferated as share prices rose, and in the three years from 1987 to 1989 around 60 trillion yen was procured in this way^[34]. The issuance of bonds with stock purchase warrants as a means of procuring funds overseas recorded particularly striking growth.

[31] West Germany, on the other hand, had moved to tighten credit one year earlier than Japan, in the middle of 1988. See the "Annual World Economic Report" (1990, country profiles section) from the Economic Planning Agency: <http://wp.cao.go.jp/zenbun/sekai/wp-we90-2/wp-we90bun-4-13z.html> (in Japanese, accessed in September 2010)

[32] The chief reason that the consumer price index increased by just under two percentage points in 1997 was that the consumption tax was raised from three percent to five percent in April 1997.

[33] When convertible bonds are converted into shares, they do not need to be repaid because the bond component is cancelled. In the case of bonds with stock purchase warrants, however, the bonds will not be cancelled before maturity even if the warrants are used to purchase new shares. It became possible to issue bonds with warrants following revisions to the Commercial Code in 1981 in Japan. Further revisions in 2002 reclassified both convertible bonds and bonds with warrants as "bonds with share options."

[34] See *Kaishasai Geppou* [Monthly Corporate Bond Bulletin] from the Bond Underwriters Association of Japan. In 1985, the balance of outstanding bonds was around five trillion yen.

Because the yen was strong at the time, a promise to repay dollars in the future meant that provided the value of the yen increased in the meantime, the actual amount repaid would be small. In fact, it was possible to maintain zero or negative interest rates by combining currency futures transactions with the issuance of bonds with warrants^[35].

Such financing methods were used mainly by large corporations (especially manufacturers). Furthermore, issuing commercial paper^[36] (CP) became a popular way of procuring short-term funds, and large companies were also the chief users of this method. In this way, large corporations expanded their financing methods to include direct finance. Or to put it another way, they found themselves free to employ other methods besides traditional indirect financing (i.e. borrowing from banks).

Changes in the Behavior of Banks

Having lost large corporations, their prime loan customers, to direct finance, banks needed to find new borrowers, and their attention turned to households and small and medium enterprises (SMEs), as well as the three “bubble sectors,” i.e. construction, real estate, and non-bank finance^[37]. In the three bubble sectors, in particular, loans for the purchase of real estate were made on a particularly large scale (see **Figure 11**).

Although this change in the composition of bank borrowers raised the risk of lending, the banks were ill-prepared to manage this risk. When screening potential new borrowers, for example, financial institutions need to spend a lot of cost to gather and analyze information. However, because land values were rising, the banks approved loans based solely on the land and other real estate that would serve as collateral.

Figure 12 shows the amount of personal savings at private-sector financial institutions and the total volume of bank lending. Throughout the 1980s, personal savings grew steadily, but bank lending increased at an even faster rate, growing especially fast in 1989.

The “Zai-Tech” Boom

Companies used the money they raised to play the stock market by investing in specified money trusts (known as *tokkin*) or fund trusts, instead of investing it in plant and equipment for their core operations^[38]. This was the so-called “Zai-tech” boom. At the end of 1985, 8.8 trillion yen was held in *tokkin* or fund trusts. At the end of 1989 the figure was more than 42 trillion yen^[39].

[35] See Nikkei (1985), *Zeminaaru Nihon Keizai Nyuumon* [Seminars: Introduction to the Japanese Economy]; Takayuki Tanaka (2002), *Gendai Nihon Keizai – Baburu to Posuto-Baburu no Kiseki* [The Modern Japanese Economy: The Path from the Bubble to the Post-Bubble Era], Nippon Hyoronsha; and Tadahiro Mitsuhashi and Shigeo Uchida (1994), *Shouwa Keizaishi (part II)* [Economic History of the Showa Period], Nikkei Bunko.

[36] Commercial paper (CP) is a form of unsecured promissory note issued by corporations to obtain short-term funding.

[37] See Takayuki Tanaka (2002), *Gendai Nihon Keizai – Baburu to Posuto-Baburu no Kiseki* [The Modern Japanese Economy: The Path from the Bubble to the Post-Bubble Era], Nippon Hyoronsha.

[38] With fund trusts, the investor gives general instructions concerning what the money should be invested in and what investment methods should be used, leaving the details up to the trustee. With *tokkin*, however, the investor makes all the decisions, leaving the trustee with no room for discretion.

[39] Tadahiro Mitsuhashi and Shigeo Uchida (1994), *Shouwa Keizaishi (Ge)* [Economic History of the Showa Period], Nikkei Bunko. Yukio Noguchi (2008), *Sengo Nihon Keizaishi* [Economic History of Post-War Japan], Shinchosha Publishing.

The growing flow of funds into the stock market caused share prices to rise. At the time, 70 percent of Japanese stocks were cross-held by other companies, with only 30 percent actually circulating in the market. The inflow of funds therefore translated into demand for this 30 percent of stocks, magnifying the increase in share prices^[40].

The rise in stock prices also led to an increase in the use of equity finance, enabling companies to procure large amounts of funds at low interest rates. These funds were then invested in the stock market through *Zai-tech* vehicles, resulting in further rises in share prices and creating a self-perpetuating system^[41].

Corporations and financial institutions such as banks and life insurers were not the only ones investing in stocks. Individual investors also got involved. Although the scale of their involvement in the stock market was small, it accelerated particularly rapidly following the privatization and listing of NTT in 1987.

Futures Trading and Arbitrage Trading

Another factor accelerating the rise in stock prices was the use of futures^[42], a new form of trading made possible (from 1988) by financial liberalization. Recovery from the high-yen recession of 1985-86 led to expectations of rising stock prices, and arbitrage trading, whereby futures were sold and cash stocks were purchased at the same time, started being used to take advantage of the use of futures. If higher share prices were forecast, this type of arbitrage trading allowed investors and speculators to make risk-free profits by buying shares for cash and simultaneously selling futures for a higher price than that of the shares. This type of arbitrage trading was therefore a set of financial transactions designed for making profits amid rising stock prices. Moreover, the purchase of cash stocks as part of this arbitrage trading pushed up the Nikkei Stock Average, which made investors even more bullish^[43].

Soaring Share Prices and Land Values

Figure 9 shows changes in the Nikkei Stock Average. In 1986 the Nikkei began to soar, and apart

[40] Ryunoskin Kamikawa (2002), “*Baburu Keizai to Nihon Ginkou no Dokuritsusei*” [The Bubble Economy and Bank of Japan Independence], in *Heisei Baburu no Kenkyu Jou Keisei Hen* [Research on the Heisei Bubble, Vol. 01: The Formation], Toyo Keizai.

[41] However, equity finance brings with it the possibility that the number of shares will increase in the future, and the expansion in the use of equity finance resulted in an oversupply of shares, which was one of the factors behind the bursting of the bubble later.

[42] “Futures” represents a promise now to trade an asset at a fixed price at a certain point in the future.

[43] The sale of stock index futures for arbitrage purposes became possible in 1988 for both the Nikkei Stock Average and the Tokyo Stock Price Index (TOPIX). However, selling futures on the Nikkei Stock Average was more convenient. The Nikkei Stock Average is just a number, so it cannot be traded directly. However, the purchase of all the issues comprising the Nikkei Stock Average allows a portfolio that is closely tied with it (the Nikkei Stock Average is calculated by converting the issues comprising it to a par value of 50 yen and dividing the total by a divisor). What is important here is that this technique involves the issues comprising the index being purchased in equal quantities, so the prices of thinly traded issues, i.e. issues for which few shares are outstanding, will rise by a large margin. Such spikes played a major role in pushing up the value of the Nikkei Stock Average as a whole.

from a brief dip following Black Monday, it rose continuously for the four years to the end of 1989. At the close of trading on December 30, 1989, the last trading day of the year, it reached a historical peak of 38,916 yen.

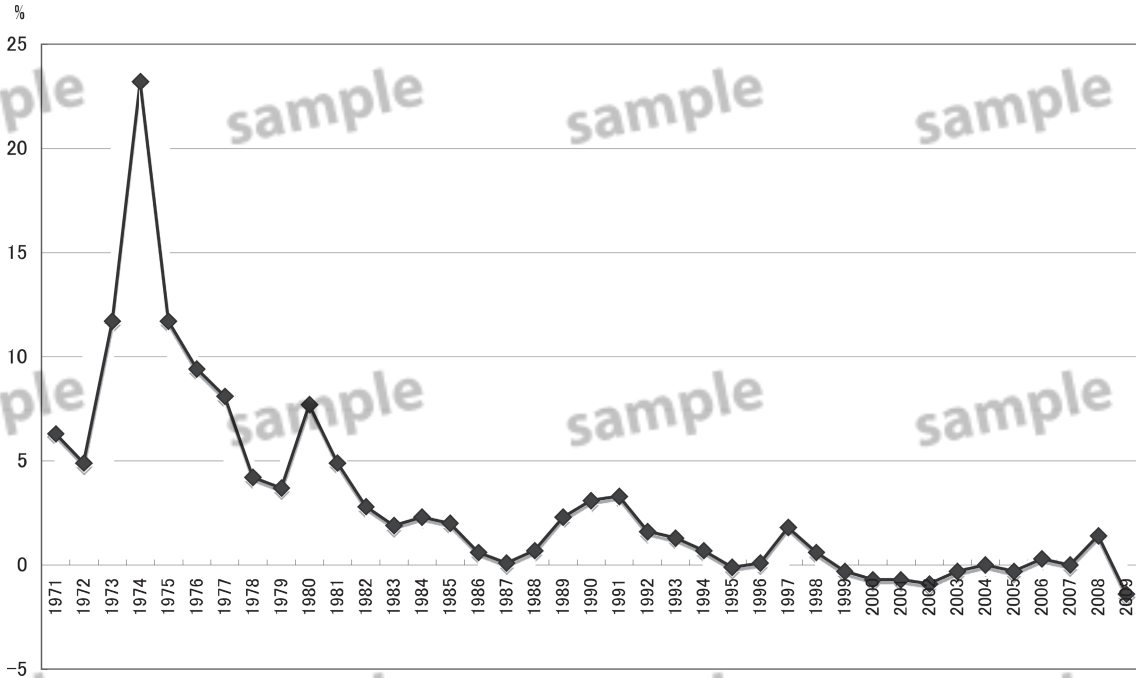
Although corporate earnings generally increased during this period, this increase is not enough to explain the steep rise in share prices that actually occurred. One of the basic indicators employed to evaluate stocks is PER (price earnings ratio). PER is defined as the share price divided by net income per share. The higher the PER, the more expensive the stock is in relation to earnings. At the end of 1985, the average PER was 35.2, but by the end of 1989 it had more than doubled, to 70.6. In other words, at the end of 1989 shares were considerably overvalued given actual levels of earnings.

Almost exactly the same trend was seen with land values. **Figure 10** shows changes in indexes for the publicly assessed values of residential land nationwide, commercial land nationwide, residential land in the three major urban areas, and commercial land in the three major urban areas (1974 was the base year, with each of these posted values set at 100^[44]). All the trend lines become steeply upward sloping in 1987 and reach their peaks in 1991. The rapid rate of increase in the values of commercial and residential land in the three major urban areas is particularly striking.

One of the reasons was use of a technique called *tochi-korogashi*, which refers to the practice of repeatedly buying and selling land. During this period, the so-called *tochi-shinwa* [land myth] prevailed, with people believing that land values would never fall. There was therefore a bullishness about land values. Speculators, expecting land values to rise, purchased land with the goal of selling it again later. Once the land had appreciated by a certain margin, they sold it to another company. That company would then sell it on to another, which would sell it on to another, and so on. The name *tochi-korogashi* was coined for this repeated buying and selling. *Tochi-korogashi* was also fueled by easier credit, which enabled speculators to secure large sums of money at low interest rates.

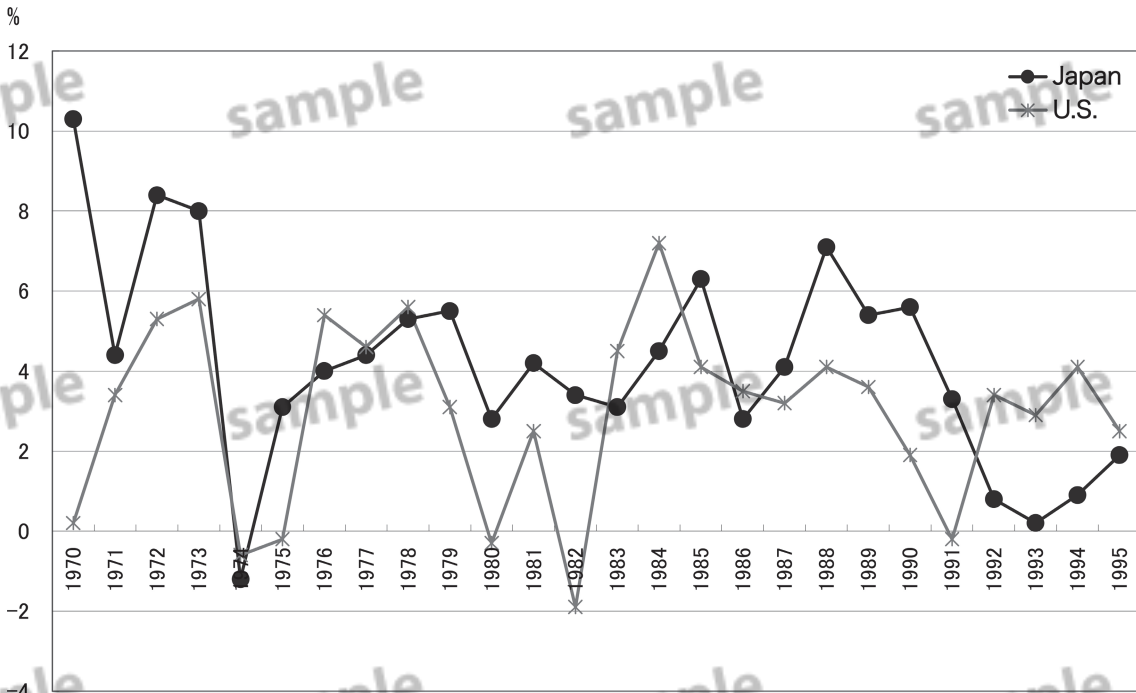
[44] The three major urban areas are the Tokyo, Osaka, and Nagoya areas.

Figure 1: Year-on-Year Changes in Japan's Consumer Price Index



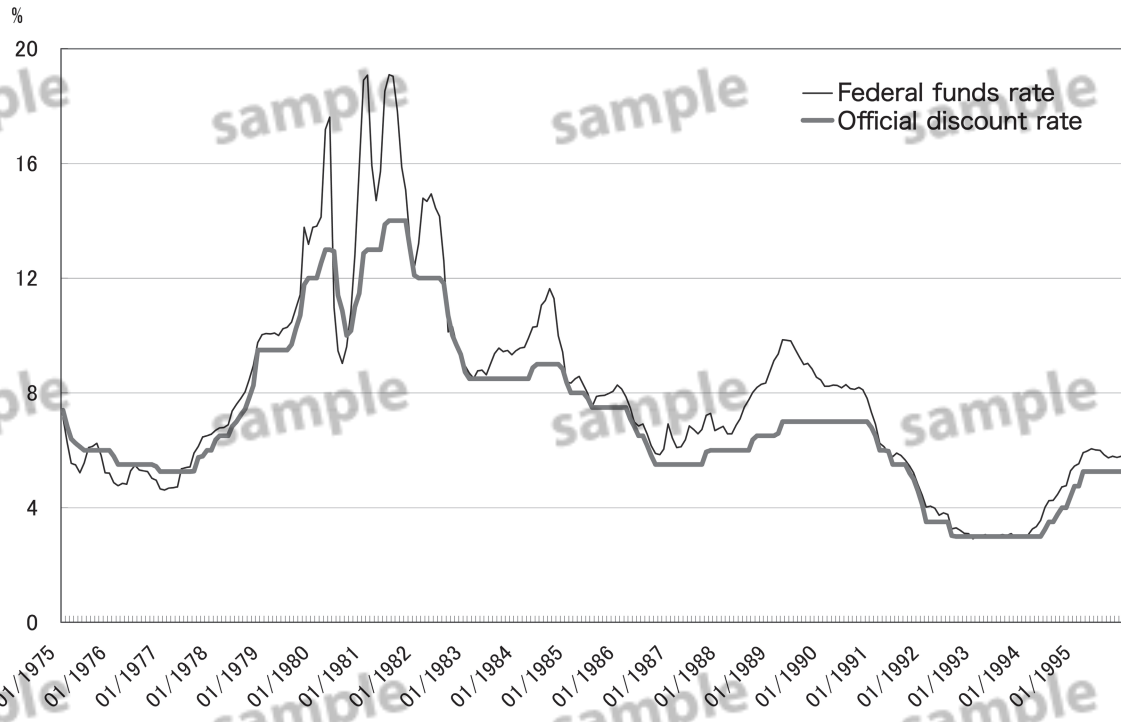
Source: Ministry of Internal Affairs and Communications, Japan

Figure 2: Real Economic Growth Rates in Japan and the U.S. (%)



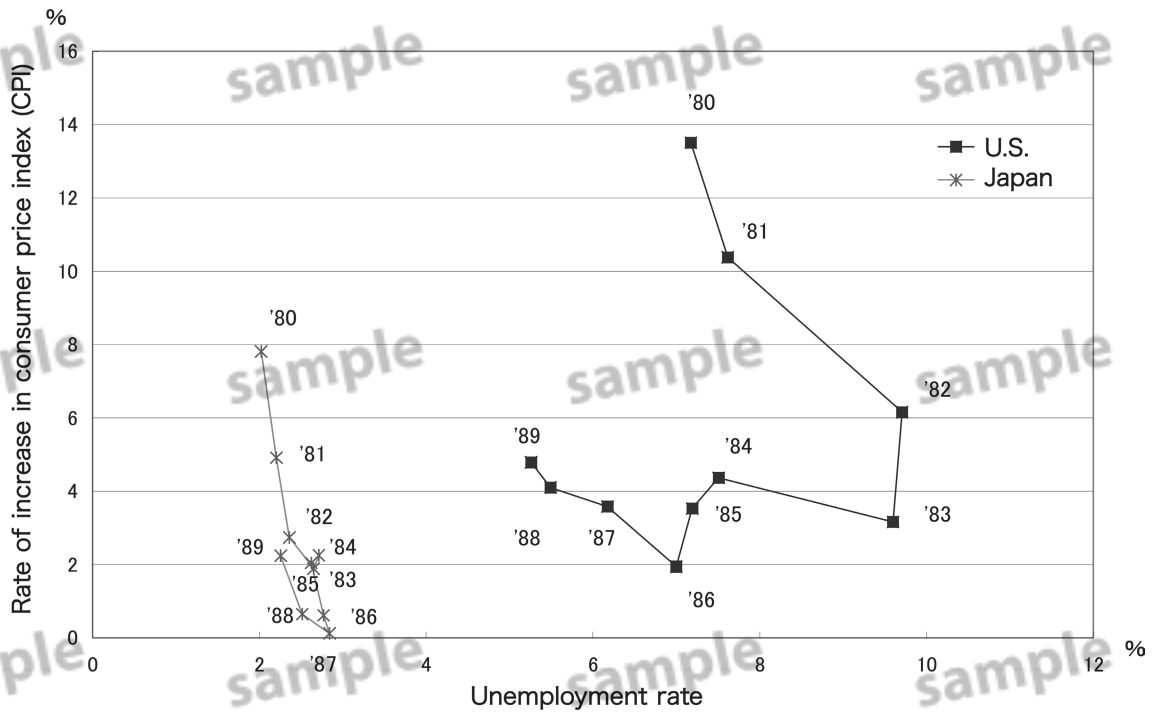
Source: U.S. Department of Commerce, Annual reports on the Japanese economy and public finance (Long-Term Economic Statistics, Cabinet Office, Government of Japan)

Figure 3: Monthly Changes in the U.S. Federal Funds Rate and Official Discount Rate



Source: Board of Governors of the Federal Reserve System

Figure 4: Phillips Curve Scattergram for Consumer Prices



Source: IMF World Economic Outlook Database

Figure 5: Laffer Curve

Tax revenue

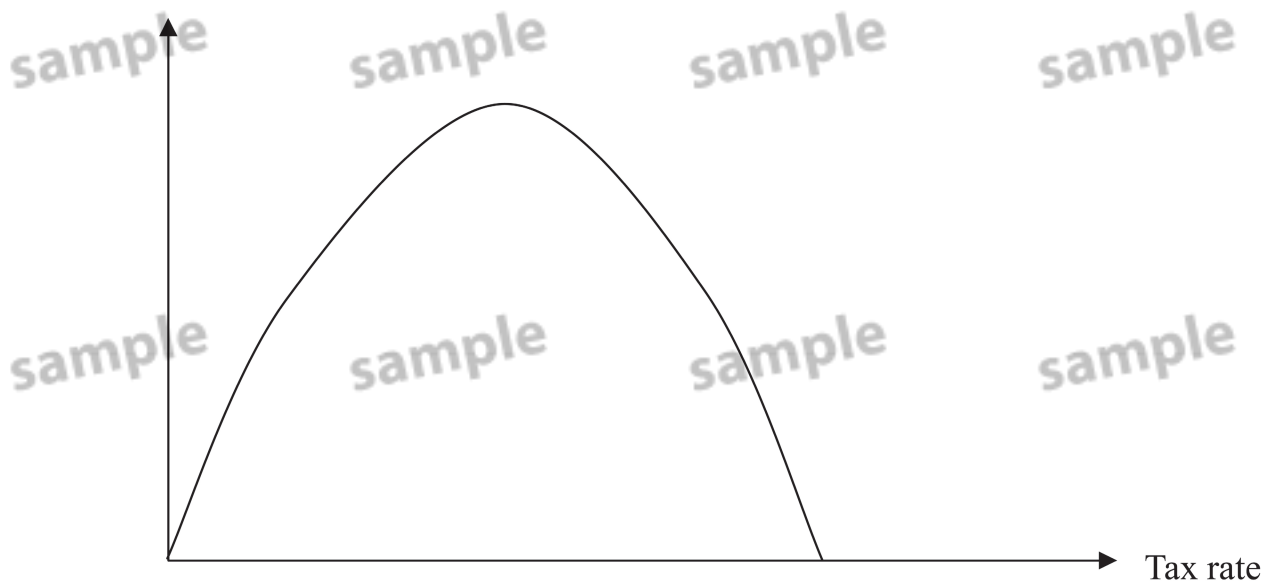
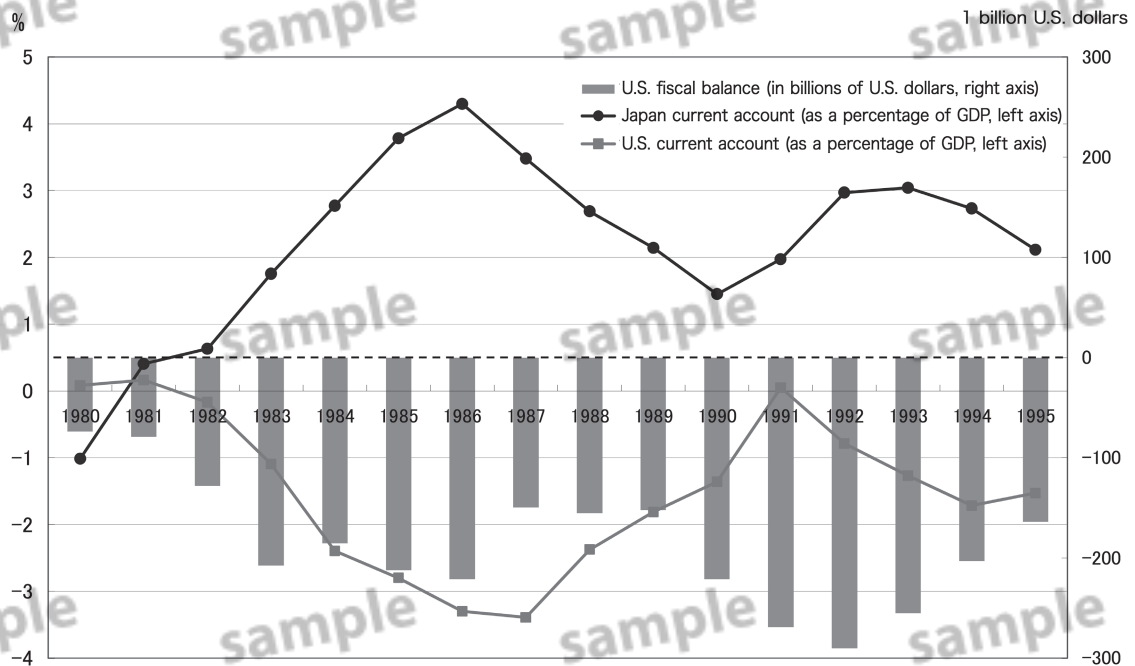


Figure 6: U.S. Fiscal Balance and Capital and Financial Account and the U.S. and Japan's Current Account

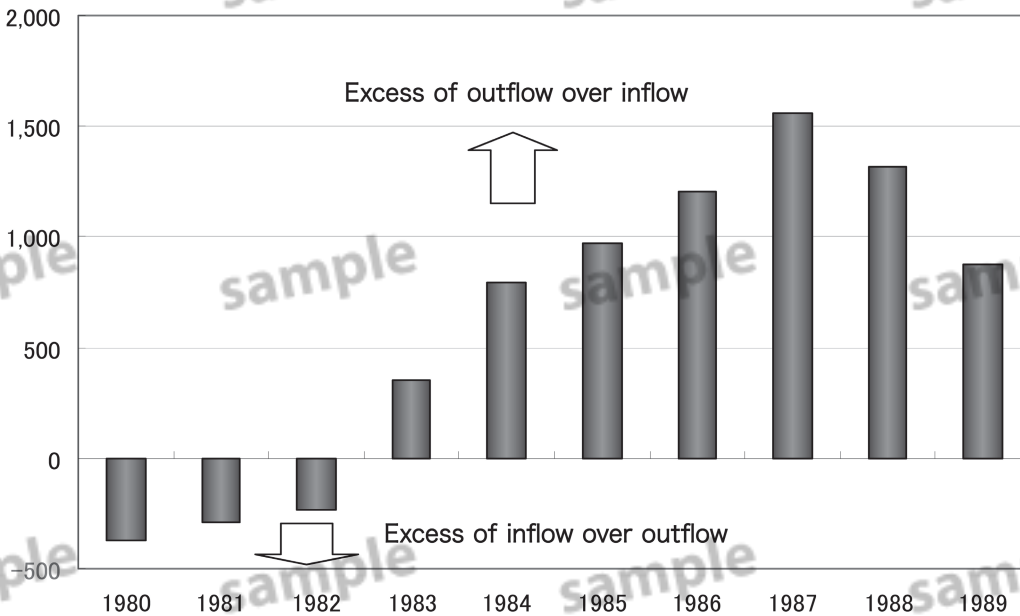
The U.S. Fiscal Balance and the U.S. and Japan's Current Account (as a Percentage of GDP)



Source, IMF World Economic Outlook Database, White Paper on International Economy and Trade by Minister of Economy, Trade and Industry, Japan

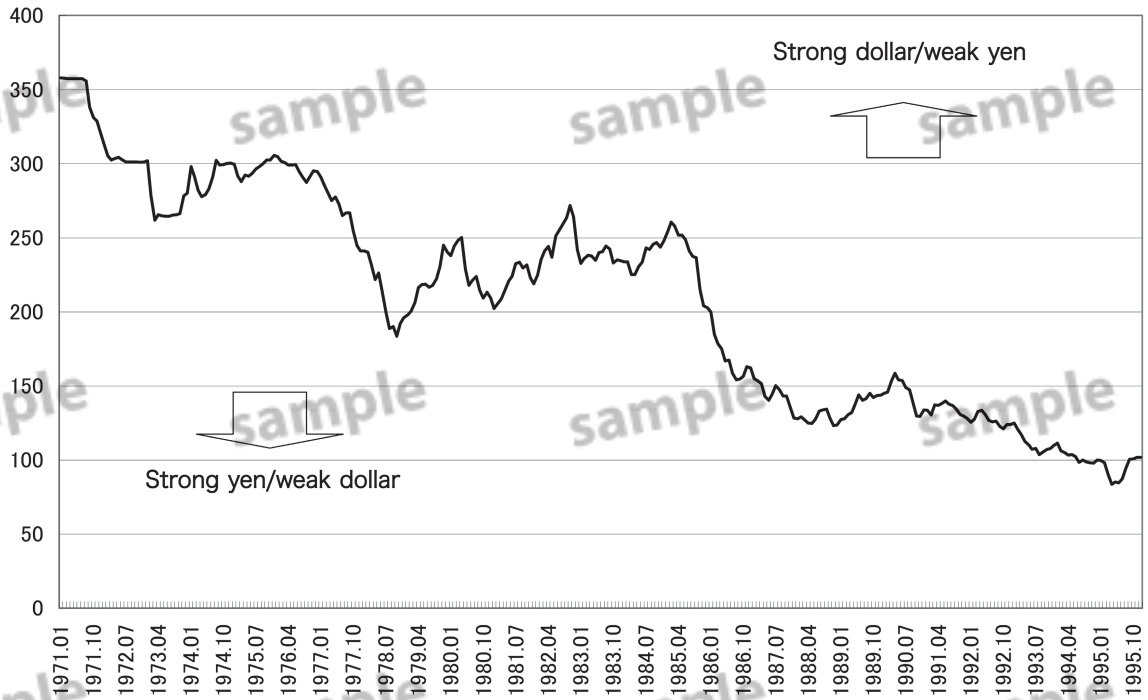
U.S. Capital and Financial Account

100 million U.S. dollars



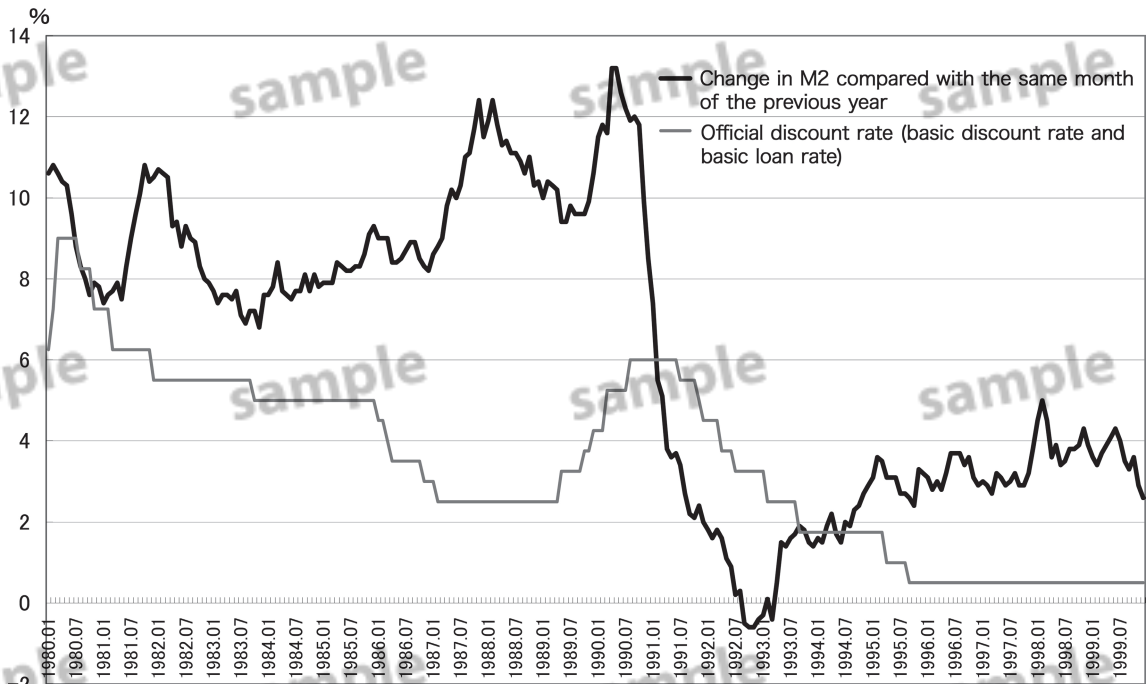
Source: U.S. Department of Commerce, White Paper on International Economy and Trade by Minister of Economy, Trade and Industry, Japan

Figure 7: Yen-Dollar Exchange Rates (JPY/USD)



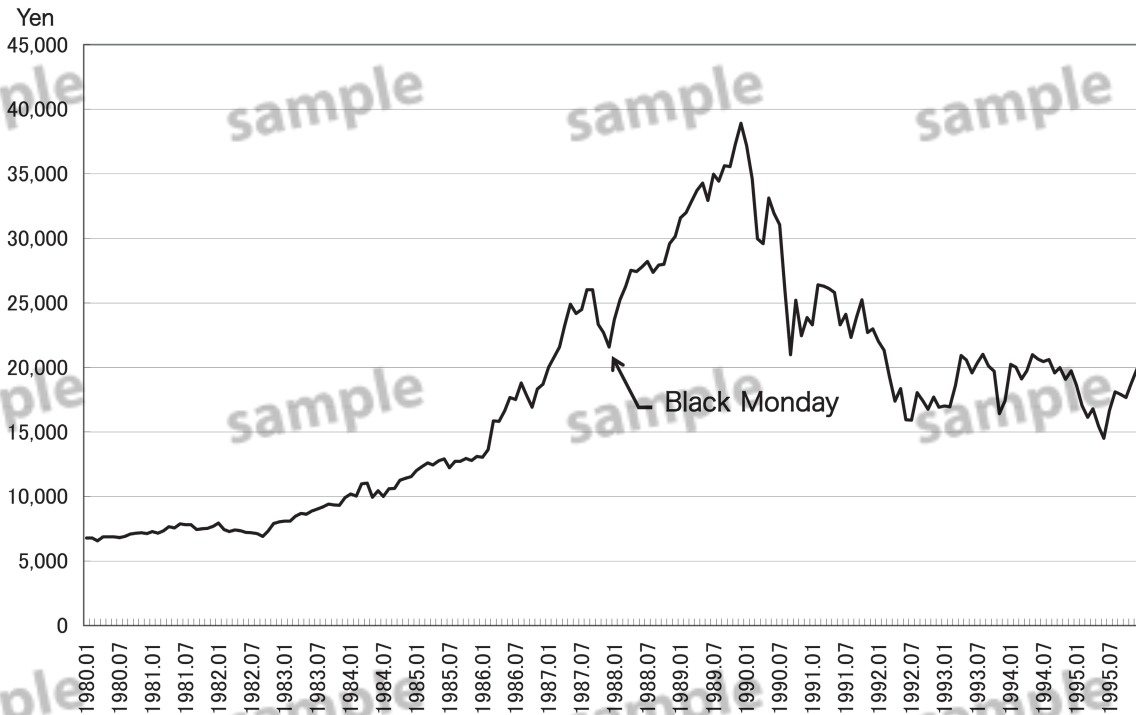
Source: The University of British Columbia, PACIFIC Exchange Rate Service

Figure 8: Money Stock Growth Rates and Changes in Official Discount Rate in Japan



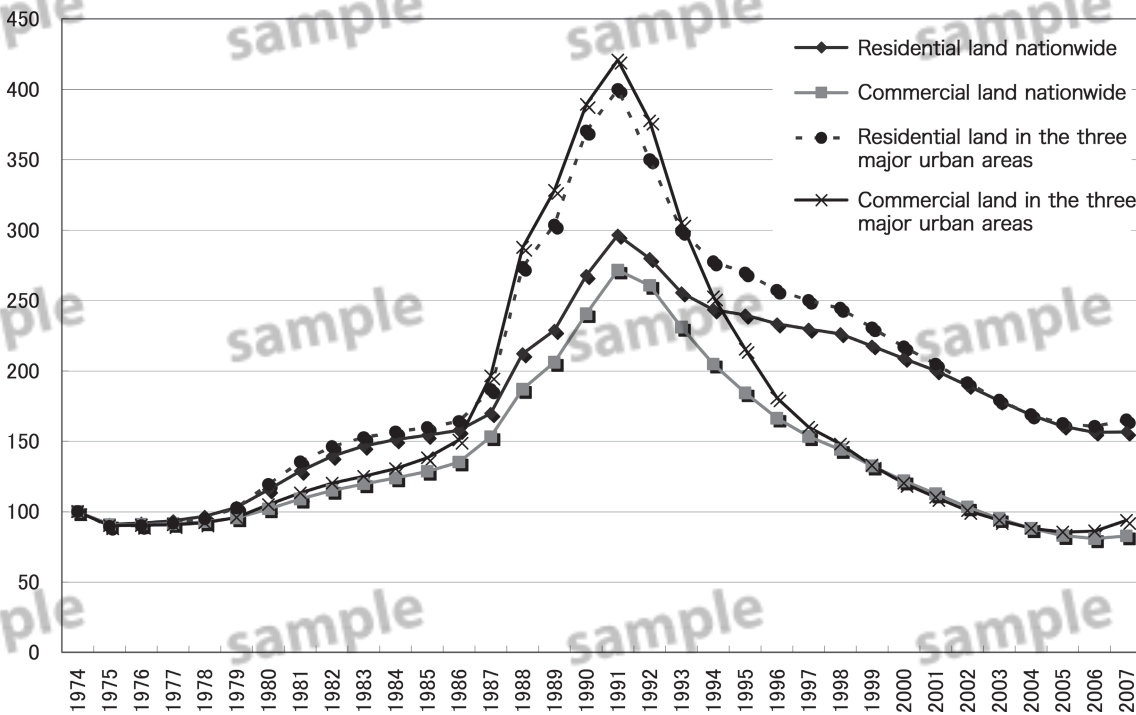
Source: Bank of Japan

Figure 9: Nikkei Stock Average (Month-End Figures in Yen)



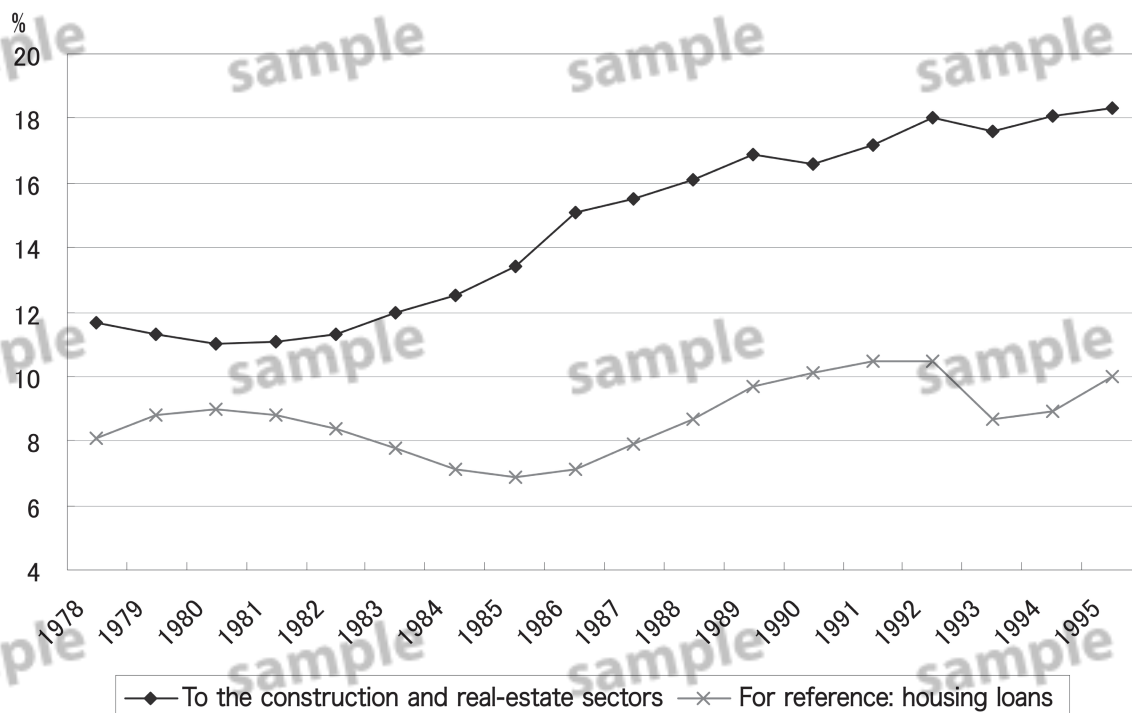
Source: Bank of Japan

Figure 10: The Publicly Assessed Values of Land (1974 Value = 100)



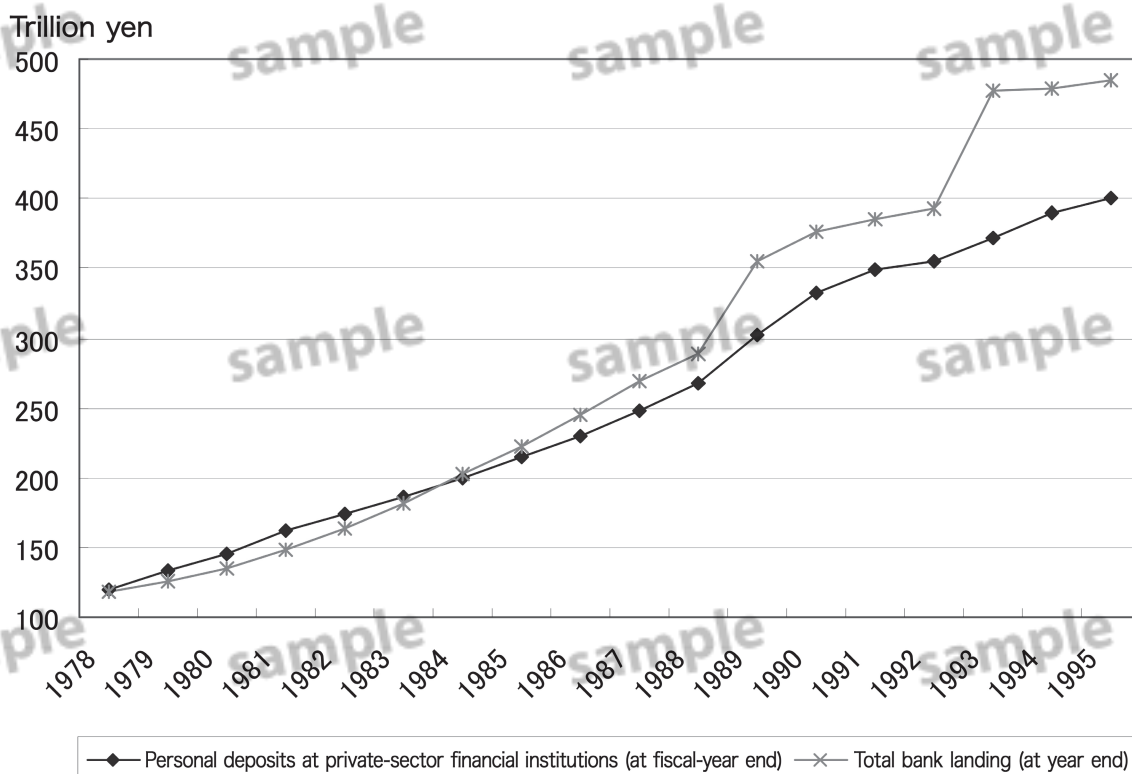
Source: Ministry of Land, Infrastructure, Transport and Tourism

Figure 11: Loans to the Construction and Real-Estate Sectors as a Proportion of Outstanding Bank Loans in Japan



Source: *Zaisei Kinyu Tokei Geppou* by Ministry of Finance, Japan

Figure 12: Personal Savings at Private-Sector Financial Institutions and Total Bank Lending in Japan



Source: Ministry of Finance Statistics Monthly

Addendum: The Current Account and Capital and Financial Account in the Balance of Payments

The balance of payments comprises three elements: “the current account,” “the capital and financial account,” and “changes in reserve assets.” The current account consists chiefly of (1) the trade balance, which records transactions involving goods, (2) the service balance, which records transactions involving tourism, shipping, etc., and (3) the income balance, which records the payment/receipt of interest, dividends, etc.

The main component of the capital and financial account, on the other hand, is the financial account, which records transactions accompanying the movement of financial claims and obligations in Japan. The financial account is further subdivided into “direct investment,” “portfolio investment,” “financial derivatives,” and “other investment” (note that different countries present their data in different ways). Besides the financial account, there is another component, called as “the capital account.”

If statistical discrepancies are ignored, the relationship between the current account, capital and financial account, and changes in reserve assets is as follows:

$$\text{Current account} + \text{capital and financial account} + \text{changes in reserve assets} = 0$$

If changes in reserve assets are ignored, the current-account deficit (or surplus) equals a surplus in the capital-and-financial account^[45]. Because most of the current-account deficit is accounted for by the trade deficit and service deficit, the excess of imports over exports is paid for with inflows of funds from abroad (i.e. a surplus in the capital-and-financial account). In the case of countries with current-account surpluses, the surplus either remains at home (as reserve assets) or is invested abroad (through direct investment and loans, i.e. a deficit in the capital and financial account).

[45] Inflows of funds are described as a surplus in the capital-and-financial account because, in effect, loan certificates are being exported. Looking at it this way makes it easier to understand.

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