

# Japan's Story: A Mixed Minskian Analysis

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For most of the 1980s, it was difficult to find a media newspaper story or academic article in North America that did not look at Japan without equal parts reverence, awe, and disdain. These appellation "Japan Inc." captured the popular perception of a Japan more like a bee colony than a human settlement: Japanese workers were industrious, self-sacrificing and guaranteed lifetime employment; Japanese corporations eschewed the western preoccupation with short-term profits in favor of long-term gains; the Japanese government and its bureaucratic apparatus were the figurative queen bee, nurturing a strange economy that was two parts capitalism and one part socialism/planned economy. What was frightening about Japan was that somehow it all seemed to work despite what orthodox economics would have led one to believe. What was awe inspiring was that Japan had grown from a demolished, disheartened nation following the devastation of World War II into the world's second biggest and richest economy, complete with a roster of some of the world's biggest banks, automobile, steel and electronics companies. What was disdainful was Japan's unwillingness to play by western rules.

The 1990s put an end to all of that. Articles now trumpeted the superiority of western, and especially American, economic and industrial organization. "Japan Inc." was used more to refer to a country going broke than to an unstoppable behemoth. Certainly by most conventional measures, this has been a lost decade for Japan. Real economic growth this decade has averaged 1.7%, down from 4.1% in the 1980s, 4.02% in the 1970s and 10.5% in the 1960s.

Unemployment has risen to unheard of levels in the post-war era: the unemployment rate hit 4.4% in November, 1998, matching the US unemployment rate for the first time since Japan started keeping such statistics 45 years ago. Japan's financial system is in disarray. The cost of

bailing out Japan's banking system will likely exceed \$500 billion.<sup>1</sup>

To be sure, it is important not to exaggerate Japan's fall from grace. Despite all its difficulties, Japan remains a potent economic force. For example, data from the OECD (1998, 22) show that Japan's economic performance from 1991 to 1997 was comparable to that of the European Union (EU) as a whole: the average annual growth rates of output, compensation to employees and disposable income were roughly the same for both Japan and the EU.<sup>2</sup> Furthermore, whatever its recent shortcomings on a macro level or in the financial sector, the country remains blessed with some of the most able, well-managed, cash rich and technologically advanced companies in the world (Lazonick, 1998). Moreover, some prominent Japanese political and economic figures are now suggesting that the end is in sight. Eisuke Sakakibara, better-known perhaps as Mr. Yen for his ability to move the Japanese exchange rate with a telling comment, expects the country to pull out of its slump by the end of this year. (Sakakibara, 1999<sup>3</sup>) Japan has also served as a development model for the rest of Asia and particularly Korea and Taiwan, until recently two of the most successful developmental economies.<sup>4</sup> If we understand what went wrong in Japan, then surely we will have made some progress to understanding what went wrong in Korea and what might go wrong in Taiwan.

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<sup>1</sup> "The Sound of a Japanese Bank Falling : Very Quiet," *Christian Science Monitor*, 1998, October 30

<sup>2</sup> However, real residential investment in Japan actually fell 1.8% (annual average) over this period, reflecting Japan's persistent real estate crisis. We discuss this at length later in the paper.

<sup>3</sup> This speech was delivered to The Foreign Correspondents of Japan in January. The document does not appear to be available online. A copy is available from the author upon request.

<sup>4</sup> Both countries were ruled by Japan until 1945. As such, their institutional structure, especially in the financial services sector, bears a strong resemblance to the Japanese system. Taiwan became a Japanese colony in 1895 and Korea came under Japan's control beginning in 1905. See Yunk Chul Park (1994) for a more detailed discussion.

Indeed, as Kregel (1998), and others have argued, at least part of the blame for the South East Asian crisis must be laid on the doorstep of Japan. It was precisely the collapse of Japan's own speculative bubble that permitted the East Asian crisis to unfold the way it did. As interest rates fell to unheard of lows<sup>5</sup> and Japanese corporations sought refuge from the high Yen<sup>6</sup> and high labor costs, large amounts of capital—much of it short-term and speculative—flowed out of the country and into neighboring East Asia, an area that historically was to Japan what Latin America has been to the U.S. : a source of raw materials, sometimes cheap labor and territorial ambition.

This paper tackles only one possible explanation of what happened in Japan, namely whether Japan's financial and economic crisis fits within Minsky's theoretical framework. We answer this question with a qualified yes. The data do not seem to support Minsky's financial instability hypothesis (FIH), a cornerstone of his theoretical approach. We find little or no evidence to suggest that important ratios (debt to equity (DE) or short-term to long-term debt ratios) moved pro-cyclically in Japan. Rather, firm-level and macro-economic data suggest just the opposite : firms became less fragile (as measured by DE ratios) as the economy moved towards the 1990 crash and worsened or stabilized only after the fact. This of course begs the question: what is the reasoning behind this “qualified yes”? The answer requires that we look at broader macro-economic, historical and institutional phenomena and in particular that we focus

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<sup>5</sup> Some Japanese interest rates have defied theory by diving into negative territory. In other words, some banks have been willing to pay people to borrow money. See "Zen Banking: Japan's Negative Interest Rates", 1998, *The New York Times*, November 7.

<sup>6</sup> The Yen peaked against the U.S. dollar in May 1995 at 83.2 Yen to the dollar. While it has certainly weakened against the U.S. dollar since then, the currency is still very strong by historical standards.

on the banking and real estate sectors. If we stray from the narrow analysis of DE ratios, we find that Minsky's ideas offer a pertinent and useful explanation. There is ample justification for this approach. Minsky himself rarely focused solely on an empirical analysis of financial fragility. Indeed, the bulk of his theoretical work amounted to a careful exposition of the institutional factors that created the *conditions* for financial fragility. While application of a Minskian analysis requires that we carefully consider key ratios, such an approach alone is not enough to reject or accept a broad-ranging Minskian analysis.

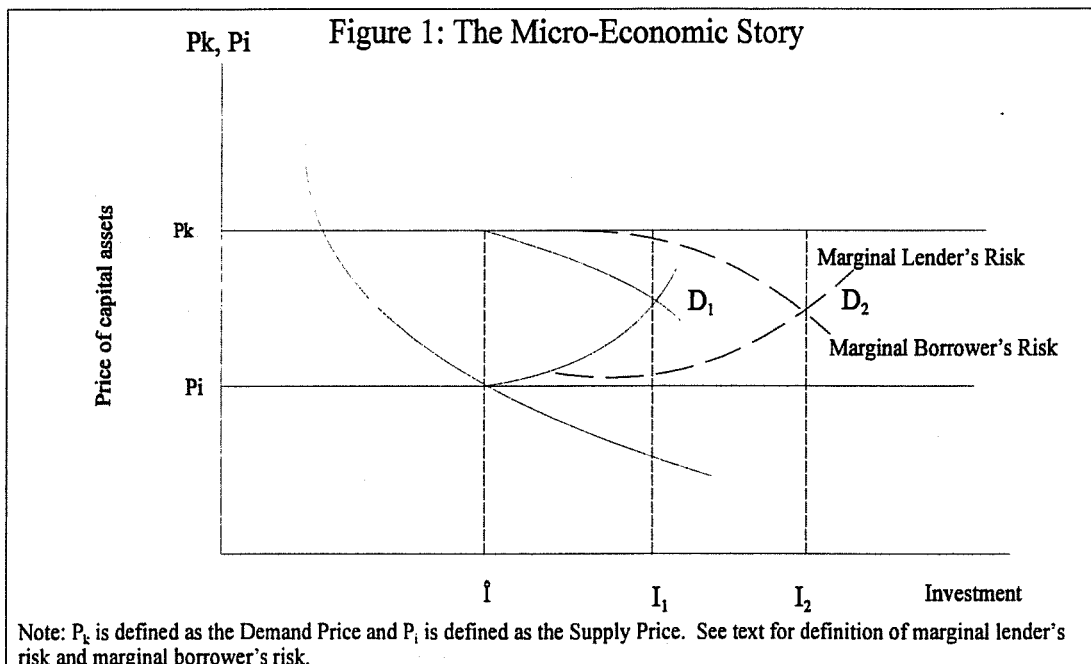
In other words, this paper augments the empirical analysis with careful examination of the institutional context. We therefore judge whether Japan's development fits not just the FIH but Minsky's broader theoretical framework. What is this framework? As a starting point, it carefully analyzes the evolution of financial institutions and practices over time. Indeed, Minsky spent much of his intellectual energy documenting, chronicling and analyzing the whittling away of regulatory and institutional factors that served the US financial system well in the first two decades after the second world war. This approach is particularly important when looking at a country such as Japan, which is known to have had a more austere and heavy-handed institutional structure than that of the United States. To ignore the institutional and historical context, even when analyzing a model that at least on one level appears to be universally applicable, is to commit the same kind of mistake made by those who assume without question that what works here will work there.

The paper will unfold as follows. In the first section, we outline key facets of Minsky's FIH theory. The second section will look at the micro and macro-economic evidence and show that the FIH does not appear to hold. In the third section, we take a step back to consider the

historical evolution of Japan's financial system. This section is necessarily cursory. Its chief aim is merely to highlight the general economic and institutional trends and relate those to what Minsky had to say about the nature of capitalism with respect to finance. The fourth and final section will harness our analysis to suggest a larger, institutional and political-economy explanation of the crisis that, we believe, fits the broader Minsky paradigm.

### **Section 1: Minsky Revisited**

Japan's economic troubles and the Asian crisis in general, like numerous other crises before them that have faded from our collective consciousness, motivate and obviate a core underlying notion of the discussion to follow. This is simply the Keynesian (and Minskian) notion that the financial economy has repercussions on the "real" economy of services and tangible goods. Simply put, finance matters. This may seem a trite and not very enlightening statement were it not for the fact that it conflicts with the orthodox view of the relationship between financial activity and the rest of the economy. For orthodoxy, markets are informational devices and money is a veil to real economic activity. Miller and Modigliani (1958) are well known for extending the core insights of a model built on perfect information and competition into the world of corporate finance. In a seminal American Economic Review paper, they showed that, given certain restrictive assumptions, it made no difference whether a firm financed investment out of retained earnings or debt. In other words, the value of the firm is independent of its financing decisions and whether or not it pays dividends. Thus, to even consider that the financial world of money, debts, balance sheets and cash flow statements might have an impact on the real world of widgets, factories, and production in both the short and long run is to open the door to a new range of analytical and theoretical tools, tools usually found in the closet of



non-orthodox economists. Minsky was such an economist.

Minsky's model is complex and nuanced but he left us an important heuristic tool that has helped make his FIH an often-quoted and much analyzed theory. Figure 1, reproduced from his book, John Maynard Keynes, contains virtually all the essential elements of the FIH theory. Like Keynes, Minsky modeled the investment decision as the result of a comparison of two prices, namely the supply price ( $P_i$ ) and demand price ( $P_k$ ). For investment to occur, the firm's demand price, which can be gleaned from the market price of a given company, must exceed the supply price. This notion is probably not unfamiliar. Tobin's famous "q" ratio seems to invoke a similar analysis, where  $q = (\text{Market Value of Installed Capital}) / (\text{Replacement Cost of Installed Capital})$ .<sup>7</sup>

<sup>7</sup> When  $q > 1$ , the market is saying that installed capital (and its capitalized prospective yields) is worth more than what it costs to buy a new machine and it pays therefore to increase investment. The converse is true when  $q < 1$ .

The demand price of a capital asset is given by the firm's estimate of the present value of future yields over the life of that machine. It is given by Equation 1 below.

**Equation 1:**

$$P_k = \sum_{t=1}^n Q_t \frac{1}{(1+r)^t}$$

where as before,  $P_k$  is the demand price,  $Q_t$  is the quasi-rents,  $r$  is the interest rate and  $t$  is the number of periods under consideration. The supply price of the capital asset is given by what it costs the firm to buy the machine at a given moment in time.<sup>6</sup> It therefore embodies the manufacturer's cost structure plus some sort of markup. These two concepts form the backbone of Minsky's model and allow one to make the link from theory to measurable quantities. Minsky modeled these curves as depicted in Figure 1. Initially, the curves are horizontal lines extending out from the vertical axis. In other words, prices are unaffected by the volume of investment. Assuming that ( $P_k > P_f$ ), Minsky argued that the representative firm will want to increase investment. It can do so by relying solely on retained earnings but this will mean a necessarily lower amount of total investment than if it were to seek additional funding from the financial sector. Minsky's argument rests on the proposition that most firms will not be content, nor able, to finance solely out of retained earnings during an economic expansion. Indeed, as we shall see below, the prudent strategy may in fact entail increased indebtedness.

The actual level of investment will be determined by the intersection of the two hyperbola

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<sup>6</sup> Minsky preferred this version of Keynes' attempt to bridge the gap between the supply and demand price over his marginal efficiency of capital analysis, stating that it allowed first for variability in the prospective yields and second, for "variability in the relation between the capitalization rate and the market rate of interest on money loans." (Minsky, 1975, 99)

that veer off from the demand and supply prices. The first hyperbola models borrower's risk, a concept borrowed from Keynes that merely describes doubts within the investor's own mind about the feasibility of her cash flow projections. Minsky modeled borrower's risk by arguing that the demand price curve for capital assets will necessarily slope downwards because as a firm increases its debt load to fund investment, there is a growing danger that it may face loan repayment difficulties at a latter point. In other words, the greater the firm's debt load, the more precarious are its net yield expectations (defined as yields minus debt servicing costs).

The concept of lender's risk—captured by the upward sloping curve—is somewhat more straightforward. It reflects the notion that as a firm extends its investment spending beyond its given stock of retained earnings, DE ratios necessarily increase. From a banker's perspective, this means an increased likelihood of default and moral hazard. It also implicitly embodies the notion that increased risk implies higher interest rates. As opposed to borrower's risk, lender's risk can be identified by looking at contracts and interest rates. The actual demand for loans by firms will be determined by the intersection of these two curves. The slopes of these curves vary depending on the conventional assumption of what is considered to be an acceptable debt-to-equity ratio and how this is likely to affect future yields. A risk-tolerant environment (usually associated with a buoyant economy) will witness a flatter curve closer to the horizontal line, leading to a level of investment given by  $I_2$  in Figure 1. A risk intolerant environment will be subject to a much steeper curve, leading to a lower level of investment equal to  $I_1$ .

Taken in the aggregate, Minsky argued that his model showed that as an economy moves into a boom phase, the conventional assumptions as to what constitutes risky behavior begin to change not only from a psychological point of view (Greenspan's "irrational exuberance") but

also from a purely mechanical perspective. Firms that in a more stable and less optimistic environment might have been seen as not worthy of credit find themselves with "uncovered" assets, i.e. assets that could serve as collateral in the new era of risk. "For the stock of capital assets owned by firms, the ratio of cash due on debts to the gross cash flows after taxes will be low by the new standards." (Minsky, 1976, 112) In a modern, American-style capitalist system, there is considerable pressure to leverage this newfound wealth because firms that do not are at risk of being taken over by a rival. The new era of risk tolerance means that investors anticipate higher profits (yields) with greater certainty. This is because "existing debts are easily validated and units that were heavily in debt prospered: it paid to lever.... it becomes apparent that the margins of safety built into debt structures were too great." (Minsky, 1982, 65) In other words, an unacceptable DE or price-to-earnings (PE) ratio at one point in the cycle may be perceived as prudent in another.

Minsky clearly believed that convention, rooted as it is in a social milieu and in historical time, moved pro-cyclically (PE, DE and other "convention" ratios rise) albeit with a lag. The revaluation or shift in convention is just another way of saying that liquidity preference falls. This gets translated into higher equity prices, which increases the denominator in debt-to-equity ratios, which in turn renders a firm's balance sheet more attractive. Households<sup>7</sup> are also subject to the more risk-tolerant atmosphere and may increase their borrowing to purchase stocks. If we

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<sup>7</sup> Minsky regards borrowing for investment as playing the biggest causal role of financial crises. "...household and government borrowing is not the critical element making for stability..." (Minsky, 1984, 18) Indeed, Minsky classifies the bulk of household borrowing in the hedge category. Household borrowing for investment however is classified as Ponzi because dividend payments rarely exceed interest costs and the household is essentially depending on asset appreciation to validate the purchase. This is particularly true during an asset bubble, when dividend returns are near zero and the household depends exclusively on appreciation.

follow Tobin's q model and view the demand price as given by the market, then we would expect the increase in stock purchases to drive up the demand price. This is another mechanism by which firms may find themselves with uncovered collateral on which to base further investment. Graphically, this process can be depicted by a flattening out of both the borrowers' and lenders' risk and an associated increase in investment. If debts are constantly being validated, profits are rising (see Kalecki discussion below) and convention keeps getting ratcheted upwards, where exactly does the fragility come from? Fragility requires debt for a large number of firms to grow faster than both their capital stock and profits. The necessary and sufficient condition (Minsky, 1982, 83) is that:

**Equation 2:** 
$$g_d > g_\pi \text{ and } g_d > g_k$$

where  $g_d$  is defined as the growth rate of debt,  $g_\pi$  is the growth rate of profits and  $g_k$  is the growth rate of capital. Why would firms increase their debt commitments at a greater rate than their profits or capital stock? The answer goes to the heart of capitalism. A firm that does not take advantage of this available (uncovered) collateral is a potential takeover target because ultimately firms must achieve at least "normal" or conventional rates of return, which as we have noted, are not independent of the economic cycle.

**Box 1: Minsky's Hierarchy of Finance** – At any point in the cycle, the economy will be characterized by a very particular mix of financial positions at the firm level. We describe these three positions below. Minsky believed that early in the cycle, the economy would be heavily weighted with hedge-financed firms. This would reflect the hard lessons of the just-ended asset bubble. Midway through the cycle, we might see more speculative firms as debt positions are validated and prove "safe" in retrospect. Towards the cyclical peak, we would expect a growing preponderance of Ponzi-financed firms as firms are forced to run faster just to keep up with the game.

*Hedged Financing Firm:* Future yields are not threatened by the state of expectations and interest rates. Further, yields easily exceed debt installment payments. Firms and households have very little short-term debt and hold mainly equity liabilities. One can describe this type of firm's structure as:

$$AQ_i \gg PC_i \quad (i = 1, \dots, n)$$

where  $AQ_i$  is the anticipated quasi-rent (gross profits) for each period and  $PC_i$  is the interest (and principal) costs that the firm must pay in each period.

*Speculative Financing Firm:* Debt payments in the *short term* (defined as  $m$  below) exceed the firm's yields over this period. The present value of future debt payments is smaller than the expected present value of the yields over the relevant period. The firm/household has a positive net worth and may use bridge loans or asset sales to carry it through its short-term deficiencies. After period  $m$ , the firm is able to meet its payment commitments strictly through cash flow. The third line ( $AQ_i(y) > PC_i(y)$ ) merely conveys the idea that the value of the income portion of the firm's quasi rents exceeds the income portion of the debt services. In other words, the firm could sell its asset and cover the cost of its debt. This position can be described mathematically as :

$$\begin{aligned} AQ_i < PC_i \quad (i = 1, \dots, m) \\ AQ_i \gg PC_i \quad (i = m + 1, \dots, n) \\ AQ_i(y) > PC_i(y) \quad (i = 1, \dots, m) \end{aligned}$$

*Ponzi Financing Firm:* A Ponzi financing firm is very much like a speculative financing firm except that it may have negative net worth "for any honest computation of present values." This type of firm/household must increase its debt or sell assets in order to meet its commitments for all periods through to  $n-1$ . Only in the final period is the firm able to meet its debt commitments through the sale of its assets, which presumably by that time have increased in value sufficiently to absolve the remaining debt. This can be depicted as follows:

$$\begin{aligned} AQ_i < PC_i \quad (i = 1, \dots, n - 1) \\ AQ_i \gg PC_i \quad (i = n) \\ AQ_i(y) < PC_i(y) \quad (i = 1, \dots, n - 1) \\ AQ_i(y) \gg PC_i(y) \quad (i = n) \end{aligned}$$

What brings the process to an end? On this, Minsky is less clear. However, we believe

Minsky's FIH hypothesis *suggests* four possible crisis catalysts (not necessarily mutually exclusive), each of which depends on the necessary and sufficient condition described above:

1. There must be some critical mass of firms which find themselves unable to meet payment commitments precisely because the rate of growth on debt has been exceeding the rate of growth in profits and hence the ability to finance investment from retained earnings. This logic is suggested in Minsky's discussion of the relative importance, or weight, of speculative and Ponzi firms in the economy. This perspective is also suggested by other academic working falling with the "Minskian" tradition.<sup>8</sup> Delli Gatti and Gallegati (1997) for example talk about an economy composed of heterogeneous firms that can be grouped according to their balance sheets. In other words, these companies must be important enough to cause heavy losses for the banking sector, which in turn re-evaluates its desire for liquidity and willingness to tolerate risk. This gets translated into a steepening of the marginal lender's curve and a restriction in the availability of credit which is particularly harmful to speculative and Ponzi firms.<sup>9</sup> The increasing fragility of the system may not be reflected in macro-economic DE data. In fact, these data may appear sanguine in the period leading up to a crisis, masked or overwhelmed by the relatively "safe" financial structure in other industries. In other words, one can imagine a sort of "contagion" effect across industries, where problems in one industry work their way via the finance sector into the rest of the economy. The banking sector therefore acts

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<sup>8</sup> The "Minskian tradition" refers to that collection of work that takes as its starting point the sum of Minsky's theoretical work, including but not limited to the FIH.

<sup>9</sup> It is not so much that banks "restrict" credit. Rather, a large number of firms fail to meet existing safety benchmarks. Alternatively, banks may revise these benchmarks downwards in an effort to be more "liquid."

a conduit and amplifier of financial crises, translating speculative firms to Ponzi and hedge firms to speculative.

2. There is an endogenous increase in the interest rate.<sup>10</sup> In this scenario, euphoria and fragility are widespread across industries and manifest in macro-economic data. This translates into a greater overall demand for bank financing, which in turn drives up interest rates. The mechanism is simple: early in the cycle, banks are able to meet the demand for cheap funds by intermediation (sale of investment portfolios) and/or innovation (creation of new deposit accounts). However, as the boom develops, these strategies become more costly because all the “easy” money has already been tapped: banks must now appeal to a set of “rentiers” who value their liquidity more highly and will only part with it at much higher interest rates. Higher interest rates increase the supply price and reduce the demand price. Worse yet, Ponzi and speculative firms find it increasingly difficult to meet their payment commitments because, by definition, they are saddled with large amounts of short-term debt that must be rolled over at the new, higher rate. Similarly, firms may also face higher interest rates due to increasing lender's (or borrower's) risk, which graphically would be represented by a steepening of the upward

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<sup>10</sup> The mechanism in Minsky whereby the interest rate increase is endogenous is one of the reasons that Lavoie and Seccareccia's (1999) believe a loanable funds interpretation of liquidity and interest rates lurks in the background of the FIH. (Their principle contention is that Minsky's model seems to eschew or miss one of the key contentions/implications of a true-Kaleckian framework, namely that an increase in savings over investment will lead to worsening DE ratios.) While Minsky explicitly denounced the loanable-funds approach (Minsky, 1982, 78), the process described here is suggested on numerous occasions in Minsky's work. In Can 'It' Happen Again?, Minsky argues that the interest rate could rise either because the central bank raises interest rates (see reason 3 in text) or “the demand for financing outraces the availability of finance.” (p. 83) In Stabilizing an Unstable Economy, Minsky makes the same point in his chapter on banking. (p. 227 and p. 228). Minsky makes the same point when he says that “acquiring assets because of inflationary expectations bids up the price of favored assets and the financing bids up interest rates.” (Minsky, 1982, 28)

sloping curve in Figure 1. This is analogous to an increase in the liquidity preference of banks. Again, a critical mass of firms, not necessarily concentrated in a particular industry, find themselves unable to meet their immediate debt payments.<sup>11</sup>

3. The crisis may be precipitated by an exogenous increase in interest rates from the central bank, itself acting in an “endogenous” fashion to the rapid runup in asset prices. The effect on speculative and Ponzi-financed firms is the same as in (2) above.
4. A piece of negative economic news or publicity surrounding the financial difficulties of an important bank or industrial conglomerate may rupture convention and force a re-evaluation of existing credit relationships. Banks may then restrict credit in light of the collapse of convention.

In all four cases, the end result is the same. Cash-flow commitments on debts for a large number of firms exceed returns on investment or, even more perniciously, the anticipated returns on investment fail to materialize. The exposure to financial risk grows for both bankers and enterprises and firms are forced to either take on yet more short term debt or sell assets to meet commitments. When a large number of firms sell assets simultaneously, asset prices fall, especially in illiquid markets. A generalized deflation will only worsen the process, increasing the principal and interest-payment burden in real terms while leaving revenue stagnant or atrophied. It will also make balance sheets look much weaker than they were, sending the leverage process in reverse. The demand price suffers on two counts: higher interest rates

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<sup>11</sup> Assuming one adopts an endogenous money approach, this second view on the crisis catalyst is invalidated by Minsky’s assumption that debt growth exceeds earnings and capital growth (and hence the ability to pay.) Most debt creation—apart from bond issues—entails money creation. If money creation is exceeding the rate of repayment (cancellation of money), then there cannot be a shortage of money supply.

increase the denominator and lower expected yields reduce the numerator. Meanwhile, higher interest rates raise the supply price. The net effect is that investment tails off and those firms that are solvent will tend to use retained earnings for debt repayment, attempting to adopt increasingly "safe" financial positions. However, the Kalecki profit identity tells us that both the reduction in investment and the attempt to increase savings will reduce aggregate profits, partially frustrating the attempt to reduce debt. (Minsky, 1982, 84) This is nothing more than a reversal of the mechanism that created the debt in the first place.

## **Part II -- Identifying the Minsky Peak: The Micro and Macro-Economic Evidence**

As we have seen, Minsky's model describes a macro and micro economic cycle. As such, any analysis of the Minsky model must begin and end with some sort of defining event. In the case of the 1920s, there is little difficulty in determining this pivotal event. The October 1929 stock market crash, whatever its causal role in what followed, was clearly a pivotal point in history that neatly defined a break from an era of prosperity and, in retrospect, unwarranted optimism to an era of economic decline, stagnation and unwarranted pessimism. The 1929 stock market crash is precisely the point chosen by Doreen Isenberg (1988) in her test of the Minsky theory during that period. She points to an atmosphere of unbridled optimism in the period leading up to the crash and suggests, correctly, that this is precisely the psychological context Minsky had in mind.

The Japanese economy only "officially" fell into recession in 1992—at least if one goes by the rule of thumb that says a recession is defined by two consecutive quarters of negative economic growth—two years after the stock market fell from its lofty heights. That it took two years for the expansion to stop even in the face of a dramatic decline in stock prices and subsequently real estate prices is indicative of the degree of optimism built into the pre-crash

surge. A true Minskian peak is best described as the pivotal moment that separates pervasive euphoria from nascent and subsequently pervasive pessimism, a moment sharp and powerful enough to halt the leveraging process and send it into reverse. It must be an event dramatic enough to awaken investors and consumers alike to hitherto unseen dangers or at least re-awaken concerns that had to that point laid dormant thanks to persistent and enduring asset inflation. It is just prior to the crash that concerns about the future are shunted and a belief in the inevitable rise of asset prices gains breadth and depth. The natural tendency to value losses twice as much as gains (Rabin, 1998) is overcome by the allure of easy money as early tentative risk-taking is validated by ever-increasing asset prices. In financial circles, there is an aphorism that says stock prices "climb a wall of worry" and that concern about the ability of the market to reach ever higher peaks is, paradoxically, what keeps the market moving ever higher. Asset prices are only threatened when sentiment becomes pervasively optimistic and, consequently, asset price inflation gains unheard of momentum and vigor. One can usually discern such a point, at least retrospectively, by reference to media reports and the increased popularization and vulgarization of investment discussions, not to mention the apparent ease with which the market brushes off bad news and stock market declines. Note that the implied causality here is fundamentally different from a Fisherian debt-deflation process, where sentiment change is a lagging indicator and occurs well after a decline in borrowing (increased debt payments), contraction of the money stock, falling prices, net worth and profits, and output, in that order. (Wolfson, 1996)

Given this analysis, we believe that the truly pivotal point in the evolution of Japan's lost decade (the 1990s) was the 1990 stock market crash. How could one verify that this is indeed the correct point in time? The simplest way is by looking at what people said during this tumultuous

period. Until early 1990 at least, most news articles still spoke of Japan's "miraculous" growth, about how its huge trade surplus threatened the U.S. economy, and how the country's "more or less permanent bull market makes investors content with low dividends."<sup>12</sup> This is precisely the kind of thinking that Minsky believed to be a telltale sign of an increasingly fragile financial structure. Indeed, he noted for example that "success breeds a disregard of the possibility of failure" (Minsky, 1986, 213) and that these "euphoric" periods were accompanied by a widespread belief that "a new era had arrived." (ibid). Indeed, the suggestion that Japan enjoyed some kind of "permanent bull market" proved to be disastrously wrong. The Nikkei Index of Japanese stocks fell 39% that year and at one point, was down almost 50% from its beginning of the year high. The Tokyo Stock Exchange Index, depicted in Figure 2, fell almost 20% and would lose almost half of its value (from the 1989 peak) by 1992.

How serious was the rupture in sentiment? As early as spring of 1990, media reports spoke of the possibility of a recession despite (accurate) predictions of continuing positive economic growth.<sup>13</sup> During most of the 1980s, the words "recession" and "Japan" were hardly ever uttered in the same breath and everyone everywhere was studying and emulating Japanese management and educational techniques. While a degree of optimism persisted even after the crash, the mere suggestion that Japan might be susceptible to western-style economic downturns represented a serious rupture in sentiment. Such a rupture is both a necessary and sufficient condition for the large-scale debt-deflation process that was to follow. The transition from asset

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<sup>12</sup> "How to Conquer Japan by Playing for Keeps Today; for Once, Short-Term Thinking may be the Right Answer for American Business", *Business Month*, 1990, March.

<sup>13</sup> "Japan Faces Growing Fear of Recession", *USA Today*, 1990, April 3.

of thumb in western countries is that working capital should be at least twice current liabilities (ibid). This is a very general guide because some industries require more working capital than others. Distilleries with long production lead times require more working capital than say, manufacturing industries, which tend to quickly turn over their inventories. This is especially true in the modern phenomenon of "just-in-time" deliveries. The data in Table 2 show clearly that only the electronics industry was able to consistently maintain a "safe" ratio of current assets to liabilities throughout the period being analyzed. More importantly, the table shows that working capital ratios for all industries except the automotive sector improved in the period leading up to the crisis. In the period after the crisis, the steel and textile industries continued to increase their working capital ratio while the automotive industry regained some lost ground. Most interesting for our purposes, however, is the fact that the real estate sector showed a dramatic deterioration in the post-crash period. Again, it appears that most real estate firms suffered serious payment problems that forced them to accumulate short-term debt in exactly the way Minsky described.

In Panel B, we analyze the quick ratio—also known as the "acid test"—because it is a more stringent test of short-term solvency than the working capital ratio. The quick ratio is simply a working capital ratio without the inventories. A quick ratio of 1 or more suggests a "good liquid position" (CSC, 1992, 95) although companies with a quick ratio of just under 1 may also be very solvent if they are able to quickly turnover (sell) their inventories. By this measure, it appears that the five Japanese sectors were relatively solvent in the period leading up to the crisis. Only the automotive sector lost any ground and the change appears to be slight. In the post-crash period however, we again see a dramatic decline in the solvency of real estate

companies that accelerated in the 1998 fiscal year. Again, the data seem to run counter to a Minskian analysis. Finally, in Panel C, we look at the short-term to long-term debt ratio. Again, there were some big improvements in ratios for all five sectors (and especially the textile sector) in the pre-crash period. In the post-crash period, these ratios deteriorated for all industries except the textile industry. Clearly, firms in a variety of industries but especially in the real estate sector were faced with considerable short-term payment difficulties.

Thus, our firm-level analysis casts doubt on Minsky's FIH. Firm-level balance sheets actually improved in the period leading up to the stock market (and subsequent real estate crash), precisely the contrary of what one would expect if the FIH was true. These results are broadly consistent with Isenberg's findings in her analysis of corporate balance sheet data during the 1920s. One of the virtues of the Isenberg approach is that it uses actual firm-level net worth rather than stock market valuations as its denominator. For example, French and Poterba (1991) show that aggregate corporate DE ratios fell monotonically from 1981 forward and were actually lower than the equivalent DE measure in the US. However, this result is not surprising because they employed stock-market valuations of equity as their denominator rather than net worth. From 1984 through to 1989, the Nikkei Index rose at an average annual rate of 27.5% and its price-earnings ratio increased from 37.9 to 70.9. Market valuations of securities and real estate are known to frequently exceed by a wide margin the actual earnings potential or recorded worth of a firm. (CSC, 1992) This appears to be particularly true of Japan, where the tight web of cross-ownership allows most companies to keep book valuations well below known market

values because they do not need to fear takeover bids. In 1988 for example, Business Week<sup>19</sup> reported that Sapporo Breweries Ltd. valued its Tokyo real estate at \$2.5 million while in fact the plot was thought to be worth more than \$9 billion. Our analysis thus represents a more solid piece of evidence against the FIH.<sup>20</sup>

Further, while the various Japanese ratios clearly exceeded what are considered "prudent" levels in western countries, they probably also reflect uniquely Japanese accounting, financing and industrial organization practices, as suggested earlier. This is precisely what French and Poterba found when they looked at studies suggesting that Japan's stock market was worth 36% more than the US market at the end of 1989. They attribute a large part of the difference to the relatively large amount of cross-ownership witnessed in Japan relatively to the US and other countries. Similarly, they find that a lot of the traditional difference between Japanese and US PE ratios can be explained by different accounting practices,<sup>21</sup> a point repeatedly emphasized by Abegglen and Stalk as well.

Ultimately what really matters is the general trend in the relevant ratios. Our analysis clearly points towards improvement, a picture that suggests a Kaleckian process was at work. In other words, the indebtedness process was frustrated or overwhelmed by the cumulative or macro-economic effect of surging investment which meant that profits increased more rapidly

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<sup>19</sup>"Why Tokyo's Stock Market is Still Soaring After All These Years", 1988, July 25

<sup>20</sup> It is of course true that firms can and do raise funds via the equity market. This may prompt some to suggest that the market value is the relevant denominator. That may be true but it is not our key point. By adopting an even more conservative denominator and showing that the data do not move in the fashion predicted, Minsky's FIH is further infirmed.

<sup>21</sup> However, French and Poterba emphasize that accounting differences *do not* explain the *widening* difference between Japan and US PE ratios in the period leading up to the 1990 stock market crash precisely because these accounting differences predate the bubble economy.

than debt. Retained earnings, equity financing and to a lesser extent bond issues rather than bank debt served as the basis for new investment (whether "real" or speculative). This appears to be especially true of companies that have achieved a certain critical mass and dominance in their respective industries. By the 1980s, the Japanese corporate landscape was dominated by these behemoths. In Forbes' 1984 list of the 200 largest non-American companies in the world, 61 were Japanese. (Abegglen and Stalk, 3) Further, Abegglen and Stalk cite evidence which suggests that the trend towards less financial fragility was in place well before 1984. Citing an article from *The Economist*, they note that "A Survey by Bank of Japan of 621 of the country's biggest companies found that in the year to March, 1984, these firms raised only 14% of their new external funding needs with bank loans, compared with an average of 56% in the previous five years and 80% in the 1960s...Slack investment and big internal reserves meant that firms now need external funds of only the equivalent of 1% of sales, compared with 2.3% during the previous five years." (Abegglen and Stalk, 151) Thus, it does in fact appear that Minsky's rectangular hyperbola of internal finance was shifting upwards in the period leading up to the crash. It is important to emphasize that Minsky seemed aware of this possibility, noting that the "improvement of realized profits partially frustrates the planned debt-financing of investments of firms." (Minsky, 1975, 114) Lavoie and Seccareccia argue that he never followed this view to its logical conclusion : DE ratios can move counter-cyclically because of macro-economic, Kalecki effects.

There is some question as to the origins of these profits. Ito (1990) suggests that profitability at many firms became increasingly dependent on financial operations. These so-called *Zaitech* operations "added the character of rentier or a financial speculator to their main

business." (Ito, 185) In 1986 for example, 43 per cent of Toyota Motors Corp.'s profit came from financial earnings. This does not appear to have been uncommon. If this was generally true for most Japanese corporations,<sup>22</sup> then the balance-sheet data analyzed in this section may be hiding some important underlying "fragility" to the extent that firm-level earnings increasingly depended on ever-increasing stock market and speculative activity rather than actual demand for goods and services. This possibility seems all the more likely in the context of widespread financial deregulation, which we will analyze shortly.

Before moving on, a final word must be said about the data used in this section. Because we chose only the largest companies in each sector, our analysis in Tables 1 and 2 undoubtedly suffers from bias. After all, we have only examined the balance sheets of large companies that survived the downturn. Given limitation on data availability, this was unavoidable. However, this is not as serious as it might first appear. Remember that we are primarily concerned with the economy-wide ramification of financial fragility—the failure of small firms, unless they achieve some sort of critical mass, has little or no impact on overall economic growth or lending behavior. In the modern capitalist society, Galbraith (1974) and other have demonstrated that large firms dominate the landscape. This is particularly true of Japan. The financial fragility of large firms is ultimately what makes the difference between a globally fragile and stable financial system. The fact that Japanese corporations also have strong vertical links suggests that an analysis of a single large company (say Honda) should reveal the broad overall trend for a host of companies. More importantly, our analysis of the micro-level data is consistent with broader

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<sup>22</sup> Non-operating income accounted for more than 60.4% of operating profits in 1986 for Japanese corporations with paid-in capital in excess of one billion yen . Between 1985 and 1989, nonoperating income accounted for more than half of total operating profits. (Teranashi, 1994, 53)

macroeconomic trends, to which we now turn.

### Macro-Economic Evidence

While Minsky is best known for his micro-economic analysis pictured in Figure 1, he was clearly a macro-economist at heart. Indeed, his description of the increasingly fragile nature of the US financial system in "Can it Happen Again" focuses exclusively on aggregate data. In this section, we look at macro-economic data for Japan to see if the patterns described by Minsky for the US (i.e. one of increasing fragility) can be found in Japan. Before we begin a detailed look at macro-level asset, liability and profit data, it is instructive to review the overall economic climate in Japan leading up to the crash.

Figure 3 plots monthly changes in the supply of base money (currency) as well as a five-month moving average trend. The chart tells two important stories. First, there was a clear break in the growth of money supply sometime around 1987. The five-month average money prior to 1987 rarely moved out of a 0% to 1% band.<sup>23</sup> From 1987 through to about 1990, the moving average frequently exceeded 1% and never dipped below 0.5%. Second, Figure 3 also shows there was an abrupt change in money supply growth in 1990, the same year as the stock market crash. Base money supply surged more than 3% in April<sup>24</sup> and then fell almost 2.5% a month later. In the 1990 to 1995 period, the five-month moving average stayed below 0.5% and only started creeping into the upper end of the 0% to 1% range in 1996, when Japan's economy experienced a brief resurgence. If one adopts an endogenous money perspective whereby the

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<sup>23</sup> The exception being of course the mid and late 1970s, when Japan, as a resource-poor manufacturing nation, suffered bouts of inflation because of the global surge in oil prices.

<sup>24</sup> It was in April, 1990 that the Ministry of Finance (MoF) imposed a restriction on credit to the real estate sector. We discuss this at greater length later in the paper.

central bank generally accommodates demand for base money from the banking sector, then the data in Figure 3 strongly suggest that, for the two years leading up to the crash, bank lending (or lending in general) was increasing at a quicker pace than it had in the past. It also suggests that lending growth slowed dramatically in 1990 and even turned negative. The 1987 spike in base money supply coincides roughly with the first spike in the growth rate of real estate prices in the 1980s and the subsequent slowing of real estate price growth 1988. Recall from our earlier analysis that the real estate sector was highly leveraged during this period and that DE ratios worsened in 1987-1988 before improving dramatically in fiscal 1989 and 1990.<sup>25</sup>

Figure 4 plots year-over-year percentage changes (monthly values) in a monetary aggregate that the Bank of Japan (BoJ) calls "broadly defined liquidity," which includes M2 plus certificates of deposits (CDs) plus foreign currency deposits held by Japanese residents. The picture here is dramatic and conclusive. In late 1990, in the midst of one of the worst stock markets in Japanese history, money supply growth started a long downward trend, moving from more than 11% near the beginning of the year to less than 7.5% by the end. Growth finally bottomed out in 1992, just as the official recession was setting in. Figure 4 also supports the conclusion that there was a break with the previous trend in money growth in and around 1987. Again, an endogenous money perspective suggests that the sharp decline in money growth after 1990 can only mean that firms actively cut back on bank loans and started paying down debts since debt payments imply the destruction of money. Virtually all other important macro-

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<sup>25</sup> Note also that Figure 3 seems to provide some evidence against the monetarist hypothesis of Friedman and Schwartz, who have argued that the Great Depression was caused by a contraction in the stock of money (Wolson, 1986, 29). Friedman and Schwartz point to, among other things, a decline in the stock of money from 1927 to 1929. This clearly did not happen in Japan during the years leading up to the crisis.

economic measures of economic activity show a similar break from previous growth patterns. While real output growth in 1990 was still almost 4%, it fell to 1% the following year. See Figure 5. Similarly, the volume of private bond issues surged in the last half of the 1980s and peaked in 1989 before falling dramatically thereafter. We have already seen that the surge in stock prices was cut off abruptly in 1990. The decline in real estate prices started in 1991 and gained momentum in 1992.

On an aggregated level, corporate data reveal similar trends. Profit to sales ratio (Figure 6) for the manufacturing sector show a dramatic increase in the last three years of the decade. We get a similar picture in Figure 7, which shows the ratio of operating profit to total liabilities and net worth. Similarly, OECD (1998, 154) data show clearly that profitability in the manufacturing sector and overall did not start falling until 1990.<sup>26</sup> These data suggest that firm-level balance sheets were *improving* in the period leading up to the crisis and only fell after the crisis.

Remember that higher profits imply higher retained earnings, which in turn imply an increase in the denominator of the debt-to-equity ratio. This is a crucial observation because Minsky's FIH model says that if profits fail to materialize to the extent expected, this must be because either the firm's gross capital income fell short of expectations or its financial commitments increased over time. This latter possibility is most likely for speculative and Ponzi firms, which are forced to refinance during the life of a given asset. Profitability is an indication of overall solvency and "an important determinant of acceptable debt structures." (Minsky, 1982, 40)

Even if profitability was rising in the period leading up to the crisis, it is possible that

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<sup>26</sup> While profitability at the peak of the expansion in the last half of the 1980s was considerably less than it had been in the pre-1974 period, it is also true that profitability in the manufacturing sector was nearly as high as it had been in the last big expansion of 1978-1979.

debt was increasing at a faster rate, thereby rendering the structure fragile. Indeed, one of the unique aspects of Minsky's FIH is that it does not posit a necessary decline in the profit rate (as do other theorists such as Wolfson, Marx and Veblen.) That being said, we have already looked at firm-level balance sheet data and rejected this view. A look at macro-level ratios leads to the same conclusion. In Table 3 we outline some data on overall industrial and manufacturing DE levels. The data clearly show that DE ratios were declining steadily since the mid-1970s for both the overall industrial sector and the manufacturing sector. This is equally true for both the short-term and long-term components of debt. The table also indicates that long-term borrowing from financial institutions has been declining steadily since the mid-1970s. While short-term borrowing from financial institutions did increase in the early part of the decade and peaked in 1987, it fell and stabilized at about 35% of total short-term liabilities thereafter. These data conclusively tell us that at the very least, on an aggregate level, the Japanese financial structure from the perspective of the firm was no more fragile in this period than it had been in earlier periods and indeed, that it may have been even more stable if one were to judge solely on the basis of these ratios.

### **Part III -- A Minskian View of Japanese Economic History**

Minsky's analysis focuses on the systemic and endogenous tendency of capitalism and especially American-style capitalism to move from boom to bust situations. As such, a complete Minskian analysis ought to incorporate a deep understanding of the institutional framework in which the indebtedness process and the economic cycle takes place. "Keynesian analysis, most especially in the alternative formulation, is institutional, in the sense that actual behavior, which determines how the transition in which we spend our time develops, depends upon how the

existing institutions behave." (Minsky, 1975, 163) At least in his major works, Minsky made little mention of Japan. In "Can it Happen Again", he devoted a paragraph and a footnote to Japan, suggesting that its economy could be considered an "example of a highly vulnerable open economy" (Minsky, 1982, 41) which conformed to a Kaleckian equation of the following variety:

**Equation 4** 
$$ATP = I + (G - T) - TD$$

where ATP is after-tax corporate profits, I is investment, G is government spending, T is government taxation and TD is the Balance of Trade Deficit. Minsky put particular emphasis on Japan's need for a balance of trade surplus to sustain after-tax profits, especially for the manufacturing sector which relied on great deal of export financing. The twin oil crises of the 1970s exposed Japan's vulnerability and the country was only able to recover thanks to massive government intervention. While this analysis appears accurate, it also betrays some unfamiliarity with Japan's economic structure. The modern Japanese economy—and even the one that existed when Minsky wrote those words—is probably much more accurately portrayed by the same Kaleckian equation Minsky applied to the US, namely:

**Equation 5** 
$$ATP = I + (G-T) - TD + c\pi - sW^{27}$$

where  $c\pi$  is consumption out of profits and  $sW$  is savings out of wages. This equation much

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<sup>27</sup> This type of equation corresponded to an "open economy with big government in which workers' income is high and stable enough so that workers can save and finance consumption through debt, and in which the administrative structure of business is bureaucratized and expensive so that a large part of profits is assigned to paying salaries and financing ancillary activities such as advertising." (Minsky, 1982, 41)

more accurately reflects the important saving and consumption role played by Japanese consumers, especially since 1973. Minsky commits another error when he suggests that the clear distinction between commercial banks and investment banks was uniquely American. "This distinction is breaking down and it never really existed in other capitalist economies such as Germany's." (Minsky, 1986, 223) As we shall see, Japan not only had this distinction but numerous others that make the post-war financial system in the US look positively tame.

Minsky's cursory familiarity with Japan reveals just how important it is to know a country's institutional structure. Hitherto high level of segmentation in Japan's financial system actually supports Minsky's contention that this form of financial organization is most apt to promote growth, investment and stability. Japan's economic growth can be closely linked to its policy of aggressive segmentation of the financial industry. Likewise, its decline can be linked to the gradual elimination of this policy, precisely the diagnosis Minsky applied to the US in the post 1966 period. Minsky's research interests were centered on the US economy and little else, which of course emphasizes how rooted his theory was to a particular brand of capitalism, namely American capitalism. If the country under consideration is not capitalist, a thoroughgoing application of a FIH analysis is difficult if not impossible. We would not want to apply Minsky's theory of private investment to communist North Korea or the former Soviet Union. Indeed, there is always the danger of applying euro-centric theories to countries that bear only a faint resemblance to the countries for which they were designed and from whence they came.

In this light, Japan presents something of a dilemma because its brand of capitalism has until recently and by most estimations been vastly different than what Keynes and Minsky

studied in the west, Minsky's brief comments notwithstanding. Chalmers Johnson (1995) for example has argued extensively and persuasively that, at least until very recently, much of American foreign policy towards Japan has been at best misguided because it failed to understand that the country represented a new breed of capitalism that he labeled the "Developmental State." The Developmental State is fundamentally Mercantilist and operates in a coherent and directed fashion relative to its competitors: "...the Japanese state has always taken precedence over interests based on the economy, the society, or other private concerns. Japan's postwar achievement...is the result of state-society relations that are utterly different from what Anglo-American democracies think of as the norm." (Johnson, 1995, 8) Similarly, Johnson and others believe that, at least until recently, Japanese corporations have been far more concerned with obtaining market share than strictly maximizing corporate profits. Minsky was careful to note that his belief in the fundamentally unstable nature of capitalism, and particularly his FIH, applied first and foremost to a "decentralized capitalist economy" (Minsky, 1982, vii) which, if we believe Johnson, does not accurately describe most of Japan's postwar experience. Recall also that the fear of takeover plays a key role in inciting a firm to take advantage of uncovered or newly discovered "goodwill"—that is, newfound value linked directly to the pervasive euphoria of an asset price boom. Japan's corporate sector has traditionally been characterized by a complex system of cross-ownership that would seem to preclude this effect.<sup>28</sup> The institutional analysis conducted in next two sections suggests that this concern may have gained more currency with deregulation, although the old institutional structure clearly did not change enough

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<sup>28</sup> Ramseyer (1997) notes that Japanese firms prefer to acquire a large controlling stake over suppliers rather than full, outright ownership, which is much more common in the US. He suggests that this may be explained by the greater ease with which shareholders in the US can bring lawsuits against management.

to make corporate-level ratios move in the fashion predicted by Minsky.

Japan's rapid growth period (1955-1972) was characterized by relative stability. This, however, started to change in the mid-1970s as the country became something of a victim of its success—its heavy reliance on oil imports and its gains from favorable terms of trade and the US consumer market would both lead to serious problems. By the late 1980s and early 1990s, Japanese-style capitalism as Johnson describes it had all but ceased to exist and state-control over finance, investment and interest rates were fast becoming things of the past. To be sure, one could regard Japan's postwar experience as following a broader Minskian pattern whereby countries adopt very secure and stable financial systems only in the aftermath of momentous and defining events. Memories from these events linger for many years, possibly generations, until time and success eventually whittle them away and they recede from society's collective memory. Thus, Japan's pre-war experience can be regarded as a sort of mania (though not financial) : a few easy military victories created the illusion that Japan possessed superior military and cultural traits that would assure future military victories. Japan emerged from the war a much diminished and humbled power. At the same time, the war had a cathartic effect because it "not only cured the mental illness (which had characterized the prewar period) but released a flow of creativity and energy which had not been released before." (Boulding and Gleason, 1972, 257). In that sense then, Japan emerged with a figurative clean slate, prepared to mend its ways through hard diligent work aimed ultimately at re-establishing the country's national pride through economic and not militaristic means—much like the US emerged from the war with memories of the Great Depression still fresh in many minds. The financial mechanism would play a key role in translating the country's new sense of mission into reality.

## 1945 - 1972: A Stable Financial System<sup>29</sup>

"Financial advantages and disadvantages can offset production

advantages and disadvantages" – *Stabilizing an Unstable Economy*, p. 229

The notion of uncertainty is central to the theoretical works of Minsky, Keynes and other economists of the heterodox persuasion. When they speak of uncertainty, they mean something more than assigning a mathematical probability to a spin at the roulette table. This is most certainly not the world of blackjack, dice, weather or even economic forecasting, where it is best to think conceptually in terms of risk. This is the world of a meteor crashing into earth, World War III starting tomorrow, or the discovery of alien life forms. This is uncertainty in the sense that at any one point in time there are a great number of things that could happen that we simply cannot anticipate. This might not pose a problem except that in a capitalist system individuals, rather than the state, must plan for the future. In socialist (and even feudalist) society, this role is (and was) largely assumed by state central planners or feudal lords. There was an implicit pact: your servitude in exchange for stability. In capitalist societies, investors must invest, builders must build, entrepreneurs must make their ideas reality, and consumers must buy cars, homes, and other essential items. To invest, build, or buy today normally requires some level of indebtedness. In this capitalist context, the most rational behavior is therefore to presume that the events of today will be, more or less, repeated tomorrow or, at the very least, that the conventional opinion of the future will unfold as expected. Investors must believe that the

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<sup>29</sup> The decade immediately after the war (1945-1954) cannot be accurately labeled as "stable." During that period, Japan experienced serious bouts of inflation, labor unrest and political upheaval. By 1955 however, American assistance in the form of massive military procurement for the Korean war coupled with government intervention laid the foundations for what was to be an exceptional surge of industrial development. (Beasley, 1990, 246, and Ito, 1990)

economy will continue growing, builders must trust that people will buy homes, entrepreneurs must have faith that their ideas will come to fruition in a vibrant economy, and consumers must assume that they will have an income flow over the duration of their debt. Individuals and enterprise must behave this way because debt payments—at least in nominal terms—are a certainty spelled out in the debt contract.

In the period under consideration, we will see that Japan managed to find what seems in retrospect at least, an optimal mix of the two extreme strategies (i.e. laissez-faire capitalism versus socialism) for dealing with fundamental uncertainty: while individuals and corporations made the bulk of day-to-day investment decisions, they did so within an institutional context of reduced uncertainty (relative to a more freewheeling, US-style economy). They did so secure in the knowledge that, for instance, the state would intervene to save a fragile bank—the so-called "no failures" policy (Tachibanaki, 1991)—prop up a weak industry with subsidies, reduce exchange rate volatility through capital controls, and assure a constant stream of steady and cheap credit. They did so secure in the knowledge that they had easy access to US markets and that their government would assist them in their technological needs, trade disputes, and temporary solvency problems.

To be sure, this type of policy is typically condemned as anti-market (and hence inefficient) by most economists but within a heterodox, Minskian analysis, this behavior is not only good but it is necessary given the volatile nature of investment and the realities of an

uncertain future.<sup>30</sup> Further, one should not get the idea that Japanese firms were completely free of competitive pressures—there was in fact a great deal of domestic competition for market share. Abegglen and Stalk (1985) make this clear in their analysis of the Japanese corporation (Kaisha). Take for example the motorcycle industry, which had more than 50 participants in the early 1950s. At the time, a company called Tohatsu was the acknowledged market leader, with 22% of the domestic Japanese motorcycle market. An up and coming company called Honda was second, with 20%. Tohatsu was widely believed to be the more solvent (financially prudent) of the two companies, with after-tax profits equal to 8% of sales and a debt-equity ratio of 1.5—relatively low by Japanese standards. Honda, which was widely seen as being too highly leveraged, had after-tax profits of only 3.4% and a DE ratio of 6. In less than five years however, Honda's share of the market had expanded to 44% while Tohatsu's had fallen to 4%. Honda's after-tax profit in 1960 was 10.3% of sales and its balance sheet strengthened to a DE ratio of 1 to 1. Tohatsu on the other hand suffered a loss of 8.3% (as a proportion of sales) and its balance sheet deteriorated to a debt-equity ratio of 7. In 1964, Tohatsu filed for bankruptcy. This short story reveals the danger of *not* expanding aggressively in the context of a growing economy. DE ratios that appear precarious at one point in the cycle are "cleaned up" by rapid growth. What appears to be prudent behavior is in fact not. Those that behave by these standards get punished.

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<sup>30</sup> For example, numerous commentators, including the OECD, have chastised Japan for its long-standing policy of supporting troubled banks. For example, the OECD (1998) claims that this policy has led to increased incidences of moral hazard and adverse selection precisely because bank customers have no incentive to "monitor" their banks. Such comments are frequently made without any supporting evidence and seem to ignore the fact that Japan's financial system served the country exceedingly well for a very long time. In other words, even if we accept that moral hazard can be a problem for the banking sector, we must also accept that it has existed for as long as Japan's been an industrial state. The question then becomes why would moral hazard be more severe in 1990 than in 1970.

"The kaisha have been built on a very rapid growth economy. They have been witnesses to the fate of companies that failed to grow faster than their competitors." (Abegglen and Stalk, 6)

Despite the important influence of US policymakers<sup>31</sup>, Japan's post-war financial and industrial system retained much of its pre-war traits. Indeed, many elements of the 1942 financial system reforms remained in place.<sup>32</sup> Further, many former Zaibatsu companies regrouped into slightly more-loosely aligned industrial organizations called Keiretsu. The Japanese government also continued to play an important role in directing and managing economic development, an activist role can be traced back at least as far as Japan's initial foray into industrial capitalism in the last third of the 19<sup>th</sup> century.

The post-war Japanese financial system was built on three pillars, which by the late 1970s and early 1980s, were dangerously close to becoming mere stilts. They were:

**i) Market segmentation:** By setting up clear guidelines on deposit rates and loan size, the regulatory framework guaranteed a highly specialized financial system with very little, if any overlap. For example, long-term and city banks dealt primarily with large corporate clients, regional banks were concerned with small and medium sized business and the Postal Savings system amassed large amounts of household deposits. Each element of the financial system had a very particular area of expertise. This was enforced by the Ministry of Finance (MoF) and the BoJ. In Appendix B, we spell out the specialized lending functions.

**ii) Direct regulatory control:** The BoJ and MoF exercised strict control over interest rates,

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<sup>31</sup> See Appendix A for a lengthier discussion.

<sup>32</sup> See Appendix D for details about the BoJ's role in the banking system.

dividends, the number of bank branches, reserve requirements and the volume of lending (so-called “window-guidance” which was a form of moral suasion rather than legal authority). These controls effectively guaranteed market segmentation and prevented interest rate competition, which was deemed detrimental to the profitability of the industry and to the country’s industrial development policy. As a result, competition for deposits occurred mainly through services. The combination of these rules meant that the BoJ effectively controlled both short and long interest rates. It also meant that banks were virtually assured profitability because of the spread between what they paid on deposits (which was regulated) and what they took in on loans, which often was not.<sup>33</sup>

**iii) Close scrutiny of financial soundness:** The BoJ and MoF assured bank solvency by demanding that certain operating and balance sheet ratios be maintained. Banks were examined annually by either the MoF or the BoJ. That being said, even the most inefficient bank was made solvent by virtue of guaranteed spreads between what the banks paid for deposits and what they charged for loans. Profitability, therefore, could be increased by augmenting loan volume with little concern for expanding liability costs.

These three pillars assured a high level of investment, savings and a steady supply of cheap loans to targeted industries. By some estimates, government regulation of the financial system amounted to ¥451 billion worth of subsidies to the banking industry during the 1966-1970 period and ¥1,006 billion during the 1971-1975 period.(Teranishi, 1994). Clearly, Japan’s

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<sup>33</sup> Suzuki (1986) argues that Japan’s low interest rates for industry may not have amounted to such a large subsidy as is commonly thought but that the guaranteed solvency of the financial industry nevertheless amounted to an industrial subsidy because banking institutions were always willing and able to extend credit.

financial system in this first period was extremely stable and followed very closely many of the practices Minsky believed were necessary for such stability to exist. Within Minsky's (1986) taxonomy, we can clearly place Japan's financial structure within the third of his three methods of exercising bank industry control (see Table 4 below).

<b>Table 4: Japan Via Minsky</b>	
<i>Minsky's Formal and Informal Methods to Control Bank Behavior</i>	<i>Application to Japan in the 1945-1972 period</i>
Customer Surveillance: Imposed informally by bank customers, stock holders and borrowers	Virtually non-existent in Japan in postwar era.
Collegiate Surveillance: Manifests itself in the price charged banks for overnight funds. For example, banks in difficulty would tend to pay premia on money market borrowing.	Minimal – Banks were virtually assured credit by the central bank and were not imposed upon in any way by competitors.
Bank Examination: Direct bank examination and control over certain key ratios by government authorities.	Formed the backbone of Japan's monetary policy in the first post-war period.

The combination of close government scrutiny and regulation plus a very segmented financial system and the traditional main bank relationship in the Keiretsu resulted in what Suzuki (1990) has called "over-borrowing" and "over-loan." Over-borrowing refers to "a state of affairs in which the raising of funds by the corporate sector relies to an extremely high degree on borrowing from banks," while over-loan "denotes a condition in the private banking sector in which banks chronically extended more credit...than they acquired from deposits or own capital."<sup>34</sup> (Suzuki, 23) Suzuki attributes the former to the inability to generate sufficient internal

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<sup>34</sup> It is rather interesting to note that what Suzuki calls "over-loan" is a relatively accurate description of an endogenous money process : the volume of bank lending was generally not constrained by deposits but only by so-called "window-guidance"—i.e. central bank controls on the quantity of loans—and overall credit demand. This phenomenon illustrates nicely the endogenous monetary theory notion that credit limits are conventional affairs.

funds (retained earnings) and the strict capital controls, which limited the availability of foreign credit either through bond sales or direct borrowing.<sup>35</sup> Suzuki attributes the latter to the willingness of the BoJ, under guidance from the Ministry of Finance, to meet the money needs of the banking system.<sup>36</sup>

Japan's financial market policies were complemented by a host of other relatively restrictive policies (from a modern-day perspective at least), including regulations both explicit and implicit to prevent foreign ownership of key industries, strict capital controls, and the gathering and dissemination of technological and market information to targeted industries.<sup>37</sup> Thus, the combination of domestic and foreign policy made it possible for speculative and even Ponzi-financed firms to exist and prosper. As Minsky notes, "speculative financing units can fulfill their commitments as long as their longer-term income prospects are favorable and as long as funds are forthcoming at non-punitive terms from the markets in which they finance and refinance their positions." (Minsky, 1982, 33) This was precisely the institutional environment that Japan created.

It is important to keep in mind that these policies did not occur in an international vacuum. While more pronounced and sweeping than in other countries, Japan's pallet of financial policies nevertheless "fit" into the international culture of the time. At least until the

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<sup>35</sup> Recall that a lack of internal reserves is evidence of an excessive savings rate. Thus, this is further evidence for our earlier contention that a high savings rate is logically compatible with a high DE ratio in the Kaleckian framework.

<sup>36</sup> Suzuki argues that the "over-loan" phenomenon existed during the Meiji period (1868-1912). It disappeared during the inter-war period, only to resume after the Second World War.

<sup>37</sup> Government institutions often provided valuable information to industries on what other corporations were doing, thus assisting in the formation of Keiretsu. The government also played a key role in assuring the establishment of Keiretsu by first buying and then selling shares in key companies to these conglomerates.

1960s, most countries were still suspicious of prosperity and financial systems reflected the memory of the roaring 20s, the Great Depression and of course WWII.<sup>38</sup> Japan's export and investment-led development growth in the three decades after the war was also consistent with cold-war considerations.<sup>39</sup> Indeed, the country sometimes used its position as a linchpin of US foreign policy to obtain and maintain trade concessions.<sup>40</sup> Further, Japan's corporations benefitted from sustained growth in the rest of the world, thereby validating the speculative nature of their financial structure. Finally, one must recall that the war relegated Japan to semi-industrialized status. In the early years of its post-war development, most Japanese production was focused in low-tech products that did not pose a serious threat to vital US industries. Thus, Japan's post-war development was both the product of an internally consistent set of policy measures and an externally favorable international environment that made those policies possible. The next three decades would show just how unique that period had been—both for Japan and other developing (and developed) countries.

### **Slower Growth and Nascent Deregulation: 1973-1979**

If the 1945-1972 period can be characterized as one of a highly centralized capitalist system—Johnson's so-called Developmental State—with largely tranquil progress, then the

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<sup>38</sup> By the mid to late 1960s, there was increasing pressure to relax some of the Great Depression legislation that had played a pivotal role in ensuring the country's strong growth after the second world war. Indeed, Minsky divides the post-war US economy into two periods. The first, from 1948-1966, he labels an era of "largely tranquil progress" (Minsky, 1982, xii). It was followed by an era of "increasing turbulence" which continues to this day. Minsky argues that the 1966 credit crunch was the first manifestation of this turbulence. See Wray (1998) for a discussion of this period.

<sup>39</sup> After losing China to the communists in 1949, the U.S. clearly needed a solid and prosperous Asian ally to show that capitalism could and did work. As such, Japan was accorded preferential access to the U.S. market.

<sup>40</sup> Japan was described as an "unsinkable aircraft carrier" by George Kennan, architect of the US policy of cold war containment. (Smith, 1998, 18)

period 1973-1979 must be regarded as one where fissures in that structure first appeared and tranquility was ruptured by real-world considerations. The rather abrupt change is generally attributed to three factors: the dismantling of the Bretton-Woods system in 1971 and the floating exchange rate system after 1973, the Organization of Petroleum Exporting Countries (OPEC) oil crisis in late 1973 and 1974, and Japan's metamorphosis into a full-fledged industrial power. Suzuki (1986) contends that these three events combined meant that Japan could no longer continue business as usual. Indeed, the first important trade tensions between the US and Japan were felt in the early part of the decade. By the 1980s, they would become important and contentious issues. For our purposes, the period 1973-1979 yielded three major changes that would forever change the country's financial landscape.

The first involved the sudden development of a large-scale government bond market, something that until that time had not existed and indeed had been precluded to a large extent by the country's balanced budget law<sup>41</sup>, which clearly played an important role in restraining inflationary pressures at least during the early part of Japan's postwar growth when the country was clearly capital constrained.<sup>42</sup> The lack of a bond market appears anathema to the theories of Minsky and Keynes—after all, much of their theoretical framework depends on an alternative investment vehicle that provides security of investment. Minsky, for example, argued that the

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<sup>41</sup> See Ito (1990, 159), Boltho (1991) and Teranishi (1994) for a discussion of Japan's balanced budget law. The law was created at the insistence of Joseph Dodge, architect of the "Dodge Plan" which sought to cure Japan of its post-war hyper-inflation. While Dodge was successful in pressuring Japan to adopt this highly unfashionable balanced budget policy, he was less successful in having the BoJ adopt price stability as one of its key policy objectives. See Appendix D for a lengthier discussion.

<sup>42</sup> Minsky ascribes just such a role to US government surpluses in the 1945-1966 period. (Minsky, 1982, xiii)

large volume of protected assets (government securities, vault cash and bank reserves) held by US banks after the war boded well for the system's overall stability. As time wore on, however, the ratio of protected assets to total liabilities fell in line with an increasingly unstable financial system. In Japan, financial institutions could not hold large amounts of government debt simply because they did not exist until the mid-1970s. This is why we can characterize Japan's postwar banking system as one that is consistent with an overdraft economy analysis. That being said, the government's active industrial policy and readiness to help troubled companies amounted to almost the same thing: corporate debts, with the implicit guarantee of government, were virtually equivalent to government bonds.

The government responded to the dramatic changes brought on by these exogenous (oil shocks) and endogenous (reduced growth rates) in a number of ways. It attempted, for example, to cushion the economic shock of the OPEC crisis by, among other things, subsidizing those industries most reliant on oil imports. At the same time, it increased social spending to counter the impact of inflation on individual wealth. Government spending jumped 55% to 21.8 trillion yen in fiscal 1975<sup>43</sup> from a year earlier as the economy suffered its first calendar year of negative growth since the war.<sup>44</sup> The change in the government's budget position can be seen quite clearly in Figure 8. The dramatic move towards deficit spending was accompanied by a surge in the volume of government bonds. The value of government bonds outstanding almost doubled to ¥15.8 trillion in 1975 from a year earlier. (Teranishi, 52) By the end of the decade, there were

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<sup>43</sup> Japan's fiscal year ends in March. Thus, 1975 data refer to the period end in March 1975 but obviously include 9 months of data from 1974, which is when the brunt of the oil crisis was felt.

<sup>44</sup> Teranishi attributes the government's increased social spending to slower growth. The government could no longer rely on 10% annual growth to make everyone richer.

¥57 trillion worth of government bonds outstanding. A large portion of the bonds, and especially the long-term issues, paid less than market rates because the government wanted to "contain the debt-servicing burden." (Tavlas and Oseki, 1992, 10). The government nevertheless had little difficulty selling them because by law, the banking sector was obliged to take up virtually all of its long-term (10 year or more) issues.

The second significant event of this era flow directly from the first. The surge in government bond issues put pressure on bank profits and led to growing demands for deregulation. By the late 1970s, banks were given permission to issue certificates of deposits with interest rates set in the market and not via administrative guidance to regain some of the deposits lost earlier in the decade to other branches of the financial sector. The composition of Japan's money supply had started an irreversible shift towards instruments of differing yields and margins of safety. This, for Minsky, is a necessary condition for an increasingly fragile financial structure.

The third event was also related to Japan's difficulties with the oil crisis and its own success. The slowdown in overall economic growth in the 1970s led to reduced demand for funds from Japan's largest companies, who were also relying increasingly on retained earnings for their financing needs. This put increasing pressure on Japan's policy of financial segmentation, as banks that had been traditional suppliers of credit to the country's manufacturing sector pressured for easier access to other lending markets, especially the real estate and consumer loan markets.

### **The Western Financial Model Triumphs : 1980 to Present**

Not surprisingly in the broader global and indeed domestic context, Japanese deregulation gained

momentum in the 1980s. If we can characterize the 1973-1979 period as one that produced cracks in Japan's financial system, then the period from 1980 to the present represents the complete rupture of the system. By gradually and in some cases dramatically doing away with the three financial pillars, capital controls, and accommodative monetary and fiscal policy, Japan created the conditions for fragility. This is especially true because of the failure to put anything in place that would ease the transition or make it workable. Minsky acknowledged that it was one thing to identify the problem but it was another to make the correct policy prescriptions.

The 1980s began with the Foreign Exchange and Trade Control Law, which established the principle that "capital flows should be free unless they were specifically restricted." (Tavlaz and Ozeki, 1992, 11) Until the mid-1970s, Japan discouraged the use of the Yen internationally because monetary authorities "were concerned that extensive foreign holdings of their currency would reduce their degree of control over the money supply and would increase the variability of the exchange rate." (Frankel, 1984, 33-34) Foreign powers and the US in particular, were not appeased by the country's tentative steps towards liberalization and internationalization. Indeed, an historical analogy can be drawn between this episode (the early 1980s) and the beginning of the Meiji period. Much like that earlier period, Japan faced heavy external pressure—largely from the US—to adapt to the "new reality" of unfettered capital transactions and liberalized financial institutions. At the same time, internal forces sympathetic to deregulation used this pressure to leverage change. The feedback between the two forces culminated in two historic and fateful accords designed to broaden the 1980 Foreign Exchange Law: the Yen-Dollar accord of 1983 and the Plaza Accord of 1985. In the Yen-Dollar accord, the Japanese agreed to liberalize barriers against the inflow and outflow of capital, "internationalize the yen," treat US banks and

other financial institutions more favorably and, to a lesser extent deregulate domestic capital markets and allow more interest rates to be market determined rather than fixed by government. This agreement and subsequent refinements would play important causal roles in the speculative boom to follow. We shall discuss the Plaza Accord at length when we look at factors that may have caused the 1990 rupture in prices.

At the firm level, the trend away from direct bank borrowing gained momentum. Firms increasingly looked to bond and equity markets for their financing needs, as can readily be seen in Table 5. Until the mid to late 1980s, the rules on bond issues were so restrictive that even as late as 1983, Toyota Motors and Matsushita Electric were the only two Japanese companies allowed to issue domestic unsecured bonds. The standards were gradually relaxed so that by 1987, 180 firms were permitted to issue unsecured debt and 330 firms were allowed to issue unsecured convertible debt. (Kang and Stulz, 1994, 19) The decline in large-scale industrial and investment loan demand reverberated throughout the Japanese economy and, most importantly for our purposes, in the bond and real estate markets. Faced with declining loan demand, Japan's largest banks demanded an end to the country's strict market segmentation. Faced with new competition, financial institutions moved into lending businesses that were either unfamiliar or risky or both. The chief outlet for this lending was the real estate sector. Again, we shall discuss these issues in greater detail later in the paper.

What has the deregulation process wrought? Even conservative analysts accept that deregulation can entail heavy costs and Minsky certainly believed that it was a contributing factor towards greater financial fragility. Even the World Bank and IMF finally seem to understand that abrupt changes in the financial system probably yield increasingly fragile

markets. An important study of financial and bank crises by Kaminsky and Reinhart (1996, 15) finds that financial liberalization "plays a significant role in explaining the probability of a banking crisis." There are other repercussions of course. Teranishi, by no means an heterodox economist, laments the fact that during the 1980s, natural sciences graduates preferred to work in the financial sector because of more lucrative salaries. Between 1980 and 1990, employment in the finance and real estate sectors combined grew at an annual rate of 3.9% versus only 1.1% for the manufacturing sector. Meanwhile, Japanese corporations distanced themselves from their traditional, formerly long-term relationships with banks and increasingly financed spending through bond and equity issues or internal funds. Ultimately, Japan's financial system bore the brunt of foreign pressure for change : in this case, the financial system not only translated or acted as a filter for the normal whimsical tendencies of capitalism but it was also the buffer or safety valve for Japan's foreign policy difficulties.

#### **Part IV -- It Happened...but Not Again**

Japan clearly suffered a debt-deflation process, the first such process in the modern era. That much we know—our analysis of debt ratios and money supply notwithstanding. Media reports refer to excessively levered firms. Journalists and academics alike call the pre-crash period an "asset bubble," implying that somehow financial valuations were divorced from "real" economic factors. These characterizations certainly suggest that a Minsky process was at work but how does one reconcile Minsky's theorem with the non-correspondence of the data? In the next few pages, we will show that the Japanese economy was made fragile by a confluence of events that would not generally have been reflected in the broad macro and micro data we examined earlier. The discussion will necessarily be cursory owing to the vastness of this topic.

Our intention is merely to flesh out plausible causal factors of the crisis—as suggested by the literature—and relate them to Minsky’s theoretical framework. We shall start with a brief review of Japan’s economic record in the period leading up to the crisis.

While Japan’s growth rate in the 1980s was less than half of what it had been during the first (tranquil) period, the country’s economic performance certainly looked good relative to other developed countries and the US in particular. Japan weathered the second oil shock admirably, keeping unemployment rates low and inflation under control. Table 6 gives an indication of Japan’s relative performance and forms the backdrop to the growing sense in the international community that Japan was threatening the US for global economic dominance.

It was precisely this kind of thinking that led to the September 1985 Plaza Accord<sup>45</sup>, an agreement in which Japan and other members of the G5 countries agreed to take steps to appreciate their currencies relative to the US dollar. True to its word, the BoJ engaged in a policy of selling US dollars (buying yen) that quickly had the desired effect. So much so that by the spring of 1986, the BoJ reversed course and started selling yen (buying US dollars). For our purposes, the Plaza Accord is interesting for two reasons. First, its implementation reveals some of the budding "schizophrenia" that has characterized Japanese economic policy ever since.<sup>46</sup> Cargill, Hutchison and Ito for example point to tensions between the BoJ, which was carrying

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<sup>45</sup> So-named because it was drafted in the Plaza Hotel in New York City.

<sup>46</sup> Japanese policymakers recently engaged in a similar bout of “flip-floping.” In February, Japanese officials took actions to weaken the Yen after only weeks earlier making it known that they wanted a stronger yen. The change in outlook coincided with a renewed attempt to re-invigorate the economy through yet lower interest rates and more fiscal stimulus. (“Japan Shifts Policy; Dollar Gains on Yen”, *USA Today*, 1999, February 17) This and other similar instances of “flip-flop” monetary and fiscal policy stand in stark contrast to the decisive and focused nature of policy in the high-growth period.

out the depreciation policy, and the MoF, which wanted to "neutralize" the effect of removing yen from circulation by decreasing the interest rate. Ultimately, the BoJ won the battle and succeeded in increasing short-term interest rates temporarily in October of 1985—even though the discount rate was held constant at 5% throughout the year. The growing demands for Central Bank independence, which were in keeping with the international pattern, would play a key role in triggering the stock market crash, as we will see later. Second, the Plaza Accord—via yen appreciation—is believed to have contributed to the real estate boom by making Japan, and especially Tokyo<sup>47</sup>, a key financial center.<sup>48</sup> At the very least, it is symbolic of Japan's entry onto the world stage. Beginning at least in 1985, there was increasing talk of the yen as a second major international currency alongside the US dollar.<sup>49</sup> With financial liberalization in full swing, an increasingly large number of foreign banks and financial companies vied for limited real estate in Tokyo and surrounding areas. In less than a decade, the number of foreign institutions in Japan jumped almost 72% to 443 in 1989. (Tavlas and Ozeki, 1992, 12)<sup>50</sup> Ito (1990) further suggests that the increased value of the yen also drove many domestic firms to "rediscover" the domestic market and led the government to pursue a more aggressive expansionary policy during

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<sup>47</sup> Japan's industrial base is highly concentrated on a strip of land facing the Pacific Ocean and enveloping Tokyo. Smith (1997) discusses this at length, noting that areas distant from this concentrated economic might more aptly resemble third-world areas in terms of their economic development concerns.

<sup>48</sup> Noguchi (1994) and Ito (1994) make similar arguments.

<sup>49</sup> See for example "The Internationalization of Currencies: An Appraisal of the Japanese Yen," (IMF, January 1992.) and Jeffrey A. Frankel's "The Yen/Dollar Agreement: Liberalizing Japanese Capital Market." (Institute for International Economics, December 1984)

<sup>50</sup> Foreign institutions include banks and securities firms. These figures include all bank and security company branches, subsidiaries and representative offices.

1987 and 1988.<sup>51</sup>

1985 was a watershed in another important way<sup>52</sup>: financial firms were given two new deposit-raising instruments with free-floating interest rates: money market certificates (MMC) and large time deposits. Both instruments represented a new and important way for large Japanese banks to raise funds and an acceleration of the process of deposit deregulation that would gain its apogee in 1994 with the complete elimination of restrictions on deposit-account interest rates.<sup>53</sup> In 1980, about 6.3% of all deposits bore market-determined interest rates. By 1989, the percentage had increased to 57.3% (Cargill, Hutchison and Ito, 52) The increasing pace of deregulation is also evidenced by the privatization of several key industries that same year.<sup>54</sup> Ito (1990, 188) argues that all these changes reflected Japan's assimilation into the Western mainstream, which we will recall was dominated by conservative, pro-free market, pro-deregulation leaders such as President Reagan in the US and Prime Minister Thatcher in England.

### **The Banking Sector**

Not coincidentally, the process of deregulation was accompanied by an increasing tendency for bank lending to the real estate sector. This has been a recurring pattern in financial

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<sup>51</sup> This expansionary policy was reversed in fiscal 1990.

<sup>52</sup> Indeed, most analyses of the stock market bubble start in 1985. See, for example, Cargill, Hutchison and Ito as well as French and Poterba. This adds some credibility to our micro-level analysis, which starts with balance sheet data for 1995. Recall also that the fiscal year-end for most Japanese corporations is March 31 so that our micro-level data actually reveal trends beginning in 1984.

<sup>53</sup> In this sense, Japan actually embarked on the deregulation process with more zeal than the US. A key element of Regulation Q still exists : banks are still prohibited from paying interest on demand deposits. The ability to limit the interest rate on time deposits was eliminated in the early 1980s.

<sup>54</sup> See chronology for details.

deregulations the world over. In recent history, one need only think of the Savings and Loans crisis in the US and the recent collapse of the Southeast Asian economies to appreciate the close connection between the two. The "why" is perhaps less clear. We will return to that issue shortly but first let us look at the evidence. In Table 7, we see that real estate loans grew from less than 4% of total bank loans in 1970 to more than 11% in 1990. For city banks, which traditionally have concerned themselves with lending to large industrial companies, real estate loans more than quadrupled as a percentage of total loans over that same period. Direct loans to the real estate sector, however, tell only part of the story. First, the OECD suggests that small and medium-sized enterprises were increasing their land-related investments in the late 1980s. The banking sector was more than happy to meet this demand because, as we have noted, its loan business to large corporations was drying up. Second, large amount of lending to the real estate sector came from *non-bank* financial institutions who in turn got their funding from the banking sector. Ito and Iwaisako (1995, 25) point to evidence suggesting that this was a convenient way for the large banks to "use non-banks as an indirect way to lend to risky borrowers." The data in Table 7 certainly do not contradict this view. Overall lending to finance companies increased almost tenfold from 1970 to 1990. Long-Term banks, which showed the smallest increases in real estate loans over that same 20 year period, were particularly aggressive in this market, increasing their loan volume almost twenty-fold over that period to 22.7% of total loans.

In Figure 9, we plot the annual percentage change in loans outstanding by sector. It is immediately clear that the annual growth rate in total loans and discounts outstanding to the finance and real estate sectors (and to a lesser extent the construction sector) surged from 1980 forward, while the rate of increase in loans to the manufacturing sector declined and even turned

negative (i.e. net repayment of loans) in the two years prior to the 1990 stock market crash. This would suggest that the manufacturing sector was becoming more solvent, precisely what the micro-data examined earlier also indicate. Interestingly, the growth rate of loans outstanding to the real estate and finance sectors fell dramatically in 1988: growth in total loans outstanding (not shown) leveled off at about 8.5% in 1988-1990, down from an average of 10.5% in the preceding seven years. This suggests that the real estate market may have been cooling off a full two years before the actual collapse in prices.

The overall decline in loans coupled with the surging stock market from 1988-1989 again suggests that an increasing number of firm—including finance and banking firms—were raising funds either through equity or bond sales. That is precisely what the flow of funds data show. In 1985, nonfinancial corporations raised more than three times as much funding (about ¥73 billion) from bank loans as they did from securities. By 1989, money raised from securities issues exceeded the amount raised from bank loans by a small margin. (Katz, 1998, 335) OECD data (1993, 49) tell a slightly more nuanced story. While large Japanese corporations issued increasing amounts of equity and "straight" bonds, the biggest increase in non-bank financing came from bonds issued with warrants.<sup>55</sup> In 1989, large Japanese corporations issued more than ¥9.7 trillion worth of bonds with warrants, up from less than ¥703 billion in 1985. Furthermore, figure 10 shows a clear and dramatic decline in the ratio of banking claims to nominal GDP in

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<sup>55</sup> A warrant give the owner the option to purchase securities at predetermined values within a stipulated time period. The CSC (1992, 208) says they are normally issued "as an inducement or sweetener" for would-be investors who might otherwise be reluctant to buy the underlying security—in this case a bond. Warrants typically have a cash value and can be bought and sold in secondary markets. Their price is determined by intrinsic value versus time value. Intrinsic value refers to the strike (i.e. exercise) price relative to the market price. Time value refers to the value placed on expectations that the underlying share price will increase. As the warrant nears expiry, the time value portion of price will converge to zero.

1987. Media reports also strongly suggest that a large part of corporate Japan was highly "liquid"—i.e. not saddled with debt. Kenneth Curtis, an economist with Deutsche Bank in Tokyo, was quoted as saying in 1990 that "Japanese corporate liquidity had reached historic peaks."<sup>56</sup>

Banks also appear to have been relatively "liquid" in the period leading up to the crash—or, at least, their liquidity position seemed to be stable. Figure 11 tells us part of the story.<sup>57</sup> On the left-hand scale, we see that cash and balances (a subset of protected assets) as a percentage of total liabilities was stable until 1989 and fell rather dramatically thereafter, reflecting the well-known difficulties faced by the entire Japanese banking/financial sector in the 1990s. Meanwhile, the ratio of capital and reserves (net worth) to total liabilities rose dramatically after 1986. This increase is clearly tied to increased bank earnings, which more than doubled between 1986 and 1988 but fell 7.7% in 1989 and continued to fall through to 1996 (Japan's commercial banks reported losses in 1995 and 1996).<sup>58</sup>

### **Real Estate and Deregulation**

What of the correlation between deregulation and real estate speculation? There were some uniquely Japanese institutional features that facilitated but could not have caused (because they predated the runup in prices) the witnessed asset price inflation. For example, Japanese tax laws made real estate extremely attractive financially. Japan's inheritance tax assessed land-holdings at significantly less than market value, while real estate loans were fully deductible in

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<sup>56</sup> "How to Conquer Japan by Playing for Keeps Today; for Once, Short-Term Thinking may be the Right Answer for American Business," *Business Month*, 1990, March.

<sup>57</sup> This figure is akin to Chart V in "Can it Happen Again?" (p. 53), where Minsky shows that commercial banks had become increasingly speculative in nature.

<sup>58</sup> These data are from the OECD's Bank Profitability database.

inheritance taxation. In the context of rising real estate prices, this would have been a tempting loophole. Further, Abegglen and Stalk suggest that most capital gains were not taxed at all.

"Although dividends paid to individuals are heavily taxed in both countries (Japan and the US), capital gains are not usually taxed in Japan." (Abegglen and Stalk, 172-173) Japanese corporations of all stripes have a long history of paying low dividends. In return, the implicit (and explicit) promise has always been to generate high growth and hence capital gains. The real estate sector would not appear to be any different.

While these institutional factors were in place well before the 1990 crash, the widespread and easy availability of credit for housing and real estate investment in general was a much more recent phenomenon. During the high-growth period for example, government regulations designed to channel financing to the investment sector meant that virtually all housing loans came from the Japan Housing Loan Corporation (JHLC).<sup>59</sup> This, plus the fact that Japanese homes have traditionally been expensive, contributed to Japan's high savings rate : would-be homeowners needed to accumulate large savings to obtain financing. Much of these savings were held in small regional banks that had chronic fund surpluses and these, in turn, were channeled to the City Banks via the interbank loans market, itself heavily regulated by the MoF and the BoJ. As loan activity to the corporate sector began to wane in the 1970s, banks, securities firms and life insurance companies looked increasingly to the home market for profit potential and created subsidiaries known as *jusen*, which were dependent on their parent corporations for financing because they were not allowed to take in deposits. *Jusen* and other non-bank financial companies

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<sup>59</sup> Before 1965, the JHLC financed virtually all of the country's housing loans. By the 1980s, only 20% to 30% of housing loans were financed by the JHLC (Seko, 1994, 52-53)

targeted the real estate sector particularly aggressively in the second half of the 1980s (Cargill, Hutchison and Ito, 121). It is important to note that these non-bank financial firms fell outside the purview of the MoF, which had an intimate and long-established link with the traditional banking sector. This meant that the non-bank financial companies could simply ignore pleas from the MoF to restrain real estate loans, which they did in the period leading up to the real estate crash. This prompted the executive director of the BoJ to lament: "Our big headache now is the non-banks. We have no direct route to exercise control over them."<sup>60</sup> The collapse in real estate prices effectively destroyed the *jusen* corporations. In 1995, the MoF found that 74% of the *jusen* loans (out of a total of ¥13 trillion) were nonperforming. About 67% of these were unrecoverable. By 1996, the seven *jusen* companies were dissolved and regrouped into the *Jusen* Resolution Company. Why would the *jusen* companies (as well as other non-bank institutions) have taken on such precarious financial positions? The answer is, as Minsky might have suggested, because the whole post-war history of Japan shows that it was not only prudent but necessary to do so. Institutional features such as a long history of low dividend payments, an emphasis on market share and growth, as well as generous tax treatments made highly leveraged positions both desirable and necessary. Highly leveraged loans to the industrial sector had reaped huge rewards, why would a similar approach not work for the real estate sector? The only difference between 1990 and the past was that the broader institutional structure had changed : whereas before there was a clear and unambiguous policy of full financial support from the BoJ and the entire Japanese financial infrastructure, this was less so in 1990 (as we shall see).

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<sup>60</sup> "While Land Prices in Japan Soar, Officials Fight Back with Words" 1990. *New York Times*, March 25.

Whereas before the MoF might have been able to exert some control over real estate lending, this was less true in the period leading up to the crash. While Japanese manufacturing corporations and other companies with international exposure and clout were adopting relatively safe financial positions by virtue of their size (and their long-term exposure to foreign financing rules), the real estate and financial services sectors were not. Both were still relatively new to the international rules that were fast being foisted on Japan, rules that would ultimately alter the policy orientation of the BoJ.

There are other institutional and historical factors that make real estate a particularly desirous investment. Banks in Japan and elsewhere, for example, have traditionally been more willing to lend to firms and individuals if they already have or intend to acquire land. Keynes noted that land could be more liquid than money during times of crisis—there may therefore also be an element of liquidity preference in the acquisition of land. Further, the carrying costs of land are relatively low : land does not physically depreciate and in Japan, property taxes were extremely low—Noguchi (1994, 24) suggests that property taxes actually fell from 0.1% of land value in the early 1980s to 0.06% by the end of the decade. This meant that people had an incentive to hoard and treat land as a speculative asset rather than as a productive asset. Finally, from a purely geographic perspective, Japan is a small mountainous island with a relative paucity of good arable land and a history of rapid increases in real estate prices<sup>61</sup> One can get a sense of Japan's "real estate constraint" by looking at the percentage of land devoted to agriculture over

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<sup>61</sup> Japan is actually larger than Germany or the United Kingdom in terms of square kilometers (all three obviously lag far behind the US), but much of this is comprised of mountainous regions ill-suited to agriculture, industry or even settlement. The actual land masses in square kilometers are: 376,520 for Japan, 359,720 for Germany, 241,760 for the UK and 9,159,120 for the US.

time. Figure 12 shows that the percentage of land devoted to agriculture has declined more rapidly in Japan than elsewhere (it was roughly constant in Germany and the US but fell dramatically in the UK), suggesting that an increasing portion of its land mass is being used for housing and industry.<sup>62</sup> The actual percentage of land devoted to agriculture in Japan during this time fell from about 15.7% to 11.7%, while in Germany it fell only marginally to 34.5% from 36.4%. Finally, it is worth noting that the Japanese themselves have long claimed to be land "constrained." For example, ultra-nationalists before and during the second world war claimed that Japan needed to expand overseas to alleviate overpopulation. While the historical evidence (see Boulding and Gleason for example) certainly seems to invalidate this claim,<sup>63</sup> it is nevertheless true that it is a sentiment shared by many. This certainly was reflected in real estate prices. Abegglen and Stalk make this point abundantly clear. For example, "between 1950 and 1981, the average price per acre of farmland in the US rose by about 14 times. By contrast, the price of Japanese industrial acreage has increased 150 times from 1950 to 1981 and over 6,000 times since just before the start of World War II." (Abegglen and Stalk, 165) Seko (1994, 54) makes a similar point but in a different way.

"In the mid-1980s, banks actively sought to boost property-related lending.

They mistakenly credited the myth that land prices always go up and thus ran little risk if loans were secured by property. The banks have traditionally

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<sup>62</sup> A decline in land devoted to agriculture does not necessarily imply increased urban sprawl. It is possible that a lot of former agriculture land remains idle because it cannot be farmed economically. This, however, does not seem likely in the context of rapidly increasing real estate prices.

<sup>63</sup> While Japan was explicitly isolationist during the Tokugawa era, Boulding and Gleason claim that Japan has a long history of territorial ambition that predates the surge in population growth and industrialization of the last century and a half. For example, Japan invaded Korea in 1592 as part of an abortive attempt to conquer China (Boulding and Gleason, 247)

lent heavily to manufacturing firms, but this source of business dried up in the mid-1980s as manufacturers increasingly turned to equity markets to raise money."

If humans are indeed subject to animal spirits and whimsical emotions, then surely the presumed security of real estate must count among those assets most likely to assuage the restless human spirit. This appears to be particularly true of Japan because of the historical belief (and to some extent reality) that the country was land-constrained.

### **Rate Hikes and Balanced Budgets**

Minsky believed that the US was only able to avert a major economic crisis in the post-war period because of two relatively new and important institutions: big government and an activist central bank, both of which owed their existence to the Great Depression<sup>64</sup>. Government, through its sheer preponderance in the national economy, could cushion the economy from shocks through its spending and taxing power, while the central bank could act as a Lender of Last Resort, assuring liquidity during credit crunches and other crises of confidence, as it did during the 1987 US stock market crash (Wolfson, 1996). This can be seen very clearly in Minsky's "Truth Table" of policy options, which he outlines in the preface to *"Can 'It' Happen Again"* and which we have reproduced below as Table 8:

#### **Table 8 : Minsky's "Truth Table" of Policy Options**

##### **Lender-of-Last-Resort Intervention**

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<sup>64</sup> The US Federal Reserve system was created in 1913 but Friedman and others contend that the lender of last resort policy option—on which Minsky was primarily concerned—only came into use after the Great Depression.

		Yes	No
		Yes	Yes-Yes
Government deficit	No	No-Yes	No-No

Minsky believed that during much of the post-war period, the US administered a "yes-yes" strategy of government deficits combined with lender-of-last-resort intervention. By contrast, he believed that the Great Depression was characterized by a "no-no" strategy: government was too small and monetary policy too timid to make a difference.

To be sure, Minsky favored government deficits (and spending) for investment items such as roads and infrastructure over "consumption" items such as social spending. Minsky believed that consumption spending contributed to inflation because it maintained corporate profits during slumps without doing much to improve productivity. This in turn "could override the failure of investments to increase the productivity of labor: big government is a shield that protects an inefficient industrial structure."<sup>65</sup> (Minsky, 1982, 57) Thus, the long-run unstable nature of capitalism is even more pernicious than it first appears : even if we use our available tools to counter capitalism's natural and vicious swings (i.e. deficit spending and lender of last resort policies), we set ourselves up for a host of other problems unless we are extremely selective (and fortunate) in our macro policy decisions.

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<sup>65</sup> Note that Minsky's preference for investment over "pure" social spending on social programs such as welfare is not only consistent with the American work ethic (Collins and Goldberg, 1999), it also coincides with Minsky's early support for an employer of last resort (ELR) policy of the type advocated by Wray (1998) and others. Wray in particular emphasizes the productivity gains (and their salutary effects on prices) that would result from such a policy.

Clearly then, fiscal and monetary policy are important but potentially destabilizing tools. Both can become endogenous and destabilizing if policymakers misread and mis-comprehend the true economic mechanisms at work, as they did before and during the Great Depression. Policymakers are subject to the same, often wrong, conventions that guide everyday behavior in the financial markets. We shall soon see that this is precisely what happened in Japan. In the period leading up to the 1990 stock market crash, the country simply did not use its institutions effectively. Japanese fiscal and monetary policy both caused and exasperated the financial crisis. For a brief period of time, Japan effectively adopted a "no-no" strategy that led to one of the most prolonged slumps in its modern history.<sup>66</sup>

Monetary and fiscal policy unsettle the financial structure through two key facets of financial fragility. "In the first, the cost of debt and the need to roll over ever larger debt structures leads to a break in asset values as units try (or are forced to try) to decrease their debt dependency; the second is when cross capital income falls because the determinants of profits have fallen. A deep recession requires that such financial markets and cash flow effects occur." (Minsky, 1982, 29) Monetary policy, via control of interest rates, can affect the first element. Fiscal policy, through its Kaleckian repercussions on macro-economic profits, can affect the second. Let us look at each in turn.

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<sup>66</sup> This does not mean we are suggesting Japan experienced anything akin to the Great Depression, even though it most certainly is the most serious economic crisis to face the country since the Second World War. The Japanese government obviously continues to play a large role in the economy and the central bank has, on numerous occasions since that time acted to shore up the financial system through bank reorganizations and liquidity support. The central bank has also, as we noted earlier, dropped interest rates to record lows. We are merely suggesting that, for a brief period of time—roughly late 1989 through to mid 1991—both fiscal and monetary policy worked to precipitate a decline in prices that inadvertently led to a financial crises.

As figure 13 shows, the cost of debt in Japan was falling throughout much of the 1980s.<sup>67</sup> The trend towards lower interest costs held until May 1989, when the BoJ launched a pre-emptive strike against the perceived threat of inflation, increasing the discount rate by 75 basis points to 3.25%. By the end of 1990, the discount had been increased an additional four times to 6%. These rate increases occurred despite the fact that inflation remained below 2% for most of the 1980s. Why did the BoJ behave so aggressively? The answer goes back to the oil crises of the 1970s and Japan's seemingly successful efforts to quell inflation without causing a recession. This led the BoJ to adopt price stability as its primary policy objective, falling firmly into line with the de facto policy goal of most other major central banks.<sup>68</sup> It also represented a serious departure from the BoJ's historical role (See Appendix C for details). In the post-war boom period, price stability was given "somewhat less emphasis" than other policy objectives such as strong economic growth, low unemployment, and a neutral balance of payment and this was indeed consistent with the BoJ's historical role. (Tavlas and Oseki, 1992, 7) Similarly, Abegglen and Stalk suggest that the government's monetary policy had long been to "maintain low interest rates and to avoid a liquidity crisis." (Abegglen and Stalk, 167) Figure 14 shows that Japan suffered a serious bout of hyperinflation immediately after the war but that by the end of the 1950s (until the oil shocks), the country's inflation rate had settled at a presumably acceptable 5% rate—well in excess of the 3.27% peak rate witnessed in 1991. By 1990, the BoJ's policy

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<sup>67</sup> As noted earlier, there was a temporary increase in some short-term interest rates after the Basle Accord but these were not reflected in the discount rate.

<sup>68</sup> While the BoJ lacks an explicit full employment objective (unlike many western central banks born out of the Great Depression), article 2 of the 1942 BoJ revisions states that the BoJ shall act so as to assist the economic in achieving its "potential of economic activities." See Appendix D for details. Of course, the goal of full-employment in western central banks has not been heeded. Virtually all modern Central Banks now regard price stability as their most important stated policy objective.

stance had swung around so radically that the Governor of the BoJ, Yasushi Mieno, argued that "it is essential to foster an environment and infrastructure through which strong economic performance can be realized. First and foremost, this means price stability...To this end, when conducting monetary policy, it is of utmost importance that the BoJ places priority on securing price stability." (Quoted in Tavlas and Ozeki, 1992, 7) Other sources have noted a similar shift in policy. For example, the OECD said in a June 1990 review of Japan's economy that "the policy stand has shifted in emphasis towards containing inflation pressures and expectations" because of concerns about "tight" labor markets and a weakening currency (OECD, 1990, 1-2) This clearly had a dramatic effect on the country's banking and real estate sectors, whose profits were increasingly dependent on asset inflation and which had been reared on accommodative central bank monetary policy. Many of the firms in these sectors were saddled with highly inelastic demand for loans relative to interest rates just like Minsky said they would be: they had to keep borrowing just to keep current on existing debt. Eventually, this process must end and not just for the banks and real estate companies: people with mortgages also suffered because of the interest rate increases. Starting in 1983, Japanese banks and other financial institutions were permitted to offer loans with floating interest rates. Prior to 1983, virtually all home loans were negotiated at fixed interest rates, with the bulk of these coming from the JHLC (as we noted earlier). By 1989, roughly two-thirds of all home loans had floating interest rates.(Seko, 55) These naturally became more burdensome with the surge in interest rates beginning in 1989 and would have contributed to less consumer spending if not outright bankruptcies.

As for the government sector, there are two key events that contributed to the rupture in prices. First, the government was a clearly exerting a drag on the economy. Spending as a percent

of nominal GDP fell from 18.5% in 1985 to 15.7% in 1990. See Figure 15. Of course, this does not mean that government expenditure fell in absolute terms. In fact, as Figure 16 shows, expenditure increased at about 4% a year between 1985 and 1988 and jumped almost 10% in fiscal 1989. Despite this surge in expenditure, the government of Japan was still on track for a budget surplus by 1991 as we saw earlier (Figure 8). Clearly, revenue overwhelmed expenditures. If the government generates a surplus despite a surge in expenditure, why should we expect firm-level behavior to be any different? In other words, the government's efforts to exert fiscal stimulus (i.e. the 10% surge in expenditure in 1989) were foiled by the booming economy in much the same way that the firm-level indebtedness process was foiled by growth in profits. In any case, the Kaleckian equation tells us that the move towards a budget surplus would have had a negative impact on aggregate profits.

This discussion notwithstanding, it is important to remember that the 11% increase in fiscal 1989 was exerted mostly in calendar 1988. By calendar year 1989 and into the first three months of 1990 (i.e. fiscal 1990), the Japanese government had embarked on a program of fiscal austerity, i.e. budget surpluses. This represented a remarkable coordination of fiscal and monetary policy designed to "wring speculative excesses from the stock and real estate markets." (Central Intelligence Agency, 1997) In keeping with this objective, the government introduced a 3% consumption tax in 1989 as part of a general effort to "shore-up" its pension system.<sup>69</sup> This too acted as a drag on corporate profits by discouraging consumer expenditures, which had been increasing monotonically since at least 1981 but were halted by the 1990 stock

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<sup>69</sup> Like most other developed countries, an increasing percentage of the Japanese population is over the age of 65.

market crash and the consumption tax. Figure 17 shows that the household savings rate as a percent of disposable income fell from 1981 to 1989 but increased abruptly in 1991.<sup>70</sup> The Kaleckian equation tells us that household consumption enhances corporate profits so the taxation policy would have exerted a negative effect on profits via consumption. There were of course other fiscal policy measures that may have contributed to the asset price boom (and hence its end) while at the same time increasing the government's take of the economy (hence reducing corporate profits). For example, in April 1988, the MoF "revoked the tax-free status of \$2.4 trillion in small, low-yield savings accounts," effectively driving many consumers into the stock market seeking higher returns.<sup>71</sup>

### **The Basle Accord**

A number of studies have suggested that the crisis was exasperated by the 1988 Basle Accord, which required banks to hold at least 8% of their assets in Tier I and Tier II capital (combined) by March 1993, the Japanese fiscal year-end.<sup>72</sup> Unlike other developed countries, Japanese banks hold large amounts of stock in other financial and non-financial corporations as part of their traditional Keiretsu relationships. Since much of this stock was acquired well before the boom in stock prices, most banks were sitting on huge unrealized gains called fukumi. Japan lobbied successfully to allow its banks to count 45% of fukumi as Tier II capital. The reasoning was that these were long-term ownership stakes and thus ought to be legitimately considered as

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<sup>70</sup> This is of course the mere inverse of a consumption analysis since, by definition, disposable income less savings must give consumption.

<sup>71</sup> "Why Tokyo's Stock Market is Still Soaring After All These Years," *Business Week*, 1998, July 25.

<sup>72</sup> Tier I capital includes own equity (i.e. face value of common and preferred stock), reserves, and retained earnings. Tier II capital includes subordinated debt, 45% of "latent" capital gains (i.e. fukumi) and other kinds of debt.

part of capital. The end result of this compromise was that Japanese banks easily met the Basle Accord requirements in the period leading up to the stock market crash but faced considerable difficulty after prices collapsed. Ito and Sasaki (1998) find empirical evidence that the Fukumi provision exacerbated the dramatic downturn in asset prices by creating at the very least the conditions for a credit crunch. In other words, banks reduced loan volume, loaded up on subordinated debt—which is also counted as Tier II capital—or sold assets (i.e. loans) as they struggled to meet the stipulated 8% ratio. This is evidenced by the fall in money supply growth discussed earlier. All these actions would have amplified a worsening crisis.

### **The Crisis Aftermath**

Broadly speaking, we have suggested that the years leading up to the crisis were framed by two broad historical-political and institutional trends : first, Japan's ascendancy threatened US economic hegemony. This led to the death of the Bretton-Woods agreement, trade tensions, the 1985 Basle Accord and a broad agreement to deregulate its financial system. Why would Japan—the second largest economy in the world—accede to US demands? The answer to this question is the same one given by pro-free trade forces in Canada during the 1988 free trade election: Japan believed that it had to acquiesce to US pressure in order to maintain access to the largest consumer market in the world. Second, Japan's financial structure was undergoing serious institutional changes that were directly related to the first trend. This led to the erosion of Japan's early postwar policy of segmentation, which in turn contributed to real estate and stock price inflation. The catalysts to the financial crisis were monetary and fiscal.

The collapse of the stock market exposed the speculative nature of the real estate sector and banking sector : while various solvency ratios may have been improving in the period

leading up to the crisis, the gains were based on pure asset inflation. This is evidenced by the abrupt change in sentiment towards both the real estate and banking sector. Less than a month after the precipitous stock market decline and in the midst of rising interest rates, Moody's Investors Service Inc. lowered its debt ratings on three large Japanese banks because "there is potential weakness in Japanese real estate prices even though institutional arrangements have prevented serious losses so far."<sup>73</sup> This warning was issued well before the fall in real estate prices and indicates the extent to which the stock market crash changed sentiment.<sup>74</sup> Bond agencies are often slow (or loath) to recognize debt problems so this warning, in the context of falling stock prices, was a particularly important signal that all was not well with Japan's financial system.<sup>75</sup> It also meant that these banks—as well as other banks not affected by the rating—would probably face higher interest costs when issuing bonds or debentures.

Thus, by virtue of its power over credit and its own preference for liquidity in the context of collapsing asset prices and the Basle Accord, the banking sector amplified the crisis into the rest of the economy. As Wolfson (1990, 333-334) notes, "Problems in the banking system can disrupt the overall economic and financial systems; conversely, problems elsewhere in the financial system will have a much magnified effect on the overall economy if they spread to the banking system." At least some portion of the banking sector's preference for liquidity was foisted upon them by a MoF edict that "imposed a zero-growth restriction on the total amount of

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<sup>73</sup> "Moody's Drops Ratings for 3 Japanese Banks," *The New York Times*, 1990, February 7.

<sup>74</sup> This is obviously further evidence in favor of choosing 1990 as the pivotal "Minskian" year.

<sup>75</sup> UNCTAD (1998) for example notes that New York bond rating agencies did not reduce their ratings on East Asian country debt until well after the beginning of the crisis.

bank lending to real estate companies in April 1990." (Noguchi, 26) This occurred a scant three months after the initial stock market crash and pre-dated the collapse in real estate prices, as shown in Figure 18. "If demands for credit are indeed necessitous, then an inability to obtain the needed funds would be expected to result in defaults on debt obligations, the collapse of the debt structure that had been built up during the expansion, and a cumulative downward spiral characteristic of financial crises." (Wolfson, 1986, 126)

Again, it is important to place these events in an historical context. Figure 18 also shows that Japan's suffered a more abrupt collapse in real estate prices in 1974-75, just after the demise of Bretton Woods and the oil shocks, without engendering the severe economic crisis that followed the 1990 stock and real estate price crash. The key difference between that crisis and the 1990 collapse was the institutional structure: in 1974-75, Japan's post-war banking system—which had imparted stability to the financial structure—was largely intact; in 1990 it was being consciously disassembled. In 1974-75, the government stepped in with massive fiscal stimulus—precisely as prescribed by Minsky, in 1990 it did not. In 1974-75, the dramatic decline in prices was transient, in 1990 it was anything but.

Now let us briefly consider some broad-based trends in the post-1990 period. Data clearly show a broad-based decline in corporate and bank profitability. Debt-equity levels worsened. Short-term debts increased. Bankruptcies more than doubled to 14,000 in 1992 from less than 7,000 in 1990. The economy stagnated, with growth this decade averaging 1.7%. The financial sector was particularly hard hit. As noted earlier, the government was eventually forced to rescue the entire jusen (housing loan) industry. According to the OECD, this rescue engendered considerable "political fallout" that made further aid to the financial industry unpalatable. This

meant that official policy until late 1998 was that the banking sector should deal with its nonperforming loans problem on its own.<sup>76</sup> All told, the OECD estimates that the financial sector has lost about \$1.3 trillion worth of capital since the beginning of the decade, roughly 19% of the total capital lost in all industries as a result of the financial crises of 1990. More than 80% of these losses came from losses on the banks' securities holdings (shares in other companies and financial institutions) At the urging of the US and international agencies such as the OECD, as well as domestic interests, financial deregulation continued apace despite turmoil in the financial markets, culminating in what has been termed Japan's "big bang" in 1998. A cornerstone of this reform was the new BoJ Law, which replaced the 1942 provisions (see Appendix C). The changes were designed to "enhance the independence and transparency" of the BoJ. (OECD, 1998, 102)

The policy dyslexia that had characterized the latter half of the 1980s persisted and worsened: policymakers seem unable to decide whether they want a strong or weak yen. Even today, Japan seems to be lurching back and forth, clearly lacking the single-minded focus that carried it so far after the Second World War. This in part stems from Japan's reliance on the US consumer market to take up its exports : the country must walk a fine line between reviving its economy through a weak yen (which improves exports) and angering the US, which is its biggest export market. Japan's fiscal policy has also been inconsistent. While the government incurred large budget deficits beginning in 1992<sup>77</sup>, it also acted quickly to "remedy" its fiscal situation in

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<sup>76</sup> In October 1998, the Japanese government announced a \$517 billion bailout package for the banking sector.

<sup>77</sup> No fiscal measures were announced in 1991 despite the dramatic decline in growth that year.

1997, just as the economy appeared to be recovering from its four-year old slump. The OECD euphemistically calls this a period of "fiscal consolidation" and deems that it was "quite appropriate" in the context of a growing economy. "With the benefit of hindsight, it is now clear that ...the expansion...was not strong enough to absorb the significant fiscal tightening in 1997." (OECD, 1998, 2) It is telling that only the BoJ adopted a consistent policy by virtue of keeping the discount rate below 1% since 1995. However, the fact that the economy is only now showing signs of recovery (notwithstanding the growth spurt in 1996)—after a very powerful dose of fiscal stimulus in 1999—indicates the limitations of monetary policy.

### **Conclusion and Reflections**

In this paper, we have asked whether Japan's economic crisis fits a broader Minskian pattern with the FIH as a subset. We found that the data do not seem to support the FIH. Japanese corporations grew more liquid in the period leading up to the crisis. This can be explained by the growing preponderance of large Japanese corporations able to finance investments out of retained earnings combined with a growing tendency to raise funds through bond or equity issues. A Kaleckian interpretation suggests that this makes sense in the context of a falling savings rate during the period leading up to the crisis.

If the FIH cannot explain the crisis, what does? We have suggested that the crisis followed what might be best labeled a "Minskian" pattern. This pattern can be found in Minsky's discussions of financial deregulation (see the chapter on banking in his 1986 tome) as well as the important and stabilizing role of government deficits and central bank lender-of-last resort policy. We can group the causal factors into two broadly defined groups. First, we have the contextual events/facts. They are as follows:

- A highly leveraged (relative to other sectors) real estate industry. Even though DE ratios were moving lower in the period leading up to the crash, the subsequent worsening of DE ratios—especially in light of the continued improvement in other sectors—suggests that even these improvements were insufficient or perhaps illusory. The importance of the real estate sector cannot be underestimated for its impact on the banking sector, which we revisit next.
- The banking sector was growing ever more exposed to the real estate sector and stock market because of a broad decline in demand for financing from its traditional clients, the large Japanese corporations. The collapse of real estate and stock prices, combined with the Basle accord, induced a "liquidity preference" on the part of banks.
- There was growing pressure from the U.S. to stimulate domestic demand (for trade reasons) and deregulate financial markets.

The catalysts to the crisis were as follows:

- A sharp spike in interest rates by the Central Bank, which since the late 1970s at least had abandoned its previous policy commitment to high growth in favor of a low inflation objective. The higher interest rates collapsed first the stock market and second, the real estate market by reducing the demand price and increasing the supply price. The collapse of the former and its impact on the banking industry and overall sentiment contributed to the collapse of the latter.
- A government budget surplus impinges on corporate profits.
- A consumption tax slows consumption which further eats away at corporate profits.

At this juncture, we must insist on a point that perhaps has not been stressed enough: in a

very real way, the broader Minsky theory (i.e. outside of the FIH or what we earlier called a "Minskian" analysis) rests on an analysis of a capitalist economy that naturally and endogenously moves towards deregulation. This gradual shift imparts inherent fragility precisely because the adjustment process ventures into the unknown. The pallet of "uncertain" events grows with the adjustment process. While Japanese officials at the MoF or the BoJ made clear policy mistakes, Minsky probably would have argued that such mistakes were virtually inevitable in the context of a long-term bout of prosperity. Finally, while we have not explicitly considered other theories of financial crises, we have seen enough evidence to rule out models by writers such as Wolfson, Marx and Veblen. All three authors believe that a falling profit rate is a pre-condition to financial instability and crises. We have seen that Japan's profit rate only fell after the stock market crash. These three writers also tend to regard the fiscal and monetary sectors as an after-thought, while Minsky takes great pains to discuss their impact on the financial process—even if he does not make much allowance for their influence in the FIH.<sup>78</sup>

Like all good stories then, the analysis of Japan's fall from grace is complex, layered and susceptible to differing interpretation depending on the reader, the time of the day, or solar spot activity. This is not to be facetious. The truth of any theory must be wedded not only to its historical time and its ability to make sense of a seemingly chaotic and incoherent world, but also to its general acceptability. Like most macro-economic models, Minsky's model also purports to explain the evolution of any modern capitalist economy. The model makes no explicit reference to culture, though arguably this is embedded in Minsky's emphasis on the importance of

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<sup>78</sup> This of course makes sense for writers such as Veblen and Marx, who wrote at a time when government played a relatively small role in the economy and the lender-of-last resort function of the Central Bank (or even a large private bank) was still not well defined. Wolfson, however, cannot make the same claim.

institutions. In the same vein, Minsky's model also appeals to over-arching psychological traits that get amplified by the capitalist system. What are these underlying principles and forces?

Minsky's analysis rests on the notion that humans everywhere, regardless of race, color or creed, fall victim to their own optimism.

Throughout this paper we have attempted to make sure that a clear picture of Japan's institutional and economic history lurked always in the background. This is very important if only because it is lacking in so much of what passes for modern-day economic research. It is also something which Minsky believed to be absolutely essential to a clear understanding of financial processes. If we were to vulgarize the story we have laid out here, we would say that Japan simply could not easily escape its past. This was Minsky's main message and it is one of the few things we can say with certainty about people and, for that matter, economies.

## Appendix A: Brief Overview of Japanese Economic History

Japan's capitalist history is young by European and even North American standards, dating back to 1868 and the Meiji period. It is also unique. Japanese capitalism was, to a greater extent than probably any other nascent capitalism of the day, purposeful and directed. At the same time, Japan's cultural and institutional setting was fecund turf for capitalism to take root. "Modern Japan inherited from her past certain political and economic institutions that could be easily adapted to serving the nation in its new role... Japan entered upon her course as a Great Power with an inheritance of political ideas and emotional dispositions well-fitted to supply driving force and unifying power in the task of nation-building." (Allen, pp. 9-10, 1946) To understand the recent history of Japan's political economy, we need to understand first how Japan moved from feudalism to capitalism and second, the structure of its economy in the post-war period.

For more than two centuries prior to the Meiji era and the country's headlong move into capitalism, Japan was ruled by a military dictatorship controlled by the Tokugawa shoguns (shoguns were military governors of the state). The shogun was in theory at least subordinate to the emperor but this allegiance was more apparent than real. The Tokugawa shogun owned roughly a quarter of the country's agricultural land. The balance was administered by lords, whose loyalty to the shogun was put to the test every year by an annual pilgrimage called the *sankin kotai*. This obliged lords to spend several months a year in Tokyo in order to pay a tribute and report on developments in their domains.<sup>1</sup> This tradition or means of control over disparate areas of the country played a key role in establishing a trading relationship and indeed road system between Tokyo and the periphery of the country. The tradition also helped build and solidify a sense of nationhood and cultural homogeneity that has endured to this day. Apart from isolated (but culturally important) tribes that remain in more remote areas of the country, Japan managed to develop an extremely homogenous culture.

Europeans first landed in Japan in 1542 and quickly moved to convert the Japanese to Christianity. By 1587, the Tokugawa shoguns were sufficiently concerned about the spread of European ways that they put in place a ban on missionaries. By 1650, the shoguns had effectively adopted an isolationist policy called *sakoku* (closed country). For most of the Tokugawa period, Japanese citizens were forbidden to leave the country on pain of death. The *Bakufu* (central administration) also limited the size of ocean going ships and confined western influence to a single port in Deshima, where Dutch merchants were permitted to trade in a limited number of goods. that included a ban on ocean-going vessels and trade with outsiders. Persons attempting to leave the island were executed. (Smith, 1997, 51) Little would change for the next two hundred years. Economically, the Tokugawa or Edo (Tokyo) era was an extreme form of feudalism and isolationism. Agriculture was primarily in rice and a few industrial type crops such as kelp and cotton. Manufacturing, especially of crafts, was geared primarily towards production for the ruling class and was organized around guilds similar to those in European. Culturally, the Edo era fostered a static society built around a maze of edicts, rules and regulations administered

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<sup>1</sup> The lords or *daimyo* were obliged to leave hostages upon each visit so as to guarantee their return the following year.

from on high. Despite numerous rural uprisings (on average, once a month during the entire Tokugawa era), many modern-day Japanese still regard the Edo era with nostalgia and a longing for those simpler, more rural times. This is a largely mythical and delusional interpretation. Smith (1997) likens the era to a middle-ages version of the Soviet Union. It is also, however, the thread of history that motivates much of the country's neurosis and half-baked attempts to open its economy to the outside.

By the mid 19<sup>th</sup> century, important forces were at work that would spell the undoing of the shogun and ease the transition to capitalism. Small textile factories employing as many as a 100 workers had begun to spring up and there was increased use of bills of exchange and promissory notes, a clear indication of an economy that was becoming more trade-oriented and specialized. The caste system was disintegrating and the merchant class, long reviled in Japanese society, was gaining ascendancy. Some of the country's far-flung clans (mostly in the west) and lords were actively learning western ways and languages. One clan secretly sent a group of young samurai overseas to learn the western ways. They would play an important role in setting Japan on a course with capitalism by forming the backbone of Japan's bureaucratic elite.

By the time Perry sailed into Suruga Bay in 1854 and refused to leave until a trade agreement was struck, the shogun was already seriously weakened and a two-centuries old tradition of relative stability was but a memory. In short order, the Tokugawa regime signed treaties with the United States, Britain, Holland, Russia and France that weakened the nation's sovereignty by, among other things, limiting the government's rights to tax imports. The settlements with the Europeans, coupled with bombardments by foreign powers of Kaogshima and Shimonoseki in 1863 and 1864, further crippled the dictatorship and gave a stronger voice to its opponents, who called for a return to more traditional Japanese ways including the worship and re-invigoration of the monarchy and a stronger policy of economic development to forestall further European concessions. By 1868, the Tokugawa regime was no more<sup>2</sup> and Japan embarked on a modernization project during the Meiji era (so named after the emperor) the likes of which had not been seen before. The memory of its humiliation at the hands of the Europeans, while only one of the causal factors in the transition out of feudalism, would "shape japan's goal to make itself the West's industrial and military equal and lent the endeavor an urgency that left no Japanese untouched." (Smith, p. 57, 1997) Johnson characterizes Japan's development from the Meiji period forward as a "state-led campaign of modernization from above." (Johnson, 1995, 11)

The rest of Japanese history can be neatly divided in two. The first tranche consists of the period 1868 to World War II and is an era of rapid economic growth, fortuitous timing, and military incursion that ultimately ended in the devastating defeat of World War II. One could characterize the last decade of this period as one where Japan came to believe (and act on this belief) that it possessed superior cultural, economic and racial traits. This type of thinking—quite

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<sup>2</sup> While the Meiji era is often portrayed as having been brought about because of explicit threats from abroad—U.S. Commodore Mathew Perry sailed to Japan in 1853 with "a substantial naval force for the purpose of negotiating an agreement" (Beasley, 28)—most historical analyses acknowledge that there were strong domestic and endogenous forces that demanded change, not the least of which being the breakdown of the old feudal system. (Allen, 1946 and Beasley, 1990). In other words, the external threat merely hastened a process that had already taken root within the country. As we shall see, this is a re-occurring theme in Japanese foreign/domestic policy.

apart from the geopolitical and economic considerations—clearly played a role in leading to war against the US—a war that seems foolhardy and illogical in retrospect. As Boulding and Gleason (1972) suggest, the rational course from an economic standpoint would have been for Japan to behave as it did during WWI, when it prospered enormously by supplying goods to the British and French powers and supplanting European producers in mainland Asia. In World War I, Japan sided with the British and French but did not actively engage in warfare against the Germans.

Following the war, Japan's economy was reorganized according to the Supreme Commander of Allied Powers (SCAP), which was dominated by US policymakers. SCAP attempted to put in place a system that reflected both the dominant US economic ideology and some of the real-world lessons learned by US policymakers during the 1930s. For example, one of SCAP's first directives was to dismantle Japanese *Zaibatsu* (meaning "money clique" in Japanese), industrial conglomerations similar to the now reviled *chaebols* in South Korea.<sup>3</sup> SCAP believed the *Zaibatsu* played a key role in Japan's militarism<sup>4</sup> and also objected to them on the grounds that they were anti-competitive. (Beasley, 1990) One can also see the influences of the Glass-Steagall Act throughout Japan's financial system. Until very recently for example, Japan imposed ceilings on rates paid for deposit accounts, a policy similar to regulation Q in the US. SCAP also imposed a regulatory wall between investment and commercial banking (Cargill, Hutschison and Ito, 1997). These influence notwithstanding, the bulk of Japan's financial structure reflected uniquely Japanese features. We discuss these at length in the main body of the text.

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<sup>3</sup> The *Chaebol* institutional and industrial structure owe its origins to Japanese control of South Korea during most of the first half of this century.

<sup>4</sup> Boulding and Gleason dispute the factual basis for this view but the literature clearly suggests that the American occupying forces believed the *Zaibatsu* played a key role in moving Japan along the path that led to war.

## Appendix B:

**Japan's Specialized Financial Institutions** : *This table describes the banking sector during the stable, high-growth period. It is clear that there was very little overlap during this era. This was made possible not only by their specialized functions but by the control of the MoF and the BoJ over interest rates, branch numbers, and a variety of solvency ratios. Since the early 1970s however, these distinctions have blurred to the point where many now compete for the same business. See Suzuki (1990) for a detailed description of these banks by function and their evolution since the high growth period.*

### Institution

### Area of Concentration

*Sogo banks*

Specialized in financing small and medium sized firms. Able to accept deposits.

*Shinkin banks*

The Shinkin banks were created out of credit co-operatives that most resembled banks. They tend to be located in urban areas. Functioned similarly to ordinary banks but maintained Credit Union principal of one vote per member.

*Credit Co-operatives and Agricultural Co-operatives.*

These are the "true" credit co-operatives. In other words, they functioned much more like credit unions than Shinkin banks. Agricultural co-operatives were structured similarly but, as their namesake suggests, targeted only the agricultural sector.

*Long-Term Credit Bank*

As suggested by their name, long-term credit banks specialized in making long-term loans. These institutions were created to "lighten the burden" (Suzuki, 1990, p. 200) of ordinary banks. As such, the Long-Term Credit Banks raised most of their funds from debenture issues. Most other banks were not permitted to issue long-term debentures.

*City Banks*

City banks were, as their name suggests, commercial ("ordinary") banks situated largely in the biggest urban centers but with a network of branches throughout the country. They accepted deposits from individuals and corporations alike but targeted most of their loans to larger corporations. City Banks were chronically short of funds in the high-growth period and frequently turned to the BoJ or the interbank market for finance.

*Regional Banks*

Regional banks tended to be headquartered in small to medium size cities. Most of their business occurred within a relatively small radius of their central operations. Most city banks were small to medium sized.

*Trust Banks*

As the name suggests, trust banks were originally concerned with managing estates. In the high-growth period however, there was a shift in emphasis towards long-term lending. Trust banks also played an important role as savings institutions.

*Juren*

Created in the post-1970 period by the banking sector in an effort to decentralize administration of housing loans, which tended to be small in amount but complicated from an administrative perspective. Part of a shift away from lending to large corporations towards real estate and smaller scale investors.

#### Securities Firms Versus Investment Firms

Japan has a long tradition of separating commercial banking from securities business. This reflects the belief that "a bank may harm its own stability by holding equities or long-term securities which experience large fluctuations in price." (Suzuki, 1990, p. 39) The Securities and Exchange Law (SEL-1948) merely codified what had been a longstanding practice in Japan. There was one important difference between the SEL and the Glass Steagall Act in the US (which influenced the drafting of the SEL): Japanese banks were allowed to acquire securities for purely investment purposes (this would form the basis for counting some unrealized gains as Tier II capital in the Basle Accord). This was not permitted in the US.

## Appendix C: A Brief History of the Bank of Japan:

The Bank of Japan (BoJ) was created in 1882 as the Meiji reforms were gaining momentum and therefore predates the US Federal Reserve Bank (1913) by a wide margin. Two years later, the BoJ was declared the country's sole note-issuing bank.

Prior to the Second World War, the BoJ had a rather limited scope of operation, especially relative to the modern context. The bulk of its duties consisted of issuing currency, managing foreign exchange and providing financial aid to the government through the purchase of government bonds.<sup>1</sup> In this sense, the BoJ could not be considered a "banker's bank," at least in the context of that era, because it did not play a role in centralizing deposits or an active role in discounting (or re-discounting) domestic bills of exchange. While the central bank did engage in some limited re-discounting during periods of crisis, the bank rate "in no sense was a controlling rate" and for the most part followed the market-determined discount rate "because of the Bank's slender connections with the market." (Allen, 1946, 52). The BoJ also did not engage in any regulatory or supervisory roles and was formally under the control of the Ministry of Finance despite the fact that it was a corporation dependent on the private sector for half of its capital. This subservient relationship would prevail at least until the mid-1970s, when some authors suggest that the BoJ became more assertive and independent of the Ministry of Finance. Thus the BoJ had very little control over the banking system in the pre-World War II era. This flowed both from the aforementioned "slender" connection to the markets and the growing importance of Zaibatsu, especially after the 1927 financial crisis, when they "became increasingly independent of the central bank and were more than ever inclined to follow autonomous policies." (Allen, 1946, 103).

The Second World War did much to change the BoJ relationship with the banking sector. In 1942, the BoJ was revised with the goal of putting all the nation's resources into the war effort. This effectively meant that the BoJ "was required to support whatever objective was determined by the government." (Cargill, Hutschinson, Ito, 21) If there had been a modicum of independence from the central government in the pre-war period, this was completely eliminated by the 1942 reforms: by law, the BoJ was controlled fully and completely by the Ministry of Finance. This was of course reflected in the wording of the law. Article 1 and 2 are of particular importance both for what they say and do not say. Article 1 states that "The Bank of Japan has, for its object, the regulation of the currency, the control and facilitation of credit and finance, and the maintenance and fostering of the credit system, *pursuant to the national policy, in order that the general economic activities of the nation might adequately be enhanced.*" (Emphasis added) Article 2 states that : "The Bank of Japan shall be managed solely for achievement of national aims," which included the goal of achieving the "potential of economic activities." Other parts of the law effectively gave the BoJ the power—with the consent of the Ministry of Finance—to take any action it deemed necessary to avert a financial crisis and ensure the stability of the financial system.

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<sup>1</sup> The BoJ played a key role in discounting foreign bills collected by the Yokohama Specia Bank, a specialized bank founded in 1880 that served as the country's main foreign exchange bank.

There are three important historical and institutional lessons here. First, there is no mention of price stability as a key goal of monetary policy in either of these articles, which were in force well into 1997. This despite pressure from Joseph Dodge to have the Bank of Japan Law revised again to place more emphasis on price stability. Second, the Bank of Japan has traditionally been directly under the control of government without any of the disastrous consequences predicted by proponents of central bank independence. In fact, if we believe Cargill, Hutchinson and Ito, Japan's only truly serious financial crisis coincided with growing demands for independence from the central bank. Third, the BoJ has traditionally stood ready to act as a lender of last resort, even in the pre-war period. Allen (1946) for example notes that the BoJ actively discounted and re-discounted bills during crises. During the high growth period, the BoJ acted decisively to salvage troubled banks and it continues to do so today.

## Appendix D : Glossary

<u>Japanese Term</u>	<u>English Translation</u>
Bakufu	The feudal government of the Shogunate dynasty.
Chokoku Funds	Mutual funds made up of government long and medium-term bonds.
Compensating Deposits	These were assets held as security by banks against borrowing and essentially served the same function as collateral. However, it appears that the actual amount of compensating balances was subject to fluctuation and was more a matter of convention than something written in the letter of the law.
Daimyo	Feudal Lord before the Restoration (Meiji period)
Daini Chigin	Commercial banks created out of mergers between sogo banks (see below) in 1989. Also known as "second-line local banks."
Fukumi-Shisan	Term used to refer to unrealized (hidden) value of land held by non-financial, non-real estate firms. The book value of firms was generally considerably below market value. Itoh (p. 249) cites the example of Fuji Steel Corp., which had land worth more than 78 billion yen at market prices but whose book value for this land was only 3.3 billion yen. The Japanese convinced the BIS that some portion of this unrealized value should be recognized as Tier 2 capital. This caused problems in the post-crash period.
Gensaki	Market-rate instrument similar to repurchase (repos) agreements in Canada and the U.S. The Gensaki market became more liquid in the late 1970s as government deficits led to a surge in bond issues.
Kairetsu	Formed out of the remains of the pre-war Zaibatsu, these were large industrial groups.
Kawase-gumi	Exchange company
Kogyo Kumiai	Manufacturers' association or guild
Kyodo Shoken	Japan Joint Securities company. One of two such financial institutions (Shoken Hoyu Kumiai is the other) created to support the stock market by the government during a recession in the early 1960s. Later sold shares to companies to help further formation of Keiretsu.

Jusen	Small finance companies set up banks, trust companies and insurance firms to provide financing to the household sector.
Overloan & Overborrowing	Over-loan denotes "a state of affairs in which the raising of funds by the corporate sector relies to an extremely high degree on borrowing from banks," while over-loan "denotes a condition in the private banking sector in which banks chronically extended more credit...than they acquired from deposits or own capital. (Suzuki, 23)
Samurai	A member of the military class in feudal Japan
Sankin Kotai	Alternate attendance, referring to the obligation imposed on daimyo of residing for part of each year in Yedo
Shikin Henzai	Term used to refer to the imbalance between the large city and smaller (mostly rural) banks. City banks were traditionally deposit poor but loan rich. They were therefore forced to borrow from the rural banks, who were deposit rich but loan poor. This flowed partly from the BoJ's practice of providing short-term loans only to the city banks. To compensate, the BoJ limited the number of new city banks but was generous in licensing new sogo and shinkin banks.
Shinkin banks	A credit association similar to the sogo banks in that it targeted mostly small to medium-sized businesses.
Shogun	Military governor of the State during the period when the Emperor was held aloof from the administration
Shoken Hoyu Kumiai	Japan Securities Holding Association. The second financial company (Kyodo Shoken is the other) created by the government to support the stock market during the early 1960s recession.
Sogo	Mutual banks concerned primarily with lending to small and medium-sized firms. The last sogo bank was merged out of existence (into a daini chigin bank) in 1992.
Yedo	The name for Tokyo before the Meiji era
Zaibatsu	The literal translation of this term is "money clique" but it is generally used to refer to the groups of companies owned by prominent Japanese families such as Mistubishi, Mitsui, Sumitomo, Yasuda and Furukawa.

Zaitech

Word used to describe the process by which Japanese firms engaged in speculative (financial) investment through the use of excess internal funds.

## *Appendix E: Chronology*

### *Major Economic Events*

1947

- Antitrust Law prohibits industrial companies from owning shares of another company. It did allow financial institutions to own up to 5% of an industrial company's shares. The law was later amended to allow industrial companies to acquire shares in other companies so long as they were not in a competitive position.

1953

- Antitrust law is amended to allow banks to hold up to 10% of an industrial company's shares.

1971

- Suspension of dollar-gold convertibility by Nixon government. Yen appreciates from pre-suspension peg of 360 yen to the dollar to 308 yen that year. Reaches 280 yen by the end of 1973.

1974

- First Oil Shock : Japan engages in massive fiscal and monetary stimulus designed to alleviate the effects of surging energy costs and maintain exports through a devalued yen. Japan imported 90% of its energy at the time. The surge in government spending represents a decisive break with the balanced budget policy of the high growth era.

1979

- Second Oil Shock: Japan exercises much greater fiscal and monetary restraint.

1985

- Plaza Accord – Led by the US, the G7 undertook massive and concerted intervention to force the yen up from around 260 to the dollar to nearer 130. This exercise was undertaken to blunt Japan's competitive power in export markets and to reduce the nation's chronic current account surplus. One of the key elements of the Plaza Accord was a reduction in interest rates, which is thought to have played a partial role in the speculative boom in land and stock prices.
- Privatization of Nippon Telegraph and Telephone, Japan Monopoly Corporation and Japan Tobacco and Salt

1987

- Privatization of Japan National Railways (JNR)
- Other privatizations : Japan Tobacco and Salt Public Corporation.
- Under increasing pressure to open its markets from overseas , the Japanese government begins expansionary fiscal policy to stimulate demand.

1989

- Consumption tax of 3% introduced.

1990

- Regulations restricting gasoline station openings are abolished.

### **Major Financial Events**

1952

- Long-Term Credit Bank Law of 1952 separates long-term lending banks from commercial banks; creates the Long-Term Credit Bank of Japan and led to the conversion of the Industrial Bank of Japan from a special government-run institution into a long-term credit bank. Long-term credit banks raised funds by issuing 5-year coupon and 1-year discount “bank debentures” that could not be issued by any other financial institution.
- City and regional banks raise capital primarily through time deposits with maturities of less than 3 years.
- These maturities were allocated by the MoF through so-called “administrative guidance” in an effort to avoid competition among types of financial institutions. Administrative guidance did not have the force of law but was enforced via moral suasion and the BoJ’s control over credit.

1953

- Two government-run banks, Nippon Kangyo and Hokkaido Takushoku, are briefly converted into Long-Term Credit banks but then become city banks in December of this year.

1954

- Banks are required to hold 10% of total assets in equity (including reserves exceeding the required coverage of deposits and CDs). This was not regularly enforced until the late 1980s because of the existence of other regulations.

1959

- Liquidity regulations imposed to keep the level of current assets to deposits and CDs at 30% or greater.

Early 1960s

- Government creates two financial institutions (Japan Joint Securities and Japan Securities Holding Association) to support the stock market by buying the holdings of unsuccessful investment trust funds, securities firms and individuals. These holdings were sold to companies in 1969 to encourage cross-holding relationships.

1963

- Small savings accounts are declared tax exempt. Postal savings and personal bank deposits up to ¥3 million (the maximum a person can have in the postal system) were exempt.

1950 - 1970

- Financial institutions were subject to a large number of strict government regulations. The most important of these regulated the :
  - *Establishment of new institutions and new bank/financial firm branches.* Policy was designed to avoid “excess competition” among financial institutions and ensure the profitability of new branches.
  - *Entry into the business of issuing bonds, listing stocks or creating short-term money.* The Japanese bond and stock market remained underdeveloped (by American standards) until the mid to late 1970s.
  - *Creation of new deposit, money or capital market instruments.*
  - *Interest Rates on Deposits, loans and newly issued bonds.* Interest on newly issued bonds were kept lower than the prevailing market rates, providing implicit subsidies to the issuer. Flood of bonds causes government to restrict bond issuance to basic industries such as electricity.
  - *Brokerage commissions.*
  - *International Capital movements (portfolio and direct, inflow as well as outflow.)*
  - *Phenomena of overloan and overborrowing*

1971-Present

- Increased government bond issuances coupled with a decline in the need for financing from the banking sector put pressure on the regulatory system to change.

1971

- City and local banks allowed to issue 30-month time deposits.
- Deposit Insurance Corporation established for deposits of up to ¥3 million (increased to ¥10 million in 1986). The MoF, BoJ and the private banks each provided one third of the startup capital. The Deposit Insurance Corp. has no

inspection or regulatory power.

1972

- Interest rates on foreign currency deposits deregulated. However, limits on amount that could be held in deposits is maintained.

1973

- Sogo banks allowed to enter the foreign exchange business.
- Shinkin banks allowed to lend to banks that would have previously been considered too big.

1974

- Loan size restrictions placed on all banks by “administrative guidance”. Loans to one company could not be more than 20% of equity for ordinary banks and 30% for long-term banks.

1975

- Government incurs substantial budget deficit. Government budget remains in deficit until 1990.

1977

- Government begins to relax restrictions on the sale of government bonds by banks.

1979

- Introduction of Certificates of Deposits.
- Market-Determined deposit interest rates first introduced for Certificates of Deposit. Initial issues of CDs was highly regulated : minimum deposit requirements were of ¥ 500 million and banks could hold no more than 10% of their capital as CDs.

1980

- Conditions for issuing bonds also relaxed. Starting in 1980, the issue rate for new bonds follows the market rate closely.
- Wall between the banking and securities business breaks down. Securities companies are permitted to issue medium-term government bond funds that acted as substitutes for deposits.
- Foreign Exchange and Trade Control Law allows for the free flow of capital unless specifically restricted.

1981

- Deregulation of deposits. New types of financial instruments approved for commercial banks, trust banks, long-term credit banks and the post savings system. Each institution was allowed to develop a different and unique instrument (i.e. there would be no competition across instruments)

1983

- Banks given permission to broker government bonds. Part of a broader trend towards eliminating the walls between banking and security.

1984

- Short-term Euroyen loans to residents are liberalized under U.S. pressure (the so-called Yen-Dollar Committee).

1985

- Money Market Certificates (MMC) and large time deposits introduced. (Sekine, May 1998). MMC interest rates follow closely the rates on CDs and their minimum deposit were smaller than those of large time deposits (initially, ¥ 1 billion). For example, the rate on 3-month MMCs was equal to the rate on CDs minus 1.75 percentage points. MMC eventually became large time deposits because of reductions in the size of the latter's minimum deposit requirement.
- Interest on large time deposits liberalized.
- Bankers Acceptances introduced.
- Banks apparently leverage lending on increased value of collateral (Sekine, 1998)
- Watershed year : Financial markets liberalized rapidly (Sekine, May 1998), surge in financial holdings (see Teranishi, p. 50 - Table)
- Futures on long-term government bonds introduced.

1986

- First ever issue of short-term government debt. The debt is conceptually equivalent to treasury bills.

1987

- Commercial Paper introduced.
- Banks allowed to deal in government bonds and commercial paper. Further erosion of wall between banking and securities business.

1988

- Stock index futures introduced.
- Tax exemption for postal savings abolished (\$2.4 trillion worth of savings affected by this change).

1989

- Bank of Japan raises interest rates to "burst the bubble"
- Ministry of Finance restrained bank lending for land purchasing.
- Sogo banks allowed to convert into ordinary banks.
- Stock options introduced.
- Banks given permission to lend to local governments.

1991

- Super Money Market Certificates (MMCs) – Rates are 80% to 94% of average interest paid on large time deposits.

1993

- Deregulation of time deposits completed in 1993. MoF rejects plea from smaller banks for a further 2-3 years of controls. They fear the loss of deposits to the postal savings network or the larger city banks. .

1994

- Deregulation of demand deposits completed in 1994

1996

- Jusen Banks are dissolved into the Jusen Resolution Corporation.
- December: Expiration of a 2 trillion yen “special tax cut.”

1997

- Japan proposes establishment of an Asian Monetary Fund to support other Asian currencies. U.S. opposes idea and it does not get off the ground.
- Increase in consumption tax to 5% from 3%.
- Fiscal Structural Reform Act passed in November : sought to reduce budget deficit to 3% of GDP by fiscal year 2003 and eliminate government bond issues by the year 2005.
- Failure of Japan’s 10<sup>th</sup> largest commercial bank—Hokkaido Takushoki Bank.
- Failure of Yamaichi Securities—one of Japan’s “big four” securities firms.

1998

- Second Wave of Big Bang Commences : New Bank of Japan law put in place with greater emphasis on independence and transparency.
- Government unveils a \$128 billion stimulus program.
- Proposal to suspend the Fiscal Structural Reform Act.
- Government increases size of stimulus program to \$195 billion.

1999

- Japan hands out \$6 billion worth of “shopping coupons” to families with children under 15 or senior citizens over 65. The coupons expire in August, 1999.

2001

- Completion of 2<sup>nd</sup> wave of “Big Bang” deregulation

Appendix F: Table 1 --- Debt to Equity Ratios---Weighted Averages

	1985	1986	1987	1988	1989	1990	Change	1991	1992	1993	1994	1995	1996	1997	1998	Change 1998- 1991
<b>A. Overall Debt to Equity</b>																
Overall (weighted average)	0.70	0.69	0.68	0.67	0.65	0.63	(0.08)	0.63	0.64	0.63	0.63	0.63	0.62	0.61	0.60	(0.03)
Automotive	0.57	0.54	0.55	0.55	0.55	0.54	(0.03)	0.53	0.53	0.52	0.51	0.50	0.49	0.49	0.48	(0.04)
Electronics	0.64	0.65	0.62	0.60	0.58	0.58	(0.06)	0.59	0.59	0.58	0.57	0.58	0.58	0.57	0.56	(0.02)
Entertainment	0.46	0.42	0.41	0.43	0.45	0.39	(0.07)	0.35	0.36	0.42	0.38	0.39	0.37	0.37	0.33	(0.01)
Real Estate	0.87	0.84	0.85	0.85	0.84	0.82	(0.05)	0.86	0.87	0.86	0.86	0.87	0.87	0.86	0.88	0.03
Steel	0.85	0.85	0.84	0.83	0.80	0.73	(0.12)	0.73	0.73	0.74	0.75	0.76	0.73	0.73	0.73	(0.01)
Textile	0.73	0.72	0.68	0.66	0.62	0.61	(0.12)	0.61	0.58	0.57	0.56	0.56	0.57	0.55	0.52	(0.09)
<b>B. Short Term Debt to Equity</b>																
Overall (weighted average)	0.470	0.448	0.422	0.418	0.403	0.373	(0.10)	0.372	0.370	0.358	0.340	0.342	0.350	0.364	0.352	(0.02)
Automotive	0.44	0.40	0.40	0.39	0.37	0.36	(0.08)	0.34	0.36	0.34	0.31	0.33	0.33	0.37	0.35	0.00
Electronics	0.49	0.48	0.43	0.43	0.42	0.39	(0.10)	0.39	0.38	0.38	0.36	0.36	0.37	0.37	0.36	(0.04)
Entertainment	0.27	0.26	0.24	0.22	0.26	0.23	(0.04)	0.20	0.18	0.16	0.17	0.18	0.24	0.25	0.25	0.06
Real Estate	0.44	0.41	0.41	0.39	0.39	0.38	(0.06)	0.37	0.36	0.36	0.34	0.35	0.36	0.37	0.38	0.01
Steel	1.37	1.46	1.46	1.43	1.44	1.56	0.19	1.57	1.58	1.63	1.69	1.68	1.66	1.56	1.60	0.03
Textile	1.06	1.05	1.04	1.09	1.23	1.09	0.03	1.01	1.00	1.24	1.20	1.19	1.13	0.99	0.96	(0.05)
<b>C. Long Term Debt to Equity</b>																
Overall (weighted average)	0.23	0.24	0.25	0.24	0.24	0.25	0.02	0.25	0.26	0.27	0.28	0.28	0.26	0.23	0.24	(0.01)
Automotive	0.13	0.14	0.15	0.16	0.18	0.18	0.04	0.19	0.18	0.18	0.19	0.17	0.16	0.12	0.14	(0.05)
Electronics	0.15	0.18	0.19	0.17	0.15	0.20	0.04	0.19	0.21	0.20	0.21	0.22	0.21	0.20	0.21	0.01
Entertainment	0.19	0.17	0.17	0.21	0.20	0.16	(0.03)	0.15	0.18	0.26	0.20	0.20	0.13	0.11	0.08	(0.07)
Real Estate	0.37	0.35	0.36	0.39	0.38	0.39	0.02	0.42	0.44	0.44	0.46	0.45	0.44	0.42	0.43	0.01
Steel	0.99	0.94	0.98	1.03	1.12	1.05	0.07	0.93	0.97	1.17	1.11	1.14	1.07	1.00	0.95	0.01
Textile	1.99	2.08	2.13	2.15	2.28	2.28	0.29	2.50	2.45	2.55	2.75	2.65	2.63	2.33	2.55	0.05

**Notes:**

1. Debt to Equity Ratios are given by the ratio of Total Liabilities to Shareholders' Equity
2. Short-term debt to equity ratios are given by the ratio of Short-Term Debt to Shareholders' Equity
3. Long Term Debt to Equity Ratios are given by the ratio of Long Term Debt to Shareholders' Equity
4. The sum of short and long term debt ratios may not add up to the overall debt to equity ratio because of rounding.
5. Data are the fiscal year ending in March. Thus, data for 1990 actually represent results for 9 months in 1989. All data are from Toyo Keizai.

Appendix F: Table 2---Short-Term Ratios---Weighted Averages

	1985	1986	1987	1988	1989	1990	Change	1991	1992	1993	1994	1995	1996	1997	1998	Change
<b>A. Working Capital Ratio</b>																
Overall (weighted average)	1.19	1.22	1.30	1.33	1.40	1.51	0.32	1.42	1.40	1.39	1.43	1.41	1.37	1.32	1.33	(0.09)
Automotive	1.29	1.31	1.39	1.43	1.55	1.55	0.26	1.49	1.43	1.42	1.54	1.48	1.40	1.30	1.39	(0.10)
Electronics	1.32	1.35	1.45	1.43	1.47	1.62	0.31	1.44	1.49	1.45	1.50	1.51	1.49	1.46	1.44	(0.00)
Entertainment	2.08	2.15	2.31	2.74	2.17	2.25	0.17	2.54	2.59	3.02	2.46	2.24	1.75	1.49	1.54	(1.00)
Real Estate	1.30	1.39	1.42	1.51	1.45	1.47	0.17	1.51	1.50	1.46	1.46	1.40	1.30	1.22	1.08	(0.43)
Steel	0.95	0.95	0.99	0.98	1.04	1.26	0.31	1.19	1.09	1.12	1.05	1.04	1.06	1.08	1.16	(0.03)
Textile	1.08	1.24	1.46	1.49	1.48	1.48	0.41	1.47	1.58	1.43	1.60	1.83	1.69	1.47	1.50	0.03
<b>B. Quick Ratio</b>																
Overall (weighted average)	0.82	0.83	0.91	0.95	1.02	1.11	0.29	0.98	0.95	0.95	0.99	0.98	0.96	0.94	0.94	(0.04)
Automotive	1.02	1.03	1.13	1.18	1.29	1.29	0.27	1.18	1.13	1.09	1.18	1.14	1.08	1.01	1.04	(0.14)
Electronics	0.94	0.97	1.06	1.08	1.13	1.28	0.34	1.09	1.11	1.10	1.16	1.17	1.15	1.15	1.13	0.03
Entertainment	1.92	1.99	2.16	2.60	2.06	2.13	0.21	2.39	2.42	2.87	2.34	2.12	1.67	1.42	1.45	(0.93)
Real Estate	0.52	0.56	0.54	0.58	0.60	0.59	0.07	0.51	0.46	0.54	0.55	0.54	0.51	0.48	0.38	(0.13)
Steel	0.57	0.56	0.63	0.63	0.69	0.84	0.27	0.78	0.69	0.69	0.65	0.64	0.65	0.70	0.76	(0.02)
Textile	0.79	0.91	1.14	1.21	1.19	1.21	0.42	1.18	1.27	1.13	1.27	1.45	1.35	1.15	1.11	(0.07)
<b>C. Short to Long Term Debt Ratio</b>																
Overall (weighted average)	2.05	1.87	1.68	1.74	1.70	1.51	(0.54)	1.48	1.45	1.35	1.22	1.24	1.35	1.55	1.46	(0.02)
Automotive	3.27	2.87	2.59	2.52	2.08	2.06	(1.20)	1.83	2.03	1.85	1.63	1.88	2.06	3.07	2.50	0.67
Electronics	3.20	2.68	2.27	2.56	2.73	1.96	(1.24)	2.05	1.82	1.92	1.74	1.65	1.73	1.89	1.74	(0.31)
Entertainment	1.39	1.54	1.41	1.06	1.30	1.44	0.05	1.31	1.01	0.59	0.86	0.91	1.81	2.28	3.12	1.81
Real Estate	1.21	1.16	1.12	1.01	1.03	0.99	(0.22)	0.89	0.81	0.82	0.73	0.77	0.82	0.87	0.89	0.00
Steel	1.33	1.31	1.19	1.25	1.22	1.05	(0.28)	1.15	1.23	0.95	0.92	0.90	0.95	0.96	0.93	(0.22)
Textile	2.39	1.54	1.19	1.28	1.42	1.56	(0.83)	1.55	1.32	1.45	1.03	0.78	0.91	1.20	1.06	(0.49)

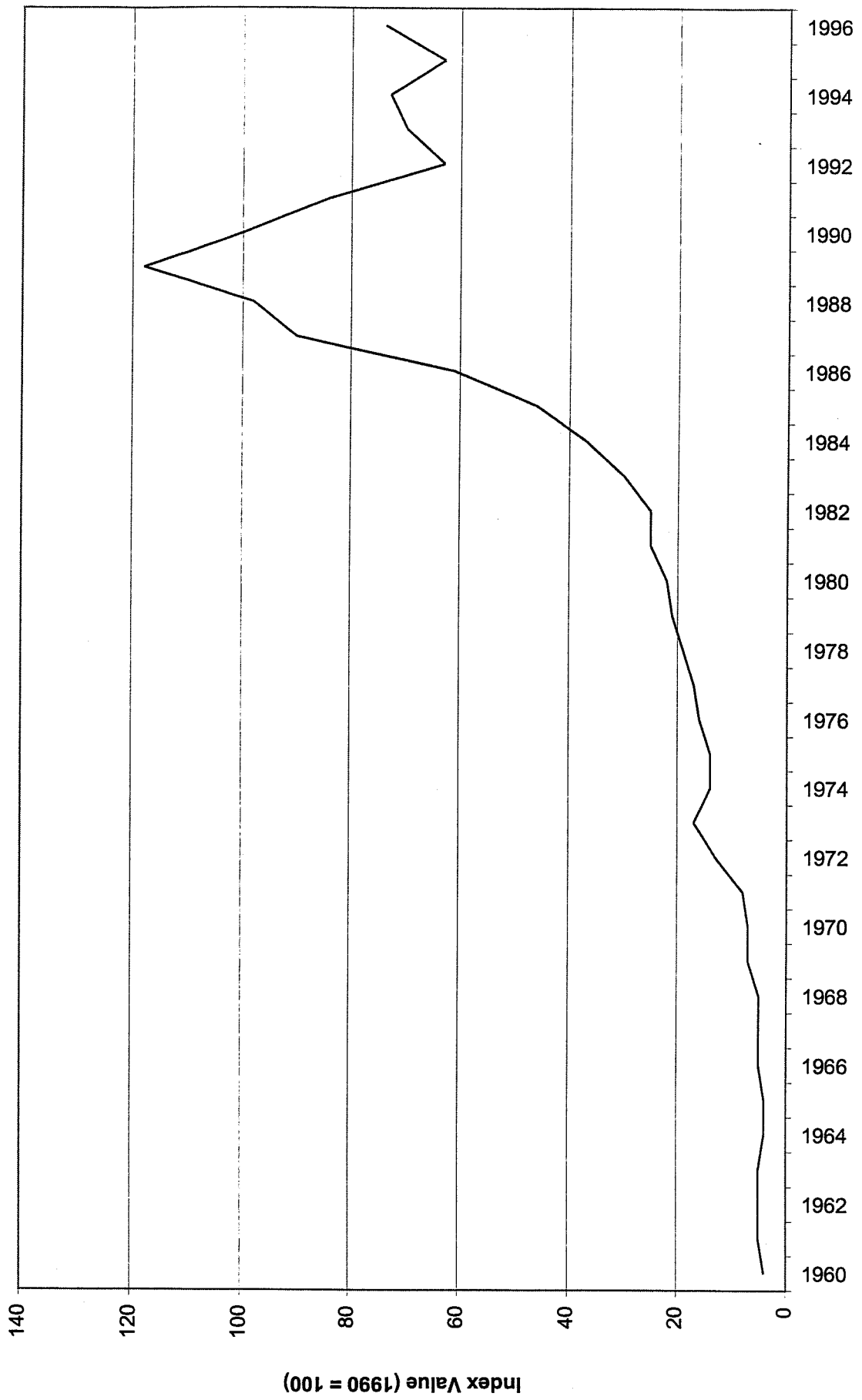
1. Working Capital Ratios are given by the ratio of Total Liabilities to Shareholders' Equity

2. Quick Ratios are given by the ratio of Current Assets (less inventories) to Current Liabilities.

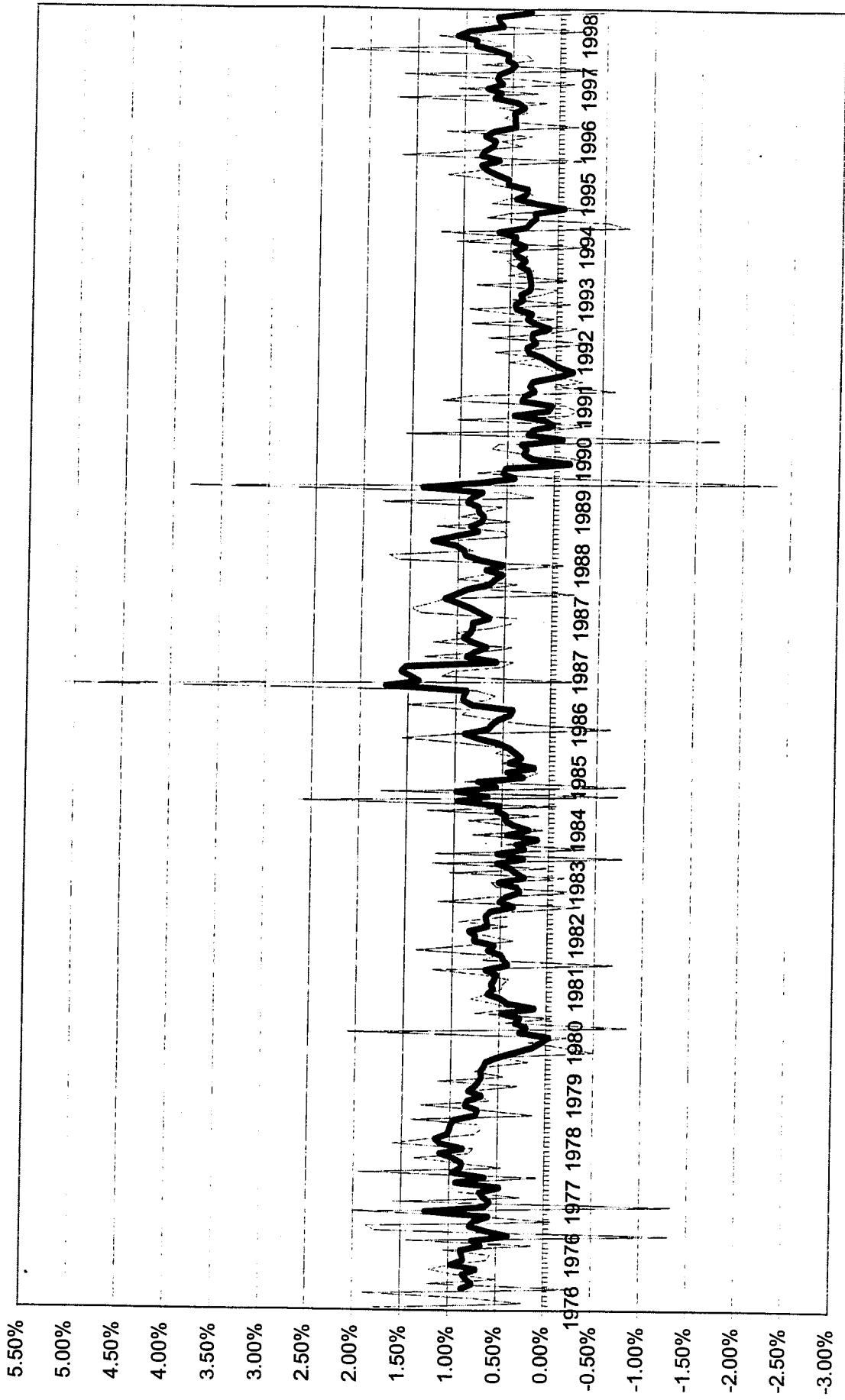
3. Short-Term to Long Term Debt Ratio corresponds to title.

4. Data are the fiscal year ending in March. Thus, data for 1990 actually represent results for 9 months in 1989. All data are from Toyo Keizai.

**Figure 2: Tokyo Stock Exchange Index (TSE)**  
Source: OECD Main Economic Indicators

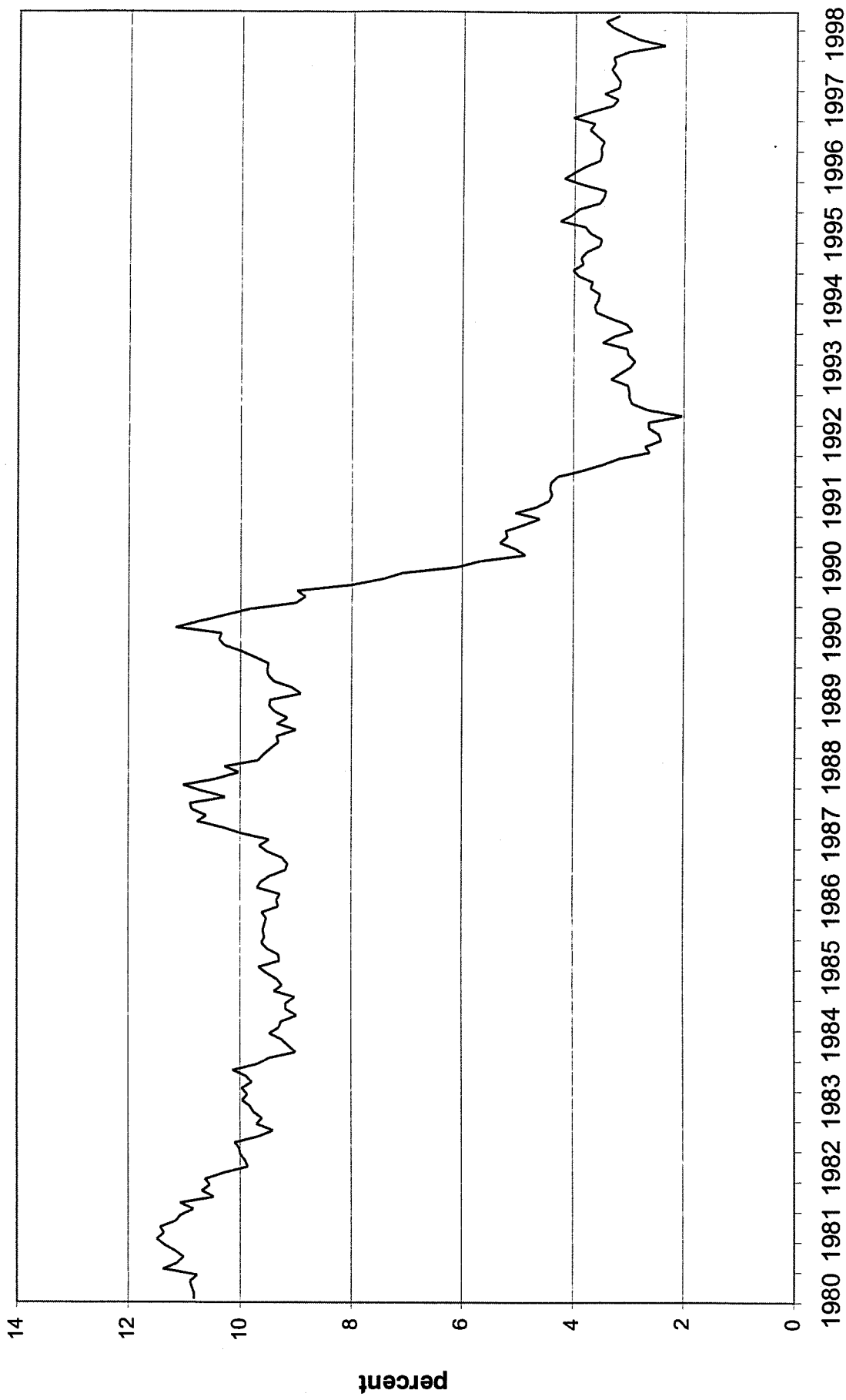


**Figure 3: Month over Month Change in Base Money Supply and a Five Month Moving Average**  
Source: Bank of Japan Internet site [http://www.boj.or.jp/en/down/down\\_f.htm](http://www.boj.or.jp/en/down/down_f.htm)

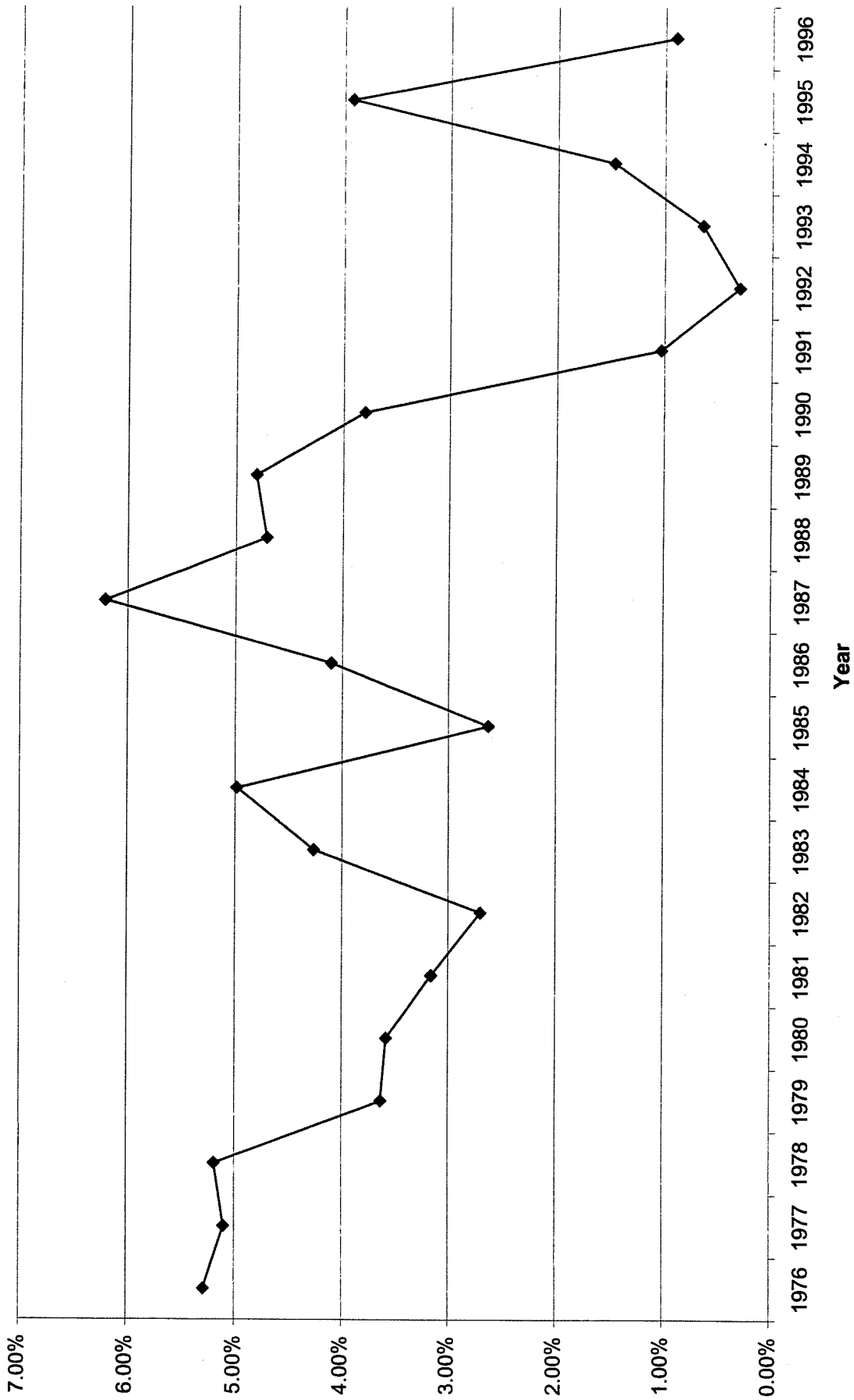


**Figure 4: Broadly-defined Liquidity: Year over Year Change in Average Outstanding**

Source: Bank of Japan

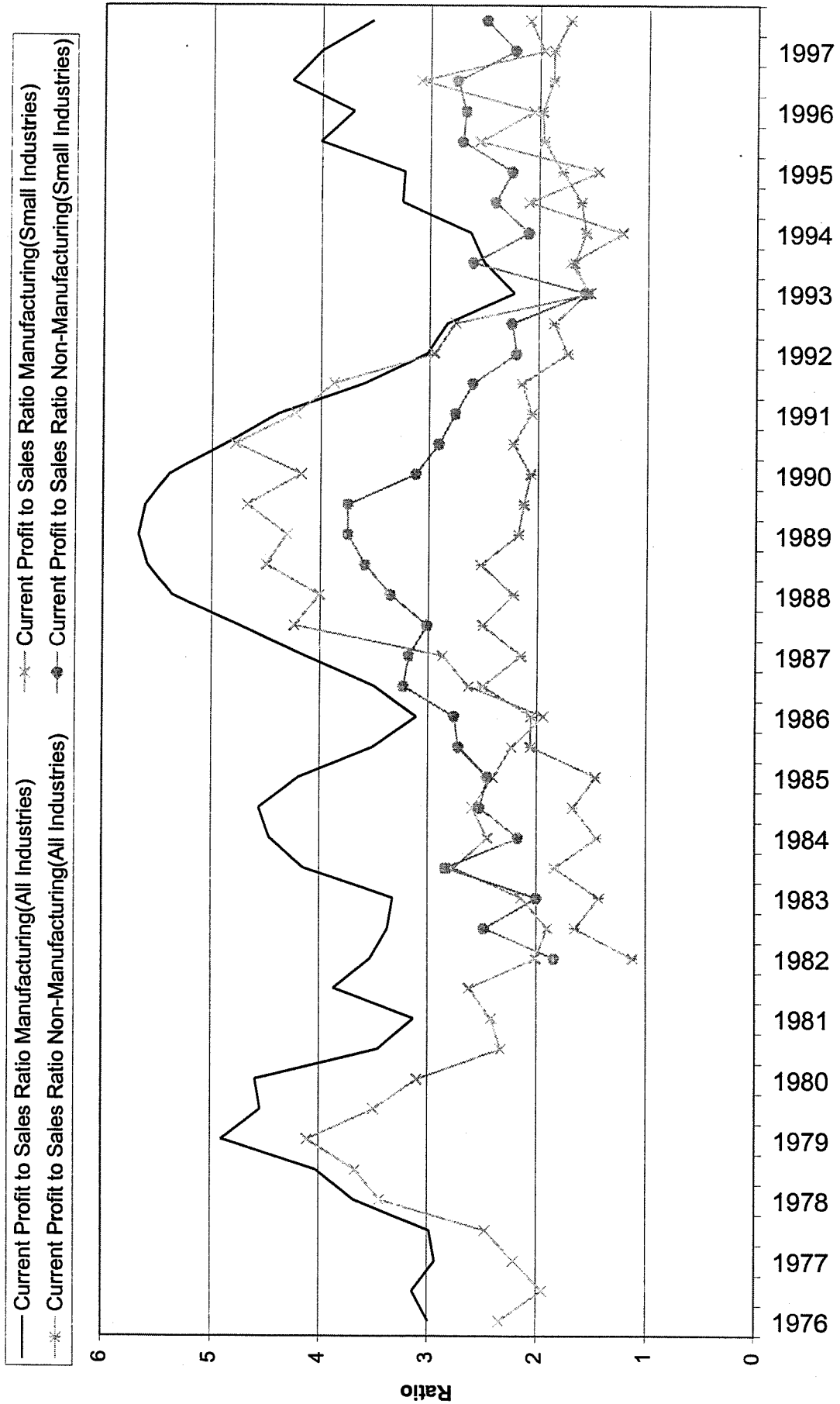


**Figure 5: Japan's Real GDP Growth -- Annual Change (1990 prices)**  
Source: International Monetary Fund Financial Statistics

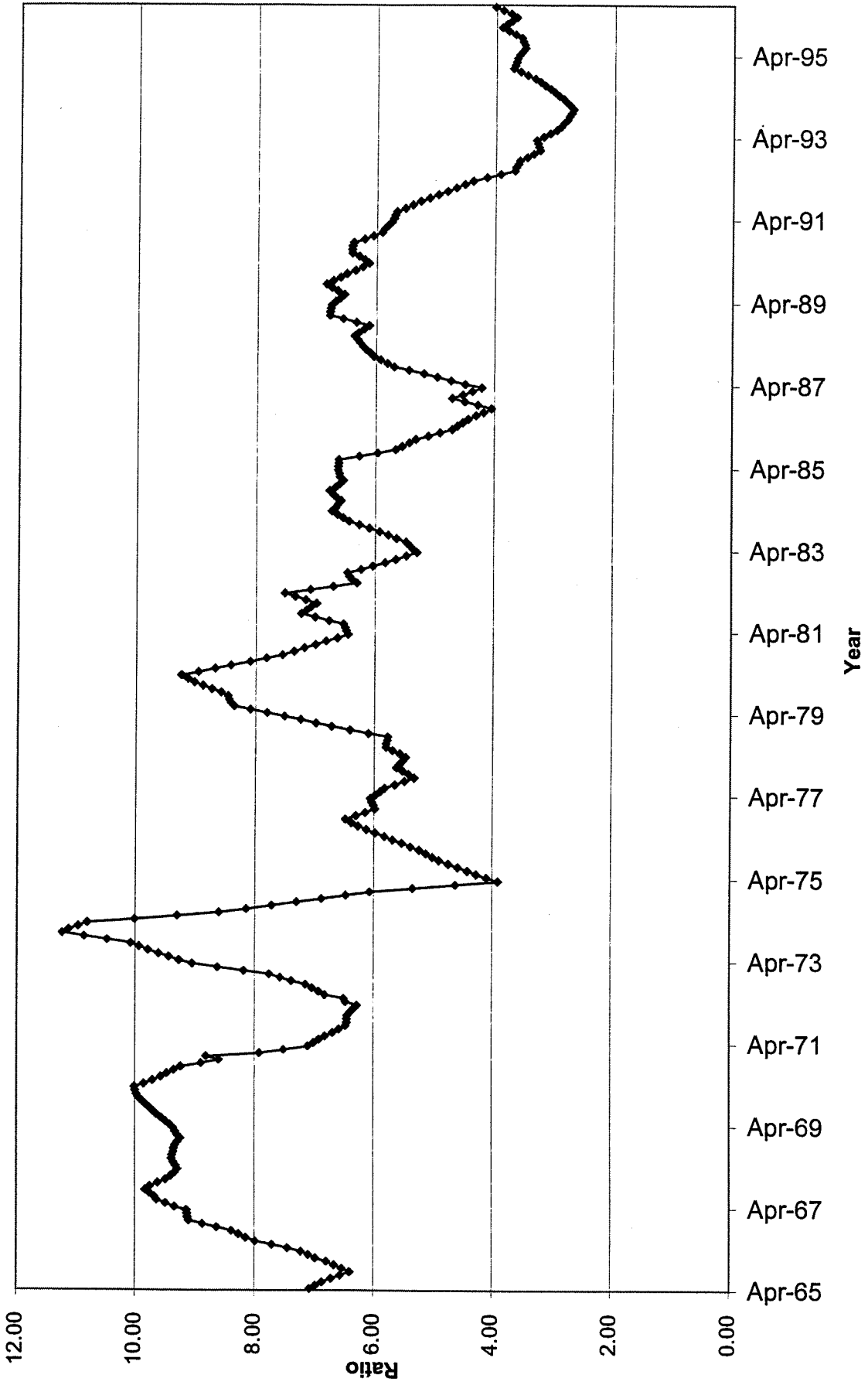


**Figure 6: Profit to Sales Ratios**

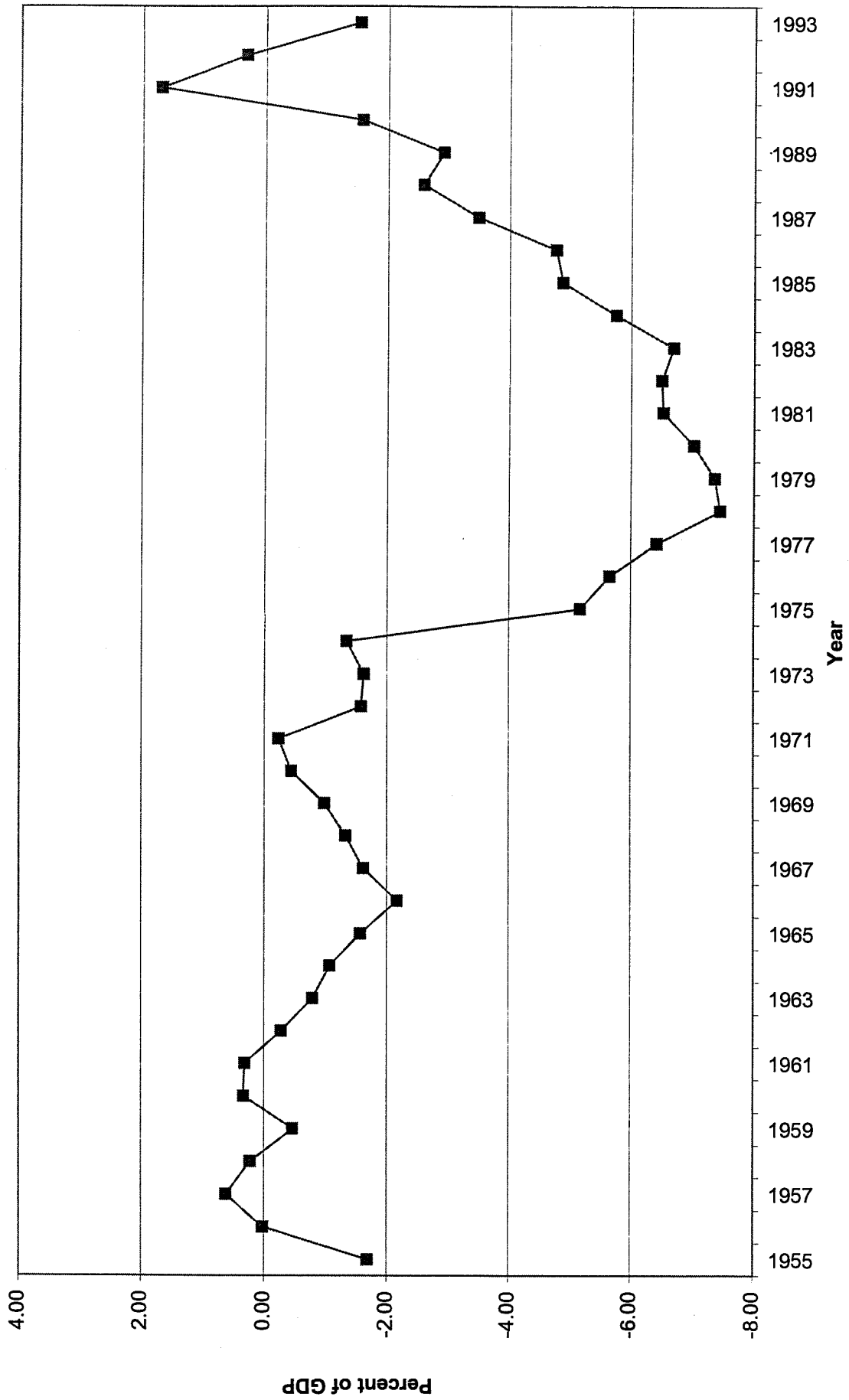
Source: Bank for Japan



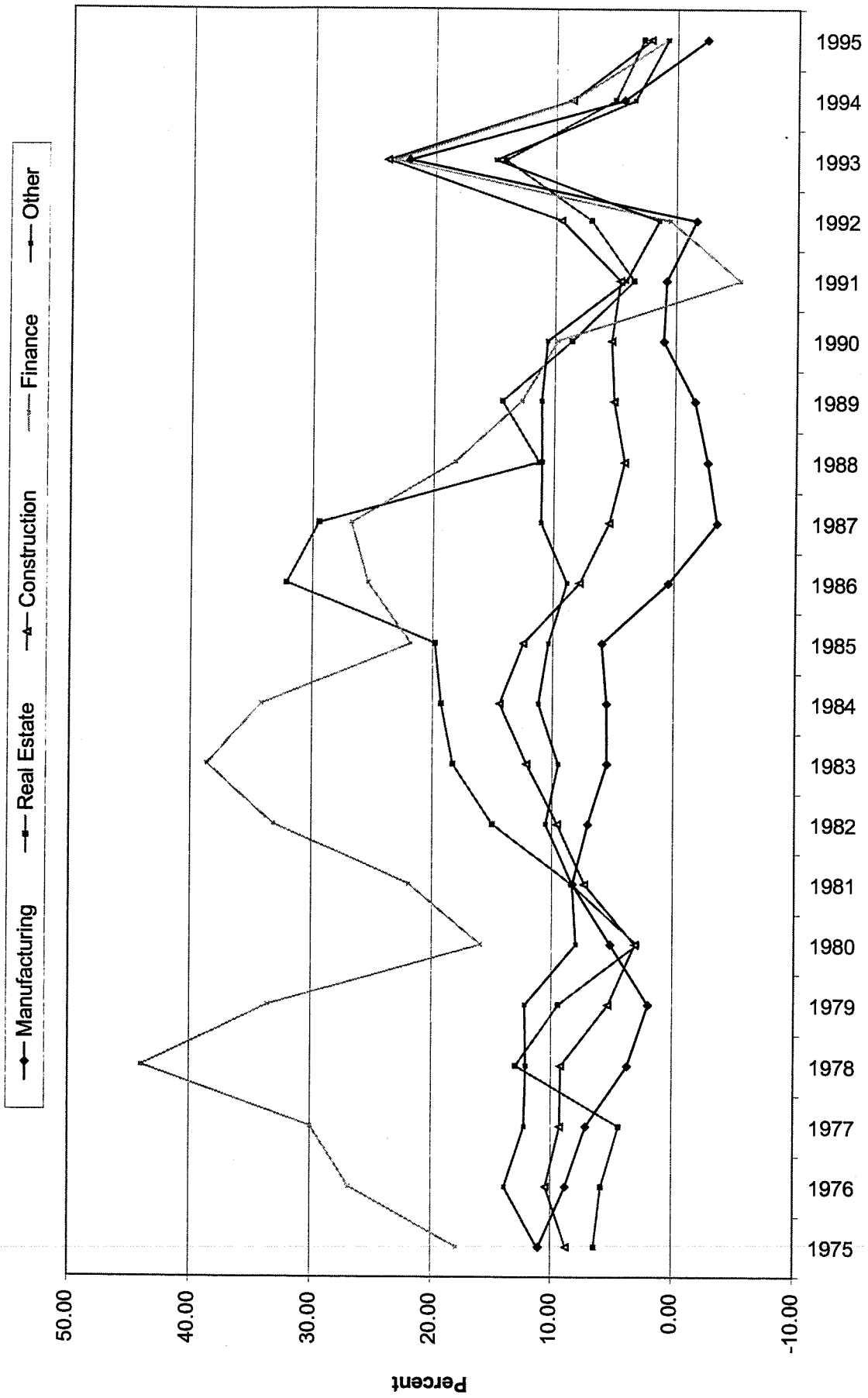
**Figure 7: Ratio of Operating Profit to Total Liabilities (including Net Worth) for the Manufacturing Sector**  
Source: Japan's Diffusion Index



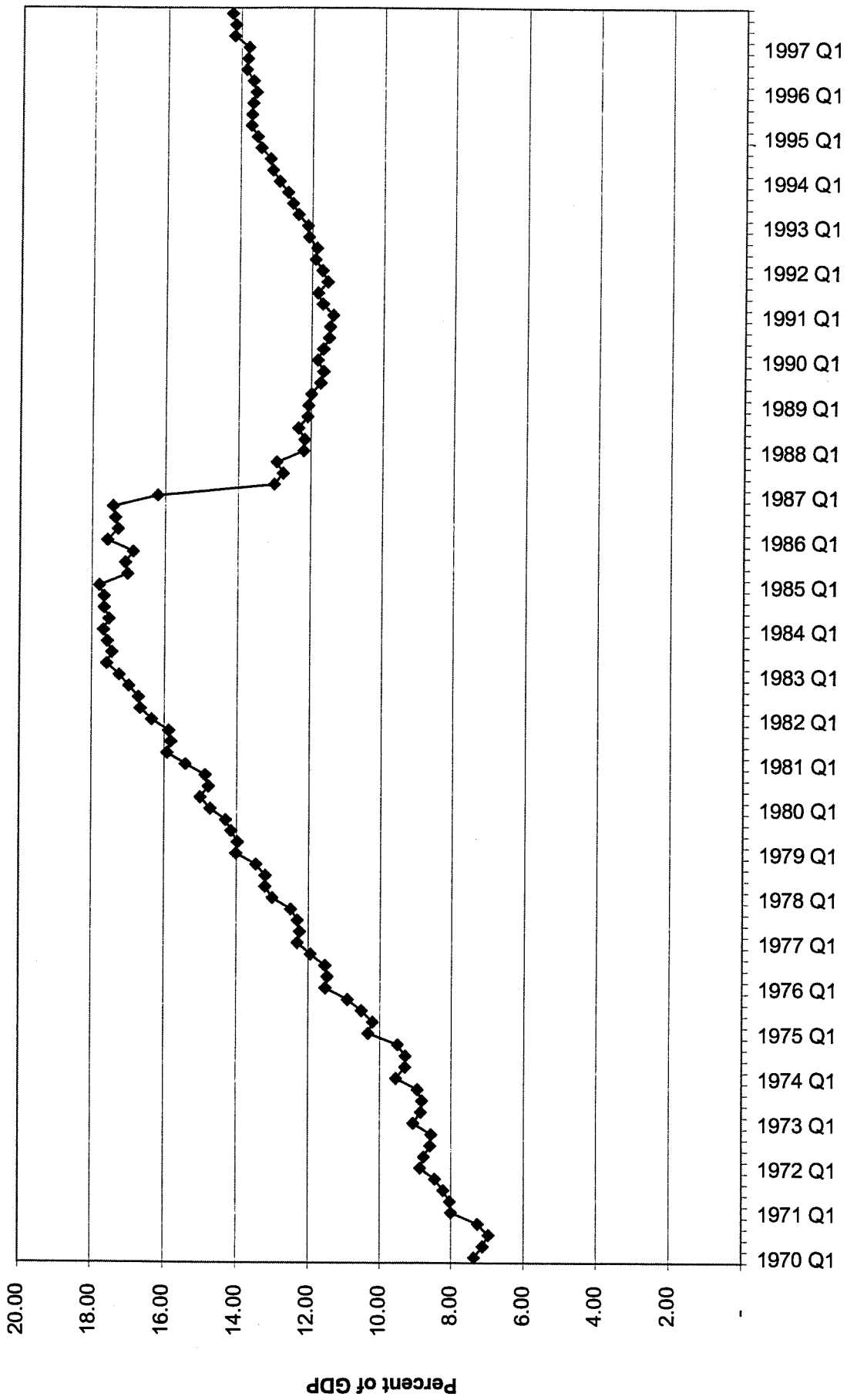
**Figure 8: Japanese Government Budget Balance as a % of Nominal GDP**  
Source: IMF International Financial Statistics



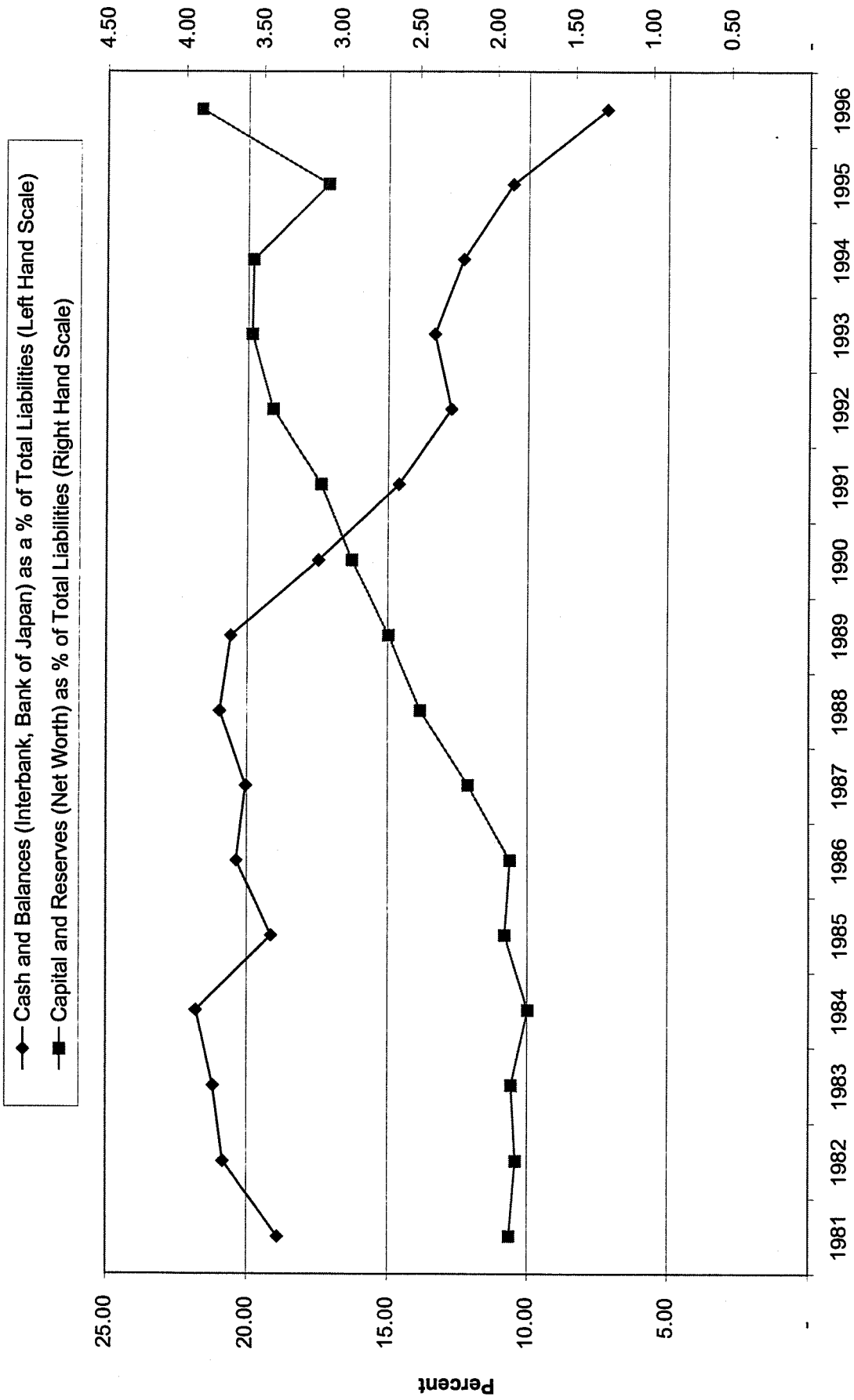
**Figure 9: Annual Percent Change in Loans and Discounts Outstanding by Sector**  
 Source: Japan's Economic Statistics Monthly



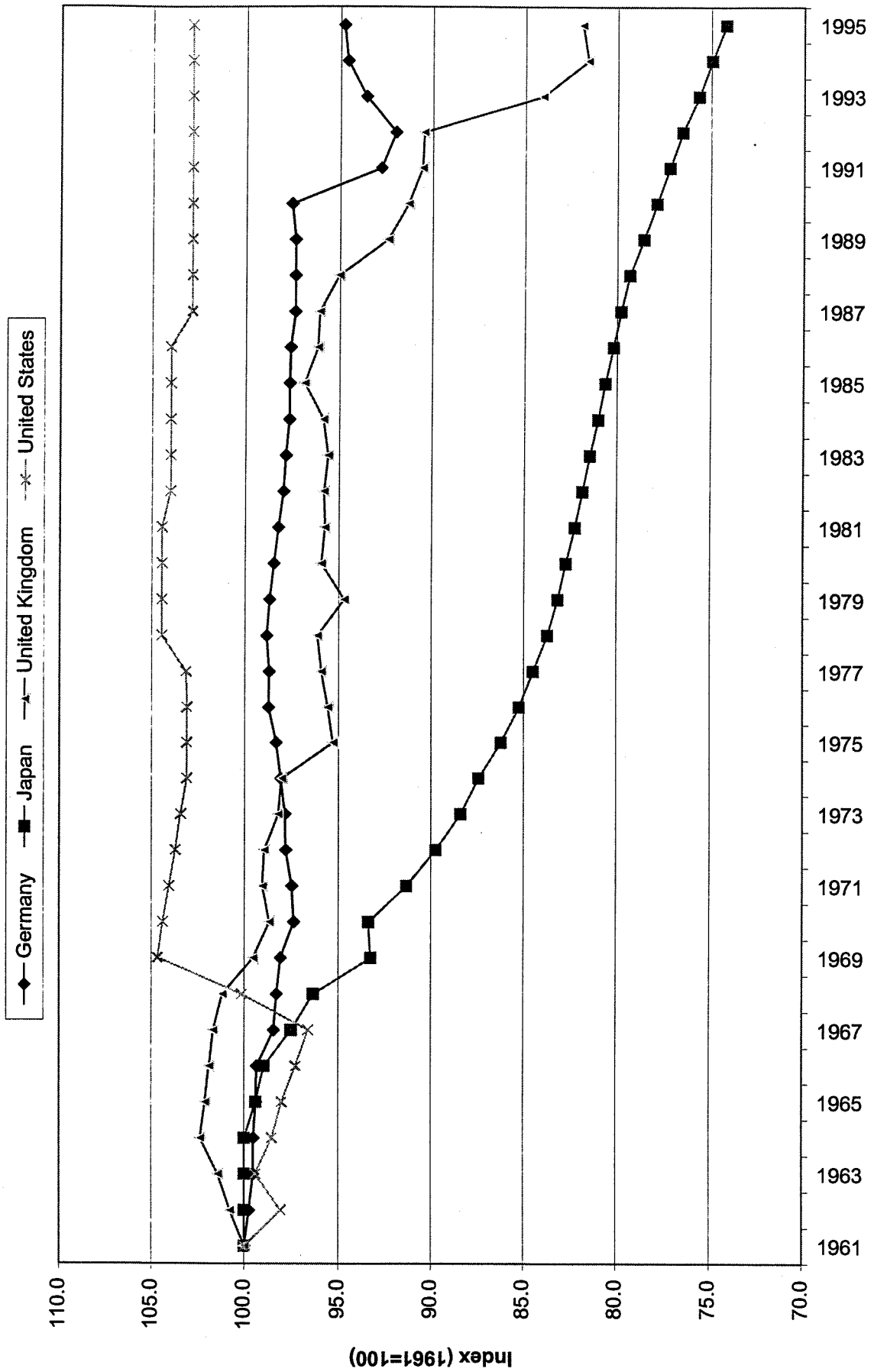
**Figure 10: Bank Claims on Non-Financial Companies as a percent of GDP**  
Source: Bank of Japan Internet Site



**Figure 11 : Financial Stability and Large Commercial Banks**  
 Source : OECD 1998 Bank Profitability Statistics



**Figure 12 : Percentage of Total Land Mass Devoted to Agriculture**  
 Source: 1997 World Bank World Economic Indicators



**Figure 13: Nominal and Real Interest Rates**  
 Source: Bank of Japan

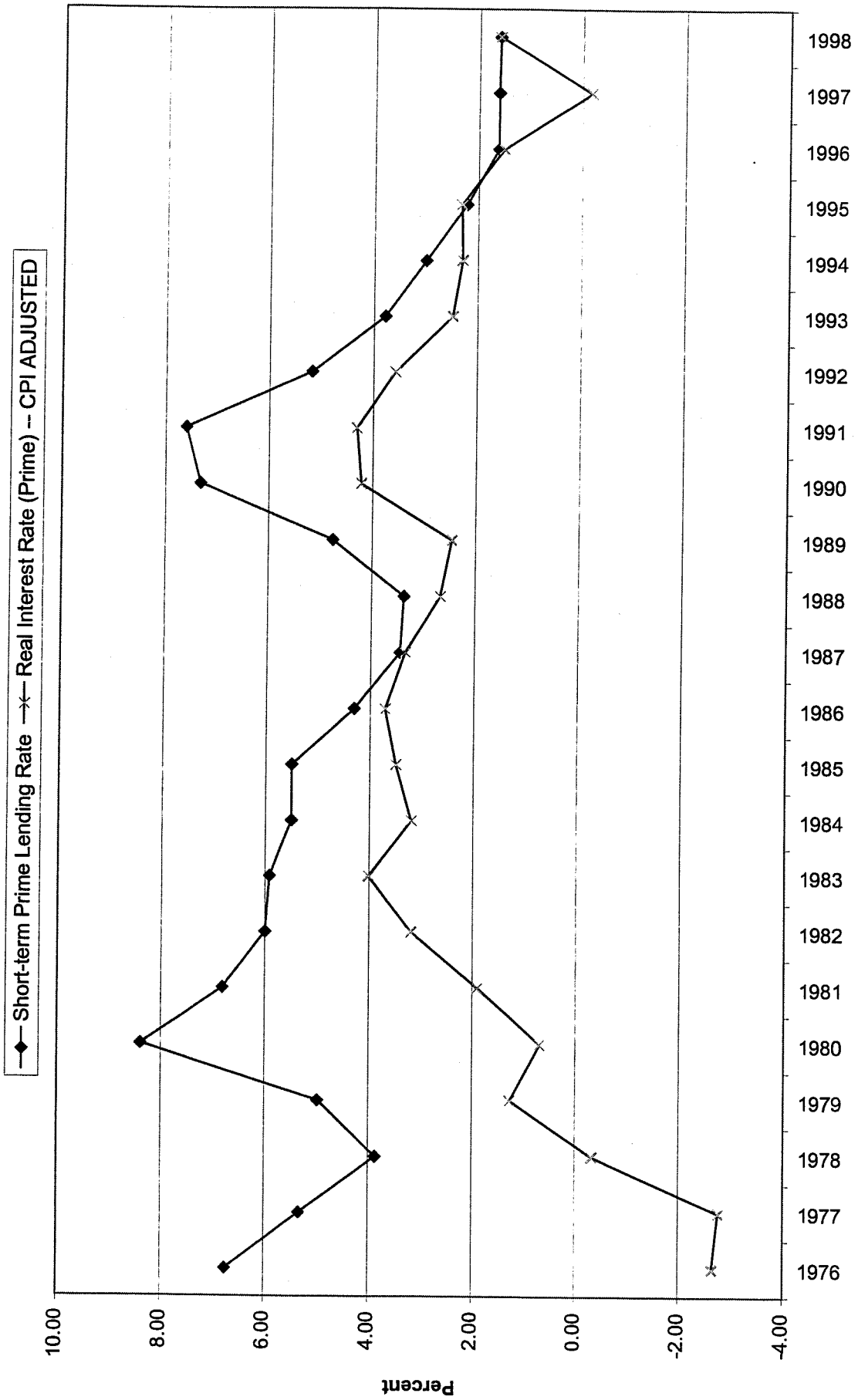
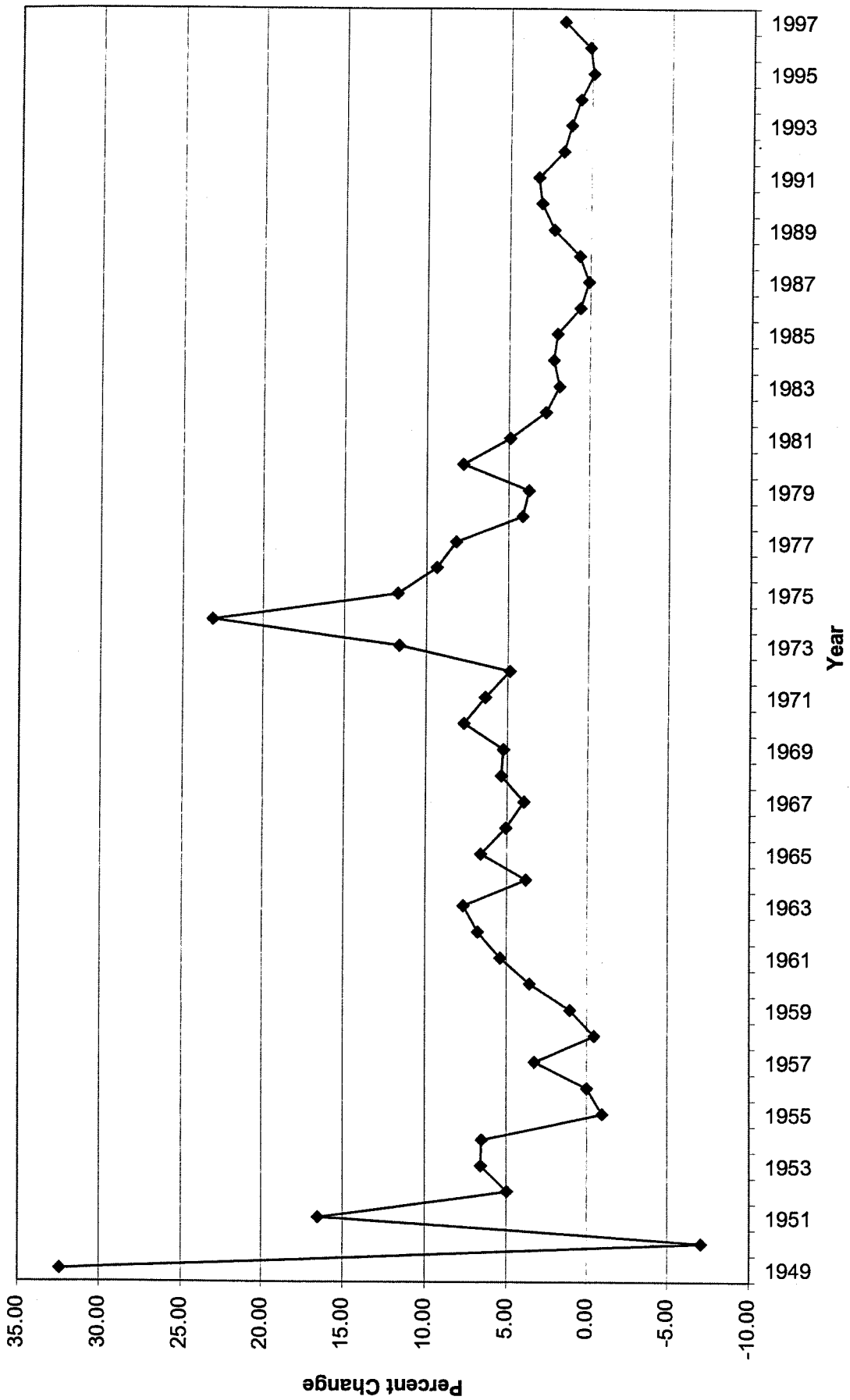


Figure 14: Japanese Inflation as Measured by the Consumer Price Index (CPI)  
Source: IMF International Financial Statistics



**Figure 15 : Government Expenditures as a percent of GDP**  
Source: IMF International Financial Statistics

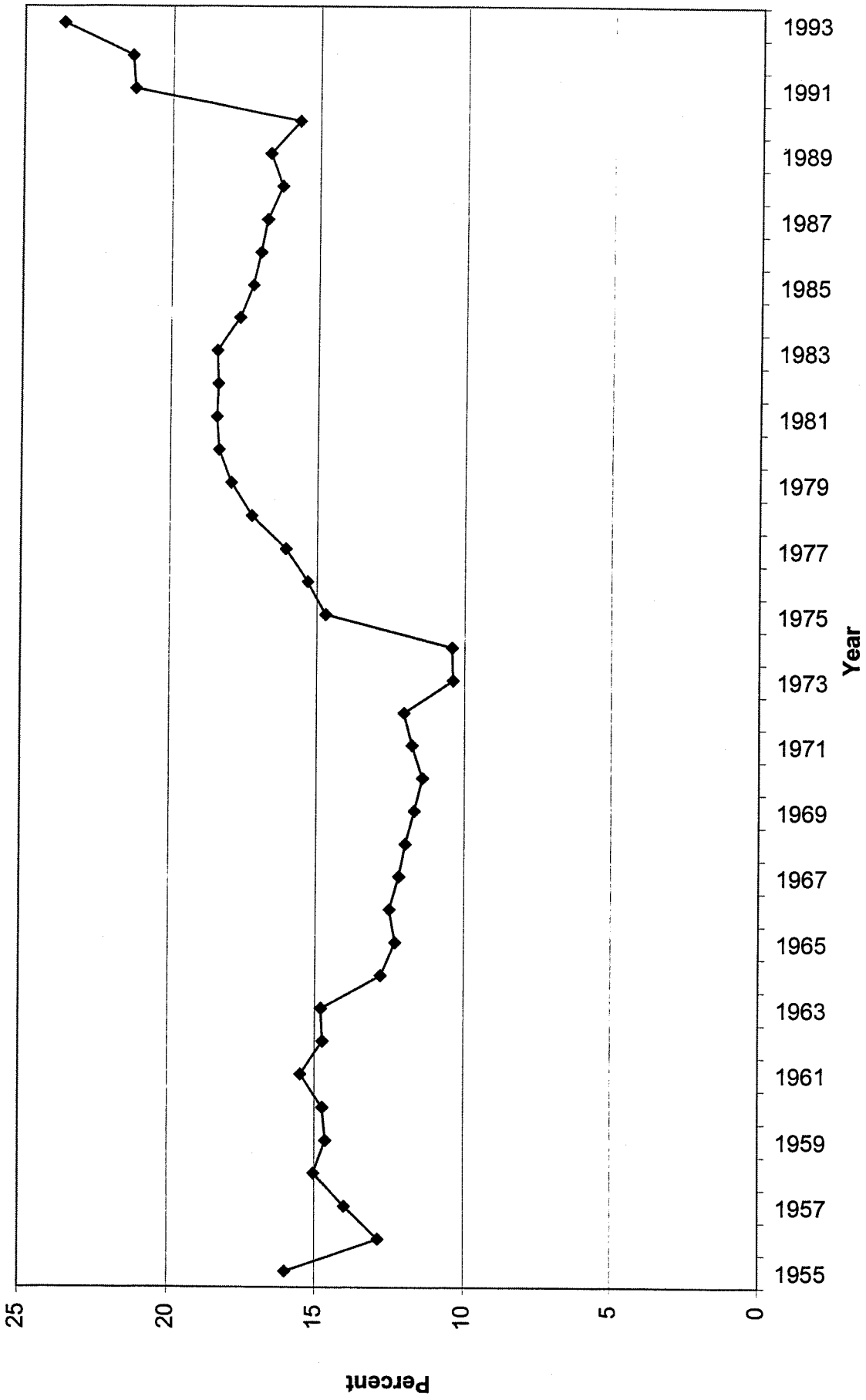
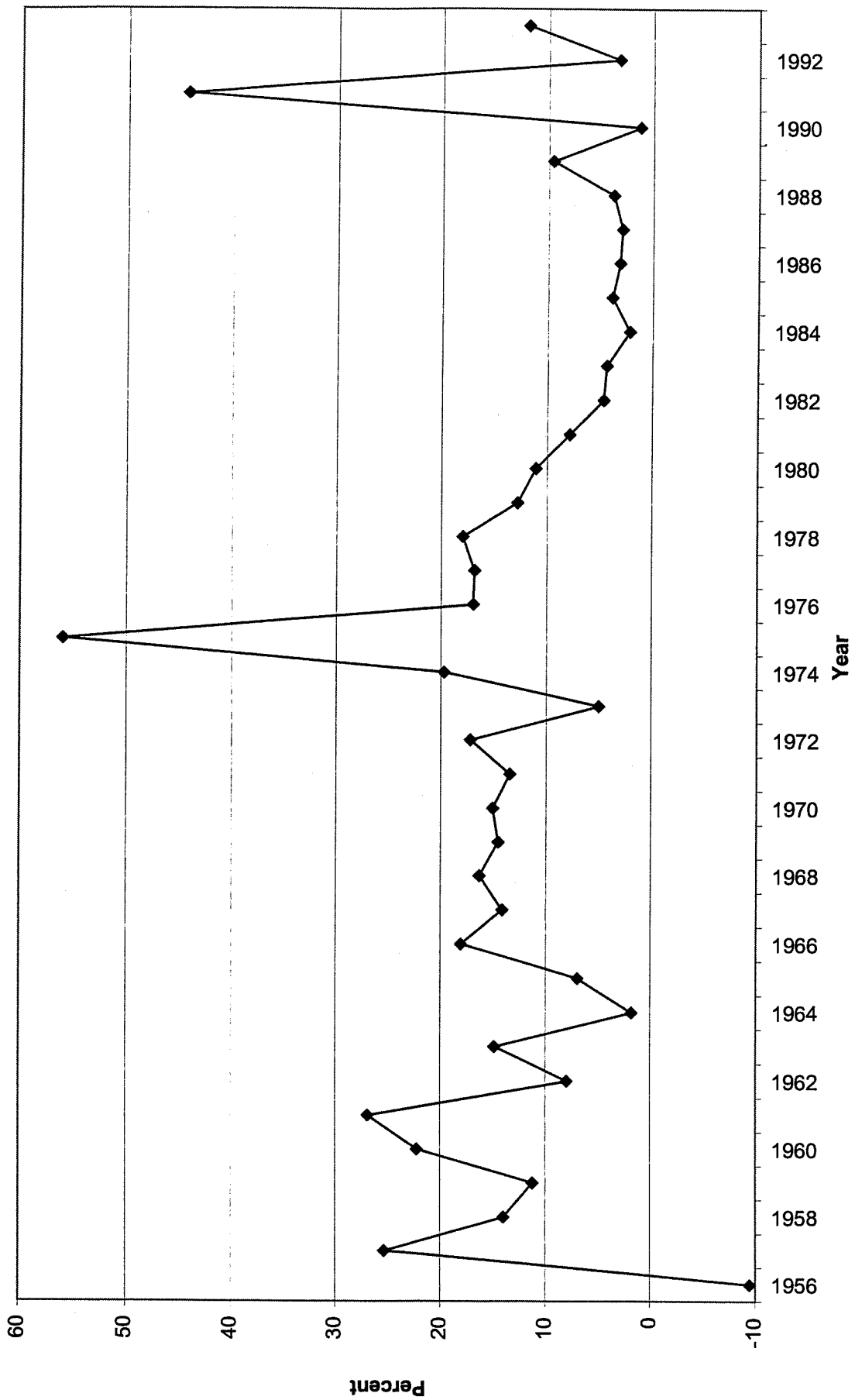
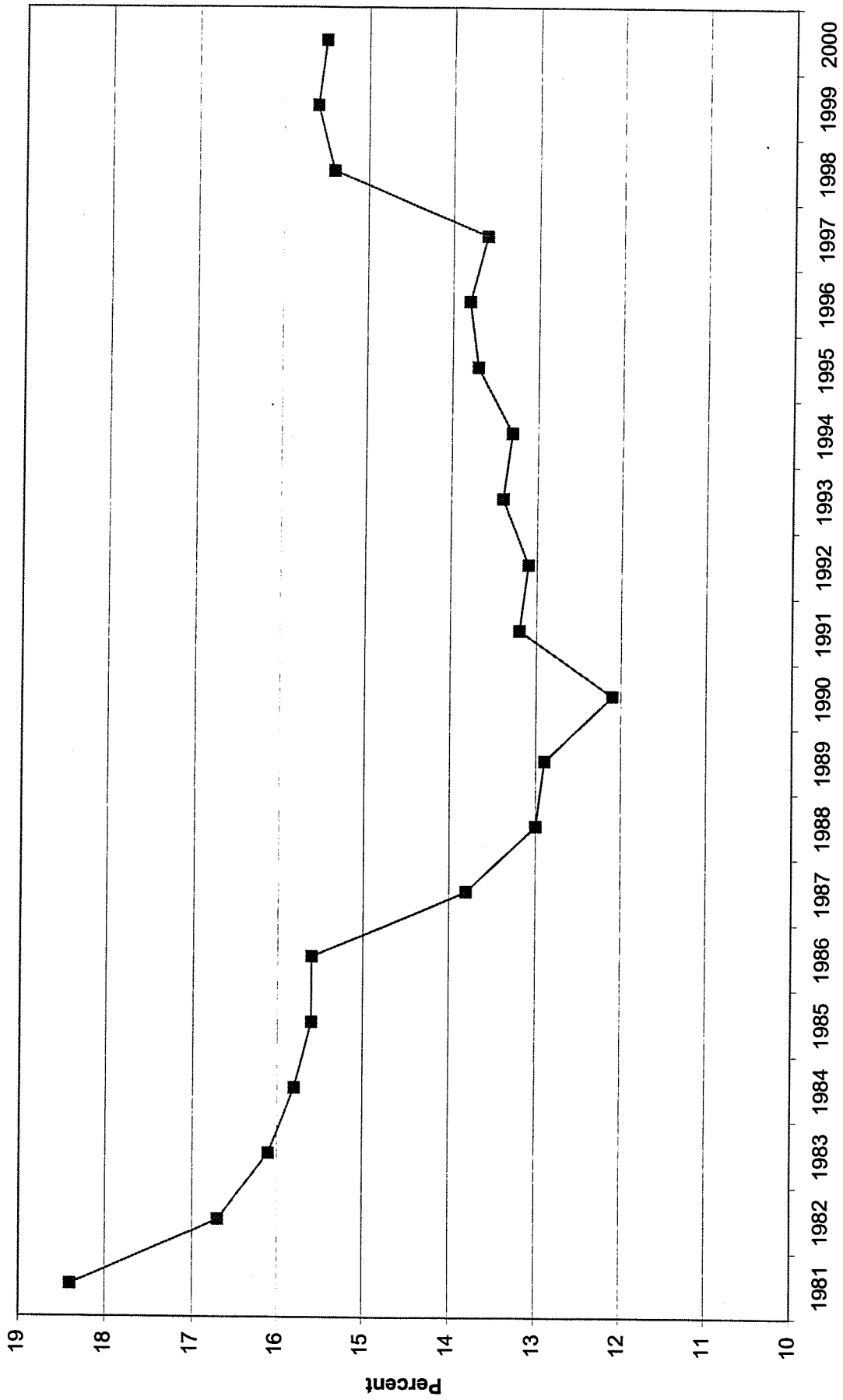


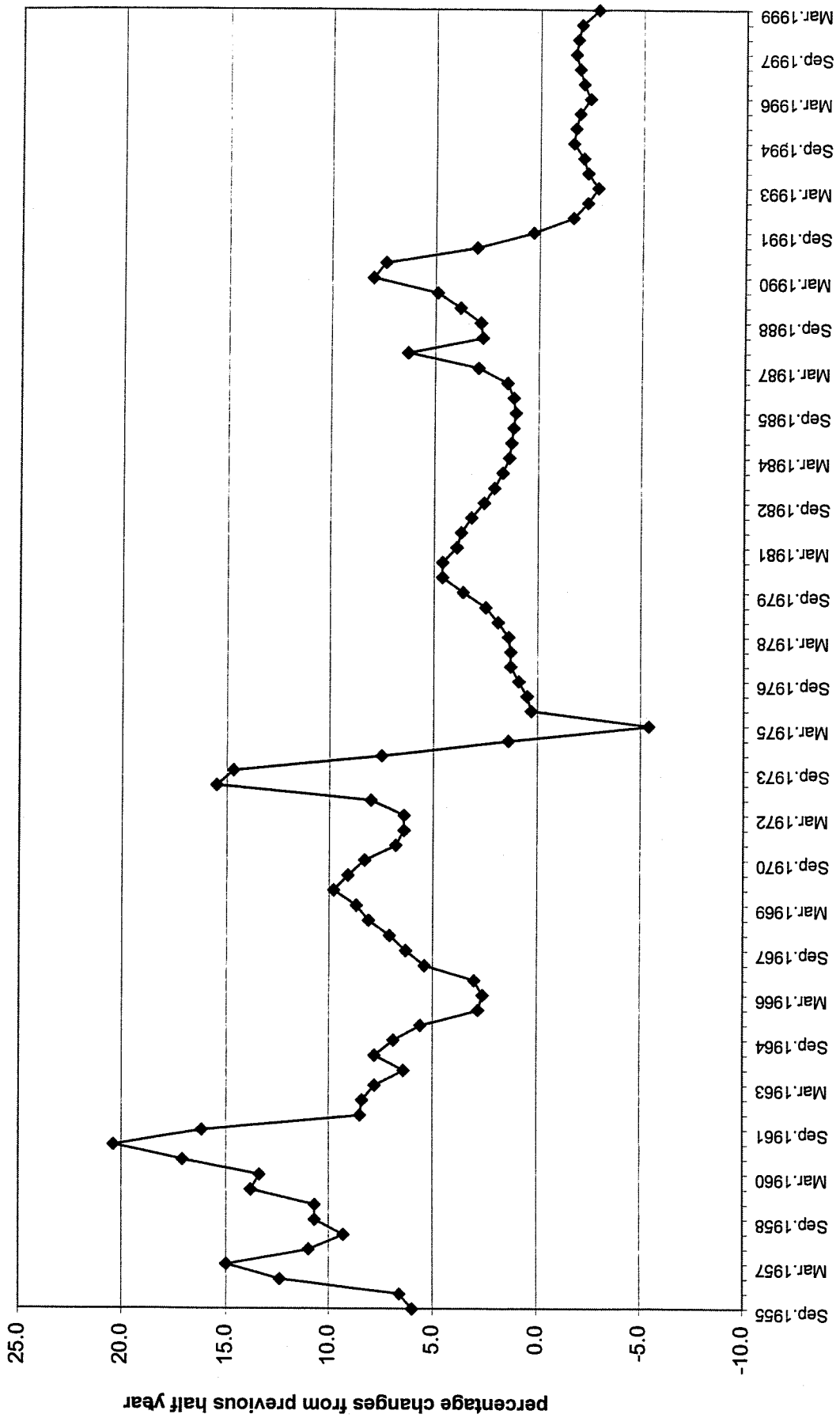
Figure 16 : Annual Growth Rate in Government Expenditure  
Source: IMF International Financial Statistics



**Figure 17: Japan's Savings Rates**  
Source: OECD



**Figure 18: Percentage Change in Real Estate Prices for 223 Japanese Cities**  
 Source: Japan Real Estate Institute



Note: The data represent an average of prices for the industrial, commercial and residential sectors.

**Table 1: Debt to Equity Ratios**

	1985	1986	1987	1988	1989	1990	Change		1991	1992	1993	1994	1995	1996	1997	1998	Change		
								1990-	1985										1998-
<b>A. Overall Debt to Equity</b>																			
Five Industry Average	3.995	3.582	3.404	3.232	2.859	1.942	-2.053	2.130	2.112	2.099	2.085	2.125	2.112	2.112	2.125	2.191	0.060		
Automotive	2.760	2.353	2.218	1.850	1.789	1.710	-1.050	1.811	1.850	1.815	1.743	1.706	1.581	1.581	1.518	1.478	-0.333		
Electronics	1.520	1.391	1.414	1.287	1.248	1.231	-0.289	1.234	1.213	1.191	1.141	1.124	1.162	1.162	1.113	1.095	-0.140		
Textile	3.007	2.935	2.463	2.419	2.104	1.919	-1.088	1.891	1.693	1.586	1.475	1.583	1.921	1.921	2.187	0.698	-1.193		
Steel	4.740	4.583	4.245	3.756	3.267	2.196	-2.544	2.198	2.091	2.142	2.107	2.236	1.923	1.923	1.802	1.823	-0.375		
Real Estate	7.948	6.648	6.682	6.848	5.887	2.656	-5.292	3.517	3.712	3.759	3.957	3.974	3.973	4.008	4.008	5.860	2.343		
<b>B. Short Term Debt to Equity</b>																			
Five Industry Average	2.750	2.412	2.176	2.081	1.783	1.262	-1.488	1.252	1.225	1.109	1.136	1.177	1.233	1.233	1.292	1.241	-0.011		
Automotive	1.919	1.694	1.500	1.348	1.245	1.181	-0.738	1.208	1.238	1.185	1.055	1.081	1.067	1.067	1.016	0.979	-0.230		
Electronics	1.136	0.974	0.899	0.870	0.853	0.783	-0.353	0.811	0.750	0.771	0.720	0.711	0.764	0.764	0.760	0.721	-0.090		
Textile	2.509	2.297	1.923	1.760	1.576	1.431	-1.078	1.396	1.311	1.181	1.054	1.134	1.474	1.474	1.833	0.285	-1.110		
Steel	2.783	2.596	2.359	2.138	1.782	1.113	-1.670	1.144	1.168	1.075	1.026	1.113	0.978	0.978	0.938	0.948	-0.195		
Real Estate	5.406	4.499	4.200	4.288	3.457	1.804	-3.602	1.702	1.658	1.335	1.822	1.848	1.884	1.884	1.914	3.270	1.569		
<b>C. Long Term Debt to Equity</b>																			
Five Industry Average	1.244	1.170	1.228	1.151	1.076	0.801	-0.443	0.839	0.875	0.912	0.982	0.954	0.866	0.866	0.813	0.895	0.057		
Automotive	0.841	0.659	0.717	0.502	0.543	0.529	-0.312	0.603	0.613	0.630	0.688	0.625	0.514	0.514	0.502	0.500	-0.103		
Electronics	0.384	0.417	0.516	0.417	0.394	0.448	0.065	0.423	0.463	0.421	0.421	0.413	0.398	0.398	0.353	0.374	-0.049		
Textile	0.498	0.638	0.540	0.659	0.528	0.488	-0.010	0.495	0.382	0.405	0.420	0.449	0.447	0.447	0.354	0.412	-0.083		
Steel	1.957	1.987	1.886	1.618	1.485	1.083	-0.876	1.054	0.923	1.067	1.081	1.123	0.945	0.945	0.864	0.874	-0.180		
Real Estate	2.542	2.149	2.482	2.560	2.430	1.458	-1.084	1.618	1.992	2.036	2.302	2.158	2.025	2.025	1.995	2.316	0.698		

**Notes:**

1. Debt to Equity Ratios are given by the ratio of Total Liabilities to Shareholders' Equity
2. Short-term debt to equity ratios are given by the ratio of Short-Term Debt to Shareholders' Equity
3. Long Term Debt to Equity Ratios are given by the ratio of Long Term Debt to Shareholders' Equity
4. The sum of short and long term debt ratios may not add up to the overall debt to equity ratio because of rounding.
5. Data are the fiscal year ending in March. Thus, data for 1990 actually represent results for 9 months in 1989. All data are from Toyo Keizai.

Table 2: Short-Term Ratios

	1985	1986	1987	1988	1989	1990	Change: 1985- 1990	1991	1992	1993	1994	1995	1996	1997	1998	Change 1991- 1998
<b>A. Working Capital Ratio</b>																
Five Industry Average	1.543	1.611	1.704	1.742	1.694	1.849	0.306	1.794	1.788	2.049	2.050	1.901	1.949	1.877	1.782	-0.012
Automotive	1.849	1.735	1.678	1.396	1.383	1.361	-0.487	1.401	1.337	1.368	1.393	1.395	1.352	1.363	1.410	0.009
Electronics	1.823	2.041	2.696	2.226	2.365	2.367	0.544	2.108	2.825	2.795	3.345	2.548	2.457	2.500	2.329	0.221
Textile	1.497	1.738	1.593	2.129	1.790	2.119	0.622	2.030	1.832	2.098	2.133	2.374	2.680	2.398	2.363	0.333
Steel	1.135	1.246	1.260	1.200	1.357	1.658	0.524	1.680	1.440	1.503	1.870	1.636	1.687	1.720	1.728	0.048
Real Estate	1.411	1.296	1.294	1.758	1.572	1.737	0.326	1.751	1.507	2.480	1.509	1.551	1.571	1.403	1.082	-0.669
<b>B. Quick Ratio</b>																
Five Industry Average	0.993	1.048	1.164	1.258	1.252	1.378	0.386	1.307	1.283	1.391	1.554	1.417	1.489	1.433	1.335	0.028
Automotive	0.870	0.854	0.875	0.844	0.891	0.845	-0.026	0.810	0.762	0.781	0.816	0.854	0.818	0.850	0.865	0.055
Electronics	1.409	1.577	2.169	1.807	1.956	1.971	0.562	1.741	2.307	2.362	2.888	2.182	2.099	2.164	1.987	0.246
Textile	1.141	1.287	1.238	1.762	1.510	1.787	0.646	1.685	1.518	1.755	1.803	2.004	2.329	2.065	2.030	0.346
Steel	0.763	0.877	0.913	0.871	1.020	1.261	0.498	1.275	1.081	1.117	1.426	1.206	1.243	1.286	1.266	-0.007
Real Estate	0.779	0.645	0.625	1.004	0.885	1.028	0.249	1.025	0.748	0.942	0.836	0.841	0.957	0.800	0.524	-0.500
<b>C. Short to Long Term Debt Ratio</b>																
Five Industry Average	6.791	4.263	4.372	3.130	3.191	2.380	-4.411	3.214	4.124	4.758	2.788	2.663	2.900	3.501	3.699	0.485
Automotive	3.360	2.937	3.045	3.279	2.444	2.711	-0.649	2.304	2.207	2.135	1.836	1.957	2.284	2.338	2.502	0.198
Electronics	4.150	3.980	2.242	2.173	2.820	2.244	-1.906	2.516	2.152	2.333	1.986	2.721	2.926	3.909	4.674	2.159
Textile	22.930	11.372	13.576	7.377	8.244	4.487	-18.443	9.185	13.264	16.885	7.986	6.181	6.545	8.081	7.469	-1.716
Steel	1.758	1.283	1.525	1.500	1.332	1.075	-0.683	1.073	2.228	1.782	1.293	1.456	1.743	2.146	2.578	1.605
Real Estate	1.755	1.741	1.472	1.321	1.113	1.381	-0.374	0.992	0.769	0.656	0.837	1.002	1.000	1.033	1.273	0.281

**Notes:**

1. Working Capital Ratios are given by the ratio of Current Assets to Current Liabilities
2. Quick Ratios are given by the ratio of Current Assets (less inventories) to Current Liabilities
3. Short-Term to Long Term Debt Ratio corresponds to title.
4. Data are the fiscal year ending in March. Thus, data for 1990 actually represent results for 9 months in 1989. All data are from Toyo Keizai.

Table 3: Macroeconomic Solvency Measures

	1960	1965	1970	1975	1980	1985	1990	1995
<b>All Industries:</b>								
Overall Debt to Equity Ratio	2.90	3.89	4.72	5.59	5.17	4.38	4.09	3.80
Short-Term Ratio	2.02	2.69	3.27	3.76	3.61	2.99	2.58	2.21
Long-Term Ratio	0.87	1.20	1.45	1.83	1.56	1.39	1.52	1.58
Current Assets/Current Liabilities	1.06	1.05	1.09	1.14	1.11	1.10	1.20	1.14
<b>Manufacturing</b>								
Overall Debt to Equity Ratio	2.41	3.06	3.72	4.25	3.58	2.79	2.16	1.97
Short-Term Ratio	1.71	2.05	2.49	2.82	2.57	2.01	1.43	1.21
Long-Term Ratio	0.70	1.00	1.23	1.43	1.01	0.79	0.73	0.76
Current Assets/Current Liabilities	1.16	1.14	1.16	1.17	1.17	1.19	1.35	1.35

Source:

Quarterly Report of Incorporated Enterprises Statistics

Table 5: Distribution of Sources of Funds Raised by the Private Sector (percent)

	1970-1974	1975-1979	1980-1984	1985-1989
Internal	34.7	42	47.6	43.4
Equity	2.2	2.3	5.4	5.4
Debt Securities	1.4	2.2	1.2	7.1
Borrowing from:				
Private Financial Institutions	33.2	27.6	29.1	28.2
Government Financial Institutions	3	4.2	3.3	5.7
Foreign Sources	-0.2	1	1.3	5.6
Trade Credits	25.7	20.7	12.1	4.5

Notes:

1. This Table is from Teranashi (1994)
2. Internal funds are savings and gross fixed capital depreciation
3. Debt Securities are bonds, commercial paper and bills
4. Foreign Sources are bonds and other foreign liabilities
5. The 4.5% figure for Trade Credits between 1985-1989 is affected by an 11.9% decline in 1986 associated with the Plaza Accord

Table 6: Japan's Relative Economic Performance

	Real-GDP growth rate	Inflation (CPI)	Unemploy- ment Rate
<b>1960-1973</b>			
Japan	9.6	6.2	1.3
US	3.9	3.2	4.8
Germany	4.3	6.4	0.8
G7 Average	4.8	3.9	3.1
OECD average	4.9	4.1	3.2
<b>1973-1979</b>			
Japan	3.6	9.9	1.9
US	2.5	8.5	6.7
Germany	2.4	4.7	3.4
G7 Average	2.7	9.8	4.9
OECD average	2.8	10.8	5
<b>1979-1989</b>			
Japan	4	2.5	2.5
US	2.5	5.5	7.2
Germany	1.8	2.9	6.8
G7 Average	2.7	5.6	6.9
OECD average	2.6	8.9	7.2

Notes:

1. This table is taken from Cargill, Hutchinson and Ito, p. 33
2. Growth rates and CPI inflation rates are annual percentage rates of change between the years indicated.
3. The unemployment rate is an average of the individual years indicated.

Table 7 : Outstanding Loans and Discounts by Bank Type as a Percent of Total Loans

	1970	1975	1980	1985	1990	1995
<b>City Banks</b>						
Mnfg % of Total	45.46	38.39	32.99	28.52	16.42	14.74
Real Estate % of Total	2.72	5.20	4.85	6.73	11.65	12.11
Construction % of Total	4.84	6.25	5.61	5.63	4.51	5.48
Finance % of Total	1.07	1.53	3.24	6.17	7.47	9.45
Other % of Total	45.91	48.64	53.30	52.95	59.94	58.23
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
<b>Regional Banks</b>						
Mnfg % of Total	39.69	34.58	28.09	25.66	18.65	17.88
Real Estate % of Total	4.01	6.34	4.99	6.05	9.36	9.19
Construction % of Total	5.38	6.43	6.58	7.74	7.30	8.48
Finance % of Total	1.06	0.90	1.96	4.07	8.25	6.06
Other % of Total	49.85	51.75	58.39	56.48	56.44	58.40
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
<b>Trust Banks</b>						
Mnfg % of Total	34.48	31.62	30.90	20.45	9.99	11.70
Real Estate % of Total	3.62	7.34	9.63	12.38	11.16	16.62
Construction % of Total	3.44	4.80	3.23	2.87	1.52	2.31
Finance % of Total	4.21	2.41	4.17	18.91	30.76	26.98
Other % of Total	54.25	53.83	52.07	45.38	46.57	42.40
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
<b>Long-Term Banks</b>						
Mnfg % of Total	54.98	46.95	36.00	23.49	12.18	14.05
Real Estate % of Total	7.02	10.64	9.90	10.71	13.92	15.80
Construction % of Total	2.24	3.76	2.58	2.01	1.90	2.62
Finance % of Total	1.15	1.57	6.37	14.84	22.74	22.80
Other % of Total	34.61	37.08	45.15	48.94	49.25	44.74
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
<b>Total (City, Regional, Trust and Lg-Term)</b>						
Mnfg % of Total	44.58	38.08	31.73	26.56	16.13	15.43
Real Estate % of Total	3.65	6.30	5.69	7.34	11.25	11.91
Construction % of Total	4.64	5.94	5.46	5.67	4.81	5.88
Finance % of Total	1.17	1.38	3.25	7.34	11.07	11.05
Other % of Total	45.96	48.30	53.87	53.09	56.74	55.72
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Source: All data are from Japan's Economic Statistics Monthly

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